poster guide

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President: Pietro De Camilli
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Poster Board Assignments

The ASCB and EMBO have assigned all abstracts to poster boards with the letter “B” followed by a number. Please place your poster on the board you were assigned at the date and time indicated in your notification email.

Online Poster/Abstract Viewing

From Thursday, November 30, through Wednesday, December 6, registered meeting participants will be able to visit a password-protected website to search and view abstracts, uploaded posters, and slides. This will allow participants who miss posters or presentations they were hoping to see view them, and connect with the presenter. Participants will be able to contact the presenter with any questions directly through this website. To search and view the abstracts/posters visit: http://www.ascb.org/amabstract. A login and password was sent on to all attendees registered by November 27. This information is also provided to all meeting participants when they pick up their badge in the Registration area.
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Sunday Poster Session
Learning Center, Exhibit Halls C-E

Poster Set Up
Saturday 5:30–6:00 pm

Posters Displayed
Saturday 6:00–8:00 pm
Sunday 7:30 am–5:30 pm

Author Presentation
Odd Boards 12:00–1:30 pm
Even Boards 1:30–3:00 pm

Poster Tear Down
Sunday 5:30–6:00 pm

Board Numbers | Session Titles
--- | ---
B1-B32 | Science Education 1
B34-B53 | New Technologies in Light and Electron Microscopy
B54-B70 | New Technologies in Cell Biology: CRISPR, Biosensors, and Machine Learning Platforms
B72-B91 | Cellular Functions of the Actin Cytoskeleton
B92-B115 | Higher-Order Actin-Based Structures
B117-B130 | Myosins 1
B131-B147 | Dynein
B149-B160 | Microtubules Nucleation and Organization 1
B161-B173 | Microtubule Cytoskeleton: Techniques
B175-B190 | Assembly and Disassembly of Cilia/Flagella 1
B192-B203 | Centrosome Assembly and Functions 1
B204-B221 | Kinetochore Assembly and Functions 1
B222-B237 | Spindle Assembly 1
B238-B257 | Chromosome Organization
B259-B281 | Oncogenes
B282-B302 | Tumor Invasion and Metastasis 1
B303-B321 | Cancer Therapy: Chemotherapy and Drug Resistance
B322-B345 | Cancer Therapy: Natural Products
B346-B355 | Cancer Stem Cells
B357-B366 | Gene Regulation and Genome Structure
B367-B376 | Regulatory and Noncoding RNAs
B377-B385 | Post-Transcription Gene Regulation
B387-B407 | Nuclear Lamina and Laminopathies
B409-B429 | Vesicle Docking, Fusion, and Exosome Release
B430-B448 | ER and Golgi Transport
B449-B463 | Endosomes, Lysosomes, and Lysosome-Related Organelles 1
B465-B481 | Neuronal Degeneration - AD, PD, HD
B482-B500 | Neuronal Organelles, Membrane Biology, Membrane Trafficking
B501-B519 | Neuronal Cytoskeleton
B521-B540 | Establishing and Maintaining Organelle Structure 1
B541-B559 | Inter-Organelles Contact Sites and Membrane Microdomains
B561-B573 | Kinases and Phosphatases 1
B574-B593 | Signaling Scaffolds and Microdomains
B595-B607 | Cytoskeleton-Membrane Interactions
B608-B625 | 3D Migration and Invasion
B626-B634 | Dynamics of Focal Adhesions and Invadosomes
B636-B647 | Structure and Function of the Extracellular Matrix
B648-B664 | Cell-Cell Junctions 1
B665-B670 | Glycoproteins and Metalloproteases
B672-B691 | Ubiquitin and Proteasome Function
B692-B708 | Autophagy
B710-B725 | Computational Cell Biology
B726-B743 | Systems and Synthetic Biology and Tissue Engineering
B745-B766 | Germ Cells, Gametogenesis, and Fertilization
B767-B795 | Embryogenesis
B796-820 | Tissue Development and Morphogenesis 1
B822-B841 | Prokaryotic Cell Biology
B842-B855 | Protists and Parasites
B857-884 | Immune System

Poster Presentation Guidelines

- Presenters should ensure their posters are placed on the appropriate poster board for the duration of their assigned poster session and viewing. Please use the number starting with “B” for your poster board.
- Poster presenters should stand at their poster locations during the appropriate 90-minute time slot—odd board numbers, 12:00-1:30 pm or even board numbers, 1:30-3:00 pm. The specific time slot is included in the original poster notification emails sent on October 30. If presenters have to leave early, they should post a note on their boards with contact information or stating when they will be available to answer attendee questions.
- IMPORTANT! Poster presenters are solely responsible for placing and removing their poster according to the schedule provided above. If you are unable to set up your poster the evening before your session, please do so the morning of your presentation.
- Poster presenters should not leave any items unattended at their poster board, including poster tubes, meeting bags, Programs, Poster Guides, personal items, etc. The ASCB and EMBO are not responsible for any items left in the Learning Center.
- Cameras/Photography: Cameras and all other recording devices are strictly prohibited in all session rooms, in the Learning Center, and in all poster and oral presentation sessions.
Science Education

B1/P1001 Biomedical postdocs: Salaries and population in the US. A. Bankston1, C. Pickett2, G.S. McDowell1,2; Future of Research, Abington, MA, 2Rescuing Biomedical Research, Princeton, NJ, 3Manylabs, San Francisco, CA

B2/P1002 Outcomes From a Novel Online Course, Planning Your Scientific Journey. A.M. Schnoes1,2, S. Behrman1,2, N. Griffin1,2, D. McCuillen1, E. Kirschner1, E. Cohon1, N. Green1,3, S. Goodwin1, R.D. Vale1,2;1Biological Sciences, Virginia Tech, Blacksburg, VA, 2Biology, Lane College, Hampton, VA, 3Manylabs, San Francisco, CA.

B3/P1003 Providing resources and strategies to enhance career training for junior scientists. A. Bankston1, G.S. McDowell1,2;1Future of Research, Boston, MA, 2Manylabs, San Francisco, CA

B4/P1004 Planting the seed of research in the undergraduate mind: Conducting mentoring sessions on research opportunities and graduate school by INSPIRE/IRACDA fellows. S. Borinskaya1, H. Menori2, S.M. Quatruccio2;1Pathology, Rutgers University, Piscataway, NJ, 2Cell Biology and Neurosciences, Rutgers University, Piscataway, NJ, 3Department of Genetics, Rutgers University, Piscataway, NJ

B5/P1005 Sustained teaching mentoring works—and benefits mentors as well as those mentored. An update on the Promoting Active Learning and Mentoring (PALM) Network. S. Wick1, A.J. Prunuske2, M.J. Wolyniak3, M. Peifer4;1Biology Teaching Learning, University of Minnesota—Twin Cities, Minneapolis, MN, 2Medical College of Wisconsin, Wausau, WI, 3Biology, Hampden-Sydney College, Hampden-Sydney, VA, 4Biology, University of North Carolina, Chapel Hill, NC

B6/P1006 Experiments in Pedagogy: Mixing MALT and CURE for collaboration in an undergraduate cell biology class and lab. Z.C. Murphy1, E.M. Konieczko2;1University of Rochester, Rochester, NY, 2Gannon University, Erie, PA

B7/P1007 Mentorship for Developing course-based undergraduate research experiences (CURES): The CUR/ASCB Mentorship for Integrating Research Into the Classroom (MIRIC) program. M.J. Wolyniak1, A.J. Prunuske2, K.K. Resendez3;1Biology, Hampden-Sydney College, Hampden-Sydney, VA, 2Basic Sciences, Medical College of Wisconsin, Wausau, WI, 3Biology, Westminster College, New Wilmington, PA

B8/P1008 It's a small world: a cell biology outreach program for young learners. E. Garcia1, A. Osimani1, M. Lunde1, N. Baudoin1, M. Rosenzweig1, D. Cimini1;1Biological Sciences, Virginia Tech, Blacksburg, VA

B9/P1009 Share your expertise and enthusiasm with teachers: Organize a workshop to build cheap, homemade microscopes. B. Goldstein1, K. Yoshino1;2Biology Department, UNC Chapel Hill, Chapel Hill, NC, 3University, Hamilton, NY

B10/P1010 Citizen scientists detect pathogens associated with tick-borne illnesses in ixodes scapularis. J.S. Alegria-Berridi1, M. Alhalal1, C.N. Fisher2, R. Ragland2, J. van Westrienen3, A.J. Prunuske4;1Biology, University of Wisconsin-Stevens Point, Stevens Point, WI, 2University of Minnesota-Duluth, Duluth, MN, 3Biomere, Philadelphia, PA, 4Microbiology and Immunology, Medical College of Wisconsin, Wausau, WI

B11/P1011 A Five Week Cell Biology Laboratory Exercise: Characterization of Head and Neck Cancer Cell Growth and Invasiveness. J.E. Hall1;1Biology, Bucknell University, Lewisburg, PA

B12/P1012 The yeast orphan gene project: Undergraduates finding a place for ORFans to GO. M.J. Wolyniak1, J.B. Keeney1, E.D. Strome1;1Biology, Hampden-Sydney College, Hampden-Sydney, VA, 2Biology, Juniata College, Huntingdon, PA, 3Biological Sciences, Northern Kentucky University, Highland Heights, KY

B13/P1013 Steel City Blues: Leveraging a Legacy of Pollution for Research and Reflection in Introductory and Advanced Undergraduate Biology Courses. K.M. Drace1, V.K. Gibbs1, M.L. Styes1, P.K. Hanson1;1Biology, Birmingham-Southern College, Birmingham, AL

B14/P1014 A semester-long cell biology research experience: from novice to project owner. M.K. Dennis1;1Biology, Marist College, Poughkeepsie, NY

B15/P1015 CUREs for Everyone: Introductory Biology Lab Course Converted to Research Experience. D.M. Thurtle-Schmidt1, M. Prudencio1, T.T. Eckdahl2, A.M. Campbell2;1Biology, Davidson College, Davidson, NC, 2Biology, Missouri Western State University, St. Joseph, MO

B16/P1016 Evaluating Cures as a Model for Persistence and Success in Science Majors and as a Model for Accelerating Departmental Curriculum Change. A. Dasgupta1, K.A. Mars1, J. Mars2;1office of vice chancellor for research, IUPUI, Indianapolis, IN

B17/P1017 Investigating the Role of Authentic Research Experiences on Science Identity of African American women. I.A. Ero-Tolliver1;1Biology, Sciences, Hampton University, Hampton, VA

B18/P1018 Student Retention using a Forensic Science Based Approach. C.A. Jones1;1Biology, Lane College, Jackson, TN

B19/P1019 A Peer-Led Team Learning Strategy for Course-based Undergraduate Research in General Biology. M. Van Striy1, U. Ugwu1, K. Samuels1, A. Gayle1, T. Gladney1, J. Smith-Levi1, I. Tasie1, D. Skiensky1;1Biology, Lane College, Jackson, TN

B20/P1020 Assessment of Mapping the Brain, a research and neurotechnology based approach for the modern neuroscience classroom. S.D. Robertson1, Z.A. Johnson1, N.R. Scioliino2, N.W. Plummer2, P. Jensen3;1Biotechnology Program, Department of Molecular Biomedical Sciences, North Carolina State University, Raleigh, NC, 2Neurobiology Laboratory, National Institute of Environmental Health Sciences, Research Triangle Park, NC

B21/P1021 Integrating Cell Biology Concepts: Comparing Learning Gains And Self-Efficacy In Live And Virtual Undergraduate Lab Experiences. L. Goudouzian1, P. Rola2, K. Ruggles2, P. Gupta2, M.A. Mondoux3;1Natural Science, DeSales University, Center Valley, PA, 2Mathematics and Computer Science, DeSales University, Center Valley, PA, 3Biology, College of the Holy Cross, Worcester, MA

B22/P1022 Fine-tuning summer research programs to increase underrepresented students’ scientific identity. M. Gheesi1, M. Keels1, C.A. Spelman2, E. Baker3, E.B. Evans1, C. Poston1;1The Leadership Alliance, Brown University, Providence, RI, 2Department of Comparative Human Development, University of Chicago, Chicago, IL, 3Department of Sociology, Spelman College, Atlanta, GA, 4Meyerhoff Scholarship Program, University of Maryland, Baltimore County, Baltimore, MD

B23/P1023 A short authentic research module increases complexity in student thinking about research without sacrificing student experience or content knowledge. L.L. Dahlberg1, S.R. Lee1, B. Wiggins2, H. Jordt2, L. Lily3, D.S. Leaf1;1Biology, Western Washington University, Bellingham, WA, 2Biology, University of Washington, Seattle, WA

B24/P1024 Design-based and Interdisciplinary Strategies for Learning in Laboratory Sciences. J. Forsmaggio1, Z. Sheffler1, D. Huff1, A. Bobak1;1Biology, Seton Hill University, Greensburg, PA, 2Greensburg Central Catholic High School, Greensburg, PA

B25/P1025 Inquiry-based cell culture course improves student conceptual and practical understanding of biomedical research. A. Krufka1, M. Dittmar1, G.J. Eaton1, C. Iftode2;1Department of Biological Sciences, Rowan University, Glassboro, NJ, 2Department of Molecular and Cellular Biosciences, Rowan University, Glassboro, NJ

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New Technologies in Light and Electron Microscopy

B34/P1033 Applying Machine Learning and Pattern Recognition for Accurately and Rapidly Determining Cellular Signaling Status. M.F. Lohrer1, D.M. Hanna2, Y. Liu2, G. Liu3, Electrical and Computer Engineering, Oakland University, Rochester, MI, 3Chemistry, University of California, Davis, Davis, CA

B35/P1034 The comparison of 3D imaging methods of electron microscopy for phages. T. Haruta1, M. Suga1, H. Matsushima2, K. Hasumi1, H. Nishio1, Application management department, JEOL Ltd., Akishima, Japan, 1B Application group, JEOL Ltd., Akishima, Japan

B36/P1035 Unlocking the distribution of fluorescent-labeled albumin in zebrafish through correlative microscopy. D. Cheng1, M. Morsch1, G. Shami1, R. Chung2, F. Braid3, 1School of Medical Sciences, The University of Sydney, Sydney, Australia, 2Faculty of Medicine and Health Sciences, Macquarie University, Sydney, Australia, 3Sydney Microscopy Microanalysis, The University of Sydney, Sydney, Australia

B37/P1036 Development of a new type of low-voltage cryo-electron microscope enabling simultaneous imaging of STEM and SEM in biological samples. J. Usukura1, A. Nara1, T. Matsumoto1, E. Usukura1, T. Sunaoshi2, Y. Tamba1, J. Azuma1, Y. Nagakubo1, T. Mizuo1, M. Osumi1, K. Nimura1, R. Tamochi1, Y. Ooe1, Graduate School of Science, Nagoya University, Nagoya, Japan, 2Hitachi High-Technologies Corporation, Tokyo, Japan, 3Japan Women’s University, Tokyo, Japan

B38/P1037 Graphene-oxide as a substrate for high-resolution single-particle cryo-EM. E. Palovcak1, F. Wang2, D. Bulley1, S. Zheng1, 2D.A. Agard2, Y. Cheng1, 2Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA, 1Howard Hughes Medical Institute, University of California San Francisco, San Francisco, CA

B39/P1038 An adaptive optical, structured illumination, lattice light sheet microscope for isotropic 100 nm resolution imaging of living specimens. W.R. Legant1, E. Betzig1, 2Howard Hughes Medical Institute, Ashburn, VA

B40/P1039 A high resolution, tomography-compatible electron microscopic method for assessing subcellular distribution of membrane proteins. R. Sengupta1, S. Mattoo1, 2Biology, Purdue University, West Lafayette, IN

B41/P1040 Imaging Live Uterine Smooth Muscle Modulation. B. Obayomi1, S.M. Peck1, D.P. Baluch1, 2School of Life Sciences, Arizona State University, Tempe, AZ

B42/P1041 LITE imaging: a high numerical aperture, low photobleaching fluorescence imaging technology. T.C. Fadero1, T.M. Gerbich1, K. Rana2, A. Suzuki3, M. DiSalvo4, 5K. Schaber1, J. Heppert1, T.C. Boothby2, B. Goldstein1, M. Peifer1, N.L. Allbritton1, 2A.S. Gladfelter1, 5A.S. Maddox1, P.S. Maddox1, 2Biology, UNC-Chapel Hill, Chapel Hill, NC, 3Chemistry, UNC-Chapel Hill, Chapel Hill, NC, 4Biomedical Engineering, North Carolina State University, Raleigh, NC, 5Biomedical Engineering, UNC-Chapel Hill, Chapel Hill, NC

B43/P1042 A new method for large-volume high-resolution intravital imaging using multiphoton microscopy identifies microenvironment-driven tumor cell phenotypes leading to metastasis. D. Entenberg1, 2, 3Y. Wang1, 2, 3J. Pastoriza1, 2, 3M. H.O. Koy1, 2, 3, 4J. S. Condeelis1, 2, 3Department of Anatomy and Structural Biology, Einstein College of Medicine/ Montefiore Medical Center, Bronx, NY, 4Gruss-Lipper Biophotonics Center, Einstein College of Medicine/ Montefiore Medical Center, Bronx, NY, 5Integrated Imaging Program, Einstein College of Medicine/ Montefiore Medical Center, Bronx, NY, 6Department of Surgery, Einstein College of Medicine/ Montefiore Medical Center, Bronx, NY

B44/P1043 Innovative measuring methods of optical transparency of the cleared brains by various newest tissue clearing techniques. J. Woo1, 2E. Lee1, Y. Cho1, 2The Spine and Spinal cord Institute, Department of Neurosurgery, Gangnam Severance Hospital, Yonsei University of Medicine, Seoul, South Korea, 3Brain Korea 21 PLUS Project for Medical Science, Yonsei University, Seoul, South Korea, 4College of Physicians and Surgeons, Columbia University, New York, NY

B45/P1044 Detection of PI(3,4,5)P3 on cellular endomembranes using fluorescence correlation spectroscopy. M. Ebner1, 2, I. Yudushkin1, 2, 3Department of Medical Biochemistry, Medical University of Vienna, Vienna, Austria, 4Department of Structural and Computational Biology, Max F. Perutz Laboratories, Vienna, Austria

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B46/P1045 Methodology to uncover a 100-year-old mystery, how does ploidy affect cell volume? R. Suma1, A. Glen2, R. Kasprzowicz2, P. O’Toole1, 2Phasefocus Ltd, Sheffield, United Kingdom, 2Technology Facility, The University of York, York, United Kingdom

B47/P1046 Dual-Color Metal-Induced and Förster Resonance Energy Transfer for Cell Nanoscopy, A.M. Chizhik1, C. Wolnik1, D. Ruhlandt1, N. Kareda1, A.I. Chizhik1, D. Hähnel1, I. Gregori1, J. Endelein1, F. Rehfeldt2, 3‘3rd Institute of Physics - Biophysics, University of Göttingen, Göttingen, Germany

B48/P1047 Hybrid phasor unmixing for hyperspectral fluorescence imaging. H.R. Chiang1,2, E.S. Koo1,2, L.A. Trinh1,3, S.E. Fraser1,2,3, F. Cutrale1,2, 1Translational Imaging Center, University of Southern California, Los Angeles, CA, 2Biomedical Engineering, University of Southern California, Los Angeles, CA, 3Molecular and Computational Biology, University of Southern California, Los Angeles, CA, 4Stowers Institute for Biotechnology, University of Southern California, Los Angeles, CA

B49/P1048 Enhancing visualization of hyperspectral data with Phasor-Maps. W. Shi1,2, E.S. Koo1,3, L.A. Trinh1,3, S.E. Fraser1,2,3, F. Cutrale1,2, 1University of Southern California, Translational Imaging Center, Los Angeles, CA, 2University of Southern California, Department of Biomedical Engineering, Los Angeles, CA, 3University of Southern California, Molecular and Computational Biology, Los Angeles, CA

B50/P1049 Higher spatial resolution of overlapping gene expression achieved through a combination of multiplexing in situ Hairpin Chain Reaction and Hyperspectral Phasor analysis. V. Thomas1,2, H.R. Chiang1,2, F. Cutrale2,3, S.E. Fraser1,2,3, L.A. Trinh1,3, 1Translational Imaging Center, University of Southern California, Los Angeles, CA, 2Molecular and Computational Biology Department, University of Southern California, Los Angeles, CA, 3Biomedical Engineering, University of Southern California, Los Angeles, CA

B51/P1050 Unraveling combinatorial labels in vivo with Voronoi Hyper-Spectral Phasor. F. Cutrale1,2, B. Steventon2, M. Kitano1,2, W. Shi1,2, E.S. Koo1,3, Y. Chai2, L.A. Trinh1,2, S.E. Fraser1,2, 1Translational Imaging Center, University of Southern California, Los Angeles, CA, 2Molecular and Computational Biology, University of Southern California, Los Angeles, CA, 3Department of Genetics, University of Cambridge, Cambridge, United Kingdom, 4Biomedical Engineering Department, University of Southern California, Los Angeles, CA, 5Center for Craniofacial Molecular Biology, University of Southern California, Los Angeles, CA

B52/P1051 Nanophotonics and Optogenetics – A Novel Combination towards Precise Stem Cell Regulation. A. Desai1, C. Hanelmann1, K. Harikrishnan1, B. Decker1, A. Sangwan1, P. Miao1, M.K. Stachowiak1, J. Jorneit1, L. Feng2, Y. Bae1, 1Pathology and Anatomical Sciences, State University of New York at Buffalo, Buffalo, NY, 2Electrical Engineering, State University of New York at Buffalo, Buffalo, NY

B53/P1052 Liquid Tunable Microscopy to study Chromatin-DNA. A. Diaspro1,2, 1Nanophotonics, Istituto Italiano di Tecnologia, Genoa, Italy, 2Physics, University of Genoa, Genoa, Italy

New Technologies in Cell Biology: CRISPR, Biosensors, and Machine Learning Platforms

B54/P1053 CRISPR/Cas9 generated knockout cell lines for antibody screening and validation. X. Xu1, W. Zhang2, H. Wei2, J. Li2, M. Liu2, L.J. Fang2, 1OriGene Technologies, Inc., Rockville, MD, 2EdiGene Inc., Beijing, China

B55/P1054 Pooled screening in an insect cell-line. R. Viswanatha1, Z. Li1, Y. Hu1, N. Perrimon1, 1Genetics, Harvard Medical School, Boston, MA

B56/P1055 Designing an imaging pipeline for gene edited hiPSC-derived cardiomyocytes. R. Gunawardane1, 1Allen Institute for Cell Science, Seattle, WA

B57/P1056 Systematic gene tagging to illuminate stem cell organization. R. Gunawardane1, 1Allen Institute for Cell Science, Seattle, WA

B58/P1057 Eyes in the cell: Visualizing active kinases using genetically encodable fluorescent biosensors. A. Mukherjee1,2, R. Singh1, S. DilipKumar1, P. Pothula1, S. Udayan1, R. Das1, B. Rao1, A. Gulyani1, 1technology for the advancement of science, institute for stem cell biology and regenerative medicine, Bangalore, India, 2school of chemical and biotechnology, SASTRA University, Thanjavur, India, 3National Centre for Biological Sciences, Bangalore, India, 4Department of Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC

B59/P1058 Sensitive biosensor imaging based on membrane-permeant, environment-sensing dyes. T. Watanabe1, C.J. MacNevin1, M. Weitzenmann1, A. Gulyani1, S. Fuehrer1, F. Liu1, J. Jin2, K.M. Hahn1, 1Pharmacology and Lineberger Cancer Center, University of North Carolina at Chapel Hill, School of Medicine, Chapel Hill, NC, 2Center for Integrative Chemical Biology and Drug Discovery, University of North Carolina at Chapel Hill, School of Pharmacy, Chapel Hill, NC

B60/P1059 The development of non-FRET ratiometric ATP indicator “QUEEN-37C” and its application for single-cell metabolism analysis. H. Yaginuma1, Y. Okada1, 1QBIC, RIKEN, Osaka, Japan

B61/P1060 Tool-box of Fluorescent Biosensors for Visualizing Protein Kinase Activation Dynamics in Live Cells. R. Singh1, A. Mukherjee1, P. Pothula1, S.O. Raja1, R. Das2, B. Rao1, A. Gulyani1, 1Technologies for the Advancement of Science, Institute for Stem Cell Biology and Regenerative Medicine, BANGALURU, India, 2Biochemistry, Biophysics and Bioinformatics, National Centre for Biological Sciences, BANGALURU, India, 3Department of Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC

B62/P1061 Use of orthogonal binding interfaces to develop small GTPase biosensors with greatly reduced cellular perturbation. E.C. O’Shaughnessy1, T.M. Jacobs1, X. Ma1, D. Tsygankov1, B. Kuhlman1, G. Dias1, B. Kuhlman2, 1Department of Pharmacology, University of North Carolina at Chapel Hill, Chapel Hill, NC, 2Department of Biochemistry and Biophysics, University of North Carolina at Chapel Hill, Chapel Hill, NC, 3Department of Cell Biology, UT Southwestern Medical Center at Dallas, Dallas, TX, 4Department of Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA

B63/P1062 Luminescent metabolite detection assays to monitor cancer cell metabolism in real-time. D.F. Lazar1, D. Leipe1, J. Vidigurine1, 1Promega Corporation, Madison, WI

B64/P1063 Deep Cell: Deep Learning in Biological Image Analysis and Phenotypic Profiling. J.J. Nirschl1, A.S. Moore1, E.L. Holzbaur1, 1Department of Physiology, University of Pennsylvania, Perelman School of Medicine, Philadelphia, PA, 2Neuroscience Graduate Group, University of Pennsylvania, Perelman School of Medicine, Philadelphia, PA

B65/P1064 A machine learning framework for kinetic phenotypic prediction of neurological disease states in patient-derived cell models. M. Jones1, C. Huang1, H. Sasaki1, T. Cheng1, T. Sugawara2, Y. Shi2, J. Ichida3, J.S. Lee1, 1D’RVision Technologies LLC, Bellevue, WA, 2El and Edythe Broad Center for Regenerative Medicine and Stem Cell Research, University of Southern California, Los Angeles, CA

B66/P1065 Automated novel neuronal type discoveries by machine learning. M. Jones1, H. Sasaki1, C. Huang1, J.S. Lee1, 1D’RVision Technologies LLC, Bellevue, WA

B67/P1066 Identification of genes involved in CAR-T therapy using CRISPR screening. P. YUAN1, F. WANG1, M. JIN1, 1Business Development Department, EdiGene Biotechnology Inc, Beijing, China
Cellular Functions of the Actin Cytoskeleton

B72/P1070 Metastatic tumor cells exit circulation as multicellular clusters augmenting secondary tumor formation ability in melanoma cancer. T.A. Allen, D. Asad, E.O. Amu, J.A. Yoder, K. Cheng; Molecular Biomedical Sciences, NC State University, Raleigh, NC; Joint Department of Biomedical Engineering, NC State University & University of North Carolina at Chapel Hill, Raleigh, NC

B73/P1071 Pseudophosphatase MK-STYX regulates neurite outgrowth and alters the morphology of primary neurons. D.A. Banks, A. Dahal, A. McFarland, B.M. Flowers, C.A. Stephens, A. Guggsa, W.A. Anderson, S.D. Hinton; Biology, College of William and Mary, Williamsburg, VA; National Cancer Institute, National Institutes of Health, Bethesda, MD; Biology, Howard University, Washington, DC

B74/P1072 Evolutionarily Conserved Mechanisms Drive Sarcomere Assembly in Cardiomyocytes. A.M. Fenix, N. Taneja, M.R. Visetsouk, B.R. Nixon, A. Manalo, J.R. Becker, S.W. Crawley, D. Bader, M.J. Tyska, J.H. Gutzman; Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN; Department of Biological Sciences, Cell and Molecular Biology, University of Wisconsin, Milwaukee, WI; Department of Medicine, Vanderbilt University Medical Center, Nashville, TN; Department of Biological Sciences, The University of Toledo, Toledo, OH

B75/P1073 Ehrh01 regulates cell motility and phagocytosis in Entamoeba histolytica. R. Bharadwaj, R. Arya, A. Bhattacharya, S. Bhattacharya, S. Mohanty; Stem cell facility, AIIMS, New Delhi, India; School of Biotechnology, Jawaharlal Nehru University, New Delhi, India; School of Life Sciences, Jawaharlal Nehru University, New Delhi, India

B76/P1074 XMAP215 is important for coordination between actin filaments and microtubules in embryonic neuronal growth cones. P.G. Slater, A. Magee, A. Samuelson, L.A. Lowery; Biology, Boston College, Chestnut Hill, MA

B77/P1075 Functional Behavior of Overexpressed Fusion Proteins in Melanoma Cells Under Confinement Mediating Leader Bleb Based Motility. G. Adams Jr, M. Preciado-Lopez, R.S. Fischer, M.A. Baird, J. Logue; Cell Biology and Physiology Center, National Institute of Health, Bethesda, MD; Regenerative and Cancer Cell Biology (RCCB), Albany Medical Center, Albany, NY

B78/P1076 Uncovering the developmental functions of nuclear actin. D.J. Kelsch, D.M. Wineland, C.M. Jamie, T.L. Toole; Anatomy and Cell Biology, University of Iowa, Iowa City, IA

B79/P1077 Nuclear actin interactors link actin to novel functions inside the nucleus. T. Viita, M. Varjosalo, M.K. Vartiainen; University of Helsinki, Institute of Biotechnology, Helsinki, Finland

B80/P1078 NanoScale dynamism of F-actin enables secretory function in cytolytic cells. A.F. Carisey, E.M. Mace, M.B. Saeed, D.M. Davis, J.S. Oranje; MCCIR, University of Manchester, Manchester, United Kingdom; Pediatrics and Human Immunobiology, Baylor College of Medicine, Houston, TX

B81/P1079 Differential effect of M-CSF vs. GM-CSF on macrophage morphology and phagocytic ability. Z. Roth, J.J. Lim, S. Grinstein 1,2, S. Grinstein; Cell Biology, The Hospital for Sick Children, Toronto, ON; Biochemistry, University of Toronto, Toronto, ON; Keenan Research Centre for Biomedical Science, St. Michael’s Hospital, Toronto, ON

B82/P1080 Targeting mechanoresponsive cytoskeletal proteins to inhibit pancreatic cancer cell metastasis. A. Surcel, E.S. Schifflaurer, D. Thomas, Q. Zhu, K. DiNapoli, M. Herbig, O. Otto, P. Iglesias, J. Guck, R. Anders, D.N. Robinson; Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD; Pathology, Johns Hopkins University School of Medicine, Baltimore, MD; Electrical and Computer Engineering, Johns Hopkins University, Baltimore, MD; Biotechnology Center of the TU, Dresden, Germany; University of Greifswald, Greifswald, Germany

B83/P1081 Structure-based virtual screening to identify first-generation inhibitor of profilin-1:actin interaction with anti-angiogenic property. D. Gau, T. Lewis, L. Mclermott, P. Wipf, D. Koest, P. Roy; Biotech Engineering, University of Pittsburgh, Pittsburgh, PA; Chemistry, University of Pittsburgh, Pittsburgh, PA; Computational and Systems Biology, University of Pittsburgh, Pittsburgh, PA

B84/P1082 ARAPI2 suppresses Akt signaling through APPL1. R. Luo, P. Chen, C.M. Waterman, X. Jian, J.C. Ku, P.A. Randazzio; LCMB, NC/NIH, Bethesda, MD; Biology Department, William & Mary College, Williamsburg, VA; ILCMT, NHLBI, Bethesda, MD; The Institute of Biochemistry and Molecular Biology, National Yang ming University, Yanmin, Taiwan

B85/P1083 Nuclear actin and actin regulated transcription factors in heat shock responses. B. Prapapat, M. Sokolova, M.K. Vartiainen; Institute of Biotechnology, University of Helsinki, Helsinki, Finland

B86/P1084 Optogenetic stimulation of Ras-RalGDF-Ral axis promotes cell migration through recruitment of Exocyst-Wave complexes at the plasma membrane. G. Zago, M.C. Parrini, J. Camonis, M. Coppé; Research, Institut Curie, Paris, France

B87/P1085 Matricellular Protein Cysteine-Rich Angiogenic Inducer 61 (CCN1/ Cyr61) – A Potential Therapeutic Target to Lower Intracranial Pressure. P.P. Patsibararam; Department of Ophthalmology, Case Western Reserve University, Cleveland, OH

B88/P1086 Anillin regulates epithelial cell mechanics by restructuring the apical actin network. T.R. Arnold, R.E. Stephenson, K.M. Dinshaw, T. Higashi, A.L. Miller; Molecular, Cellular, and Developmental Biology, University of Michigan, Ann Arbor, MI

B89/P1087 Asymmetrical distribution of actin and endocytic proteins provide differential mechanical forces to propel myoblast fusion. Y. Liu, M. Chuang, S. Lin; Institute of Molecular Medicine, National Taiwan University, Taipei, Taiwan

B90/P1088 Differential regulation of the axonal cytoskeleton by glycolysis and mitochondrial respiration. S.M. Holland, A. Ketschef; G. Gallo; Temple University School of Medicine, SHPRC, Philadelphia, PA

B91/P1089 FRAP Simulations and Computational Modeling show that F-Actin Mediated Focusing of Vesicles at the Cell Tip is Essential for Polarized Growth. J.P. Bibeau, J.L. Kingsley, S.I. Mousavi, F. Furti, C. Unsa, Z. Chen, X. Huang, L. Vidali, E. Tuzel; Department of Biology and Biotechnology, Worcester Polytechnic Institute, Worcester, MA; Department of Physics, Worcester Polytechnic Institute, Worcester, MA; Department of Electrical and Computer Engineering, Worcester Polytechnic Institute, Worcester, MA
Higher-Order Actin-Based Structures


B107/P1105 Intranuclear and cytoplasmic actin rod assembly in Dictyostelium discoideum. H. C. Ishikawa-Ankerhold, A. Müller-Taubenberger, Walter Brendel Centre of Experimental Medicine, LMU Munich, Munich, Germany, Cell Biology (Anatomy III), Biomedical Center, LMU Munich, Planegg-Martinsried, Germany

B99/P1097 Impact of tip-enriched adhesion on the morphology and dynamics of actin-based protrusions. M. L. Weck; S. W. Crawley, M. J. Tyska; Department of Cell and Development Biology, Vanderbilt University, Nashville, TN

B98/P1096 RTKs elongates brush border microvilli using EP58-dependent and -independent mechanisms. M. M. Postema; N. E. Grega Larson, A. C. Neininger, M. J. Tyska; Department of Cell and Development Biology, Vanderbilt University, Nashville, TN

B101/P1099 Two isoforms of myosin-II cooperate to organise the fission yeast cytokinetic ring for maximal tension production. S. Wang, H. F. Chin, S. Thyagarajan, E. Karatekin, T. D. Pollard; S. Wang, B. O’Saughnessy; Department of Physics, Columbia University, New York, NY, Department of Chemical Engineering, Columbia University, New York, NY, Department of Cellular and Molecular Physiology, Yale University, New Haven, CT, Department of Molecular Cellular and Developmental Biology, Yale University, New Haven, CT

B102/P1100 Self organization in liquid droplets of cross-linked actin filaments. K. L. Weirich, K. Dasbivas, S. Banerjee, T. A. Witten; S. Vaikuntanathan, James Franck Institute, University of Chicago, Chicago, IL, Department of Physics and Astronomy, University of Chicago, Chicago, IL, Department of Chemistry, University of Chicago, Chicago, IL, Institute for Biophysical Dynamics, University of Chicago, Chicago, IL

B103/P1101 A Band Assembly in Vertebrate Cardiac and Skeletal Muscles Observed with Super-resolution Microscopy. J. Wang, M. Welchons, Y. Fan, J. M. Sanger; J. W. Sanger; Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY

B104/P1102 Actin rod formation and cytoskeletal dysregulation in the neurodegenerative motoneuron disease Spinal Muscular Atrophy (SMA). S. Rademacher, N. Hensel, L. Walter, I. Wefel, G. Brandes, P. Claus; Laboratory for Neuroanatomy and Cell Biology, Hannover Medical School, Hannover, Germany, Center for Systems Neuroscience (ZSN), Hannover, Germany

B105/P1103 Dynamic interplay between filopodia, focal adhesions and stress fibers. L. E. Young; H. N. Higgs, T. U. Butt, M. D. C. Woods, A. C. Neininger, M. J. Tyska; Department of Cell and Development Biology, Vanderbilt University, Nashville, TN

B106/P1104 Filamentation in Schizosaccharomyces japonicus in response to natural stimuli. C. Kinnaer, S. G. Martin, M. H. Khan, S. I. Salomaa, J. S. Charamut, C. Kovaleski, F. Mayville, J. B. Sleel, Department of Natural Science, DeSales University, Center Valley, PA

B107/P1105 Intranuclear and cytoplasmic actin rod assembly in Dictyostelium discoideum. H. C. Ishikawa-Ankerhold, A. Müller-Taubenberger, Walter Brendel Centre of Experimental Medicine, LMU Munich, Munich, Germany, Cell Biology (Anatomy III), Biomedical Center, LMU Munich, Planegg-Martinsried, Germany

B108/P1106 Identifying actin cytoskeletal components required for actin-based motility in the frog-killing chytrid fungus: Batrachochytrium dendrobatidis (Bd). M. R. Kakley, L. Fritz-Laylin; Department of Biology, University of Massachusetts Amherst, Amherst, MA

B109/P1107 Anti-Inflammatory effects of annonacin in vascular endothelium in response to TNF-a induced cell stress. G. D. VanNorden, E. Chambers, E. Charamut, C. Kovaleski, F. Mayville, J. B. Sleel, Department of Natural Science, DeSales University, Center Valley, PA

B110/P1108 Anti-Inflammatory effects of resveratrol in vascular endothelium in response to TNF-a induced cell stress. B. Event, T. Judge, C. McGlocklin, F. Mayville, J. B. Sleel; Department of Natural Science, DeSales University, Center Valley, PA

B111/P1109 Evolution and interplay of axonal actin assemblies. P. Dubey, K. Lardi, J. Loi, S. Roy; Department of Pathology, University of Wisconsin-Madison, Madison, WI, Department of Neurosciences, University of California, San Diego, WI, Department of Pathology and Laboratory Medicine, University of Wisconsin-Madison, Madison, WI

B112/P1110 Autonomous structure formation and contraction of actomyosin regulated by contractile ring related cross-linking proteins (CRCPs). K. Matsuda, M. Sugawa, J. Yajima; Department of Life Sciences, Univ. of Tokyo, Tokyo, Japan

B113/P1111 Shootin1-Mediated Dendritic Spine Formation in Hippocampal Neurons. R. F. Kastian, H. Katsuno, N. Inagaki; Biological Sciences, Nara Institute of Science and Technology, Ikoma, Japan

B114/P1112 The Sharpin interactome reveals a role for Sharpin in lamellipodium formation via the Arp2/3 complex. M. H. Khan, S. I. Salomaa, J. S. Charamut, C. Kovaleski, F. Mayville, M. J. Tyska; Department of Pathology, University of Wisconsin-Madison, Madison, WI

B88/P1096 IRTKs elongates brush border microvilli using EP58-dependent and -independent mechanisms. M. M. Postema; N. E. Grega Larson, A. C. Neininger, M. J. Tyska; Department of Cell and Development Biology, Vanderbilt University, Nashville, TN

B90/P1099 Function of Dynamin-2 in Postsynaptic Neuromuscular Junction. S. Lin, Y. Liu; Institute of Molecular Medicine, National Taiwan University, Taipei, Taiwan

B91/P1091 Investigating cytoskeleton-mediated mechanotransduction using a stem cell model of oogenesis. J. A. MacDonald, D. C. Woods, J. L. Tilly; Biology Department, Northeastern University, Boston, MA

B92/P1098 Src-mediated cortactin tyrosine phosphorylation regulates filopodia formation in neuronal growth cones. Y. Ren, Y. He, D. M. Suter; Biological Sciences, Purdue University, West Lafayette, IN

B93/P1097 Impact of tip-enriched adhesion on the morphology and dynamics of actin-based protrusions. M. L. Weck; S. W. Crawley, M. J. Tyska; Department of Cell and Development Biology, Vanderbilt University, Nashville, TN, Department of Biological Sciences, The University of Toledo, Toledo, OH
Myosins 1

B117/P1114 Mutations in Non-muscle Myosin 2A Disrupt Actomyosin-Microtubule Dynamics Resulting in Male Infertility. D.C. Sung1, C.B. Lema Cervantes1, Y. Zhang1, X. Ma1, R.S. Adelstein1; Genetics and Developmental Biology Center, National Heart, Lung, and Blood Institute, Bethesda, MD

B118/P1115 Nonmuscle Myosin 2B Is Important for Atrioventricular Endocardial Cushion Remodeling. X. Ma1, D.C. Sung1, R.S. Adelstein1; LMC/GDBC, NHLBI/NIH, Bethesda, MD

B119/P1116 A distinct role of non-muscle myosin 2B and microtubules in control of cell contact guidance and polarization. A. Zhouver1, E. Tabdanov2, H. Miao2, H. Wen3, P. Provenzano4,5,6,7,8, X. Ma1, R.S. Adelstein1; Laboratory of Molecular Cardiology, National Heart, Lung and Blood Institute, Bethesda, MD, 8Laboratory for Engineering in Oncology, University of Minnesota, Minneapolis, MN, 7Imaging Physics Laboratory, National Heart, Lung and Blood Institute, Bethesda, MD, 5Dept. of Biomedical Engineering, University of Minnesota, Minneapolis, MN, 6Masonic Cancer Center, University of Minnesota, Minneapolis, MN, 4Stem Cell Institute, University of Minnesota, Minneapolis, MN, 3Institute for Engineering in Medicine, University of Minnesota, Minneapolis, MN

B120/P1117 Nonmuscle Myosin 2B isoforms are uniquely expressed in mouse renal epithelial cells and play a critical role in renal tubular function in adult mice. K.L. Otterpohl1, R.G. Hart1, C. Evans1, C.L. Phillips2, X. Ma3, R.S. Adelstein1, K. Surendran1, B.A. Mollitoris1, I. Chandrasekar1; Sanford Children’s Health Research Center, Sanford Research, Sioux Falls, SD, 2Department of Pathology Laboratory Medicine, Indiana University, Indianapolis, IN, 1Laboratory of Molecular Cardiology, NHLBI/NIH, Bethesda, MD, 3Department of Medicine, Indiana University, Indianapolis, IN

B121/P1118 The role of nonmuscle myosin 2A in early embryonic development. T. Wei1, X. Ma1, R.S. Adelstein1; Laboratory of Molecular Cardiology, NHLBI/NIH, Bethesda, MD

B122/P1119 Intestinal enteroids: A 3D model system to study the role of cytoskeletal dynamics and motor proteins in epithelial cell extrusion. K. Remmert1, J.A. Hammer III1; NHLBI, CBPC, NIH, Bethesda, MD

Myosins 2

B123/P1120 Identification and characterization of a putative myosin-mediated contractile activity in sponges. E. Chang1, C. Cotter1, M.S. Hill1, O.A. Quintero1; Department of Biology, University of Richmond, Richmond, VA

B124/P1121 Myosin IIA controls red blood cell membrane morphology and mechanical properties. A.S. Smith1, R.B. Nowak1, S. Zhou1, J. Wan2, I.C. Ghirri1, V.M. Fowler1; Molecular Medicine, The Scripps Research Institute, La Jolla, CA, 2Microsystems Engineering, Rochester Institute of Technology, Rochester, NY, 3Medicine, Beth Israel Deaconess Medical Center, Boston, MA

B125/P1122 A Novel Role for Nonmuscle Myosin II Monomers in Regulation of Focal Adhesion Dynamics. M. Shutova1, T.M. Svitkina1; Biology, University of Pennsylvania, Philadelphia, PA

B126/P1123 Myosin II B mecharesponse accumulation is determined by relative assembly into bipolar filaments. E.S. Schiffhauser1, D.N. Robinson1,2,3, Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD, 2Pharmacology and Molecular Science, Johns Hopkins University School of Medicine, Baltimore, MD

B127/P1124 The role of cAMP and protein kinase A (PKA) in regulation of myosin II-dependent pigment granule aggregation in RPE of sunfish, Lepomis spp. C. King-Smith1, J.G. Quinlan1, N.E. Fischer1, E.A. Del Rio1, M.L. Quinlan1, M.T. Messalti1; Department of Biology, Saint Joseph’s University, Philadelphia, PA

B128/P1125 Differential actomyosin contractility in tumorigenecity. S.K. Dey1, R.K. Singh1, S.S. Jana1; Biological Chemistry, Indian Association for the Cultivation of Science, Kolkata, India

B129/P1126 Characterization of MYO19 knockdown phenotype in a cultured neuron-like cell line. J.L. Bocanegra1, J.L. Hawthorne1, B.M. Fujita1, A. Li1, O.A. Quintero1; Department of Biology, University of Richmond, Richmond, VA

B130/P1127 Contributions of Myo1 motor and tail domains to Myo1 localization and function at the endocytic sites in fission yeast. R.T. Carroll1, E. Oakes1, M.L. James1, V. Sirotkin1; Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY

B131/P1128 The dynein activator Hook1 is required for long-distance trafficking of BDNF-signaling endosomes in neurons. M. Olenick1, E.L. Holzbaur2; Biochemistry and Molecular Biophysics Graduate Group, University of Pennsylvania, Philadelphia, PA, 3Physiology, University of Pennsylvania, Philadelphia, PA

Dynein

B132/P1129 Distribution of Cortical Dynein Attachment Molecule Regulates Dynein-Mediated Spindle Pulling Mechanism in Budding Yeast. S. Omer1, W. Lee2; Biology department, University of Massachusetts, Amherst, MA, 3Department of Biological Sciences, Dartmouth College, Hanover, NH

B133/P1130 Investigating the mechanism by which the dynein cortical receptor Numt1 activates dynein motility. L.G. Lammers1, D. Garo1, S.M. Markus1; Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO

B134/P1131 Cell cycle regulation of dynein activity prevents DNA damage. C.E. Estrem1, J.K. Moore1; 2Cell and Development, University of Colorado Anschutz Medical Campus, Aurora, CO

B135/P1132 Mechanism for G2 phase-specific nuclear export of the kinetochore protein CENP-F. K.M. Loftus1, H. Cui1, E. Coutavas1, D.S. Kingi1, A. Cervolo1, D. Pereiras1, S.R. Solmaz1; Department of Chemistry, State University of New York at Binghamton, Binghamton, NY, 2Laboratory of Cell Biology, The Rockefeller University, New York, NY, 3Mass Spectrometry Laboratory, Howard Hughes Medical Institute at University of California, Berkeley, Berkeley, NY

B136/P1133 The contribution of electrostatic interactions to the processivity of inner-arm dynein c. M. Kikumoto1, R. Nakamori1, H. Kojima2, H. Sakakibara3; 2Structural Biology Research Center, Nagoya University, Nagoya, Japan, 1Advanced ICT Research Institute, National Institute of Information and Communications Technology, Kobe, Japan

B137/P1134 The 3.5Å cryoEM structure of a fast dynein/dynein complex. L. Umarvis1, C.K. Lau1, M.M. Elshenawy2, E. Morales1, A. Yildiz2, A.P. Carter3; 1MRC LMB, Cambridge, United Kingdom, 2UC Berkeley, Berkeley, CA

B138/P1135 A Conserved Interaction of the Light Intermediate Chain with Dynein-Dynactin Effectors. I. Lee1, M.A. Olenick1, M. Boczkowska1, C. Franzini-Armstrong2, E.L. Holzbaur1, R. Dominguez1; 1Department of Physiology, University of Pennsylvania, Philadelphia, PA, 2Cell Developmental Biology, University of Pennsylvania, Philadelphia, PA

B139/P1136 Dynein Light Intermediate Chains participate differently in fundamental aspects of nocortex development. J.C. Goncalves1,2,3, R.B. Valle1; 1Department of Pathology and Cell Biology, Columbia University Medical Center, New York City, NY, 2Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga, Portugal, 3ICVS/3B’s - PT Government Associate Laboratory, Braga/Guimarães, Portugal
The actin capping protein is essential for Arp1 filament assembly and ciliary array organization. A.D. Berger1,2,3, C. Berger1,2; 1Laboratory of Chemistry and Chemical Biology, Department of Chemistry, Harvard University, Cambridge, MA, 2ICFO The Barcelona Institute for Science and Technology, Barcelona, Spain, 3Department of Chemistry, University of Pennsylvania, Philadelphia, PA, 2ICFO The Institute of Photonic Sciences, Barcelona, Spain

Microtubule Cytoskeleton: Techniques

B161/P1157 Using smFRET to Understand the Structural Changes that Underlie Tau's Behavior on the Microtubule Surface. J.L. Stern1,2, R. Ali1, A. Cario1,2, C. Berger1,2; 1Molecular Physiology and Biophysics, University of Vermont, Burlington, VT, 2Cellular and Molecular Biomedical Sciences Program, University of Vermont, Burlington, VT, 2Neuroscience Graduate Program, University of Vermont, Burlington, VT

B162/P1158 Illuminating intra-cellular transport regulation by post-translational modifications of tubulin with super resolution microscopy. N. Mohan1, I. V.Vilanova2, J. Borbely2, A. Sandoval4, M. Lakadamyali3; 1Physiology Department, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, 2European Molecular Biology Laboratory, Heidelberg, Germany

B163/P1159 Examining mechanisms regulating microtubule organization in dividing cells using lattice light sheet microscopy. M.C. Pamula1, S. Forth3, S. Suresh1, W.R. Legant3, E. Betzig3, T.M. Kapoor; 1Laboratory of Chemistry and Cell Biology, The Rockefeller University, New York, NY, 2Department of Biological Sciences, Rensselaer Polytechnic Institute, Troy, NY, 3Howard Hughes Medical Institute, Janelia Research Campus, Ashburn, VA

B164/P1160 An optogenetic approach to control microtubule acetylation in living cells. N. Kaul1, H. Wang2, O. Dagliyan2, K.M. Hahn3; 1Pharmacology, University of North Carolina, Chapel Hill, NC, 2Neurobiology, Harvard Medical School, Boston, MA
B165/P1161 Controlling cytoskeletal organization and cellular dynamics by localized optical modulation of microtubule dynamics. J. van Haren1, A. Ettinger2, R. Charafeddine1, H. Wang3, K.M. Hahn1, T. Wittmann1; 1Department of Cell and Tissue Biology, UCSF, San Francisco, CA, 2Institute of Epigenetics and Stem Cells, Helmholtz Center Munich, Munich, Germany, 3Department of Pharmacology, UNC Chapel Hill, Chapel Hill, NC

B166/P1162 A two-step mechanism for inactivation of MTOC function at the centrosome. J. Magescas1, J.C. Zonka1, J.L. Feldman1; 1Department of Biology, Stanford, Stanford, CA

B168/P1164 Assembly and Disassembly of Cilia/Flagella 1

B175/P1170 IDA3 associates with IFT in growing cilia to selectively mediate transport and assembly of axonemal I1 dynein. E.L. Hunter1, J. Hwang1, G. Fu1, L.M. Alford1, A. Gokhale1, R. Yamamoto2, R. Kamiya3, H. Lim4, F. Yang1, D. Nicastro2, K.F. Lechtreck4, M. Wirschell4, S.K. Dutcher1, W.S. Sale1; 1Department of Cell Biology, Emory University, Atlanta, GA, 2Department of Cell Biology and Biophysics, UT Southwestern Medical Center, Dallas, TX, 3Department of Biology, Oglethorpe University, Atlanta, GA, 4Department of Biological Sciences, Osaka University, Osaka, Japan, 5Department of Biological Sciences, Chuo University, Tokyo, Japan, 6Department of Genetics, Washington University School of Medicine, St. Louis, MO, 7Department of Biochemistry, University of Mississippi Medical Center, Jackson, MS, 8Department of Cellular Biology, University of Georgia, Athens, GA

B176/P1171 The CEP19-RABL2 GTPase complex binds IFT-B to initiate intraflagellar transport at the ciliary base. T. Kanie1,2, P.K. Jackson1,3,4; 1Baxter Laboratory, Stanford University, Stanford, CA, 2Microbiology and Immunology, Stanford University, Stanford, CA

B177/P1172 Diffusion as a ruler: Modeling kinesin diffusion as a length sensor for intraflagellar transport. N.L. Hendel1, M. Thomson2, W.F. Marshall1; 1Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA, 2Biology and Biological Engineering, California Institute of Technology, Pasadena, CA

B178/P1173 Axonemal Lumen Dominates Cytosolic Protein Diffusion inside the Primary Cilium. W. Luo1, A. Rub1, D. Takao1, L.P. Zweifel2, R.Y. Lim1, K.J. Verhey1, W. Yang1; 1Biology, Temple University, Philadelphia, PA, 2Department of Cell and Developmental Biology, University of Michigan Medical School, Ann Arbor, MI, 3Biocentrum and the Swiss Nanoscience Institute, University of Basel, Basel, Switzerland

B179/P1174 Ran-mediated ciliary entry of the heterotrimeric kinesin-2 motor complex. S. Huang1, P. Avasthi1,2; 1Ophthalmology, University of Kansas Medical Center, Kansas city, KS, 2Anatomy and Cell Biology, University of Kansas Medical Center, Kansas city, KS

B180/P1175 Local regulation of IFT train assembly and injection at eight distinct flagellar pores in the multilicate, Giardia lamblia. S.G. McNally1, S.C. Dawson1; 1Microbiology and Molecular Genetics, University of California, Davis, Davis, CA

B181/P1176 Novel IFT-A gene, Thm2, interacts with its paralog, Thm1, in ciliary protein transport and in adiopogenesis. W. Wang1,2, B.A. Allard1,2, L.M. Silva1,2, D.T. Jacobs1,2, P.V. Tran1,2; 1Kidney Institute, University of Kansas Medical Center, Kansas City, KS, 2Department of Anatomy and Cell Biology, University of Kansas Medical Center, Kansas City, KS

B182/P1177 A new model for regulation of flagellum length in Trypanosoma brucei. E. Bertiaux1, B. Morga1, T. Bilsnick1, S. Perrot1, B. Rotureau1, P. Bastin1; 1Trypanosome Cell Biology Unit, Institut Pasteur, Paris, France

B183/P1178 The role of IFT concentration at the base of the flagellum. J. Jung1, J. Santi-Rocca1, C. Fort1, S. Perrot1, P. Bastin1,2; 1Trypanosome Cell Biology Unit, Institut Pasteur, Paris, France

B184/P1179 PKD2-mediated modulation of transition zone protein regulate the nucleation of apical actin network in vertebrate multi ciliated cells. T. Yasunaga1, O. Kretz1, M. Hêlmstadter1, O. Cîcek1, T. Huber1, S. Lienkamp1, G. Walz2; 1Renal Division, University Freiburg Medical Center, Freiburg, Germany, 2Computer Science, University Freiburg, Freiburg, Germany

B185/P1180 Actin redundancy in Chlamydomonas reinhardtii is necessary for flagellar protein trafficking. B. Jack1, D.M. Mueller1, A.L. Tettow1, P. Avasthi1,2; 1Anatomy and Cell Biology, University of Kansas Medical Center, Kansas City, KS, 2Ophthalmology, University of Kansas Medical Center, Kansas City, KS

B186/P1181 Formation of Microvilli and Cilia in the Zebrafish Prophores. Requires an Actin-binding Bioactive Peptide Amidating Enzyme. D. Kumar1, R.T. Thomson1,2, M. Yankova1,4, J.D. Gitlin2, R.E. Mains1, B.A. Eipper1, S.M. King1,4; 1Department of Molecular Biology and Biophysics, University of Connecticut Health Center, Farmington, CT, 2Eugene Bell Center for Regenerative Biology and Tissue Engineering, Marine Biological Laboratory, Woods Hole, MA, University of Virginia, Charlotteville, VA, 3Electron Microscopy Facility, University of Connecticut Health Center, Farmington, CT, 4Department of Neurosciences, University of Connecticut Health Center, Farmington, CT

B187/P1182 The role of FBFI in Drosophila Ciliogenesis. Q. Wei1, Y. Hou1, Z. Wu1; 1Key Laboratory of Insect Developmental and Evolutionary Biology, Shanghai Institute of Plant Physiology and Ecology, Shanghai, China
**B189/P1184** IFT140 is required for anterograde IFT of several subgroups of flagellar membrane proteins in *Chlamydomonas*. T. Picariello1, J. Brown2, G. Swank3, D. Cochran4, O. King5, G.J. Pazour4, G.B. Witman1

**B190/P1185** Cryo-EM structure of anterograde intraflagellar transport trains. M. Jordan1, D. Diener1, L. Stepanek1, G. Piperno2, Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany

**B192/P1186** The molecular architecture of the yeast spindle pole body core determined by Bayesian integrative modeling. S. Viswanath1, M. Bonomi1,2, S.J. Kim3, V.A. Khinchen1, K.C. Taylor1, K. Yabut4, N.T. Umbret4, H. Van Epps4, J. Meehi5, M.H. Jones1, D. Russel1, J.A. Velazquez-Muriel1, M. Winey1, I. Raymont5, T.N. Davis1, A. Sali1,7, E. Muller4, Department of Bioengineering and Therapeutic Sciences, The University of California, San Francisco, San Francisco, CA, 1Department of Chemistry, University of Cambridge, Cambridge, UK, 2Department of Biochemistry, University of Wisconsin, Madison, WI, 3Department of Biochemistry, University of Washington, Seattle, WA, 4Department of Molecular, Cellular and Developmental Biology, University of Colorado, Boulder, CO, 5California Institute for Quantitative Biosciences, The University of California, San Francisco, San Francisco, CA, 6Department of Pharmaceutical Chemistry, The University of California, San Francisco, San Francisco, CA

**B193/P1187** Coupling of Polo kinase activation to nuclear localization by a bifunctional NLS is required during mitotic entry. D.O. Kachaner1, D. Garrido1, K. Normandin1, H. Lavio1, V. Archambault1, University of Montréal - IRIC, Montréal, QC

**B194/P1188** Upstream open reading frames control Plk4 translation and centriole biogenesis. P. Phan1, S. Hutcherson1, V. Daggubati1, A.J. Holland1, Molecular Biology and Genetics, Johns Hopkins University School of Medicine, Baltimore, MD

**B195/P1189** Albatross/FBF1 integrates centrosome dynamics. A. Inoko1, T. Kyono2, M. Inagaki1, Y. Hayashi1, Department of Cell Biology, Aichi Cancer Center Research Institute, Nagoya, Japan, 2Division of Carcinogenesis and Cancer Prevention, National Cancer Center Research Institute, Tokyo, Japan

**B196/P1190** e3421, a mutation in a novel protein required for centrosome matrix assembly in the one-cell stage C. elegans embryo. A.C. Erpf1, N. Memar1, R. Schnabel2, T. Mikeladze-Dvali1, Biocenter, Ludwig-Maximilians-University Munich, Munich, Germany, 2Institute of Genetics, Technical University Braunschweig, Braunschweig, Germany

**B197/P1191** CEP135 isoforms Regulate Centrosome Number in Breast Cancer Cells. D. Ganapathi Sankaran1, C.G. Pearson1, Cell and Developmental Biology, University of Colorado School of Medicine, Aurora, CO

**B198/P1192** C. elegans FZR-1, a Co-Activator of Anaphase Promoting Complex, Acts as Genetic Suppressor of egg-1 in Regulating Centrosome Assembly. J.C. Medley1, L.E. DeMeyer1, Stearns1,2, 1Department of Bioengineering and Therapeutic Sciences, University of Colorado School of Medicine, Aurora, CO, 2Institute for Genome Sciences, University of Colorado School of Medicine, Aurora, CO

**B199/P1193** Centrosome number homeostatic mechanisms. R. Sala1, T. Stearns1,2, Biology, Stanford University, Stanford, CA, 2Genetics, Stanford University, Stanford, CA

**B200/P1194** Correlative STORM/EM analysis of the centriole distal appendage architecture. M. Bowler1, D. Kong1, J. Loncarek1, National Cancer Institute, National Institute of Health, Frederick, MD

**B201/P1195** mRNA is a dynamic component of the pericentriolar material in *Drosophila* early embryos. P.V. Ryder1, D.A. Lerit1, Department of Cell Biology, Emory University, Atlanta, GA

**B202/P1196** Centrocortin regulates actin-related processes in the early *Drosophila* embryo including axial nuclear expansion in a Rho1-dependent manner. C. Blake-Hedges1, L. Kao1, C. Zheng1, T.L. Megraw1, Department of Biomedical Sciences, College of Medicine, Florida State University, Tallahassee, FL

**B203/P1197** Characterization of centrosome amplification in the unique cell types of the placenta. M. Stratton1, T. Stearns1,2, Biology, Stanford University, Stanford, CA, 2Genetics, Stanford University School of Medicine, Stanford, CA

**B204/P1198** Investigating the contribution of phospho-Histone H4 marks to Aurora B kinase activity at kinetochores. A.J. Broad1, J.G. DeLuca1,2, 1Biochemistry and Molecular Biology, Colorado State University, Fort, CO, 2Institute for Genome Architecture and Function, Fort Collins, CO

**B205/P1199** Aurora B association with nucleosomes, not transcription, regulates its centromere localization and proper SAC response in human cells. C. Ferras1, M. Cruz1, M. Alba Abad2, N. Galjart1, J. Aulinandam1, H.J. Maito1, 1Chromosome Instability Dynamics Lab, IBMC/ISS, Porto, Portugal, 2Cell Biology, Wellcome Trust Centre for Cell Biology, Institute of Cell Biology, Edinburgh, United Kingdom, 2Genetics, Erasmus MC, Rotterdam, Netherlands

**B206/P1200** Dual Roles of the Chromosomal Passenger Complex at Centromeres. J. Haase1, M. Bonner1, H. Halas1, A.E. Kelly1, National Cancer Institute, National Institutes of Health, Bethesda, MD

**B207/P1201** Optogenetic manipulation of individual kinetochore shows that Aurora B kinase promotes microtubule depolymerization rather than detachment. H. Zhang1, A. Gokden1, C. Aonbangkhen1, M. Liu1, M.A. Lampson1, D.M. Chenoweth2, Biology, University of Pennsylvania, Philadelphia, PA, 2Chemistry, University of Pennsylvania, Philadelphia, PA

**B208/P1202** Measuring NDC80 binding reveals the molecular basis of tension-dependent kinetochore attachments. T. Yoo1, C. Yu1, D.J. Needleman1, School of Engineering and Applied Sciences, Harvard University, Cambridge, MA

**B209/P1203** Coordination between discrete MAD1 domains is required for efficient mitotic checkpoint signaling. W. Ji1, Y. Luo1, E. Ahmed1, S. Liu1, Biological Sciences, University of Toledo, Toledo, OH

**B210/P1204** Plk1 anchors the inner kinetochore against tension. R.F. Lera1, A. Dennee1, M.E. Burkd1, Department of Medicine, Carbone Cancer Center, University of Wisconsin, Madison, WI

**B211/P1205** PP1-87B antagonizes Polo kinase and C(3)G, a transverse element of synaptonemal complex, in maintaining sister chromatid co-orientation in metaphase I in *Drosophila* oocytes. L. Wang1, A. Das2, K. McKimm1, Rutgers University, Waksman Institute, Piscataway, NJ, 2Department of Biology, University of Pennsylvania, Philadelphia, PA

**B212/P1206** Fin1-PP1 promotes the translocation of the Chromosomal Passenger Complex in early anaphase. M.H. Bokros1, Y. Wang1, 1Biomedical Sciences, Florida State University, Tallahassee, FL

**B213/P1207** Interdependent centromeric and microtubule bound pools of the CPC enable kinetochore phosphorylation and resolution of merotelic attachments. P. Trivedi1, T. Stukenberg2, 1Department of Cell Biology, University of Virginia, Charlottesville, VA, 2Department of Biochemistry and Molecular Genetics, University of Virginia, Charlottesville, VA
B216/P1210 MPS1 N-terminal domains interact to regulate kinetochores levels and normal mitotic progression. S.T. Fuchs1, Y. Hiruma1, M. Ubbink1, A. Perrakis2, G.J. Kops1; 1Hubrecht Institute, Utrecht, Netherlands, 2Division of Biochemistry, Netherlands Cancer Institute, Amsterdam, Netherlands, 3Leiden Institute of Chemistry, Leiden University, Leiden, Netherlands

B217/P1211 Monitoring Aurora B kinase activity in response to changes in kinetochore-microtubule attachment stability during mitosis. J.A. DeSimone1,2, D.A. Compton1,2; 1Biochemistry and Cell Biology, Geisel School of Medicine at Dartmouth, Hanover, NH, 2Norris Cotton Cancer Center, Lebanon, NH

B218/P1212 Glycogen Synthase Kinase 3 maintains mitotic arrest by regulating mitotic checkpoint complex levels. M. Rashid1, W.R. Taylor1; 1Biological Sciences, University of Toledo, Toledo, OH

B219/P1213 The role of kinetochore-mediated regulation of Protein Phosphatase 1 activity in the correction of syntelic attachments in budding yeast. B. Roy1, J. Sim1, V. Verma1,2; 1,2Chemical and Biomolecular Engineering, University of Delaware, Newark, DE

B220/P1214 Identification and characterisation of spindle checkpoint silencing components in C. elegans. S. Soper Ni Chafraidh1, I. Leontiou1, K. May1, P. Amin1, I. Yuan1, K. Hardwick1; 1Biology, University of Edinburgh, Edinburgh, United Kingdom

B221/P1215 Factors Required for Centromere Formation. K. Kitagawa1, R. Kitagawa1, Y. Niiyura1; 1Department of Molecular Medicine, Gheehey Children’s Cancer Research Institute, UT Health San Antonio, San Antonio, TX

Spindle Assembly

B222/P1216 CG10126, a calcium-binding microtubule-associated protein, is a target of EGFR signaling and promotes mitosis during Drosophila development. S. Spencer1, O. Nie1, B. Setu1; 1Biology, Saint Louis University, Saint Louis, MO

B223/P1217 Microtubule-associated tumor suppressor ATIP3 controls Kif2A and aurora kinases to maintain mitotic spindle length. A. Nehlig1, C. Seiler1, C. Nahmias1; 1INSERM U981, Gustave Roussy Institute, Villejuif, France

B224/P1218 Preparing frozen Xenopus egg extracts for the study of spindle assembly mechanisms. J. Takagi1, Y. Shimamoto2,3; 1Center for Frontier Research, National Institute of Genetics, Shizuoka, Japan, 2Department of Genetics, Sokendai University, Shizuoka, Japan

B225/P1219 UBAP2L/PQON-59 is a novel Pik1 regulator, required for chromosome segregation in human cells and C. elegans embryos. L. Cirillo1, S. Abbatemarco1, F. Schwager1, M. Gotta1; 1Department of Cellular Physiology and Metabolism, University of Geneva, Geneva, Switzerland

B226/P1220 Investigating the functional role of the GAPVD1-CK1δ interaction. R.X. Guilen1, J. Chen1, J.R. Beckley1, K.L. Gould1; 1Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B227/P1221 Controlling candidate physical inputs to the spindle assembly checkpoint. J.A. Kuhn1,2, E.G. Ter Steege1,3, G.J. Kops1; 1Department of Tissue Biology, University of California, San Francisco, CA, 2Tetrad Graduate Program, University of California, San Francisco, CA, 3Department of Pathology and Cell Biology, Columbia University Medical Center, New York, NY

B228/P1222 Tension-dependent anaphase A in the C. elegans embryo. G. Maton1, N. Garel1, J.C. Canman1, J. Dumont1; 1Institut Jacques Monod UMR-CNRS 7592, Universite Paris Diderot, Sorbonne Paris Cite, Paris, France, 2Department of Pathology and Cell Biology, Columbia University Medical Center, New York, NY

B229/P1223 Measuring force responses in the mitotic spindle. M. Anjur-Dietrich1,2, D.J. Needledman1,2; 1Applied Physics, Harvard University, Cambridge, MA, 2Molecular and Cellular Biology, Harvard University, Cambridge, MA

B230/P1224 Cell cycle progression and mitotic spindle assembly following light-induced release of proteins from photodegradable hydrogels. J.S. Bishl1,2, P.J. LeValley1,2,3, B.E. Noren1,2, M. Tomschik1, A.M. Kloxin1, J.S. Oakey1,2, J.C. Gatlin1,2; 1Department of Molecular Biology, University of Wyoming, Laramie, WY, 2Cell Division Group, Marine Biological Laboratory, Woods Hole, MA, 3Department of Chemical Engineering, University of Wyoming, Laramie, WY, 4Department of Chemical and Biomolecular Engineering, University of Delaware, Newark, DE

Chromosome Organization

B231/P1225 The middle region of BUBR1 binds to MAD2 and p3comet. J. LaBelle1, W. Ji1, K. Wang1; 1Biology Department, University of Toledo, Toledo, OH

B232/P1226 Aurora A activation in mitosis promoted by BuGZ. Y. Huang1, T. Li2,3, S.C. Ems-McClung1, C.E. Walczak2, C. Prigent1, X. Zhu1, X. Zhang1, Y. Zheng1; 1embryology, Carnegie Institution, Baltimore, MD, 2Cell Biology, National Center of Biomedical Analysis, Beijing, China, 3School of Medicine, Indiana University, Bloomington, IN, 4Equipe labellisée Ligue Nationale Contre la Cancer, 4Institut de Génétique et Développement de Rennes, Rennes, France, 5Institute of Biochemistry and Cell Biology, Shanghai Institutes for Biological Sciences, Chinese Academy of Sciences, Shanghai, China

B233/P1227 Study on the function of BubR1 in zebrafish model system. J. Park1, H. Lee1; 1Biological Sciences, Seoul National University, Seoul, Korea, South Korea

B234/P1228 Induction of outer radial glia by the random spindle orientation causes severe microcephaly in the Aspm mutant mice. I. Fujita1, T. Guetsugu1, C. Kishida1, Y. Tsumekawa1, D. Konno1, A. Fujimori2, F. Matsuzaki1; 1Center for Developmental Biology, RIKEN, Kobe, Hyogo, Japan, 2Department of Basic Medical Sciences for Radiation Damages, NIRS, Chiba, Japan

B235/P1229 Characterization of a novel myosin light chain in mitosis. I. Ramirez1, J.Z. Torres1; 1Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles, CA

B236/P1230 Identification of genetic regions that influence the expression of mitotic checkpoint genes. D.E. Weidemann1,2, E. Esposito1,2, H. Yang1,2, J. Rogers1,2, H. Haynie1,2, T. Boularte1,2, S. Hauf1,2,4; 1Department of Biological Sciences, Virginia Tech, Blacksburg, VA, 2Biocomplexity Institute, Virginia Tech, Blacksburg, VA, 3Department of Chemical Engineering, University of Wyoming, Laramie, WY, 4Center for Soft Matter and Biological Physics, Virginia Tech, Blacksburg, VA

B237/P1231 Kinesin-12 generates essential force during C. elegans acentrosomal spindle assembly through regulation by TPX2-like protein MESP-1. I.D. Wolff1, S.M. Wiggett1; 1Molecular Biosciences, Northwestern University, Evanston, IL
B242/P1236 Chromosome dynamics simulations reveal the role of condensin and cohesin in building the bottlebrush chromosome architecture. J.G. Lawrimore1, A.B. Doshi2, B.S. Friedman2, A. Fulpi3, E.Y. Yeh1, K.S. Bloom1; 1Curriculum in Genetics and Molecular Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC, 2Biological Chemistry and Molecular Pharmacology, Harvard Medical School, Boston, MA, 3Howard Hughes Medical Institute, Boston, MA, 4Broad Institute of MIT and Harvard, Cambridge, MA

B243/P1237 Characterization of a novel, fungal-specific seprase parahelix unloading, fork collapse, and genome instability. L. Deng1, J. Walter2, D. Pellman3,4; 1Pediatric Oncology, Dana-Farber Cancer Institute, Boston, MA, 2Cell Biology, Harvard Medical School, Boston, MA, 3Biological Chemistry and Molecular Pharmacology, Harvard Medical School, Boston, MA, 4Howard Hughes Medical Institute, Boston, MA, 5Broad Institute of MIT and Harvard, Cambridge, MA

B245/P1239 Eg5 activity regulates cell division property of tetraploid-induced tumor cells. S. Shu1,2, M. limoni1, H. Saeki1, E. Oki1, Y. Maehara1; 1Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan, 2Product Research, Chugai Pharmaceutical Co., Ltd., Kamakura, Japan, 3Graduate School of Pharmaceutical Sciences, Kyushu University, Fukuoka, Japan

B246/P1240 Rapid degradation and 3D CLEM of condensin uncouple chromatid compaction from chromosome architecture in mitotic cells. K. Samejima1; 1Wellcome Centre for Cell Biology, University of Edinburgh, Edinburgh, United Kingdom

B247/P1241 The determinants and consequences of cohesion fatigue. H.R. Sapkota1, J.R. Daum1, E. Wasiak1, G. Gorbsky2; 1Cell Cycle and Cancer Biology, Oklahoma Medical Research Foundation, Oklahoma City, OK, 2Cell Biology, University of Oklahoma Health Sciences Center, Oklahoma City, OK

B248/P1242 SUMO-mediated regulation of anaphase progression during C. elegans oocyte meiosis. A.C. Davis-Roca1, N.S. Diversek1, S.M. Wignall1, R. Ng1; 1Molecular Biosciences, Northwestern University, Evanston, IL

B249/P1243 A compartmentalized, self-extinguishing signaling network mediates crossover control and faithful chromosome segregation in meiosis. L. Zhang1,2,3,4, S. Köhler1,2,3,4, R. Rillo-Bohn1,2,3,4, A.F. Dernburg1,2,3,4; 1Department of Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, 2California Institute for Quantitative Biosciences, Berkeley, CA, 3Howard Hughes Medical Institute, Chevy Chase, MD, 4Biological Systems and Engineering Division, Lawrence Berkeley National Laboratory, Berkeley, CA

B250/P1244 Vive la différence! Evolutionary divergence in meiotic chromosome dynamics among nematodes. R. Rillo-Bohn1,2,3,4, B. Avsaroglu1,2,3,4, J.J. Bayes1,2,3,4, A.F. Dernburg1,2,3,4; 1Department of Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, 2Howard Hughes Medical Institute, Chevy Chase, MD, 3California Institute for Quantitative Biosciences (QB3), Berkeley, CA, 4Biological Sciences and Engineering Division, Lawrence Berkeley National Laboratory, Berkeley, CA

B251/P1245 Sisters keep arms locked through metaphase. J.R. Daum1, H. Sapkota1,2, G.J. Gorbsky1,2; 1Cell Cycle and Cancer Biology, Oklahoma Medical Research Foundation, Oklahoma City, OK, 2Department of Cell Biology, University of Oklahoma Health Sciences Center, Oklahoma City, OK

B252/P1246 Actin protects mammalian eggs against chromosome segregation errors. B. Mogessie1, M. Schuh1; 1Meiosis, Max Planck Institute for Biophysical Chemistry, Goettingen, Germany

B253/P1247 Persistent DNA-break potential near telomeres contributes to a chromosome-size bias in break initiation. V.V. Subramanian1, P.A. San-Segundo1, N.M. Hollingsworth2, A. Hochwagen3; 1Biological, New York University, New York, NY, 2Consejo Superior de Investigaciones Científicas, Instituto de Biología Funcional y Genómica and University of Salamanca, Salamanca, Spain, 3Department of Biochemistry and Cell Biology, Stony Brook University, Stony Brook, NY

B254/P1248 Intrinsinc and extrinsic factors contributing to the stability of CENP-A nucleosomes at centromeres. P.K. Allu1, A. Das2,3, L.Y. Guo1, M.A. Lampson1, B.E. Black4; 1Department of Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA, 2Department of Biology, University of Pennsylvania, Philadelphia, PA

B255/P1249 Investigating the Role of CDK-2 in Crossover Recombination in C. elegans. J. Haversat1, V. Roberts1, Y. Kim1; 1Biology, Johns Hopkins University, Baltimore, MD

B256/P1250 Different Mechanisms of Micronucleus Formation and Impact to Genomic Stability. L.A. Sepaniac1, L.G. Reinhold2, J.K. Stumpfl3; 1Department of Molecular Physiology and Biophysics, University of Vermont, Burlington, VT, 2Genetic Resource Science, The Jackson Laboratory, Bar Harbor, ME

B257/P1251 The cytoplasmic DNA sensor cGAS promotes mitotic cell death. C. Zierhut1, H. Funakishi1; 1Laboratory of Chromosome and Cell Biology, The Rockefeller University, New York, NY

Oncogenes

B259/P1252 Developing a C. elegans model to study SF3B1-driven Myelodysplastic Syndromes using CRISPR/Cas9 to introduce a point mutation and RNAi-mediated knockdown of sftb1. N. Tirado-Class1, C.E. Rolle, PhD1; 1Science and Mathematics, Capital Community College, Hartford, CT

B260/P1253 Cross-species oncogenomics approach identifies PTPN11 as an oncogene and potential therapeutic target in melanoma. K.S. Hill1, X. Wang1, E.R. Roberts1, E.M. Marin1, J.K. Teer1, Y. Kim1, J. Messina1, J. Wu4, M. Kim1; 1Molecular Oncology, Moffitt Cancer Center, Tampa, FL, 2Bios-statistics and Bioinformatics, Moffitt Cancer Center, Tampa, FL, 3Anatomic Pathology, Moffitt Cancer Center, Tampa, FL, 4Pathology, University of Oklahoma Health Sciences Center, Oklahoma City, OK

B261/P1254 On the role of kindlin-3 phosphorylation in cancer cells. K. Bialkowska1, K. Sossey-Alaoui1, E.F. Plow1; 1Molecular Cardiology, Cleveland Clinic, Cleveland, OH

B262/P1255 NRMT1 mutants naturally occurring in human cancers have altered catalytic activity and cause a decrease in N-terminal trimethylation levels. K.M. Shields1, J.G. Tookey2, C.E. Schaner Tookey2; 1Biochemistry and Molecular Genetics, University of Louisville, Louisville, KY, 2Biochemistry, State University of New York at Buffalo, Buffalo, NY
B263/P1256 Downregulation of LAT1 (L-type amino acid transporter 1 / SLC7A5) in human cancer. A. Oliveira1, P. Soares-da-Silva1,2,3, Phyzak Biopharmaceuticals, Porto, Portugal;4Center for Drug Discovery and Innovative Medicines, MedInUP, Porto, Portugal

B264/P1257 Transforming growth factor beta (TGFβ) regulates glutamine metabolism in lung Fibrosis. M. Choudhury1, X. Yin1, J. Kang1, M. Jung1, M. Andrianianfahana1, E.B. Leof1;5Pulmonary and Critical Care Medicine, Mayo Clinic, Rochester, MN

B265/P1258 How does MYC make purines? M. Lafaia Navarro1, J. Kilgore2, N. Williams3, L. Zacharias4, R. DeBerardinis5, M. Conacci-Sorrell2;6Cell biology, UT Southwestern, Dallas, TX, 3Children’s Research Institute, UT Southwestern Medical Center, Dallas, TX, 2Biochemistry, University, Moscow, Russia

B266/P1259 Alpha1-antitrypsin-derived C-terminal peptide is a potent oxidative stress inhibitor. A. Aslakova1, M.A. Andrianifahanana1, E.B. Leof1;5Pulmonary and Critical Care Medicine, Mayo Clinic, Rochester, MN

B267/P1260 Targeting the Notch1 Transcriptional Activation Domain in T-Cell Acute Lymphoblastic Leukemia. K.A. Sottovia1, L. Shao1, K. Pajcini1;7Pharmacology, University of Illinois at Chicago, Chicago, IL

B268/P1261 Investigating the Role of PA28y in DNA Base Excision Repair. B.E. Bundrant1, C. Calhoun1, L.F. Barton1;8Biology, Austin College, Sherman, TX

B269/P1262 The NF45-NF90 complex is required for execution of the mitotic programme and chromosome stability. S. Nourreddine1, G. Lavoie1, J. Paradies1, K. Ben El Kadhi1, P. gendron1, S. Carreno1, M. Bouvier1, P.P. Roux1;9Department of Pathology and Cell Biology, IRIC, University of Montreal, Montreal, QC

B270/P1263 The potential prognostic marker Bax:Δ2 is generated without mutation at a genetic or transcriptional level. A.S. Davis1, A. Mañas1, J. Li1, J. Xiang1;10Biology, Illinois Institute of Technology, Chicago, IL

B271/P1264 Ribosomal frameshift-mediated expression of Bax:Δ2 in human tissues and its correlation with cancer stage. A. Mañas1, A.S. Davis1, H. Zhang1, J. Xiang1;10Biology, Illinois Institute of Technology, Chicago, IL

B272/P1265 Nedd9 influences lung cancer tumorigenesis through regulation of autophagy. A.Y. Deneka1,2, M.C. Kopp1, A.S. Nikanova1, L. Haber1, A. Gaponova1, A. Nagele1, H. Hensley1, E.A. Golemis1, Molecular Therapeutics, Fox Chase Cancer Center, Philadelphia, PA, 2Biochemistry, Kazan Federal University, Kazan, Russia, 3Pulmonary, Allergy and Critical Care, University of Pennsylvania, Philadelphia, PA

B273/P1266 Survivin governs mitochondrial architecture by regulating phosphatidylethanolamine (PE) availability. S.P. Wheatley1, A.R. Townley1, L. Dunajova1, D. McLean1;11School of Life Sciences, University of Nottingham, Nottingham, United Kingdom

B274/P1267 Increased Rac activity is required for Ha-RasV12-induced multilayer cellular aggregates in Madin-Darby canine kidney cells. M. Tang1, C. Han1;12Physiology, National Cheng Kung University, Tainan, Taiwan

B275/P1268 The role of Initiator of Growth (ING) 2 in Breast Cancer Treatment. K.T. Riabowol1, D.I. Udenvobele2, E. Kornaga3, X. Feng4, K. Tae-sun1;13Biochemistry and molecular Biology, University of Calgary, Calgary, Canada, 2Biochemistry, University of Nigeria,Nsukka, Nigeria, 3Translational Research Laboratory, Tom Baker Cancer Centre, Calgary, Canada, 4Oncology, BC Cancer Agency-Vancouver Island Center, Victoria, Canada

B276/P1269 To Understand the Structural Role of Pyruvate Kinase M2 in Epigenetic Mechanism. K. Verma1, A. Patel1;14Kusuma School of Biological Sciences, Indian Institute of Technology, Delhi, Delhi, India, 2Kusuma School of Biological sciences, Indian Institute of Technology, Delhi, Delhi, India

B277/P1270 LIN9 is a mitotic vulnerability in triple-negative breast cancer that is targetable with BET inhibitors. J.M. Sahni1, S.S. Gayle2, B.M. Webb1, K.L. Weber-Bonk1, S. Singh2, S.T. Sizemore3, G. Bebek3, V. Varadan4, M.K. Summers2, R.A. Keri5,6;7Department of Pharmacology, Case Western Reserve University, Cleveland, OH, 2Case Comprehensive Cancer Center, Case Western Reserve University, Cleveland, OH, 3Department of Radiation Oncology, The Ohio State University, Columbus, OH, 4Center for Proteomics and Bioinformatics, Case Western Reserve University, Cleveland, OH, 5Department of Genetics and Genome Sciences, Case Western Reserve University, Cleveland, OH, 6Department General Medical Sciences-Oncology, Case Western Reserve University, Cleveland, OH

B278/P1271 Wnt/β-catenin signaling, genomic instability and DNA break formation in hematopoietic cells: Role of Topoisomerase Ila. M.F. Vargas1, G.D. Ugarte1, D.A. Verdugo1, M.E. Lemus1, B.I. Bustos1, G.V. De Ferrari1;18Center for Biomedical Research, Universidad Andres Bello, Santiago, Chile

B279/P1272 Characterization of the Interferon Regulatory Factor 4 Pathway in Melanoma Cells. U. Sobhiafshar1, N. Yildiz2, A.B. Tufan1, E. Yilmaz1, M.C. Ayhan1, C. Yerinde1, E.E. Erkan1, N. Emre1;19Laboratory of Genome Regulation, Department of Molecular Biology and Genetics, Boğaziçi University, Istanbul, Turkey

B280/P1273 HPV16 E6 and E7 Oncoproteins are Negative Regulators of Invadopodia Activity but Promote Migration in Head and Neck Squamous Cell Carcinoma. C.N. Kahu1, R.J. Jerrell1, A. Parekh2,3,4;5Department of Otolaryngology, Vanderbilt University Medical Center, Nashville, TN, 2Vanderbilt Ingram Cancer Center, Vanderbilt University Medical Center, Nashville, TN, 3Department of Biomedical Engineering, Vanderbilt University Medical Center, Nashville, TN, 4Department of Cancer Biology, Vanderbilt University Medical Center, Nashville, TN

B281/P1274 Dual role of mitochondria in tumor initiation and progression. S. JOSHI1, W. Lu2, S.V. Ladda1, J.S. Hsieh3, E. Singer1, C. Chan1, M.V. Vunavilli1, J. Marszalek1, G. Dretta3, J.D. Rabinowitz1,2, E. White3;4Rutgers Cancer Institute of New Jersey, Rutgers Cancer Institute of New Jersey, New Brunswick, NJ, 2Department of Chemistry Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ, 3Human Oncology and Pathogenesis Program, Memorial Sloan Kettering Cancer Center, New York, NY, 4Department of Pathology and Cell biology, Columbia University, New York, NY, 5Centre for Co-Clinical Trials Research, MD Anderson Cancer center, Houston, TX, 6Therapeutics discovery, MD Anderson Cancer Center, Houston, TX

Tumor Invasion and Metastasis 1

B282/P1275 Tissue explant imaging reveals spatially coordinated migration patterns in the tumor core. R. Staneva1, F. El Marjou1, A.G. Clark1, D. Matic Vignjevic1;2Institut Curie, Paris, France

B283/P1276 A novel window for high resolution imaging of the lung reveals mechanisms of metastatic breast cancer progression. L. Borriello1,2, S. Voiculescu1, Y. Wang1,2,4, M.H. Oktyabrski1, J.S. Condeelis1,2,4, D. Entenberg1,2,4Department of Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, 2Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, 3Department of Surgery, Albert Einstein College of Medicine, Bronx, NY, 4Integrated Imaging Program, Albert Einstein College of Medicine, Bronx, NY, 5Department of Pathology, Albert Einstein College of Medicine, Bronx, NY
B284/P1277 Cancer cell extracellular vesicle release during cancer extravasation: A novel anti-metastasis target. 1. Kim1,2, A. Poorn1, F. Lucien1,2,3, K. Williams1, J. Gomes1, R.P. Singh1,2, K. Deng1, H.S. Leong1,2,3; 1Pathology and Laboratory Medicine, Western University, London, ON, 2Urology, Mayo Clinic, Rochester, MN, 3Surgery, Western University, London, ON

B285/P1278 Distinct ECM proteins of breast cancer metastatic niches in multiple organs. J.D. Hebert1, S.A. Myers2, A. Naba1, K.R. Clauser2, S.A. Carr2, R.O. Hynes1; 1Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology, Cambridge, MA, 2Proteomics Platform, Broad Institute of MIT and Harvard, Cambridge, MA

B286/P1279 Liver metastasis is facilitated by the adherence of circulating tumor cells to vascular fibronectin deposits. J. Barbazan1,2, L. Alonso-Alconada1, N. Elkhattab1, S. Gerald1, B. Gurchenkov1, A. Gentis1, G. van Niel1, R. Palmulli1, B. Fernandez2, P. Viana1, T. Garcia-Caballero1, R. Lopez-Lopez2, M. Abali2, D. Matic Vijnjec1; 1UMR144, Institut Curie, Paris, France, 2Translational Medical Oncology, Health Research Institute of Santiago (IDIS), Santiago de Compostela, Spain, 3Department of Pathology, Complexo Hospitalario Universitario de Santiago de Compostela/SERGAS, Santiago de Compostela, Spain, 4CHUS, Health Research Institute of Santiago (IDIS), Santiago de Compostela, Spain, 5Department of Morphological Sciences, University of Santiago de Compostela, Santiago de Compostela, Spain

B287/P1280 3D collagen fiber architecture regulates cell migration phenotypes by modulating MMP activity. D. Ortiz Velez1, S.I. Faley2,3; 1Bioengineering, University of California San Diego, La Jolla, CA, 2Moore’s Cancer Center, University of California San Diego, La Jolla, CA

B288/P1281 Role of Laminin Matrixrin in Phenotypic Switching of Motile Cancer Cells. L. Perrin1, B. Gilgorijevic1; 1Bioengineering, Temple University, Philadelphia, PA

B289/P1282 Collective epithelial invasation in breast cancer metastasis. V.L. Silvestri1, A. Wong1,2, P. Seashon1,2, A.J. Ewald1,2; 1Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD, 2Department of Materials Science and Engineering, Johns Hopkins University, Baltimore, MD, 3Institute for Nanobiotechnology (INBT), Johns Hopkins University, Baltimore, MD, 4Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins University, Baltimore, MD, 5Oncology, Johns Hopkins University School of Medicine, Baltimore, MD, 6Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, MD

B290/P1283 Cell-density dependent migration in pancreatic ductal adenocarcinoma. M. Karl1, H. Jayatilaka1, D. Wirtz1,2,3; 1Department of Chemical and Biomolecular Engineering, The Johns Hopkins University, Baltimore, MD, 2Departments of Pathology and Oncology and Sydney Kimmel Comprehensive Cancer Center, The Johns Hopkins School of Medicine, Baltimore, MD

B291/P1284 NHE1 overexpression disrupts organization of epithelial cell monolayers and accelerates collective cell migration. H.H. Jensen1,2, G.A. Pedersen1, J.J. Morgen1, M. Parsons2, S.F. Pedersen2, L.N. Nejsum2; 1Department of Clinical Medicine, Aarhus University, Aarhus, Denmark, 2Department of Molecular Biology and Genetics, Aarhus University, Aarhus, Denmark, 3Randall Division of Cell and Molecular Biophysics, King’s College London, London, United Kingdom, 4Department of Biology, University of Copenhagen, Copenhagen, Denmark

B292/P1285 Loss of MTSS1 results in increased metastatic potential in pancreatic cancer. A.E. Zeleniak1,2, W. Huang3, M.K. Brinkman3, R. Hiil1; 1Integrated Biomedical Sciences, University of Notre Dame, South Bend, IN, 2Harper Cancer Research Institute, South Bend, IN, 3Biological Sciences, University of Notre Dame, South Bend, IN

B293/P1286 WITHDRAWN

B294/P1287 CCL18 from tumor-associated macrophages promotes breast cancer metastasis via ACAP4-ARF6 signaling cascade. X. Liu1, X. Yuan1, M. Muller1, H. Green2, X. Ding1, X. Yao2; 1Cellular Dynamics, Chemical Biology, Hefei, China, 2Keck Center for Molecular Imaging, Morehouse School of Medicine, Atlanta, GA

B295/P1288 Cellular localization of ER chaperones may predict cancer patient prognosis. K. Tiemann1, C. Garr1, S. Lee1, P.D. Malhi1, M. Park1, R. Alvarez1, L. Yap2, P.S. Conti1, P. Mallick1, J.E. Katz1, D. Agus1, M.E. Gross1, K. Kani1; 1Lawrence J. Ellison Institute for Transformative Medicine, University of Southern California, Los Angeles, CA, 2Radiology, Keck School of Medicine, University of Southern California, Los Angeles, CA, 3Radiology, Stanford University, Stanford, CA

B296/P1289 Myoepithelial cells are a dynamic barrier to epithelial dissemination. K. Sirka1, E.R. Shamir1, A.J. Ewald1; 1Cell Biology, Johns Hopkins University, Baltimore, MD

B297/P1290 Emerin regulation of nuclear structure in cancer cell invasion. P.G. White1, K. Nee1, J. Ellis1, J.M. Holaska1; 1Pharmaceutical Sciences, University of the Sciences, Philadelphia, PA

B298/P1291 Leader cells are defined by DNA hypermethylation and aberrant gene expression during collective lung cancer invasion. E.R. Summerbell1,2, J. Bell3,4, J. Koen1, J. Kowalski5, P.M. Vertino1, A.J. Marcus6; 1Graduate Program in Cancer Biology, Emory University, Atlanta, GA, 2Department of Hematology and Medical Oncology, Emory University, Atlanta, GA, 3Graduate Program in Genetics and Molecular Biology, Emory University, Atlanta, GA, 4Department of Biostatistics and Bioinformatics, Emory University, Atlanta, GA

B299/P1292 Repair factor loss and genome variation in cancer cell invasion. J. Irianto1, Y. Xia1, C.R. Pfeifer1, J. Ji2, C.M. Alvey1, L. Smith1, A. Athirasala1, M. Tewari1, R.R. Bennett1, S.M. Harding1, A.J. Liu1, R.A. Greenberg1, D.E. Discher1; 1Molecular and Cell Biophysics Lab, University of Pennsylvania, Philadelphia, PA, 2Graduate Group, Department of Physics and Astronomy, University of Pennsylvania, Philadelphia, PA, 3Cancer Biology, Abramson Family Cancer Research Institute, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

B300/P1293 Metastasis by tumor epithelial clusters requires E-cadherin expression. V. Padmanabani1, A.J. Ewald1; 1Departments of Cell Biology and Oncology, Center for Cell Dynamics, Johns Hopkins University School of Medicine, Baltimore, MD

B301/P1294 ZEB1 becomes a transcriptional activator upon interacting with YAP. W. Lehmann1, R.L. Eccles1, J. Kleemann1, D. Mossmann1,2, C. Meisinger1, V. Mahadevan2, S. Brabletz3, M. Stemmler4, T. Brabletz1; 1Experimental Medicine I, Friedrich Alexander University, Erlangen-Nuremberg, Germany, 2Biozentrum, University of Basel, Basel, Switzerland, 3Institute of Bioinformatics and Applied Biotechnology (IBAB), Bangalore, India

B302/P1295 Constricted migration suppresses cell cycle progression. C.R. Pfeifer1,2,3, V.M. Morales Garcia1, L.M. Santiago Millan1, B. Niese2, J. Irianto1,2; 1Physical Sciences Oncology Center at Penn, University of Pennsylvania, Philadelphia, PA, 2Molecular Cell Biophysics Lab, University of Pennsylvania, Philadelphia, PA, 3Graduate Group, Department of Physics Astronomy, University of Pennsylvania, Philadelphia, PA, 4Industrial Biotechnology, University of Puerto Rico at Mayaguez, Mayaguez, PR, 5Biology, University of Puerto Rico at Humacao, Humacao, PR, 6Engineering Physics, Ohio University, Athens, OH
Cancer Therapy: Chemotherapy and Drug Resistance

B303/P1296 Leptomycin B sensitizes ovarian and endometrial cancer cells to TRAIL and cisplatin induced apoptosis through synergetic modulation of crucial apoptosis regulators. F. Fabi1, P. Adam1, K. Vincent1, F. Demontigny1, S. Parent1, E. Asselin1; 1Medical Biology, Université du Québec à Trois-Rivières, Trois-Rivières, QC

B304/P1297 Imaging effect of cellular heterogeneity on anti-cancer drug responses in breast cancer. P. Wu1, C. Tseng1, J.S. Lee2, D. Wirtz2; 1Department of Chemical and Biomolecular Engineering, The Johns Hopkins University, Baltimore, MD, 2Center for Strategic Scientific Initiatives, National Cancer Institute, National Institute of Health, Bethesda, MD

B305/P1298 Investigating the role of CD79B in primary CNS lymphoma response to ibrutinib. S.S. Tang1,2, C. Gronnies1,2,4, A. Pastore5, N. Palakas1,2, C. Campos3, D. Schartz3, T. Graeber1, N. Schultz5,6, L.M. DoAngeles6,7, I.T. Mellinghoff1,2,8,9, 1Human Oncology and Pathogenesis Program, Memorial Sloan Kettering Cancer Center, New York, NY, 2Gerstner Sloan Kettering Graduate School of Biomedical Sciences, Memorial Sloan Kettering Cancer Center, New York, NY, 3Department of Neurology, Weill Cornell Medical College, New York, NY, 4Computational Biology Program, Memorial Sloan Kettering Cancer Center, New York, NY, 5Division of Hematology/Oncology, University of California Los Angeles, Los Angeles, CA, 6Department of Molecular and Medical Pharmacology, Crump Institute for Molecular Imaging, University of California Los Angeles, Los Angeles, CA, 7Marie-Josée and Henry R. Kravis Center for Molecular Oncology, Memorial Sloan Kettering Cancer Center, New York, NY, 8Radiology, Memorial Sloan Kettering Cancer Center, New York, NY, 9Department of Pathology, Weill Cornell Medical College, New York, NY

B306/P1299 Development of a Cocktail Therapy against Human Inflammy Melanoma by Combining Autophagy Inhibitors and Vemurafenib. G. Wang1, H. Qian1, Y. Yang1; 1Biological Sciences, Emporia State University, Emporia, KS

B307/P1300 The prognostic value of RAS pathway biomarkers in late-stage breast cancer. L.L. Sweerts van Reesema1, V. Zheleva1, J.S. Winston2, R.J. Janssen2, C.F. O’Connor1, A.J. Isbell1, M. Bian1, R. Qin2, P.T. Bassett2, V.J. Hinson3, K.A. Dorsch1, B.W. Kirby2, R.E. Van Sciver1, A.M. Tang-Tan1, E.A. Harden1,2, D.Z. Chang2, C.A. Allen2, R.R. Perry2, R.A. Hoefner1,2, A.H. Tang1; 1Microbiology and Molecular Cell Biology, Eastern Virginia Medical School, Norfolk, VA, 2Surgery, Eastern Virginia Medical School, Norfolk, VA, 3Pathology, Sentara Pathology and Pathology Sciences Medical Group, Norfolk, VA, 4Public Health, North Dakota State University, Fargo, ND, 5Health Sciences Research, Mayo Clinic Cancer Center, Rochester, MN, 6Sentara Cancer Network, Newport News, VA, 7Dorothy G. Hoefner Comprehensive Breast Center, Newport News, VA, 8Virginia Oncology Associates, Newport News, VA, 9Sentara CarePlex Hospital, Newport News, VA

B308/P1301 Analysis of the Nature of Paclitaxel Resistance in APC Knockdown Breast Cancer Cells. B.J. Berkeley1,2,3, A.H. Arnavon1,2, J.R. Prospero1,2,3; 1Biochemistry and Molecular Biology, Indiana University School of Medicine, South Bend, IN, 2Biological Sciences, University of Notre Dame, South Bend, IN, 3Harper Cancer Research Institute, South Bend, IN, 4Smurfit Institute of Genetics, Trinity College Dublin, Dublin, Republic of Ireland

B309/P1302 Mapping mechanisms of drug sensitivity and resistance: genetics and environment. F. Pavoni1, S. Fancid1, S.A. Sabatino1; 1Chemistry and Biology, Ryerson University, Toronto, ON

B310/P1303 Single cell profiling of phospho-protein levels in chronic lymphocytic leukemia. I.K. Myhvol1,2, A. Cremaschi1,2, J.U. Hermansen1,2, G.E. Tjonnfjord1,2, L.A. Munthe1,2, K. Tasken1,2, S.S. Skåland1,2; 1Centre for Molecular Medicine Norway, University of Oslo, Oslo, Norway, 2K. G. Jebsen Centre for Inflammation Research and K. G. Jebsen Centre for Cancer Immunotherapy, University of Oslo, Oslo, Norway, 3Oslo Centre for Biostatistics and Epidemiology (OCBE), University of Oslo, Oslo, Norway, 4Department of Haematology, Oslo University Hospital, Oslo, Norway, 5Institute of Clinical Medicine, University of Oslo, Oslo, Norway, 6Centre for Immune Regulation, Department of Immunology, University of Oslo, Oslo, Norway, 7Department of Infectious Diseases, Oslo University Hospital, Oslo, Norway

B311/P1304 Pyrroline dithiocarbamate reverses Bcl-xL-mediated apoptotic resistance to doxorubicin by inducing paraptosis. S. Park1,2, D. Lee1, E. Ju1, E. Ko1, S. Jeong1, K. Choi2,3, E. Choi1; 1Asan Institute for Life Sciences, Center for Advancing Cancer Therapeutics, Asan Medical Center, Seoul, South Korea, 2Department of Biochemistry, Department of Biomedical Sciences, Ajou University School of Medicine, Suwon, South Korea, 3Genomic Instability Center, Ajou University School of Medicine, Suwon, South Korea, 4Center for Advancing Cancer Therapeutics, Department of Radiation Oncology, Asan Medical Center, University of Ulsan College of Medicine, Seoul, South Korea

B312/P1305 Targeting Ribosome Assembly Factors Selectively Protects p53 Positive Cells from Chemotherapeutic Agents. R.T. Sapio1, A.N. Nezdury1, M. Krevetski2, L. Anikin1, V.J. Manna1, N. Minkovsky2, D. Pestov1; 1Cell Biology and Neuroscience, Graduate School of Biomedical Sciences, Rowan University, Stratford, NJ, 2Chemistry and Biochemistry, Rowan University, Glassboro, NJ, 3Biological Sciences, Rowan University, Glassboro, NJ, 4Molecular Biology, Graduate School of Biomedical Sciences, Rowan University, Stratford, NJ

B313/P1306 Endoplasmic reticulum-mitochondria contact sites as a signaling platform of multidrug cancer resistance. J. Coku1, M.C. Padrotby1, J. C. Ye2, D.M. Booth3, A. Vu1, K. Liu1, C.P. Reynolds2, G. Hajnoczky5, M.D. Hogarty1; 1Department of Pediatric Oncology, University of Pennsylvania, Philadelphia, PA, 2Department of Pathology, Anatomy and Cell Biology, Thomas Jefferson University, Philadelphia, PA, 3Department of Cell Biology and Biochemistry, Texas Tech University Health Sciences Center, Lubbock, TX

B314/P1307 Susceptibility of Cancer Cells to Sodium Phenyl Butyrate is Associated with DJ-1 Expression and Downstream Signaling. N. Payyayje1, S. Izzi1, D. Rizk1, T. Abou Antoun2, A. Kanaan1, M. El-Sibai1; 1Natural Sciences, Lebanese American University, Beirut, Lebanon, 2School of Pharmacy, Lebanese American University, Byblos, Lebanon, 3Biomedical Sciences, University of Balamand, Koura, Lebanon

B315/P1308 Highly malignant gallbladder G4-151 cancer cells express a p53 point mutation and are sensitive to D-propranolol-induced EGFR internalization. J. Barra-Carrasco1, C. Oyanadel1, C. Metz2, V.P. Montecinos3, J.C. Roa1, A. González1,2; 1Centro de Envejecimiento y Regeneración (CARE), Facultad de Ciencias Biológicas, Pontificia Universidad Catolica de Chile, Santiago, Chile, 2Centro de Biología Celular y Biomedicina, Facultad de Ciencia, Universidad San Sebastian, Santiago, Chile, 3Departamento de Hematología y Oncología, Facultad de Medicina, Pontificia Universidad Catolica de Chile, Santiago, Chile, 4Departamento de Patología, Facultad de Medicina, Pontificia Universidad Catolica de Chile, Santiago, Chile, 5Centro de Biología Celular y Biomedicina, Facultad de Medicina, Universidad San Sebastian, Santiago, Chile

B316/P1309 Mitotic slippage is the major outcome for cells treated with microtubule inhibitors. S.R. Bekbayev1, M. Suleimenov1, A. Kakpenova1,2,3, S. Kauanov1,2,3, I.A. Vorobjev1,2,3; 1School of Science and Technology, Nazarbayev University, Astana, Kazakhstan, 2School of Engineering, Nazarbayev University, Astana, Kazakhstan, 3National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan, 4A.N. Belozersky Institute of Physico-Chemical Biology, M.V. Lomonosov Moscow State University, Moscow, Russia
B327/P1310 Label free proteomics profiling of MCF7 and K562 cancer cells treated with mitomycin C and dicarbamoyl mitomycin C identifies main cellular networks leading to inhibition of tumor cell proliferation. C.C. Clement1,2, S.Y. Cheng3, M. Dzieciatkowska4, W. Aguilar3, E. Champell;1 Pathology, Albert Einstein College of Medicine Inc, Bronx, NY, 2Chemistry, Lehman College CUNY, Bronx, NY, 3Department of Sciences, John Jay College of Criminal Justice CUNY, New York, NY, 4Biological Mass Spectrometry Core Facility, University of Colorado Denver, Aurora, CO

B328/P1311 Acute changes in leukocyte populations following focal irradiation of the intestine. B.I. Bell1, S. Koduri1, I.I. Verginadis1, C. Koumenis1;2 Department of Radiation Oncology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

B329/P1312 Repurposing Verteporfin for chemotherapeutic treatment of endometrial cancer. R.P. Gogoi1, L. Bang2, J.E. Miller2, D. Kim2,3, V. Dasari1; Philadelphia, PA

B330/P1313 Genomic correlates of imaging response in men receiving intense neoadjuvant androgen deprivation therapy. S. Wilkinson1, H. Ye1, R. Atway2, S.Y. Trostel1, S.T. Hennigan1, R. Lake1, S. Harmon1, B. Turkbeyt1, PA. Pinto1, P.L. Choyke1, F. Karza1, W.L. Dahut1, K. Kelly1, D.J. VanderWiele1, A.G. Sowlasky1; LGCP, National Cancer Institute, Bethesda, MD, 2Pathology, Beth Israel Deaconess Medical Center, Boston, MA

B331/P1314 Models of Ovarian Cancer Cell Resistance to Doxorubicin and Cisplatin. P. Caffrey1, L. Gasper1; Biological and Environmental Sci, California University of PA, California, PA

Cancer Therapy: Natural Products

B322/P1315 Epigallocatechin-3-gallate has anti tumor effects due to induction of differentiation and apoptosis in a model of acute promyelocytic leukemia mice. F.I. Della Via1, C.O. Torelli1, F.M. Roversi1,2, R.N. Shirashi1, M.C. Alvarez De Prax1, E.M. Rego1, S.T. Saad1; Hematology and Transfusion Medicine Center, University of Campinas (Hemocentro/Uncamp), Campinas, São Paulo, Brazil, 2Universidade São Francisco (USF), Bragança Paulista, Brazil, 3Department of Internal Medicine, University of São Paulo (USP), Ribeirão Preto, Brazil

B323/P1316 Ganoderma lucidum extract decreases cell viability in triple-negative breast cancer. G. Ortiz-Soto1, C.L. Santiago Negron1, L. Suarez Arroyo1, T. Ling1, F. Rivas2, M.M. Martinez-Montenayor1; Department of Biochemistry, Universidad Central del Caribe School of Medicine, Bayamon, PR, 2Chemical Biology Therapeutics, St. Jude Children's Research Hospital, Memphis, TN

B324/P1317 The cytotoxic effects of purified Ganoderma lucidum compounds on triple negative breast cancer. R. Vallejo Calzada1, I. Suarez Arroyo1, C.L. Santiago Negron1, T. Ling1, F. Rivas2, M.M. Martinez-Montenayor1; Department of Biochemistry, Universidad Central del Caribe School of Medicine, Bayamon, PR, 3Chemical Biology Therapeutics, St. Jude Children’s Research Hospital, Memphis, TN

B325/P1318 The Flavonoids Acacetin and Pinosylvin Inhibit Migration and Adhesion in MDA-MB-231 Breast Epithelial Cells. A.A. Jones1, S.R. Gehler1; Biology, Augustana College, Rock Island, IL

B326/P1319 Myrothamnus flabellifolius selectively targets Triple Negative Breast Cancer, inducing apoptosis and restoring Tamoxifen sensitivity through modulation of miRNAs associated with Estrogen Receptors. N. Futtang1, K. Askey1, J. Brar1, I. Mercier1, Z. Klase1, B. Peethambaran1; Biological Sciences, University of Sciences, Philadelphia, PA

B327/P1320 Ganoderma lucidum in combination with carboplatin inhibits the DNA damage response in triple negative breast cancer cells. I. Suarez Arroyo1, M.M. Martinez-Montenayor1; Department of Biochemistry, Universidad Central del Caribe School of Medicine, Bayamon, PR

B328/P1321 THE EFFECT OF RESVERATROL ON CELL VIABILITY IN THE BURKITT’S LYMPHOMA CELL LINE RAMOS. A.H. Zambrano1,2, P. Jara1, J. Spies1, C. García1, G. Vargas1, C.L. Otth1,2, M. Salas1; 1Instituto de Bioquímica y Microbiología, Universidad Austral de Chile, Valdivia, Chile, 2Center for Interdisciplinary Studies on the Nervous System (CISNe), Universidad Austral de Chile, Valdivia, Chile, 3Instituto de Microbiología Clínica, Universidad Austral de Chile, Valdivia, Chile

B329/P1322 Purification and characterization of natural chemopreventative compounds for the treatment of prostate adenocarcinoma. O.H. Richmond III1, Z. Wang1; Biological Sciences, Clark Atlanta University, Atlanta, GA

B330/P1323 Rosehip (Rosa canina) Extracts Decrease Human Breast Cancer Cell Migration and Invasion. P.M. Martin1,2, P.D. Cagle1; Biology, North Carolina AT State University, Greensboro, NC

B331/P1324 Involvement of HIF-1α signaling in leukemia model by polyphenols of green tea. C.O. Torelli1, R.N. Shirashi1, F.I. Della Via1, T.C. Castro2, F. Martins1, M.C. Alvarez De Prax1, M.L. Queiroz1, E.M. Rego1, S.T. Saad1; Hematology and Transfusion Medicine Center, University of Campinas, Campinas, Brazil, 2Department of Internal Medicine, University of São Paulo, Ribeirão Preto, Brazil

B332/P1325 The Antitumorigenic Effects of Natural Compounds, Conessine and Cardamonin, on MDA-MB-231 Breast Epithelial Cells. M.B. Kinder1, S.R. Gehler1; Biology, Augustana College, Rock Island, IL

B333/P1326 Suppression of breast cancer cell proliferation by combinations of the phytochemicals fisetin, luteolin and hesperetin. T. Beaumont1, M. Castanon1, H. Sabol1, K.M. Baker1; Biology, University of Indianapolis, Indianapolis, IN

B334/P1327 Ganoderma lucidum extract (GLE) decreases stemness properties via STAT3 regulation in Triple Negative Breast Cancer models. T.J. Rios1, P. Lopez2, V. Rivera-Amill3, Y. Yamamura2, M.M. Martinez-Montenayor1; Department of Biochemistry, Universidad Central del Caribe School of Medicine, Bayamon, PR, 2Basic Sciences, Ponce Health Sciences University, Ponce, PR

B335/P1328 Epigallocatechin gallate-induced magnetic nanoparticle uptake by glioma cells: Mechanism via nitric oxide/cGMP signaling. N. Wu1,2, S. Hsu3, Y. Lu1, Y. Ma1; Graduate Institute of Biomedical Sciences, Chang Gung University, Taoyuan City, Taiwan, 2Department of Physiology, Chiang Gung University, Taoyuan City, Taiwan, 3Department of Biomedical Sciences, Chang Gung University, Taoyuan City, Taiwan

B336/P1329 The place of Phytobiological Compounds in Colorectal Cancer: An in vitro study. M. Francis1,2, A. Geagea Jurus1,3, S. Al Kattar1, K. Cehovin1, M. Diab Assaf2, S. Harakeh1, A. Eid1, A.R. Jurus1; Anatomy, Cell Biology and Physiology, American University of Beirut, Beirut, Lebanon, 2Doctoral School of Science and Technology, Lebanese University, Beirut, Lebanon, 3University of Palermo, Palermo, Italy, 4King Fahd Center for Medical Research, Jeddah, Saudi Arabia

B337/P1330 Cytotoxic activity of a new lectin from Rhizoctonia solani in vitro. R. Muhammadie1, T. Sukhova1, R. Muhammadie1, T. Bagaeva1; Institute of Fundamental medicine and biology, Kazan (Volga Region) Federal University, Kazan, Russia
B338/P1333 The Supernatant of RAW 264.7 cells M1 Polarized with Phellinus linteus Prevents the Migration and Invasion in Prostate Cancer Cells by Inhibiting the Epithelial-mesenchymal Transition Pathway. H. An1, S. Yu1, H. Kim1, S. Ahn1; 1Department of Microbiology & Immunology, Pusan National University School of Medicine, Yangsan, South Korea

B341/P1334 Anticancer effects of cleistanthin A and its analogue in colorectal cancer cells. K. Jearawuttanakul1,2,3, K. Suksen3, B. Munyoos4, P. Kanjarisirait4, S. Boreat4, E. Phelmopinyo5,6, A. Chairoungdual1,2,3; 1Toxicology Graduate Program, Faculty of Science, Mahidol University, Bangkok, Thailand, 2Excellent Center for Drug Discovery (ECDD), Faculty of Science, Mahidol University, Bangkok, Thailand, 3Department of Genetics and Evolutionary Biology, National Cancer Institute, Topeka, KS, 4Faculty of Science, Mahidol University, Bangkok, Thailand, 5Biotechnology, Faculty of Science, Mahidol University, Bangkok, Thailand, 6Biotechnology, Science, Nihon Institute of Medical Science, Tokyo, Japan

B342/P1335 Gene Expression Study of L19 on Human Colorectal Cancer Cells (DLD-1). S. Mohammadhosseinpour1, B.A. L19 on Human Colorectal Cancer Cells (DLD-1). S. Mohammadhosseinpour1, B.A. Alhamdi2,3, A. Chairoungdua1,2,3, A. Chairoungdua1,2,3; 1Department of Pharmacology, Faculty of Science, Morayama, Japan, 2Biomedical Research Center, Saitama Medical University, Moroyama, Japan, 3Health and Nutrition, Kagawa Nutrition University, Sakado, Japan

B345/P1338 Mechanisms of Anticancer Activity of Novel Pyridoxine-based Bioisoster Analogues of Dehydrozingerone. O. Bondar1, R. Pavelv1y, T. Nguyen1, M. Pugachev1, G. Alekbaeva1, A. Amaletdinov1, O. Vasileva1, A. Lyubina1, K. Balakin1,2, Y. Shyrtlin1; 1Scientific and Educational Center of Pharmacuetics, Kazan (Volga Region) Federal University, Kazan, Russia, 2I.M. Sechenov First Moscow State Medical University, Moscow, Russia

B346/P1339 The WAVE3-YB1 interaction regulates cancer stem cells activity in breast cancer. K. Sossey-Alaoui1, K. Bledzk1a, W.P. Schieman1b, B. Schieman1b, E.F. Plow1c; 1Molecular Cardiology, Cleveland Clinic Lerner Research Institute, Cleveland, OH, 2Case Comprehensive Cancer Center, Cleveland, OH

B347/P1340 SOX2/OCT4 biosensor intravitral imaging reveals the invasive breast cancer stem cell phenotype and its association with TME in vivo. V.P. Sharma1,2, Y. Wang1,2, S.G. Karagiannisis3, B. Tang1, E. Xue1, D. Entenberg1,2,3, L. Wakefield1,2,3, M.H. Oktay1,2,3, J.S. Condeelis1,2,3; 1Department of Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, 2Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, 3Integrated Imaging Program, Albert Einstein College of Medicine, Bronx, NY, 4Laboratory of Cancer Biology and Genetics, National Cancer Institute, Bethesda, MD, 5Department of Pathology, Albert Einstein College of Medicine, Bronx, NY

B354/P1347 CD82 expression affects acute myeloid leukemia chemosensitivity. M. Floren1, K.M. Alvarez2, C.M. Terminii, K.D. Marjon1, J.M. Gillettie1; 1Pathology, University of New Mexico, Albuquerque, NM

B355/P1348 Histone demethylase inhibitor JIB-04 blocks the self-renewal of human colon cancer stem cells. H. Cho1, M. Kim1, Y. Jang1; 1Department of Systems Biology, College of Life Science and Biotechnology, Yonsei University, Seoul, South Korea, 2Institute for Biological Function Systems, Yonsei University, Seoul, South Korea

Cancer Stem Cells

B346/P1339 The WAVE3-YB1 interaction regulates cancer stem cells activity in breast cancer. K. Sossey-Alaoui1, K. Bledzk1a, W.P. Schieman1b, B. Schieman1b, E.F. Plow1c; 1Molecular Cardiology, Cleveland Clinic Lerner Research Institute, Cleveland, OH, 2Case Comprehensive Cancer Center, Cleveland, OH

B348/P1341 Suppression of the growth of cancer stem cells developed from iPSCs by soluble form of human Cripo-1. M.J. ALAM1, A. Mizutani1, H. Murakami1, A.K. Oo1, D.S. Salomon2, M. Seno1; 1Department of Medical Bioengineering, Okayama University, Okayama, Japan, 2Mouse Cancer Genetics Program, Center for Cancer Research, National Cancer Institute, Frederick, MD

B349/P1342 Investigating the role of YAP and TAZ in medulloblastoma cancer stem cell formation and asymmetric cell division. B. Araujo Cortez1,2, L. Carvalho Price1, M. Dias1, N.J. Ganem1, O. Okamoto2; 1Department of Pharmacology Experimental Therapeutics, Boston University School of Medicine, Boston, MA, 2Department of Genetics and Evolutionary Biology, Institute of Biosciences, University of Sao Paulo, Sao Paulo, Brazil, 3Laboratorio Especial de Toxiconologia Aplicada, Instituto Butantan, Sao Paulo, Brazil

B350/P1343 The Snail/let-7 axis induces stemness in ovarian, breast, and pancreatic cancer cells. H. Wang1, M. Lombere1, E. Chirshev1, N. Hojo1, A. Hill2, J.J. Untermaier-Hamm1; 1Basic Sciences, Loma Linda University, Loma Linda, CA

B351/P1344 O-GlcNAc transferase regulates breast cancer tumor-initiating cells. N. Akella1, D. Mukhopadhyay1, A. Mukherjee1, Z. Bacigalupa1, M.J. Reginato1; 1Biochemistry, Drexel University, Philadelphia, PA

B352/P1345 Expression of ALDH Isolforms in Colon Tumorigenesis. R. Kowash1, G. Masters1, B.M. Boman1, L.M. Opdenaker1, S.R. Modarai1; 1Biology, Dickinson College, Carlisle, PA, 2Biology, Hamilton College, Clinton, NY, 3CTCR, Christiana Care Health Services Inc., Newark, DE, 4Biological Sciences, University of Delaware, Newark, DE

B353/P1346 Hypoxia and cancer stem cell activity are linked during tumor cell dissemination and metastasis in breast tumors. E. Xue1, V.P. Sharma2, D. Entenberg1,2,3, Y. Wang1,2, B. Tang1, L. Wakefield1,2,3, M.H. Oktay1,2,3, J.S. Condeelis1,2,3; 1Department of Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, 2Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, 3Integrated Imaging Program, Albert Einstein College of Medicine, Bronx, NY, 4Laboratory of Cancer Biology and Genetics, National Cancer Institute, Bethesda, MD, 5Department of Pathology, Albert Einstein College of Medicine, Bronx, NY

Gene Regulation and Genome Structure

B357/P1349 Gene Annotation of Contig17 Within Dot Chromosome of Drosophila eugracilis. A.M. Herken1, T. Sadikot1; 1Biology, Washburn University, Topeka, KS

B358/P1350 Annotation of contig40 of the Drosophila eugracilis dot chromosome. R.P. Powell1, T. Sadikot1; 1Biology, Washburn University, Topeka, KS

B359/P1351 Annotation of contig 20 of dot chromosome in Drosophila eugracilis by comparison to Drosophila melanogaster genome using bioinformatics techniques. M. Radford1, T. Sadikot1; 1Biology, Washburn University, Topeka, KS

B360/P1352 Annotation and cross-species comparison of Drosophila genes. J. Hobson1, M. Van Stry1, W. Leung2, S.C. Elgin3; 1Biology, Lane College, Jackson, TN, 2Biology, Washington University in St. Louis, St. Louis, MO
B361/P1353 Influence by edcsyne and transcription on developmentally regulated DNA re-plication in Sciarra DNA puffs. J.M. Urban1, L. Kadota2, J. Leung3, A. Lee4, Y. Yamamoto5, E. Gustafson6, M.S. Fouli7, J. Bliss8, S.A. Gerbi9; BioMed Division, Dept of Molecular and Cell Biology and Biochemistry, Brown University, Providence, RI

B362/P1354 A function of the inverted repeat sequences located in the upstream of the mouse Oct3/4 gene. Y. Yamamoto1, O. Miura1, S. Umekita1, T. Ohyama1; Biology, Waseda University, Tokyo, Japan

B363/P1355 The histone methyltransferases Set1 and Set5 promote subtelomeric gene silencing and telomere maintenance in Saccharomyces cerevisiae. M. Jezek1, A. Gast1, G. Choi2, R. Kulkarni1, J. Quijote2, A. Graham-Yooll1, R. Kulkarni1, J. Quijote2, A. Graham-Yooll1; Baltimore, MD, 2Mathematics and Statistics, University of Maryland, Baltimore County, Baltimore, MD; 3Mathematics and Statistics, University of Maryland, Baltimore County, Baltimore, MD

B364/P1356 Temperature effects on TPE, trinucleotide repeat stability, and chromosome loss in Saccharomyces cerevisiae. R. Slade1, K. Tatsiari2, E. Godfrey1, G. Greco1, L. Goudouzian1; 1Natural Science, DeSales University, Center Valley, PA

B365/P1357 Impact of ethanol on markers of heterochromatin maintenance and trinucleotide repeat expansion in Saccharomyces cerevisiae. S. Nga1, M. Reinert1, K. Chuylo1, L. Goudouzian1; 1Natural Science, DeSales University, Center Valley, PA

B366/P1358 A single cell view of MYC’s gene regulatory and oncogenic mechanism. S. Patange1,2, M. Girvan2, D. Levens1, D.R. Larson1; 1Laboratory of Receptor Biology and Gene Expression, National Cancer Institute, NIH, Bethesda, MD, 2Institute for Physical Science and Technology, University of Maryland - College Park, College Park, MD; 3Laboratory of Pathology, National Cancer Institute, NIH, Bethesda, MD

Regulatory and Noncoding RNAs

B367/P1359 Role of microRNAs in brain tumors as diagnostic and prognostic markers. Y. Santana Rivera1,2, E. Lozada Delgado1,2,4, P.E. Vivas Mejia1,4; 1Interdisciplinary Studies Program, University of Puerto Rico Rio Piedras Campus, San Juan, PR, 2Biology, University of Puerto Rico Rio Piedras Campus, San Juan, PR, 3Biology, University of Puerto Rico Comprehensive Cancer Center, San Juan, PR, 4Biochemistry, University of Puerto Rico Science Medical Campus, San Juan, PR

B368/P1360 Regulation of proinflammatory chemokine CXCL5 by microRNA hsa-mir-605. A. Parkh1, S. Ramanathan1, B. Shenod1, S. Aijit1; 1Pharmacology and Physiology, Drexel University College of Medicine, Philadelphia, PA

B369/P1361 Identification of growth-suppressive microRNAs that regulate genes involved in cell cycle progression and apoptosis by miRNA library screening. Y. Byun1, Y. Jeong1, Y. Choi1, J. Yoon1, K. Baek1; 1Graduate School of Biotechnology, Kyung Hee University, Yongin-si, South Korea

B370/P1362 Nascent companions of Hobbit. Z. Aflaz1,2, B. De Kummer1, C. Nolte1, J.J. Lange1, B. Slaughter1, J. Unruh1, R.E. Krumlauf2,3; 2Stowers Institute for Medical Research, Kansas City, MO, 3Anatomy and Cell Biology, Kansas University Medical Center, Kansas City, KS

B371/P1363 Nonstop decay in C. elegans: examining a possible role for small noncoding RNAs. E.M. Youngman1, E. Mortezav1, W. Gu1, C. Mello1; 1Biology, Villanova University, Villanova, PA; 2Cell Biology and Neuroscience, University of California at Riverside, Riverside, CA, 3Program in Molecular Medicine and HMMI, UMass Medical School, Worcester, MA

B372/P1364 The Role of Protein Arginine Methylation in the Repression of tRNA Biogenesis under Stress. R. Davis1, E. Milliman1, N. Likhite1, C. Jackson1, M.C. Yu1; 1Biology, State University of New York at Buffalo, Buffalo, NY

B373/P1365 MyoD Enhancer RNA in Gene Regulation. P. Tsai1, S. Dell’Orso1, K. Vivanco1, J. Rodriguez2, D.R. Larson2, V. Sartorelli1; 1NIAMS, NIH, Bethesda, MD, 2NCI, NIH, Bethesda, MD

B374/P1366 Repeat E anchors Xist RNA to the inactive X chromosome compartment through CDKN1A-interacting protein (CIZ1). H. Sunwoo1,2,3, D. Colognori1,2,3, Y. Jeon1,2,3; 1Biophysics, University of Osnabrueck, Osnabrueck, Germany, 2Department of Biochemistry, University of Osnabrueck, Osnabrueck, Germany, 3Stowers Institute for Medical Research, Kansas City, MO

B375/P1367 The R1 retrotransposon in Drosophila rDNA is transcribed by RNA Pol I upon heat shock. H.S. Raje1, P.J. DiMarco1; 1Biological Sciences, State University of New York at Buffalo, Buffalo, NY

B376/P1368 Optical trapping studies of glmS ribosome riboswitch folding and catalysis. A. Savino1, S.M. Block1; 1Biophysics Program, Stanford University, Stanford, CA, 2Departments of Applied Physics and Biology, Stanford University, Stanford, CA

B377/P1369 Multiple mechanisms coordinately drive RNA-binding protein localization to RNA granules. X. Wang1, N. Day1, E. Voronina1; 1DBS, University of Montana, Missoula, MT

B378/P1370 Single-Molecule Imaging Reveals Dynamic Biphatic Partition of the RNA-Binding proteins G3BP1 and IMP1 in Stress Granules of Living Neuronal Cells. B. Niewidzik1, M. Igaev1, A. Pereira da Graca1, A. Strassner1, C. Lenzen1, R. Kurre2, J. Piehler2, R. Brandt1; 1Neurobiology, University of Osnabrueck, Osnabrueck, Germany, 2Biophysics, University of Osnabrueck, Osnabrueck, Germany

B379/P1371 Identification of Rbfox associated proteins in striated muscles by BioID. T. Govindarajan1, S. Kawamoto1, R.S. Adelstein1; 1Laboratory of Molecular Cardiology, National Heart, Lung, and Blood Institute (NHLBI) - NHLBI, NIH, Bethesda, MD

B380/P1372 Uncovering the cellular functions of mRNA methylation. S. Naghterzae1, C. He1; 1Institute for Biophysical Dynamics, University of Chicago, Chicago, IL

B381/P1373 eRpl22- and eRpl22-like-specific ribosomes translate distinct and overlapping populations of mRNAs expressed during spermatogenesis in Drosophila melanogaster. C.M. Mageeney1, V.C. Ware1; 1Biological Sciences, Lehigh University, Bethlehem, PA

B382/P1374 Understanding the endogenous regulation of Ataxin-1 in SCA-1. R. Manek1, E. Rodriguez-Lebron1; 1Pharmacology & Therapeutics, University of Florida, Gainesville, FL

B383/P1375 Alterations in S-adenosylmethionine synthesis regulate stress granule assembly and composition. K. Begovich1, J.E. Wilhelm1; 1Biological Sciences, University of California, San Diego, La Jolla, CA

B384/P1376 Zthi2 and Zthi3: Prospects in Breeding and Genetic Engineering for Thiamine Biosynthesis and Accumulation. T.O. Salaam1,2, O.O. Omidiji1, I.A. Taiwo2, K.O. Adekoya1; 1Biology, Federal Institute of Industrial Research, Oshodi, Lagos, Nigeria, 2Cell Biology and Genetics, University of Lagos, Lagos, Nigeria

B385/P1377 Translational regulation of DEAD-box helicase Ded1/DDX3 medulloblastoma mutations. N.P. Brown1, T.A. Bolger1; 1Molecular and Cellular Biology, University of Arizona, Tucson, AZ
Nuclear Lamina and Laminopathies

B387/P1378 Mutant laminas alter genome integrity, protooncogenes, and reduct homoeostasis in muscle disease. G.S. Coombs1, D.E. Snyderman2, A.C. Golli2, M.T. O’Connor1, M. Valdes1, L.L. Wallrath3, 1Biology, Waldorf University, Forest City, IA, 2Biochemistry, University of Iowa, Iowa City, IA

B388/P1379 Myofibril contraction and cross-linking drive nuclear movement to the periphery of skeletal muscle. W. Roman1,2, J.P. Martins1, F.A. Carvalho1, R. Voituriez1,2, J.V. Abella1, N.C. Santos1, B. Cadot2, M. Way1, E.R. Gomes1, 1Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, Lisbon, Portugal, 2Sorbonne Universités, UPMC Univ Paris 06, INSERM UMR974, CNRS FRE3617, Center for Research in Myology, Paris, France, 3Laboratoire de Physique Théorique de la Matière Condensée, CNRS UMR 7600; Université Pierre et Marie Curie, Paris, France, 4Laboratoire Jean Perrin; CNRS FRE 3231, Université Pierre et Marie Curie, Paris, France, 5Cell Signalling and Cytoskeletal Function, The Francis Crick Institute, London, United Kingdom

B389/P1380 Mecha-nac-protection by lamin-A against DNA damage as the developing heart stiffens and strengthens. S. Cho1, S. Majkuti1, A. Abbas2, K. Vogeli1, M. Vashisth1, J. Irianto1, M. Tewari1, B.L. Prosser3, D.E. Discher1, 1Molecular Cell Biophysics Lab, University of Pennsylvania, Philadelphia, PA, 2Department of Physics, University of Pennsylvania, Philadelphia, PA, 3Department of Physiology, Pennsylvania Muscle Institute, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA

B390/P1381 Exploring genomic reorganization during differentiation of emerin-null and EDMD mutant myogenic progenitors. A.G. Liddane1, J.M. Holaska1, 1Pharmaceutical Sciences, University of the Sciences, Philadelphia, PA

B391/P1382 Expression profiling of differentiating myogenic progenitors lacking emerin or expressing EDMD-causing emerin mutants identifies molecular pathways responsible for their impaired differentiation. A. Iyer1, J.M. Holaska1, 1Pharmaceutical Sciences, University of the Sciences, Philadelphia, PA

B392/P1383 Nanoscale Nuclear Envelope Dynamics and Spatial Organization of the Muscular Dystrophy Protein Emerin. A. Fernandez1, M. Bautista2, T. Chung3, F. Pinaud4,5, 1Biological Sciences, University of Southern California, Los Angeles, CA, 2Chemistry, University of Southern California, Los Angeles, CA, 3Physics and Astronomy, University of Southern California, Los Angeles, CA

B393/P1384 Attractive and repulsive nuclear interactions are regulated by distinct genes linked to Emery-Dreifuss Muscular Dystrophy and Centronuclear Myopathy. M.A. Collins1, J.M. Camuglia1, M. Gutierrez2, T. Shu1, E.S. Folker1, 1Department of Biology, Boston College, Chestnut Hill, MA

B394/P1385 Bocksbeutel regulates nuclear positioning by a klarsicht-dependent mechanism. T.R. Mandigo1,4, A.J. Anderson1, B.D. Turch1, E.S. Folker1, 1Biology, Boston College, Boston, MA

B395/P1386 Lamin A regulates the activity and dynamics of nucleoli. A.L. Buchwalter1, M.W. Hetzer1, 1Molecular and Cell Biology Laboratory, The Salk Institute for Biological Studies, La Jolla, CA

B396/P1387 Chromatin histone modifications and rigidity affect nuclear morphology independent of laminas. A.D. Stephens1, P.Z. Liu1, E.J. Banigan1, J.M. Almimassaha1, V. Backman1, S.A. Adam1, R.D. Goldmann1, J.F. Marko1, 1Department of Molecular Biosciences, Northwestern University, Evanston, IL, 2Department of Physics and Astronomy, Northwestern University, Evanston, IL, 3Department of Biomedical Engineering, Northwestern University, Evanston, IL, 4Department of Cell and Molecular Biology, Northwestern University Feinberg School of Medicine, Chicago, IL

B397/P1388 Chromatin state contributes to nuclear mechanics. J.F. Johnston1, S. Mochrie1, M.C. King1, 1Department of Cell Biology, Yale School of Medicine, New Haven, CT, 2Department of Physics, Yale University, New Haven, CT, 3Department of Applied Physics, Yale University, New Haven, CT

B398/P1389 WITHDRAWN

B399/P1390 Ablation of SUN2-containing LINC complexes drives defects in developmental myofibrillogenesis and cardiac hypertrophy without fibrosis. R.M. Stewart1, E.C. Rodriguez1, M.C. King1, 1Cell Biology, Yale School of Medicine, New Haven, CT

B400/P1391 Coordinated increase of nuclear tension and lamin-A with matrix stiffness out-competes Lamin-B Receptor, which favors soft tissue phenotypes. J. Irianto1, A. Buxboim1, D.E. Discher1, 1Molecular & Cell Biophysics Lab, University of Pennsylvania, Philadelphia, PA

B401/P1392 Dynin pulling forces on ruptured nuclei counteract laminaret cell repair mechanisms in vivo. L. Penfield1, B. Wysolmerski1, R. Farhadifar2, M.S. Mauro1, C.J. Broberg3, M.A. Martinez1, R.J. Biggs1, H. Wu1, D.J. Needleman1, S. Bahmanyar5, 1Dept. of Molecular Cellular and Developmental Biology, Yale University, New Haven, CT, 2School of Engineering and Applied Science, Harvard University, Cambridge, MA, 3Ludwig Institute for Cancer Research, UC San Diego, La Jolla, CA

B402/P1393 Dual roles for nuclear envelope constituents in the cytoplasm. B. KC1, C. Halfmann1, M.H. Ali1, K.J. Roux1, 1Enabling Technologies Group, Sanford Research, Sioux Falls, SD, 2Department of Pediatrics, University of South Dakota, Sioux Falls, SD

B403/P1394 LAMIN B1 TETHERS TO CHROMATIN AND ORGANIZES ITS HIGH-ORDER STRUCTURE IN MAMMALIAN CELLS. Y. Sun1, L. Chang1, 1BiOPIC, Peking University, Beijing, China

B404/P1395 The role of the BAF/VRK1 signaling axis on the DNA damage response in NGPS. M.F. El-Sabbab1, A.M. Mon1, P. Traktman1, 1Biochemistry and Molecular Biology, Medical University of South Carolina, Charleston, SC

B405/P1396 Subcellular localization of dystrophin-associated proteins is altered in Hutchinson-Gilford progeria syndrome cells. E. Amaro Encarnación1, B. Cisneros Vega1, 1Genética y Biología Molecular, CINVESTAV-IPN, Ciudad de México, Mexico

B406/P1397 Lamin A/C mutant myonuclei experience nuclear envelope rupture and DNA damage that is reduced upon microtubule stabilization. T.J. Kirby1,2, A. Earle1,2, G.R. Fedorchak1,2, P. Isermann1,2, C. Brightwell1, C. Fry1, J. Lammerding1, 1Weill Institute for Cell and Molecular Biology, Cornell University, Ithaca, NY, 2Meing School of Biomedical Engineering, Cornell University, Ithaca, NY, 3Department of Nutrition and Metabolism, University of Texas Medical Branch, Galveston, TX

B407/P1398 Visualization of Lamina Association Reveals Functional Organization of Chromosomes. T.R. Lupercio1, M.E. Sauriax1, X. Wong1, M. Gaillard1, P. Tsang9, K. Pekrun3, R. Ach1, N. Yamada1, J. Taylor1, K. Reddy1, 1Biological Chemistry, Johns Hopkins University School of Medicine, Baltimore, MD, 2Biology, Johns Hopkins University, Baltimore, MD, 3Agilent Laboratory, Agilent, Santa Clara, CA

**Vesicle Docking, Fusion, and Exosome Release**

B409/P1399 The bacterium Listeria monocytogenes stimulates host exocytosis to promote pathogen uptake. H. Van Ngo1, M. Bhalla1, D. Chen1, K. Ireton1, 1Microbiology and Immunology, University of Otago, Dunedin, New Zealand

B410/P1400 Automated detection, classification, and verification of distinct modes of exocytosis. F.L. Urbina1, S.L. Gupton1, 1Cell Biology and Physiology, University of North Carolina: Chapel Hill, Chapel Hill, NC

B411/P1401 Yck3 dependent phosphorylation of Env7 and its regulation during cell cycle in Saccharomyces cerevisiae. S.P. Manandhar1, S.P. Valencia1, C. Alvarado1, I. Mansoora1, E. Gharaokhian1, 1Biologi, CSULB, Long Beach, CA
B412/P1402 Exosomes transfer into osteoclasts through bone tissue.
N. Takahashi1; 1Graduate School of Environmental Engineering, The University of Kitakyushu, Kitakyushu, Japan
B413/P1403 Plasma membrane PI(4,5)P2 is critical for secretory granule exocytosis.
M. Omar Hmeadi1, N.R. Gandasi1, S. Barg1; 1Medical cell biology, Uppsala University, Uppsala, Sweden
B414/P1404 Plasma membrane LAT recruitment precedes vesicular LAT recruitment to reveal two phases of early T cell activation.
L. Balagopalan1, J. Yi1, T. Nguyen1, A.S. Hamed2, K. Narayanan2, L.E. Samelson1; 1Laboratory of Cellular and Molecular Biology, National Institutes of Health, Bethesda, MD, 2Center for Molecular Microscopy, National Institutes of Health, Frederick, MD
B415/P1405 EXO70 REGULATES B-CELL MIGRATION.
N.I. Gules1, M. Yuess1; 1Cellular and Molecular Biology, Pontificia Universidad Católica de Chile, Santiago, Chile
B416/P1406 Otoferlin is a multivalent calcium-sensitive scaffolding linking SNAREs and calcium channels.
C.P. Johnson1, N. Hams1, W. Qiu1; 1Biochemistry, Oregon State University, Corvallis, OR
B417/P1407 The Membrane Repair Protein Dysferlin Binds SNAREs and Stimulates Membrane Fusion in a Calcium-sensitive Manner.
C.P. Johnson1, S. Coddign1; 1Biochemistry, Oregon State University, Corvallis, OR
B418/P1408 Structure of the HOPS complex and its interactions with SNARE proteins.
S.A. Port1, P.D. Jeffrey1, F.M. Hughson1; 1Molecular Biology, Princeton University, Princeton, NJ
B419/P1409 Coarse-grained simulations of the synaptic neurotransmitter release machinery.
A. Polley1, J. Wang2; 1Cell, Molecular, and Developmental Biology, University of Massachusetts Medical School, Worcester, MA, 2Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA
B420/P1410 Elucidating Individual Subunit Positions within the Exocyst Tethering Complex.
D. Leore1, L. Kenner1, A. Frost1, M. Munson1; 1Biochemistry and Pharmacology, University of Massachusetts Medical School, Worcester, MA, 2Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA
B421/P1411 Intra-Endosomal Trafficking Mediated by Lysobisphosphatidic Acid Contributes to Intracellular Release of Phosphorothioate-modified Antisense Oligonucleotides.
S. Wang1, H. Sun1, X. Liang1, S.T. Crooke1; 1Core Research, Ionis Pharmaceuticals, Carlsbad, CA
B422/P1412 Dynamics of Exocyst Subunit Assembly and Vesicle Fusion, using CRISPR-edited GFP Tagging of Endogenous Loci.
H. Nishida-Fukuda1, I.G. Macara1, S.M. Ahmed1; 1Cell and Developmental Biology, Vanderbilt University, Nashville, TN
B423/P1413 Synaptotagmin 5 regulates Ca2+-dependent Weibel-Palade body exocytosis in human endothelial cells.
C. Lenz1, J. Stevens1, M. Hannah2, R. Bierings1, T. Carter1; 1Molecular Clinical Research Centre, St George’s University London, London, United Kingdom, 2Medical School, King’s College London, London, United Kingdom, 3Virus Reference Department, Public health England, London, United Kingdom, 4Department of Plasma Proteins, Sanquin Research, Amsterdam, Netherlands
B424/P1414 Co-regulation of the Glycine max soluble N-ethylmaleimide-sensitive fusion protein attachment protein receptor (SNARE) containing regulon occurs during defense to a root pathogen.
K. Sharma1; 1BIOLICAL SCIENCES, MISSISSISSPI STATE UNIVERSITY, Starkville, MS
B425/P1415 Cryo-EM Structure of the Exocyst Complex.
K. Mei1, Y. Li1, S. Wang1, G. Shao1, J. Wang1, Y. Ding1, G. Luo1, P. Yue1, J. Liu1, X. Wang2, M. Dong1, H. Wang2, W. Guo1; 1Department of Biology, University of Pennsylvania, Philadelphia, PA, 2School of Life Sciences, Tsinghua University, Beijing, China, 3National Institute of Biological Sciences, Beijing, China
B426/P1416 Oxidative stress impedes trafficking and increases vesicular accumulation of amyloid precursor protein in HTB-11 neuroblastoma cells.
A.R. Haber1, G. Gomez1; 1Biology, University of Scranton, Scranton, PA
B427/P1417 Cholangiocyte intercellular communication via polarized exosome release.
L.C. Doskey1, B.A. Davies1; 1Chemical Engineering, Columbia University, New York, NY, 2Cell Biology, Yale University, New Haven, CT
B428/P1418 Unconventional release of fusogenic nonenveloped reoviruses.
N.M. McMullen1, C. Pan1, R. de Antueno1, G.J. Gaspard1, D.P. MacKenzie1, K.M. Proudfoot1, R. Duncan1; 1Microbiology and Immunology, Dalhousie University, Halifax, NS
B429/P1419 CSF-1R SIGNALING ON INTERNAL VESICLES INVOLVES LYN TYROSINE KINASE.
L. Monga1; 1Biology and microbiology, South Dakota State University, Brookings, SD
B430/P1420 Regulation of COPI vesicle transport via Scy1 methylation under ER-stress.
S. Matsuizaki1, G. Amano2, Y. Mori3, D. Kobayashi1, H. Takamura2, K. Miyoshi2, T. Yoshimura2, F. Saiaka1, N. Kiguchi1, T. Katayama1, S. Kishikawa1; 1Department of Pharmacology, Wakayama Medical University, Wakayama, Japan, 2Molecular Brain Science, Osaka University, Graduate School of Child Development, Suita, Japan, 3Anatomy, International University of HEALTH and WELLFARE School of Medicine, Narita, Japan
B431/P1421 Regulation of the COPII outer coat by O-GlcNAc.
B.M. Condon1, N.J. Cox1, T.R. Meister1, B.J. Bissett1, E. Soderblom2, M. Boyce1; 1Biochemistry, Duke University, Durham, NC, 2Pharmacology, Duke University, Durham, NC, 3Proteomics and Metabolomics Core Facility, Duke University, Durham, NC
B432/P1422 The large Sec7 ARF guanine nucleotide exchange factor GBF1 contains a PIP-binding domain essential for its membrane recruitment and cellular function.
J.M. Meissner1, J.M. Bhatt1, E. Lee1, M.L. Sterys2, A.A. Ivanova1, R.A. Kahn1, E.S. Szul1; 1Department of Cell, Developmental and Integrative Biology, University of Alabama at Birmingham, Birmingham, AL, 2Department of Biology, Birmingham-Southern College, Birmingham, AL, 3Department of Biochemistry, Emory University School of Medicine, Atlanta, GA
B433/P1423 The role of the N terminus, Sec7 domain, and C terminus of GBF1 in +RNA viral replication. G.C. Sager1, E.G. Viktorova1, J.M. Meissner1, E.J. Lee1, C.A. Pocognoni1, G.A. Belov2, E.S. Szul1; 1Cell, Developmental, and Integrative Biology, University of Alabama at Birmingham, Birmingham, AL, 2Department of Veterinary Medicine, Virginia-Maryland Regional College of Veterinary Medicine, University of Maryland, College Park, College Park, MD
B434/P1424 Isomor Specialization Among the Sec23 Gene Family Has Significant Consequences for Polarized Growth.
M. Chang1, J. O’Sullivan1, M. Bezanilla11; 1Biology Department, University of Massachusetts, Amherst, Amherst, MA, 2Biology Department, Dartmouth College, Hanover, NH
B435/P1425 3D ultrastructural analysis of the progressive restructuring of the endoplasmic reticulum by a coronavirus provides insight into its subversion of the ERAD tuning pathway.
E.M. Mihelc1, S.A. Tinney1, S.C. Baker1, J.K. Lanman1; 1Biological Sciences, Purdue University, West Lafayette, IN, 2Microbiology and Immunology, Loyola University Chicago Stritch School of Medicine, Maywood, IL
B436/P1426 TMEM116: A Transmembrane Protein of Unknown Function that is Regulated by a Bidirectional Promoter. D. Grits1, Y. Bikard1, A. Stamata1, J. Viviano1, M. Ort1, R. Rubenstein1,2; Pulmonary Medicine, Children's Hospital of Philadelphia, Philadelphia, PA, 2Pulmonary Medicine, University of Pennsylvania, Philadelphia, PA

B437/P1427 Autophagosome formation is involved in unconventional secretion of CFTR. S. Noh1, M. Lee1; 1Department of Pharmacology, Severance Biomedical Science Institute, Yonsei University College of Medicine, Seoul, South Korea

B438/P1428 Tubular ER shaping protein Reticulon4a/NogoA influences protein trafficking through the secretory pathway. R. Mukherjee1, D.L. Levy1; 1Molecular Biology, University of Wyoming, Laramie, WY

B439/P1429 Unstacking the stacking problem of Golgi. B.K. Jain1, D. Bhattacharyya1,2; 1Bhattacharyya Lab, ACTREC, Tata Memorial Centre, Kharghar, Navi Mumbai, India

B440/P1430 Novel interactions of clathrin adaptors at the TGN in yeast. J.Y. Martinez-Marquez1, M.C. Duncan1; 1Cell and Developmental Biology, University of Michigan, Ann Arbor, MI

B441/P1431 pAKC Influences Golgi Integrity. E.J. Tisdale1, C.R. Artalejo1,2; 1Pharmacology, Wayne State Univ. School of Medicine, Detroit, MI

B442/P1432 SYP73 Anchors the ER to the Actin Cytoskeleton for Maintenance of ER Integrity and Streaming in Arabidopsis. P. Cao1, L. Renna1, G. Grits1, Y. Bikard1, A. Stamatia1, J. Viviano1, M. Ort1, R. Rubenstein1,2; 1Department of Energy, East Lansing, MI

B443/P1433 The Microtubule-associated End Binding proteins regulate the ER exporting and trafficking of TRPM channels. C. Blanco1, I. Aldunate1, J. Canales1, J. Rivas1, D. Riquelme1, D. Morales1, I. Silva1, A. Álvarez1, A. Vergara1,2, H. Poblete1, A. Romero1, E. Leiva1, W. González1, D. Varela1, M. Cáceres1, O. Cerda1,2; 1Molecular and Cellular Biology Program, Faculty of Medicine, University de Chile, Santiago, Chile, 2Department of Biology, Faculty of Chemistry and Biology, Universidad de Santiago de Chile, Santiago, Chile

B444/P1434 VLDL Receptor is required for non-genomic progesterone-dependent signaling to release oocyte meiotic arrest. N. Nader1, M. Dib1, R. Courjaret1, R. Hodeifel1, R. Machaca1, J. Graumann1, K. Machaca1; 1Research, Weil Cornell Medicine - Qatar, Doha, Qatar, 2American University of Ras Al Khaimah, Ras al Khaimah, United Arab Emirates, 3Max Planck Institute for Heart and Lung Research, Bad Nauheim, Germany

B445/P1435 Arf6 is Regulated by ArfGAP1 and Facilitates Sorting of ERGIC53 on pre-Golgi Membranes. S. Yilmaz Dejgaard1,2, R. Luo1, P.A. Randazzo1, J.F. Presley1; 1Anatomy and Cell Biology, McGill University, Montreal, QC, 2Medical Biology, Near East University, Nicosia, Cyprus, 3National Cancer Institute, National Institutes of Health, Bethesda, MD

B446/P1436 OS9 and FBXO6 contribute to CD147 levels. I. Tobey1, S. Cornett1, I. Masteika1, A. Mercado1, D. Mena1, J. Castorino1,2; 1National Science, Hampshire College, Amherst, MA

B447/P1437 Golgi-to-Endoplasmic reticulum retrograde transport involves Rab11-Binding-Protein. B. Vasquez1,2,3,4, B. Medel1,2,3, J. Cancino1,3,4, C. Retamal1,3,4, M. Ren1,2, D.D. Sabatini1, A. Gonzalez, MD1,2,3,4; 1Centro de Biologia Celular y Biomedicina - Facultad de Medicina, Universidad San Sebastian, Santiago, Chile, 2Facultad de Ciencias Biológicas, Pontificia Universidad Católica de Chile, Santiago, Chile, 3Centro de Biología Celular y Biomedicina - Facultad de Ciencia, Universidad San Sebastián Santiago, Santiago, Chile, 4Centro de Envejecimiento y Regeneración (CARE), Pontificia Universidad Católica de Chile, Santiago, Chile

B448/P1438 Temporal distribution of the Hantavirus Nucleocapsid Protein in human pulmonary cells (A549) infected with Rio Mamore hantaviruses. J.V. de Carvalho1, D.M. de Melo1, G. Sabino-Santos Jr1, L.T. Figueiredo1, L.L. da Silva1; 1Department of Cell and Molecular Biology, University of Sao Paulo, Ribeirão Preto, Brazil, 2Department of Biochemistry and Immunology, University of Sao Paulo, Ribeirão Preto, Brazil, 3Department of Clinical Medicine, University of Sao Paulo, Ribeirão Preto, Brazil

Endosomes, Lysosomes, and Lysosome-Related Organelles 1

B449/P1439 Investigating the role of VPS33A in melanosis biogenesis and function. L.T. Le1,2,3, M.K. Dennis1,2,3, S.L. Bowerson1,2,3, R.A. Spritz4, M.S. Marks1,2; 1Department of Pathology and Laboratory Medicine, Children’s Hospital of Philadelphia Research Institute, Philadelphia, PA, 2Department of Pathology and Laboratory Medicine, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, 3Department of Physiology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, 4Human Medical Genetics and Genomics Program, University of Colorado School of Medicine, Aurora, CO

B450/P1440 Identification of novel regulators for myosin-V-mediated cargo transport. S. Wong1, L. Gaï2, N. Harpaz2, M. Schuldiner2, L.S. Weissman1,2,3; 1Cellular and Molecular Biology, University of Michigan, Ann Arbor, MI, 2Department of Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel, 3Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI

B451/P1441 Non-endocytic clathrin adaptors control post-endocytic sorting to the vacuole. M.C. Duncan1, D. Buell1,2, C.W. Hung1,2; 1Cell and Developmental Biology, University of Michigan, Ann Arbor, MI, 2Department of Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel, 3Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI

B452/P1442 SNX-BAR mediated retrograde trafficking of yeast synaptobrevin/Snc1 is conferred by its transmembrane domain. M. Ma1, L. Purushothaman2, M. Babet3, C. Ungermann2, C.G. Burd1; 1Department of Cell Biology, Yale University, New Haven, CT, 2Department of Biology/Chemistry, University of Osnabrueck, Osnabrück, Germany, 3Department of Biology, University of Utah, Salt Lake City, UT

B453/P1443 Sorting nexin 3 drives phagosomal compaction of Borrelia burgdorferi in primary human macrophages. M. Klose1, S. Linder1; 1Institute for Medical Microbiology, Virology and Hygiene, University Medical Center Eppendorf, Hamburg, Germany

B454/P1444 Structural basis for the hijacking of endosomal sorting nexin proteins by Chlamydia trachomatis. B. Paul1, H.S. Kim1, M.C. Kerr2, W.M. Huston3, R.D. Teasdale1, B.M. Collins1; 1Institute for Molecular Bioscience, The University of Queensland, Brisbane, Australia, 2School of Life Sciences, The University of Technology, Sydney, Australia

B455/P1445 Salmonella exploits the host endolysosomal tethering factor HOPS complex to promote its intravacuolar replication. A. Sindhwan1, S.B. Arya2, H. Kaur1,2, D. Jagga1,2, A. Tulli1, M. Sharma1; 1Department of Biological Sciences, Indian Institute of Science Education and Research Mohali, Mohali, India, 2Cell Biology and Immunology, CSIR-Institute of Microbial Technology, Chandigarh, India
B456/P1446 Increased biogenesis and fusion of early endosomes promotes complement activation in the retinal pigment epithelium. L. Tan1,2, G. Kaur1, K.A. Toops1, N. La Cunza1,2, G. Rathnasamy1, A. Lakkarakuj1,2,3. 1Department of Ophthalmology and Visual Sciences, University of Wisconsin-Madison, Madison, WI, 2Department of Pharmaceutical Sciences, University of Wisconsin-Madison, Madison, WI, 3Graduate Program in Cellular and Molecular Biology, University of Wisconsin-Madison, Madison, WI

B457/F1447 TFEB regulates lysosomal positioning by modulating TMEM55B expression and JIP4 recruitment to lysosomes. R.A. Willett1, J.A. Martina1, G. Hammond1, D.J. Zewe2, R. Puertollano1, 1NH-LBL, National Institute of Health, Bethesda, MD, 2Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

B458/F1448 VMA72 and SLC35D3 sort from endolysosomes to dense granules during megakaryocyte differentiation to platelets. H.A. Hanby1,2,3,4, J. Bi-Karchin1, A. Jaume1,2,3, R. Meng1,2, M. Kowalska1, S.M. Di Pietro1, M. Poncz2, M.S. Marks1,2,3,4. 1Pathology and Laboratory Medicine, Children’s Hospital of Philadelphia, Philadelphia, PA, 2Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, PA, 3Cell and Molecular Biology Graduate Group, University of Pennsylvania, Philadelphia, PA, 4Pediatrics, Children’s Hospital of Philadelphia, Philadelphia, PA, 5Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO

B459/F1449 Regulated recruitment of C9orf72 to lysosomes supports diverse signaling and degradative functions. J. Amick1, A. Tharkeshwar1, C. Amaya1,2, S.M. Ferguson1. 1Cell Biology, Yale University, New Haven, CT

B460/P1450 pHLARE: a ratiometric pH-biosensor for measuring lysosomal pH. B.A. Webb1,2, D.L. Barber1. 1Cell and Tissue Biology, University of California, San Francisco, San Francisco, CA, 2Biochemistry, West Virginia University School of Medicine, Morgantown, WV

B461/P1451 The Structure of Melanoregulin Reveals A Role for Cholesterol Recognition in the Protein’s Ability to Promote Dynin Function. X. Wu1, A.K. Roul1, M. Strob1, J.A. Hammer1, N. Tjandra1. 1NH-LBL, National Institutes of Health, Bethesda, MD

B462/P1452 Inhibition of HDACs 1, 2, And 3 Is Necessary for Clearance of Cholesterol Accumulation in PC1 in Fibroblasts. D.L. Cruz1, N.H. Pipal1, S. Mao1, D. Gadi1, G. Liu2, M. Grigalunas3, M. O’Neill1, A. Kipper1, A. Ekebergh1, A. Dimling1, C. Gartner1, B. Melancon2, E. Holson3, P. Ng5, B. Han1, C. Liu4, X. Zheng5, P. Helquist5, O. Wiest6, F.R. Maxfield7. 1Biochemistry Cell Biology, Weil Cornell Medicine, New York, NY, 2Chemistry & Biochemistry, University of Notre Dame, South Bend, IN, 3KDaC Therapeutics, Cambridge, MA, 4FORMA Therapeutics, Branford, CT

B463/P1453 A novel approach to analyze lysosomal dysfunctions through subcellular proteomics and lipidomics: the case of NPC1 deficiency. A. Tharkeshwar Raghunath1,2,3,4, W. Vermeire1,2, J. Pauwels4, R. Sannerud1,2, D. Priestman1, D. te Vruuche2, K. Vints1,2, P. Baatsen1,2, J. Decuyper1,2, H. Lu1,2, M. Martin1, P. Vangeluwe1, J. Swinnen1, L. Lagae1, F. Impens4,5, F. Platt1, K. Gevaert4,6, W.G. Annaert1,2,7,8. 1Neurosciences, KU Leuven, Leuven, Belgium, 2Center for Brain and Disease, VIB, Leuven, Belgium, 3Life Science Technology, IMEC, Leuven, Belgium, 4Biochemistry, UGent, Gent, Belgium, 5Medical Biotechnology Center, VIB, Gent, Belgium, 6Pharmacology, University of Oxford, Oxford, United Kingdom, 7Cellular Molecular Medicine, KU Leuven, Leuven, Belgium, 8Oncology, KU Leuven, Leuven, Belgium

Neuronal Degeneration - AD, PD, HD

B465/P1454 Extracellular oligomers made from the microtubule-associated protein, tau, induce focal accumulation of endogenous neuronal tau coupled to alterations in microtubule-based fast axonal transport. E. Swanson1, L. Breckenridge1, L. McMahan2, S. Som3, I. McConnell1, G.S. Bloom1,2,4. 1Department of Biology, University of Virginia, Charlottesville, VA, 2Department of Cell Biology, University of Virginia, Charlottesville, VA, 3Department of Biomedical Engineering, University of Virginia, Charlottesville, VA, 4Department of Neuroscience, University of Virginia, Charlottesville, VA

B466/P1455 A Novel Lysosome-to-Mitochondria Signalling Pathway and Its Role in Disease. A. Norambuena1, H. Wallраб1, Z. Svindrych1, D. Bigler Wang1, J. Burks2, R. Cao3, S. Hu4, G.S. Bloom1,2,4. 1Department of Biology, University of Virginia, Charlottesville, VA, 2Department of Biomedical Engineering, University of Virginia, Charlottesville, VA, 3Department of Neuroscience, University of Virginia, Charlottesville, VA

B467/P1456 pHJ3P3 suppresses the development of amyloid plaque pathology by promoting the axonal transport of lysosomes. S. Gowrishankar1,2, Y. Wu1,2, S.M. Ferguson2. 1Neuroscience, Yale School of Medicine, New Haven, CT, 2Cell Biology, Yale School of Medicine, New Haven, CT

B468/P1457 Coffin-actin rods as mediators of α-synuclein-induced synaptic dysfunction in Parkinson’s disease. M.I. Oliveira da Silva1,2, T.F. Outeiro1, J.R. Bamburg1, M.A. Lile1,2. 1IBMC – Instituto de Biologia Molecular e Celular, Universidade do Porto, Porto, Portugal, 2Instituto de Investigación e Inovação en Saúde, Universidade do Porto, Porto, Portugal, 3University Medical Center Göttingen, Göttingen, Germany, 4Colorado State University, Fort Collins, CO

B469/P1458 ALS and PD Models Reveal Distinct Changes in Histone Modification Patterns. S.A. Bennett1,2, J. Chen1, N. Rana1, H. Yousuf1, M. Said1, S. Tasseen1, N. Mendo1, M.P. Torrente1,2. 1Chemistry, Brooklyn College, Brooklyn, NY, 2Biochemistry, The Graduate Center, City University of New York, New York, NY

B470/P1459 Transcript analysis of a focused TFEB target gene list in Parkinson’s disease-relevant cell types. C.L. Nezich1, A.C. Campbell1, R.M. Hosur1, W.D. Hirst1. 1Research and Early Development, Biogen, Cambridge, MA

B471/P1460 Prion-like transmission of mutant huntingtin aggregates in Drosophila brains. K.M. Donnelly1, M. Pearce1. 1Biological Sciences, University of the Sciences in Philadelphia, Philadelphia, PA

B472/P1461 Investigating Natural Remedies to Alleviate Parkinsons Manifested Symptoms. C. Leone1, D. Sanzhikov2, A. Patel1, A. Suryanarayanan2, B. Peethambaram1. 1Chemistry and Biochemistry, University of the Sciences, Philadelphia, PA, 2Biology, University of the Sciences, Philadelphia, PA

B473/P1462 ASM regulates the autophagic process by controlling lysosomal biogenesis in Alzheimer’s disease. H. Jin1, J. Lee1, M. Jeong1, S. Han2, J. Bae2. 1College of Veterinary Medicine, Kyungpook National University, Daegu, Korea, 2Department of Physiology, School of Medicine, Kyungpook National University, Daegu, Korea

B474/P1463 Mechanism of glycan binding by α-Synuclein. H. Fung1, K. Acosta2, M. Birol1, E. Rhoades1. 1Department of Chemistry, University of Pennsylvania, Philadelphia, PA, 2Department of Biochemistry and Biophysics, Perelman School of Medicine, Philadelphia, PA

B475/P1464 Effects of mild running on substantia nigra during early neurodegeneration. M.F. Almeida1, C.M. Silva2, R.S. Chaves1, N.C. Lima1, R.S. Almeida2, K.P. Melo1, M. Demasi3, T. Fernandez1, E.M. Oliveira1, L.E. Netto1, S.M. Cardoso2, M.F. Ferrari2. 1Instituto de Biociencias, Universidade de Sao Paulo, Sao Paulo, Brazil, 2University of Taubate, Taubate, Brazil, 3Butantan Institute, Sao Paulo, Brazil, 4School of Physical Education and Sports, Universidade de Sao Paulo, Sao Paulo, Brazil, 5Faculty of Medicine, University of Coimbra, Coimbra, Portugal
**Neuronal Organelles, Membrane Biology, Membrane Trafficking**

**B476/P1465** Decoupling the effect of mutant amyloid precursor protein (APP) from the effect of plaque on axonal transport dynamics in the living mouse brain: A correlation MRI-microscopy study. C. Salmen, E. Ghebremedhin, R. G. F. Jacobs, E. L. Bearer

**B477/P1466** Transcription derepression of Fuz triggers apoptosis and contributes to polyglutamine neurodegeneration. Z. Chen, H. Chan

**B478/P1467** GPRC6A signaling impacts mTORC1 activation and tau clearance. C. Ma, J. Calahatian, W. Fraser, H. Osborne, D. Pedersen, K. N. Nash, D. Morgan, P. Bickford, D. Lee

**B479/P1468** Aβ Oligomers Mediate its Synaptotoxic Effects through AMPK-dependent Increase in Mitochondrial Fission in Pyramidal Neurons. A. Lee, C. Kondapalli, T. Lewis, G. M. Nair-Coelho, F. Polleux

**B480/P1469** Aβ oligomers affects Blood-brain-barrier integrity in Alzheimer’s disease. L. D. Estrada, P. Ahumada

**B481/P1470** Insulin exerts a protective effect against MPP+ induced toxicity in C6 glial cells by regulating the levels of alpha-synuclein and insulin signaling molecules. S. Kim

**B482/P1471** Mitochondrial Ubiquitin Ligase Mu1 Mediates an Early Stress Protection of Neuronal Mitochondria From Degradation by Parkin-Mediated Mitophagy. R. Puri, J. Yun, M. Guo, Z. Sheng


**B485/P1474** 4-synuclein is a glycan binding protein, conferred by its N-terminal acetylation. M. Biroli

**B486/P1475** Molecular interaction between 440kDa ankyrin-B and L1CAM: a proposed mechanism for high-functioning autism. K. K. Walder, D. Lorenzo, R. Yang, D. Wu, V. Bennett

**B487/P1476** Synaptic vesicle clusters in nerve terminals: an example of liquid-liquid phase separation. D. Milovanovic, P. De Camilli

**B488/P1477** Bulk degradation of short-lived dendritic membrane proteins requires Rab7 and transport to somatic lysosomes. C. Yap, L. Digilo, L. McMahon, B. Winckler

**B489/P1478** Axonal endoplasmic reticulum is very narrow. M. Terasaki


**B492/P1481** Determining the localization and function of schizophrenia-linked protein TSNARE1b in the endolysosomal system of developing neurons. M. Plooster, G. Rossi, M. S. Farrell, P. F. Sullivan, S. L. Gupton, S. P. Brennwald

**B493/P1482** Dynamic Spatiotemporal Organization of Exocytosis During Neuronal Morphogenesis. F. L. Urbina, S. L. Gupton, S. Gomez

**B494/P1483** The Retromer Complex Regulates Presynaptic and Exosomal APP Trafficking at the Drosophila NMJ. R. B. Walsh, M. J. Zunitch, A. N. Becalska, K. Narayanan, A. A. Rodal

**B495/P1484** Disruption of the epileptic encephalopathy gene DEND95A causes Golgi fragmentation and apototic cell death via altered TrKB signaling. C. Han, M. Fotouhi, P. S. McPherson

**B496/P1485** Chondroitin Sulfate Proteoglycans Negatively Regulate the Positioning of Mitochondria and Endoplasmic Reticulum to Distant Axons. R. Sainath, L. Armijo Weingart, S. C. Han


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Neuronal Cytoskeleton

B501/P1490 Ubiquitin-dependent regulation of filopodia during axon guidance and branching. N. Boyer1, C. Monkiewicz2, S. Menon2, S.K. Guntup3,4; 1Neurobiology Curriculum, University of North Carolina at Chapel Hill, School of Medicine, Chapel Hill, NC; 2Cell Biology and Physiology, University of North Carolina at Chapel Hill, School of Medicine, Chapel Hill, NC; 3Neuroscience Center, University of North Carolina at Chapel Hill, School of Medicine, Chapel Hill, NC

B502/P1491 A requirement for Mena, an actin regulator, in local mRNA translation in developing neurons. M. Vidaki1, F.B. Gertler1; 1Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology, Cambridge, MA

B503/P1492 Novel functions of LIM and SH3 domain proteins in regulating dendritic development and synapse formation. K.R. Myers1, J.Q. Zheng2; 1Cell Biology, Emory University, Atlanta, GA

B504/P1493 WITHDRAWN

B505/P1494 Arginyltransferase ATE1 is targeted to the neuronal growth cones and regulates neurite outgrowth during brain development. J. Wang3, I. Pavlyk1, P. Vedula1, S. Sterling1, N.A. Leu1, D.W. Dong2, A.S. Kashina1; 1Biomedical Sciences, University of Pennsylvania, Philadelphia, PA

B506/P1495 A Wnt Signaling Pathway Acts as a Master Coordinator of Microtubule Regulators at Dendrite Branch Points. A.T. Weiner1, D.Y. Seebold2, N.L. Michael3, M.A. Guignet4, B. Follick1, C. Feng1, C. Kozlowski1, D.J. Barbera1, E. Jones1, C.T. Folker1, B.A. Yusk0, N. Wasi1, M. Patel1, P.G. Torres1, M.M. Rolls1; 1MBM, The Pennsylvania State University, University Park, PA

B507/P1496 Patterns of microtubule organization and dynamics determine neuronal cargo distribution. S. Yogev1, C. Maeder2, R. Cooper1, K. Shen3,4; 1Neuroscience, Yale University, New Haven, CT; 2Biology, Stanford University, Stanford, CA; 3HHMI, Stanford, United States; 4Electrical Engineering, Stanford university, Stanford, CA

B508/P1497 Molecular Pathogenesis of Tubulin Disorders During Neural Development. J.E. Aiken1,2, J.K. Moore2, E.A. Bates1; 1Department of Pediatrics, University of Colorado Anschutz Medical Campus, Aurora, CO; 2Department of Cell and Developmental Biology, University of Colorado Anschutz Medical Campus, Aurora, CO

B509/P1498 Tau is not a stabilizer of microtubules in the axon but rather enables axonal microtubules to have labile domains of substantial length. L. Qiang1, X. Sun1, T.O. Austin1, H. Muralidharan1, W. Yu1, D.C. Jean1, P.W. Baas1; 1Neurobiology and Anatomy, Drexel University College of Medicine, Philadelphia, PA

B510/P1499 Novel concepts of microtubule regulation during neuronal growth, maintenance and degeneration. I. Hahn1, Y. Qu1, A. Voelzmann1, J. Parkin1, M. Lees1, A. Prokop1; 1Faculty of Biology, Medicine and Health, University of Manchester, Manchester, United Kingdom

B511/P1500 NEK7 regulates dendrite morphogenesis in neurons via Eg5-dependent microtubule stabilization. F. Freixo1, P. Martinez Delgado2, Y. Manso3, C. Sanchez-Huertas1, C. Lacasa1, E. Soriano2, J. Roig1, J. Luders1; 1Cell and Developmental Biology, Institute for Research in Biomedicine (IRB Barcelona), Barcelona, Spain; 2Molecular Biology Institute of Barcelona (IBBM-CSIC), Barcelona, Spain; 3Department of Cell Biology, Physiology and Immunology, Faculty of Biology, University of Barcelona, Barcelona, Spain

B512/P1501 Interplay between microtubule depolymerizing kinesin KLP-7 and Wnt signaling establishes microtubule polarity in C. elegans touch neuron. D. Pun1, P. Thyagarajan1, K. Biswas1, A. Ghosh Roy1; 1National Brain Research Centre, Gurgaon, India

B513/P1502 Role of Formin-2 in actin-microtubule coordination during axonal pathfinding. T. Kundu1, A. Sahasrabudhe1, A. Jacob1, A. Ghose1; 1Biology, IISER Pune, Pune, India

B514/P1503 Nicotine Exposure Alters Neuronal Cytoskeleton by the Gβγ-pGSK3β Mediated Pathway. C.M. Palacios1, K. Castaneda2, M.N. Ramirez1, J.A. Pipkin1, B. Cruz2, M. Miranda-Arango1, L.E. O’Dell1, S. Roychowdhury1; 1Biology, University of Texas at El Paso, El Paso, TX; 2Psychology, University of Texas at El Paso, El Paso, TX

B515/P1504 Dynamic microtubules specify local delivery and capture of presynaptic cargo at en passant synapses. P. Guedes Dias1, J.J. Nirschl1, N. Abreu1, M. Tokito1, E.L. Holzbaur1; 1Department of Physiology, University of Pennsylvania, Philadelphia, PA

B516/P1505 Regulation of axon initial segment cytoskeletal architecture and function by βIV-spectrin. S.L. Jones1, T.M. Svitkina1; 1Biology, University of Pennsylvania, Philadelphia, PA

B517/P1506 Utilizing microtubule polarity as a tool for characterizing neuronal processes in the nerve net of an early metazoan: Nematostella vectensis. M.C. Stone1, J.M. Eason1,2, G.O. Kothe2, M.M. Rolls1, T.J. Jegla2; 1Biochemistry and Molecular Biology, The Pennsylvania State University, University Park, PA; 2Biology, The Pennsylvania State University, University Park, PA

B518/P1507 Characterization of the spatio-temporal expression pattern of 3R and 4R Tau variants during mouse brain development using single-molecule RNA in situ hybridization. A. Laeremans1, C. Anderson1, E. Park1, X. Ma1; 2RD, Advanced Cell Diagnostics, Newark, CA

B519/P1508 Proteomic Insights into Cytoskeletal Mechanisms of Neurodegeneration. C. Carreno1, M. Aguilera-Flores1, L. Almeida1, S. Roychowdhury1; 1Department of Biological Sciences, University of Texas at El Paso, El Paso, TX

Establishing and Maintaining Organelle Structure 1

B521/P1509 Identification of genes that control the formation of membrane-less organelles. D. Berchtold1, N. Batich1, L. Pelkmans1; 1Institute of Molecular Life Sciences, University of Zurich, Zurich, Switzerland

B522/P1510 A relationship between protein mobility and organelle morphology in the endoplasmic reticulum. L. Cirillo1, T.C. Fadero1, D. Krishnamurthy1, N. Wadhwa1, J. Nixon-Abell1, C.J. Obara1, J.K. Pullen2, J. Lippincott-Schwartz1; 1Biophysics Course, Marine Biological Laboratory, Woods Hole, MA; 2Department of Cellular Physiology and Metabolism, University of Geneva, Geneva, Switzerland; 3Department of Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC; 4Department of Mechanical Engineering, Stanford University, Palo Alto, CA; 5Department of Molecular and Cellular Biology, Harvard University, Cambridge, MA; 6Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA; 7Cell Biology Section, National Institute of Neurological Disorder and Stroke, Bethesda, MD; 8Cell Biology and Metabolism Program, National Institute of Child Health and Human Development, Bethesda, MD
B523/P1511 On the Mechanism of Protein Targeting from the Endoplasmic Reticulum to Lipid Droplets. M. Oiarte1,2,3, R.V. Farese, Jr.1,4, T.C. Walther1,2,3,4,5, 1Department of Cell Biology, Yale School of Medicine, New Haven, CT, 2Department of Genetics and Complex Diseases, Harvard T.H. Chan School of Public Health, Boston, MA, 3Department of Cell Biology, Harvard Medical School, Boston, MA, 4Broad Institute of Harvard and MIT, Cambridge, MA, 5Howard Hughes Medical Institute, Boston, MA

B524/P1512 Measurement of caveolin-1 densities in the cell membrane for quantification of caveolar deformation after exposure to hypotonic membrane tension. M. Tachikawa1, N. Morone2, S. Suetsugu3, 1Theoretical Biology Laboratory, RIKEN, Wako, Japan, 2MRC Toxicology Unit, University of Leicester, Leicester, United Kingdom, 3Graduate School of Biological Sciences, Nara Institute of Science and Technology, Ikoma, Japan

B525/P1513 DYRK3 kinase regulates dissolusion and condensation of membrane-less organelles during mitosis. A.K. Rai1, J. Chen2, M. Selbach3, L. Peikmans4, 1IMLS, University of Zurich, Zurich, Switzerland, 2MDC, Max Delbruck Center, Berlin, Germany

B526/P1514 Light-dissociable membrane-less organelles maintain spatial patterns over long periods of time. E.A. Dine1, A.A. Gil2, G.A. Urbe3, E.M. Zhao4, J.E. Toettcher2, 1Molecular Biology, Princeton University, Princeton, NJ, 2Chemical and Biological Engineering, Princeton University, Princeton, NJ

B527/P1515 Members of the UDP-GaINAc-polypeptide N-acetylglactosaminyltransferase family of enzymes use different Golgi targeting signals. J.L. Becker1, D.T. Tran2, L.A. Tabak3, 1Section on Biological Chemistry, NIDCR, National Institutes of Health, Bethesda, MD

B528/P1516 Pathogenic mechanism of human centronuclear myopathy resulted from nonsense mutations of Amphiphysin-2/Bin1. J. Loh1, Y. Liu2, 1Institute of Molecular Medicine, National Taiwan University, Taipei, Taiwan

B529/P1517 Cell size determines nuclear shape in Saccharomyces cerevisiae. K. Amoateng1, A.D. Walters1, R. Wang2, J. Chen1, G. McDermott1, C.A. Larabell2, O. Gadai2, O. Cohen-Fix3, 1Laboratory of Molecular and Cellular Biology, National Institutes of Health, Bethesda, MD, 2Laboratoire de Biologie Moléculaire Eucaryote (CBI), Université de Toulouse, Toulouse, France, 3Department of Anatomy, University of California San Francisco, San Francisco, CA

B530/P1518 Deciphering the cisternal localization of GalNAc-Ts using super-resolution imaging. G.G. Herbomel1, D.T. Tran1, G.H. Patterson2, L.A. Tabak3, 1NIDCR / Biological Chemistry Section, National Institutes of Health, Bethesda, MD, 2NIBIB / Section on Biophotonics, National Institutes of Health, Bethesda, MD

B531/P1519 Novel roles for Dynamin2 (Dnm2) during ER scission and autophagy. A. Martorell Riera1, M. Iriondo Martinez1, S. Itskanov1, A.M. Van Der Bie1,2, 1Department of Biological Chemistry, University of California Los Angeles, Los Angeles, CA, 2Molecular Biology Institute, University of California Los Angeles, Los Angeles, CA, 3Johnson Comprehensive Cancer Center, University of California Los Angeles, Los Angeles, CA

B532/P1520 The endoplasmic reticulum is partitioned asymmetrically during mitosis before cell fate selection in proneural cells in the early Drosophila embryo. B. Riggs1, A.S. Errano1, A. Altamirano1, S.A. Beyer1, N.L. Gaytan1, M. Velasquez2, 1Biology, San Francisco State University, San Francisco, CA

B533/P1521 A new pathway for membrane protein insertion at the ER. A. Guna1, N. Volkmar2, J.C. Christianson3, R.S. Hegde4, 1MRC Laboratory of Molecular Biology, Cambridge, United Kingdom, 2Ludwig Institute for Cancer Research, University of Oxford, Oxford, United Kingdom

B534/P1522 SAC1 degrades its lipid substrate PtdIns4P in the ER to maintain a steep electrochemical gradient on donor membranes. J.P. Zewe1, S.J. Sangappa1, R.C. Wils1, B. Goulden1, G.R. Hammond2, 1Department of Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

B535/P1523 An image-based subcellular map of the human proteome. P.J. Thul1, L. Akesson1, D. Mahdessian1, A. Backstrom1, F. Danielsson1, C. Gnann1, M. Hjelmare1, R. Schutten1, C. Stadler1, D.P. Sullivan1, C.F. Winsnes1, M. Uhlen2, E. Lundberg3, 1Science for Life Laboratory, Royal Institute of Technology (KTH), Stockholm, Sweden

B536/P1524 An orthogonal optogenetic toolkit to study intracellular transport and organelle positioning. M. Adriani1, W. Nijenhuis1, R.I. Hoogstraaten1, J. Willems1, P. van Bergeijk1, C.C. Hoogenraad1, L.C. Kapitein1, 1Cell Biology, Utrecht University, Utrecht, Netherlands, 2Neuroscience, Genentech Inc, South San Francisco, CA

B537/P1525 A role of an inositol 5-phosphatase in ER architecture. R. Dong1,2, T. Zhu3, L. Benedetti1,2, S. Gowrishankar2,3, H. Deng2, X. Wang3, K. Shen4, P. De Camilli1,2,5, 1Department of Neuroscience, Yale University School of Medicine, New Haven, CT, 2Department of Cell Biology, Yale University School of Medicine, New Haven, CT, 3Howard Hughes Medical Institute, Yale University School of Medicine, New Haven, CT, 4Institute of Biophysics, Chinese Academy of Sciences, Beijing, China, 5Department of Department of Biology and Department of Pathology, Stanford University School of Medicine, Stanford, CA, 6Howard Hughes Medical Institute, Stanford University School of Medicine, Stanford, CA, 7Kavli Institute for Neuroscience, Yale University School of Medicine, New Haven, CT

B538/P1526 Targeting of tail-anchored proteins by GET3B in Arabidopsis chloroplasts. S.A. Anderson1, D.E. Fernandez1, 1Botany, University of Wisconsin - Madison, Madison, WI

B539/P1527 The AFF-1 exoplasmic fusogen is required for endocytic scission and seamless tube elongation. F. Soulavie1, D. Hall2, M. Sundaram3, 1Department of Genetics, University of Pennsylvania, Philadelphia, PA, 2Department of Neuroscience, Albert Einstein College of Medicine, New-York, NY

B540/P1528 Investigating the phospho-regulation of ER shaping protein RT1A (Reticulon-1A) by the Calcinurin phosphatase. S. El Cho1, J. Roy3, Y. Ivanovson1, 1Department of Genetics and Complex Development, National Institutes of Health, Bethesda, MD, 2Department of Cell Biology, University of Pittsburgh, Pittsburgh, PA, 3Institute of Organic Chemistry and Biochemistry, Czech Academy of Sciences, Prague, Czech Republic

B541/P1529 PI(4,5)P2 controls the level of its precursor, PI4P, in the plasma membrane by regulating PI4P/PS transport at ER-plasma membrane contact sites. M. Sohn1, M. Korzeniowski1, G. Hammond2, E. Boura3, T. Balla3, 1National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD, 2Department of Cell Biology, University of Pittsburgh, Pittsburgh, PA, 3Institute of Organic Chemistry and Biochemistry, Czech Academy of Sciences, Prague, Czech Republic

B542/P1530 Aerobic Respiration Enhanced by Mitochondrial Fusion Remodels Vacular Liquid-ordered Membrane Domain to Induce Micro-lipophase for Cell Survival during Glucose Restriction. A.Y. Seo1, F. Sarklei2, C.A. Larabell3, J. Lippincott-Schwartz4, 1Janelia Research Campus, HHMI, Ashburn, VA, 2Institute of Molecular Biosciences, University of Graz, Graz, Austria, 3Department of Anatomy, University of California San Francisco, San Francisco, CA

B543/P1531 Reduction in the ER-mitochondria contact site plays an important role in palmitic acid-induced insulin resistance. S. Shinjo1, S. Jiang1, M. Nameita2, S. Minamisawa3, N. Goda, 1Department of Cell Physiology, The Jikei University School of Medicine, Tokyo, Japan, 2Department of Life Science and Medical Bioscience, Waseda University, School of Advanced Science and
B547/P1535 Sxn14 is a novel lipid metabolism protein at the Endoplasmic Reticulum. S. Datta1, Y. Liu1, H. Hanri1, M. Henne1; 1Cell Biology, University of Texas Southwestern Medical Center, Dallas, TX

B548/P1536 Evaluation of sterol transport from the endoplasmic reticulum to mitochondria in Saccharomyces cerevisiae. S. Tian1, A. Ohta2, H. Horichi3, R. Fukuda4; 1Department of Biotechnology, The University of Tokyo, Tokyo, Japan, 2Department of Biological Chemistry, College of Bioscience and Biotechnology, Chubu University, Aichi, Japan

B549/P1537 Proteomics identifies organelle specific phosphorylation and reveals major subcellular reorganization in the progression of NAFLD. N. Krammer1; B. Najafi2, F. Quagliarielli3, N.H. Uhlenhaut4; 1Department of Cell Biology, Stanford University, Stanford, CA, 2Conway Institute of Cellular and Molecular Pharmacology, University of California, San Diego, La Jolla, CA, 3The Astbury Centre for Structural Molecular Biology, University of Leeds, Leeds, United Kingdom

B550/P1538 KERATIN 18 EHD proteins cooperates to generate caveolar clusters and to maintain caveolae during repeated mechanical stress. I. Yeow1, G. Howard2, J. Chadwick1; 1C. Mendoza-Topaz1, C.G. Hansen1,2, B.J. Nichols1, E. Shvets1; 1MRC Laboratory of Molecular Biology, Cambridge, United Kingdom, 2MRC Centre for Inflammation Research, Edinburgh, United Kingdom, 3Sphere Fluidics Limited, Cambridge, United Kingdom

B551/P1539 Cholesterol remodeling may protect cells from pore-forming toxins by enhancing membrane repair. R. Thapa1, M. Romero1, P.A. Keyel2; 1Biological Sciences, Texas Tech University, Lubbock, TX

B552/P1540 Dietary fatty acids direct differentiation of mesenchymal stem cells through lipidomic remodeling, microdomain stabilization, and enhancement of Akt signaling. K.R. Levental1, J.H. Lorent1, Y. Zhou1, J.F. Hancock2, I. Levental2; 1Integrative Biology and Pharmacology, McGovern Medical School at the University of Texas Health Science Center Houston, Houston, TX

B553/P1541 Phosphoinositide diffusion in the plasma membrane reveals distinct populations in COS-7 cells. J.E. Pacheco1, G.R. Hammond1; 1Department of Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

B554/P1542 Plasma membrane wounding and repair occurs during BCR-antigen interaction and promotes B cell activation. F.Y. Maeda1; 1Department of Medicine, National Institute of Neurological Disorders and Stroke, Bethesda, MD

B555/P1543 CROSSTALK BETWEEN MEMBRANE LIPID SATURATION AND INTER-ORGANELLE LIPID TRANSPORT. M. Renne1, M. Hekken2, D. Bierhuizen2, X. Ma2, X. Bao2, T. de Kroon1; 1Membrane Biochemistry Biophysics, Utrecht University, Utrecht, Netherlands

B556/P1544 Spatial organization of ER–PM junctions revealed by super- and high-resolution imaging. T. Hsieh1, Y. Chen1, C. Chang1, W. Lee1; 1Department of Physiology, University of Texas Southwestern Medical Center, Dallas, TX

B557/P1545 Involvement of membrane rafts in acrosome reaction of avian sperm via CAMP-dependent pathway. C. Priyadarshana1, N. Ishikawa2, A. Tajima3, A. Asano3; 1Graduate School of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan, 2Faculty of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan

B558/P1546 Plasmodiemalesa defects observed in UDP-glucose:sterol glycosyltransferase B1 mutants. V.G. Pook1, M. Nair2; 1Horticulture, University of Kentucky, Lexington, KY

B559/P1547 Conformation-dependent partitioning of yeast membrane transporters into starvation-protective membrane domains. C. Gournas1, S. Gkionis1, M. Carquin1, L. Twyffels2; 1Biological sciences, Nara Institute of Science and Technology, Nara, Japan

Kinas and Phosphatases 1

B561/P1548 Direct Observation of Ligand-Induced Domain Communication in an Allosteric Protein Complex. Y. Hao1, J.P. Englund1; S.S. Taylor2, E. Paci3, R.A. Maillard3; 1Department of Chemistry, Georgetown University, Washington, DC, 2Department of Pharmacology, University of California, San Diego, La Jolla, CA, 3The Asbury Centre for Structural Molecular Biology, University of Leeds, Leeds, United Kingdom

B562/P1549 Impact of Phosphorylation by Met on FAK Activation. H. Gessessew1, L. O’Connor1; J.E. Hall2; 1Biology, Bucknell University, Lewisburg, PA

B563/P1550 Encoding optical control in LCK kinase to study its function and effect of co receptors binding in live cells. A. Lianardo-Lopepe1, B.L. Morton1, M. Mahesh2, J.W. Chin2, J.R. James1; 1Department of Medicine, University of Cambridge, Cambridge, United Kingdom, 2Medical Research Council Laboratory of Molecular Biology, Cambridge, United Kingdom

B564/P1551 Engineered Allosteric Regulation of Protein Kinases by Light. M. Shaya1, V. Huyot2, V. Natarajan1, A.V. Karginov1; 1Cellular and Molecular Pharmacology, University of Illinois at Chicago, Chicago, IL

B565/P1552 Polymerization of the mitochondrial phosphatase PGAM5 underlies its biological activity. K. Ruiz1; T.M. Thaker1, L. Miller-Vedam3, C. Agnew2, A. Frost1, N. Jura1; 1Cardiovascular Research Institute, University of California San Francisco, San Francisco, CA, 2Department of Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA, 3Department of Cellular and Molecular Pharmacology, University of California San Francisco, San Francisco, CA

B566/P1553 Mapping the human calcineurin phosphatase signaling network through global identification of short linear motifs that mediate substrate recognition. J. Roy1, C.P. Wiginton1, N.P. Danile1, I. Ulening1, E. S. El Cho1, N.E. Davey2, Y. Ivanov2, C.J. Wong1, A. Gingers5, M.S. Cyert1, 1Biology, Stanford University, Stanford, CA, 2Conway Institute of Biomolecular and Biomedical Research, University College Dublin, Dublin, North Ireland, 3Chemistry - BMC, Uppsala University, Uppsala, Sweden, 4Lunenfeld-Tanenbaum Research Institute at Mount Sinai Hospital, University of Toronto, Toronto, Canada

B567/P1554 The Mutation of the PTPN11 Gene that Encodes SHP-2 Protein Promotes Tumorigenic Activity of the NFI Deficient cells. Y. Arima1, R. Harigai1, H. Saya5; 1Division of Gene Regulation, Institute for Advanced Medical Research, Keio University School of Medicine, Tokyo, Japan
B570/P1565 Single Molecule Study of Wnt Signaling Pathway Activation. W. Ma1, M. Chen2, X. He3, S. Angers5, M.W. Kirschner1, ‘Systems Biology, Harvard Medical School, Boston, MA, 2Neurology Research, Children's Hospital, Boston, MA, 3Pharmacy Department of Biochemistry, University of Toronto, Toronto, ON

B577/P1564 APC regulates Wnt signaling by inhibiting a constitutive clathrin-mediated activation pathway. K. Saito-Diaz1, H. Benchabane2, A. Tiwari1, B. Li4, A. Tian1, L.M. Sawyer1, A.S. Hyde1, A.K. Kenworthy1, D. Robbins2, Y. Ahmed2, E. Lee1; ‘Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN, 2Department of Molecular and Systems Biology, Dartmouth College, Hanover, NH, 3Department of Surgery, University of Miami, Miami, FL

B578/P1565 Molecular delineation of MST4-elicited ACAP4 phosphorylation during histamine-stimulated gastric acid secretion. M. Mullen1, X. Yao1, Y. Liu1, P. Gui1, X. Wang1; ‘Physiology, Morehouse School of Medicine, Atlanta, GA

B579/P1566 The mAKAP complex orchestrates the dephosphorylation of MEF2D in muscle cells to stimulate its activity. S.N. Aponte Paris1, M.S. Kapiloff1, K.L. Dodge-Kafka1, ‘Calhoun Cardiology Center, UConn Health, Farmington, CT, 2Medicine and Pediatrics, University of Miami, Miami, FL

B580/P1567 Macropinosomes Coordinate the Activation of PI3Kβ by Gβγ and Rac. Z. Erami1, B.D. Khalil1, G.K. Saillou1, Y. Yao2, A. Shymaet1, B. Nuenberg1, A.R. Bresnick3, J.M. Backer1; ‘Physiology, Morehouse School of Medicine, Bronx, NY, 2Institute for Integrative Sleep Medicine, University of Toronto, Toronto, ON

B581/P1568 A novel YAP-binding protein Furry controls localization and activity of YAP. K. Irie1, T. Nagai1, K. Mizuno1; ‘Biochemistry, Albert Einstein College of Medicine, Bronx, NY

B582/P1569 A novel splice variant of Sab (SH3BP5) alters mitochondrial physiology. M. Rodríguez-Silva1, J.W. Chambers12, 1Department of Neuroscience, Herbert Wertheim College of Medicine, Florida International University, Miami, FL, 2Department of Environment and Regenerative Medicine, University of Miami, Miami, FL

B583/P1570 Alterations in outer mitochondrial signaling promote organellar and neuronal dysfunction. K.T. Ashourian1, J.W. Chambers2; ‘Department of Neuroscience, Florida International University, Miami, FL, 2Environmental and Occupational Health, Florida International University, Miami, FL

B584/P1571 Signalling via membrane receptors generate functional nanodomains at the plasma membrane of living cells. J. Kalappurakkal1, A.A. Anikumaran2, T.S. van Zanten1, M.P. Sheetz3, S. Mayor4; ‘National Centre for Biological Sciences, Tata Institute of Fundamental Research, Bangalore, India, 2St. Johns Research Institute, Bangalore, India, 3Mechanobiology Institute, National University of Singapore, Singapore, Singapore, 4Institute for Stem Cell Biology and Regenerative Medicine, Bangalore, India

B585/P1572 Live cell super-resolution microscopy measures membrane-driven sorting of B cell receptor signaling partners. S.A. Shelby1, S.L. Veatch1; ‘Biophysics, University of Michigan, Ann Arbor, MI

B586/P1573 Protein sorting by phase-like domains supports emergent signaling function in B cell plasma membranes. M.B. Stone1, S.A. Shelby1, S.L. Veatch1; ‘Biophysics, University of Michigan, Ann Arbor, MI

B587/P1574 The activation state of SRC family kinases in late endosomes determines cellular responses to Receptor Tyrosine Kinase signaling in neuroblastoma. L.E. Foltz1, J. Palacios-Moreno1, M. Mayfield1, S. Kinch1, J. Syrenne1, M.L. Grimes1; ‘Division of Biological Sciences, University of Montana, Missoula, MT

B588/P1575 Exclusion of Notch from Mechanically Active Cellular Junctions. K.M. Southard1, D.seo2, Z.J. Gartner1, Y. Jun3; ‘Pharmaceutical Chemistry, University of California, San Francisco, San Francisco, CA, 2Department of Otolaryngology, University of California, San Francisco, San Francisco, CA

B589/P1576 TNF-a priming regulates CD82 expression of Bone Marrow Homing of Hematopoietic Stem and Progenitor cells. E.M. Pascetti1, C.M. Termini1, M. Floren1, C.A. Saito Reis1, J.M. Gillette1; ‘Pathology, University of New Mexico Health Sciences Center, Albuquerque, NM

B590/P1577 A mass spectrometry-based screen reveals FRMD8 as a novel regulator of iRhom/ADAM17-dependent inflammatory and growth factor signalling. U. Kuenzel1, Y. Meng1, A.G. Grieve1, S.A. Cowley1, M. Freeman1; ‘Sir William Dunn School of Pathology, University of Oxford, Oxford, United Kingdom

B591/P1578 Characterization of IQGAP1 binding to phosphoinositides and PIP kinases. V.S. Yerramilli1, S. Scarlata1, A. Gericke1; ‘Chemistry and Biochemistry, Worcester Polytechnic Institute, Worcester, MA
Cytoskeleton-Membrane Interactions

B595/P1581 Tetraspanin 33 regulates migration, adhesion and invasion properties of human B cells. I.C. Navarro-Hernandez1,2, O. Lopez-Ortega1, E. Acevedo-Ochoa2, C.A. Perez-Martinez1, A. Galvan-Hernandez1, I. Ortega-Blake1, A. Antilllon1, B. Chavez-Muniga1, R. Fragoso-Soriano1, J.M. Hernandez-Hernandez1, L. Santos-Aguirre1, J.L. Maravillas-Montero1, 1Cell Biology, Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV-IPN), Mexico City, Mexico, 2Research Support Network, Universidad Nacional Autónoma de México, MEXICO CITY, Mexico, 1Biomedicine, Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV-IPN), Mexico City, Mexico, 2Biophysics, Instituto de Ciencias Físicas, Cuernavaca, Mexico, 1Infectomic and Molecular Pathogenesis, Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV-IPN), Mexico City, Mexico, 1Physic, Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV-IPN), Mexico City, Mexico

B596/P1582 Coordination of actomyosin contractility and mitochondrial positioning during neutrophil migration in live animals. N. Melis1, B. Subramanian1, D. Chen1, C. Parent1, R. Weigert1, 1Laboratory of Cellular and Molecular Biology, National Cancer Institute - NCI, Bethesda, MD

B597/P1583 Nanofiber Curvature Enables Quantitating Single Protrusions. A. Mukherjee1, B. Koons1, P. Sharma2, Z. Ye1, B. Behkam1, A.S. Nain1, 1Mechanical Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA, 2Department of Biomedical Engineering and Mechanics, Virginia Polytechnic Institute and State University, Blacksburg, VA

B598/P1584 LINC complexes regulate cytoskeletal tension and focal adhesions through transcriptional and post-transcriptional mechanisms. R.M. Stewart1, M.C. King2, V.J. Horsley2,3, 1Cell Biology, Yale School of Medicine, New Haven, CT, 2Department of Molecular, Cell and Developmental Biology, Yale University, New Haven, CT, 3Department of Dermatology, Yale School of Medicine, New Haven, CT

B600/P1586 Endothelial Rhogap Dlc1 is essential to allow leukocytes to change phenotype from rolling to spreading prior to diapedesis. L. Schimmel1, M.M. van der Stoel2, A. van Stalborch1, A.M. de Ligt1, M. Hoogenboezem3, S. Tol1, V. de Wardt3, S. Huveneers2, J.D. Van Buul1, 1Plasma Proteins, Sanquin Research and Landsteiner Laboratory, Amsterdam, Netherlands, 2Medical Biochemistry, Academic Medical Center, Amsterdam, Netherlands, 3Central Facility, Sanquin Research and Landsteiner Laboratory, Amsterdam, Netherlands

B601/P1587 Model of Epithelial Tissues Based on Single Cell Mechanics. S. Liu1, S.X. Sun1, 1Mechanical Engineering, Johns Hopkins University, Baltimore, MD

B602/P1588 Distinct traction stress distributions in monolayers of MDCK cells are captured by an active vertex model. E.N. Schaumann1, M. Stadler1, G.R. Ramirez-SanJuan1, S. Banerjee3, M.L. Gardel1,2, 1Department of Chemistry, University of Chicago, Chicago, IL, 2Institute for the Physics of Living Systems, University College London, London, United Kingdom, 3Institute of Biophysical Dynamics, University of Chicago, Chicago, IL, 4Graduate Program in Biophysics, University of Chicago, Chicago, IL, 5Department of Physics, University of Chicago, Chicago, IL, 6James Franck Institute, University of Chicago, Chicago, IL

B603/P1589 Going with the Flow: Water Flux and Cell Shape During Cytokinesis. Y. Li1, L. He1, J. Graham1, C. Wolgemuth1, D. Wirtz2, S.X. Sun1, 1Johns Hopkins University, Baltimore, MD, 2University of Arizona, Tucson, AZ

B604/P1590 Variable rescue of microtubule defects in mdx skeletal muscle expressing miniaturized dystrophins. D.M. Nelson1, S. Duan2, L.M. Judge3, J.S. Chamberlain1, J.M. Ervasti1, 1Biochemistry, Molecular Biology, and Biophysics, University of Minnesota, Minneapolis, MN, 2Molecular Microbiology and Immunology, University of Missouri, Columbia, MO, 3Neurology, University of Washington, Seattle, WA

B605/P1591 Basal body associated striated fibers control their length to organize ciliary arrays. W. Soh1, J. van Dam2, A. Stemm-Wolf3, C.G. Pearson1, 1Cell biology, stem cells and development, University of Colorado Anschutz Medical Campus, Aurora, CO, 2Biodynamics and biocomplexity, Universiteit Utrecht, Utrecht, Netherlands

B606/P1592 Using high-resolution live imaging to study a novel mechanism for axon growth. H.Y. Fang1, A. Clarke1,2, R. Kannan3, P.G. McQueen1, K. O’Neill1, V. Wang5, S. Wincovitch7, I. Kuzina1, E. Giniger2, 1National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD, 2Institute for Biomedical Sciences, The George Washington University, Washington, DC, 3Psychiatry, National Institute of Mental Health and Neurosciences, Bangalore, India, 4Center for Information Technology, National Institutes of Health, Bethesda, MD, 5School of Medicine, The University of Connecticut, Farmington, CT, 6National Human Genome Research Institute, National Institutes of Health, Bethesda, MD

B607/P1593 Structure, dynamics, and mechanical forces: the actin cytoskeleton in neutrophil phagocytosis. R.D. Labitigan1, J.A. Theriot1, 1Department of Biochemistry, Stanford University School of Medicine, Stanford, CA

3D Migration and Invasion

B608/P1594 Analysis of Actin Regulators, Cell-Matrix Adhesions, and Cellular Morphodynamics in 3D Extracellular Matrix Environments. T. Isogai1,2, K.M. Dean1,2, E.S. Weif1,2, P. Roques1,2, M.K. Driscoll1,2, J. Park1,2, J. Cillay1,2, R. Fiokla1, G. Danuser1, 1Department of Cell Biology, University of Texas Southwestern Medical Center, Dallas, TX, 2Lyda Hill Department of Bioinformatics, University of Texas Southwestern Medical Center, Dallas, TX

B609/P1595 Stereotyped morphological structure detection from high-resolution, live-cell, 3D images. M.K. Driscoll1,2, E.S. Weif1,2, K.M. Dean1,2, R. Fiokla1, G. Danuser1, 1Bioinformatics, UT Southwestern Medical Center, Dallas, TX, 2Cell Biology, UT Southwestern Medical Center, Dallas, TX

B610/P1596 Transition between actin-driven and water-driven cell migrations depends on the external coefficient of hydraulic resistance. Y. Li1, K. Bera1, A. Athinos1, R. Zhao1, K. Konstantopoulos1, S.X. Sun1, 1Johns Hopkins University, Baltimore, MD
B638/P1623 Effects of aragonite particles derived from skeleton of Montipora digitata applied as a scaffold on cell proliferation and collagen fiber productivity in cultured human normal dermal fibroblasts. T. Okamura, K. Tominaga, T. Nishikawa, A. Tanaka; 1Department of Oral Pathology, Osaka Dental University, Hirakata, Japan, 2Innovations in Dental Education, Osaka Dental University, Hirakata, Japan, 3Department of Pathology, Osaka Dental University, Hirakata, Japan

B640/P1625 Low adhesive scaffold collagen prepared from type I collagen induces the osteogenic differentiation of rat bone marrow stromal cells. S. Kunii, E. Yamamoto, K. Morimoto; 1Genetic Engineering, Kindai University, Kinokawa, Japan, 2Biomedical Engineering, Kindai University, Kinokawa, Japan

B641/P1626 Regulation of collagen processing and fibrillogenesis by the fibronectin matrix. J.T. Saunders, J.E. Schwarzbauer; 1Molecular Biology, Princeton University, Princeton, NJ

B642/P1627 Phenotype transformation of proliferative smooth muscle cells using crosslinking collagen gel. T. Yamashita; 1Graduate School of Environmental Engineering, The University of Kitakyushu, Kitakyushu, Japan

B643/P1628 Muscle meets immunity: Biological intersections in Drosophila melanogaster. N.M. Green, J. Walker, C. Clark, N. Odell, M. Zych, M. Dushay; 1Biochemistry Molecular Biophysics, Kansas State University, Manhattan, KS, 2Cell Biology Biophysics, University of Missouri-Kansas City, Kansas City, MO, 3Biology, California State University Channel Islands, Camarillo, CA

B644/P1629 Triops cancriciformis: a potential non-mammalian animal model for studies on mechanisms of kidney ultrafiltration. K.H. Oliver, A. Mittal, J. Cartailler; 1Pathology, Veteran’s Affairs Medical Center, Pittsburgh, PA, 2Pathology, University of Pittsburgh, Pittsburgh, PA, 3Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, University of Oxford, Oxford, United Kingdom, 4Cell Biology, University of Pittsburgh, Pittsburgh, PA, 5Dept of Neurobiology, Pharmacology Physiology, University of Chicago, Chicago, IL, 6Cell Biology, Washington University, Saint Louis, MO

B645/P1630 Alpha 2 Laminin Chain Induces Cardiomyocyte Maturation In Vitro. C. Hochman-Mendez, D. Campos, K.L. Costa, L.C. Sampaio, A.B. Carvalho, D.A. Taylor, A.C. Carvalho; 1Regenerative Medicine Research, Texas Heart Institute, Houston, TX, 2Institute of Biophysics, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil

B646/P1631 Extracellular matrix performs multi-faced roles in ciliated sensory neurons of Caenorhabditis elegans. D.M. De Vore, M. Barr, D. Hall, K. Nguyen; 1Cell and Developmental Biology, Rutgers University, New Brunswick, NJ, 2Neuroscience, Albert Einstein College of Medicine, Bronx, NY

B647/P1632 Determining Matrix Metalloproteinase Homology across Phylum Ctenophora. S.B. Rashid, M.G. Tassia, K.M. Halanych, A.G. Moss; 1Biological Sciences, College of Science and Mathematics, Auburn University, Auburn, AL

B648/P1633 14-3-3 sequesters the tight junction protein ZO-2 in the cytoplasm of cells cultured in low calcium. E. Amaya, L. Alarcon, D. Martin-Tapia, F. Cuellar, B. Cisneros Vega, A.J. Rodriguez, L. Gonzalez-Mariscal; 1Department of Physiology Biophysics and Neurosciences, Cinvestav, Mexico City, Mexico, 2Department of Genetics and Molecular Biology, Cinvestav, Mexico City, Mexico, 3Department of Biological Sciences, Rutgers University College, Newark, NJ

B649/P1634 Effect of ZO-actin complexes on tight junction barrier function. T. Hamkins-Indik, B. Belardi, D.A. Fletcher; 1Bioengineering, UC Berkeley, Berkeley, CA

B650/P1635 Tight junctions remodeling modifies polarized epithelial apical surface tension, fluidity, and intercellular adhesive forces. A.X. Gioragna-Rivera, C.M. Van Itallie, J.M. Anderson, R.S. Chadwick; 1NICHD, National Institutes of Health, Bethesda, MD, 2NHBLI, National Institutes of Health, Bethesda, MD

B651/P1636 Flares of active Rho and F-actin locally reinforce the tight junction barrier in response to mechanical stress. R.E. Stephenson, T. Higashi; 1, 2M.D. Stephenson, T. Higashi, I. Erofeev, B. Coy, T.R. Arnold, A. Goryachev, A.L. Miller; 1Cellular, and Developmental Biology, University of Michigan, Ann Arbor, MI, 2Fukushima Medical University, Fukushima, Japan, 3Centre for Systems Biology, School of Biological Sciences, University of Edinburgh, Edinburgh, United Kingdom

B652/P1637 Na+-K+-ATPase beta1 Subunit fortifies alveolar epithelial tight junctions via ion transport-independent pathway. H. Bai, D.A. Dean, A. Friedman, M. Barraveccchia; 1Department of Pathology Laboratory Medicine, University of Rochester Medical Center, Rochester, NY, 2Department of Pediatrics, University of Rochester Medical Center, Rochester, NY, 3Department of Chemistry, SUNY buffalo, Buffalo, NY

B653/P1638 The Mechanotransduction role of cell-cell junction in cell extrusion context. A. Le, R. Mege, B. Ladoux, C. Lim; 1, 2Mechanobiology Institute, National University of Singapore, Singapore, Singapore, 3NUS Graduate School for Integrative Sciences and Engineering, National University of Singapore, Singapore, Singapore, 4Institut Jacques Monod, Université Paris Diderot, Paris, France, 4Biomedical Engineering, National University of Singapore, Singapore, Singapore

B654/P1639 Effect of influenza infection on epithelial monolayer integrity. N. Reilly, L. Martinez, L. Rodriguez Garcia, P.W. Oakes; 1Department of Physics and Astronomy, University of Rochester, Rochester, NY, 2Department of Microbiology and Immunology, University of Rochester Medical Center, Rochester, NY, 3Department of Biology, University of Rochester, Rochester, NY

B655/P1640 Aquaporin-5 in carcinogenesis: expression decreases levels of cell:cell adhesion proteins in MDCK cells. F.H. Logan, H.H. Morgen, G.A. Pedersen, J.S. Koffman, J. Palmfeldt, P. Bross, M. Parsons, L.N. Nejsum; 1Department of Clinical Medicine, Aarhus University, Aarhus, Denmark, 2Department of Molecular Biology and Genetics, Aarhus University, Aarhus, Denmark, 3King’s College, London, United Kingdom, 4Interdisciplinary Nanoscience Center, Aarhus University, Aarhus, Denmark

B656/P1641 The role of VASP in modulating actin architecture at adherens junctions. B. Hissa, Y.M. Beckham, M.L. Gardel; 1Institute for Biophysical Dynamics and Physics Department, University of Chicago, Chicago, IL

B657/P1642 The RhoGEF Trio induces junctional F-actin bundles by locally activating Rapa1 to stabilize VE-cadherin-based cell-cell junctions. J.D. Van Buul, I. Timmerman, M. Hoogenboezem, Y. Wu, J.v. J. Rijssel; 1Molecular Cell Biology, Sanquin Research and Landsteiner Laboratory, Amsterdam, Netherlands, 2Center for Cell Analysis and Modeling, UConn Health, Farmington, CT
Glycoproteins and Metalloproteases

B665/P1650 Contribution of ppGalNAc transferase-1 to mucin-type O-glycosylation on the Ebola virus glycoprotein and subsequent loss of cell adhesion. E. J. Simon1, A.D. Linstedt1. 1Biological Sciences, Carnegie Mellon University, Pittsburgh, PA

B666/P1651 MMP28 is overexpressed in bronchial and alveolar epithelial cells in Idiopathic Pulmonary Fibrosis. M. Maldonado1, A. Salgado-Aguayo2, I. Herrera2, B. Ortiz2, C. Staab-Wejniitz2, M. Selman2, A. Pardo1. 1Facultad de Ciencias, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico, 2Instituto Nacional de Enfermedades Respiratorias, Mexico City, Mexico. Comprehensive Pneumology Center, Helmholtz Zentrum München, Munich, Germany

B667/P1652 Matricellular Tinagl1 affects cell polarity in early zebrafish embryos. H. Neilender1,2, A. M. Mumm1, D.J. Kozlowski1, E.K. LeMossy1. 1Department of Cellular Biology and Anatomy, Augusta University, Augusta, GA, 2Department of Neuroscience and Regenerative Medicine, Augusta University, Augusta, GA. 1Wilmer Eye Institute, Johns Hopkins University School of Medicine, Baltimore, MD

B668/P1653 Equilibrium structure and mechanics of the cellular glycocalyx. J.G. Gandhi1, D.L. Koch1, M.J. Paszek1. 1Chemical and Biomolecular Engineering, Cornell University, Ithaca, NY

B669/P1654 Cellular reprogramming of primary human adipocytes into brown adipose tissue (BAT)-like cells. K.M. Cartwright1, C.E. Long1, P.A. Harding1,2, S.R. Taylor1. 1Biology, Miami University, Oxford, OH, 2Biological Sciences, Miami University Regional, Hamilton & Middletown, OH

B670/P1655 HB-EGF and ADAM 12 co-expression of mouse fibroblasts results in increased metabolic activity. D.C. Pfeil1, S.R. Taylor1, P.A. Harding1,2. 1Biology, Miami University, Oxford, OH, 2Biological Sciences, Miami University Regional, Hamilton & Middletown, OH

Ubiquitin and Proteasome Function

B672/P1656 SCFαstim mediates degradation of Survival Motor Neuron (SMN) protein. K.M. Gray1,2, K.A. Käfer1, D. Baillat4, Y. Niihara1. 1Biology, Miami University, Oxford, OH, 2Biological Sciences, Miami University Regional, Hamilton & Middletown, OH, 3Molecular and Cellular Biology, University of Texas Medical Branch, Galveston, TX, 4Pharmacology, University of North Carolina, Chapel Hill, NC, 5Cell Biology, Neurobiology, and Anatomy, Medical College of Wisconsin, Milwaukee, WI. 1Centre for Gene Regulation and Expression, University of Dundee, Dundee, United Kingdom

B673/P1657 Histidine Ammonia-Lyase is a Proteasome Interacting Protein. F. Bardag-Gorce1, A.M. Laporte1, D. Cortez1, R. Nilihara1, S. Sunada1, J. Stark1, A. Gorce1, R.H. Hoff1, J. Whitelegge1, J. Oliva1, S.W. French1, Y. Niihara1. 1Medicine, Los Angeles Biomedical Research Institute at Harbor-UCLA Medical Center, Torrance, CA, 2NPI-Semel Institute, Pasarow Mass Spectrometry Laboratory, University of California at Los Angeles, Los Angeles, CA

B674/P1658 Arkadia (RING finger protein 111) mediates sumoylation-dependent stabilization of Nrfl2 through K48-linked ubiquitylation. D. McIntosh1, T. Walters1, I. Arinze2, J.S. Davis1. 1Pharmacology Neurosciences, Meharry Medical College, Nashville, TN, 2Physiology, Meharry Medical College, Nashville, TN. 3Biochemistry Cancer Biology, Meharry Medical College, Nashville, TN

B675/P1659 A Model Substrate whose Degradation Pathway is Determined by Aggregation Propensity. Z. Sun1, J.L. Brodsky1. 1Department of Biological Sciences, University of Pittsburgh, Pittsburgh, PA

B676/P1660 Sterol oxidation mediates stress-responsive Vms1 translocation to mitochondria. E. Fredrickson1, J. Rutter1, C.P. Hill1, J.R. Nielson1. 1Biochemistry, University of Utah, SALT LAKE CITY, UT

B677/P1661 WITHDRAWN

B678/P1662 USP3 regulates the fate of cargo proteins that enter cells by Clathrin-independent endocytosis (CIE). S. NIYOGL1, J.L. Wayt1, J. Donaldson1, C.D. Williamson1, L. Eshun-Wilson1. 1NHBLI, National Institutes of Health, Bethesda, MD

B679/P1663 Linking ISG15 to Cellular Stress Responses: Lessons from Listeria infection. L. Radoshevich1, M. Foecke1, F. Impens1, K. Knobeloch1, P. Cossart1. 1Bacteria Cell Interactions, Institut Pasteur, Paris, France, 2Microbiology, University of Iowa, Iowa City, IA, 3Proteomics Expertise Center, VIB, University of Gent, Ghent, Belgium, 4Institute of Neuropathology, University Clinic Freiburg, Freiburg, Germany

B680/P1664 Structural and kinetic analysis of protein degradation by the 26S proteasome. Y. Lu1. 1Systems Biology, Harvard Medical School, Boston, MA

B681/P1665 The ubiquitin-proteasome system regulates degradation of an anti-inflammatory receptor SIGIRR. L. Li1, J. WEI1, S. LI1, J. Zhao1, Y. Zhao1. 1Department of Medicine and the Acute Lung Injury Center of Excellence, University of Pittsburgh School of Medicine, Pittsburgh, PA
B682/P1666 Histone acetyltransferase CBP increases activation of SCF FBXL19 ubiquitin E3 ligase by acetylation and stabilization of FBXL19. J. Wei1, S. Dong2, R. Bowser3, A. Jacko4, K. Yao3, Y. Zhao1, J. Zhao1; 1Medicine, University of Pittsburgh, Pittsburgh, PA, 2Anesthesiology, First Hospital of Jilin University, Changchun, China

B683/P1667 Accelerated Senescence following DNA Damage upon Loss of a BRCA1 Associated Protein Brap is Mediated through Histone Ubiquitination and Destruction. Y. Guo1, A.A. Lantcot1, Y. Feng1,2; 1Neurology, Northwestern University School of Medicine, Chicago, IL, 2Biochemistry and Molecular Biology, Uniformed Services University, Bethesda, MD

B684/P1668 E2 and E3 Ubiquitin Ligases in the ERAD Pathway Regulate Neural Receptors in C. elegans. A. Townsend1, A. Lange1, G. Patel2, 1Molecular and Cellular Biology, Montana State University, Bozeman, MT, 2Biochemistry, University of Washington, Seattle, WA, 3Biology, Western Washington University, Bellingham, WA, 4Behavioral Neuroscience, Western Washington University, Bellingham, WA

B685/P1669 KBTBD11, a novel BTB-Kelch protein, is a negative regulator of osteoclastogenesis through controlling Cullin3-mediated ubiquitination. S. Narahara1, E. Sakai1, T. KADOWAKI1, Y. Yamaguchi1, H. Narahara1, K. Okamoto1, Y. Sumita1, I. Asahina1, T. Tsukuba1; 1Department of Dental Pharmacology, Nagasaki University, Nagasaki, Japan, 2Department of Frontier Life Science, Nagasaki University, Nagasaki, Japan, 3Department of Dental Pharmacology, Okayama University, Okayama, Japan, 4Basic and Translational Research Center for Hard Tissue Disease, Nagasaki University, Nagasaki, Japan, 5Department of Regenerative Oral Surgery, Nagasaki University, Nagasaki, Japan

B686/P1670 Cullin-3 is required for normal skeletal muscle development. J. Blondelle1, K. Tallapaka1, P. Shapiro1, M. Ghasemian2, J.D. Singer1, S. Lange1; 1Department of Cardiology, University of California, San Diego, La Jolla, CA, 2Biomolecular and Proteomics Mass Spectrometry Facility, University of California, San Diego, La Jolla, CA, 3Department of Biology, Portland State University, Portland, OR

B687/P1671 The effects of YopJ on respiratory growth due to downregulation of a mitochondria ubiquitin protease in S. cerevisiae. A.M. Benben1, Y. Wang1; 1Biology, Saint Louis University, St. Louis, MO

B688/P1672 Proteasome activity and protein oxidation levels in the skeletal muscles of cultivated rainbow trout. L. Lysenko1, N. Kantserova1; 1Lab. of Environmental Biochemistry, Institute of Biology, KarRC RAS, Petrozavodsk, Russia, 2Dept of Molecular, Biological Chemistry and Biotechnology, Petrozavodsk State University, Petrozavodsk, Russia

B689/P1673 Hyperphosphorylation repurposes the CRL4B E3 ligase to coordinate mitotic progression. S. Gilberto1, F. Lamperti1, W. Piwko1, M. Peter1; 1Department of Biology, ETH Zurich, Zurich, Switzerland

B690/P1674 Deciphering the Ubiquitin Code with Poly-Ubiquitin Chain Selective Affinity Matrices. R. Singh1, C. Sagum2; 1School of Biological Sciences, 2School of Biological Sciences, University of Glasgow, Glasgow, UK

B691/P1675 OTUB1 regulation of E2 ubiquitin conjugating enzyme levels in vivo. Y. Tanaka1, K. Papatheodorou2, S. Polyachenko3, A. Ma4, C. Wolberger1; 1Department of Biochemistry, Johns Hopkins University School of Medicine, Baltimore, MD, 2Center for Cell Biology, University of Texas, Houston, TX

B692/P1676 ATG5 deletion results in organelle dysfunction and confers enhanced cytotoxicity following the induction of autophagy. N.J. Dolman1, K.M. Chambers2, S. VanLE1, S. Leonard1, B. Samson1, M.S. Janes1; 1Biosciences, Thermo Fisher Scientific, Pittsburgh, PA

B693/P1677 Autophagosomal closure is mediated by the ESCRT machinery. K. Mortia1, I. Koyama-Honda1, Y. Yamashita1, T. Ueno2, E. Morita1, H. Mano1, N. Mizushima1; 1Dept. of Mol. Biol, Grad. Sch. of Med, Univ. of Tokyo, Tokyo, Japan, 2Dept. of Cell. Signal., Grad. Sch. of Med, Univ. of Tokyo, Tokyo, Japan, 3Dept. of Biochem. and Mol. Biol., Fac. of Agric. and Life Sci., Hirosaki Univ., Hirosaki, Japan

B694/P1678 Autophagy controls steroid hormone synthesis and developmental timing by regulating cholesterol trafficking in Drosophila melanogaster. X. Pan1,2, M.B. O'Connor1; 1Department of Genetics, Cell Biology  Development, University of Tokyo, Tokyo, Japan, 2Research and Development, LifeSensors Inc, Malvern, PA, 3Department of Molecular, Biological Chemistry and Biotechnology, Petrozavodsk State University, Petrozavodsk, Russia

B695/P1679 The Autophagy Conjugation Machinery Specifies The Loading of RNA-Binding Proteins Into Extracellular Microvesicles. A.M. Leidal1, H.H. Huang1, T. Solvik2, J. Ye1, T. Marsh1, F. Kail1, J. Goldsmith1, J.Y. Liu1, A.P. Wilt2; 1Pathology, University of California, San Francisco, San Francisco, CA, 2Laboratory Medicine, University of California, San Francisco, San Francisco, CA, 3Surgery, University of California, San Francisco, San Francisco, CA

B696/P1680 Stress-Induced Cdk5 Activity Enhances Cytotoxicity of Basal Autophagy by Phosphorylating Acinus at Serine697. H. Kramer1, N. Nandi1, L.K. Tyra1; 1Neuroscience, UT Southwestern, Dallas, TX

B697/P1681 RXR-PPAR-delta agonist therapy achieves neuroprotection by autophagic induction. M. Areola-Villanueva1, A.S. Dickey1, A.R. La Spada1, 1Pediatrics, University of California, San Diego, La Jolla, CA

B698/P1682 The Unfolded Protein Response Maintains Lipid Homeostasis by Selective Autophagy during Lipid Perturbation-Induced ER Stress. J. Koh1, L. Wang1, C. Beaudoin-Chabot1, G. Thibault1,2,3; 1School of Biological Sciences, Nanyang Technological University, Singapore, Singapore, 2Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore, Singapore

B699/P1683 Ribosome profiling reveals that autophagy impacts DNA damage repair, cell cycle progression and centrosome maintenance through protein translation regulation. J. Goldsmith1, S. Asthana1, T. Marsh1, D. Suresh1, A. Olshen1, J. Debnath1; 1Pathology, University of California, San Francisco, San Francisco, CA, 2Department of Epidemiology and Biostatistics, University of California, San Francisco, San Francisco, CA

B700/P1684 Herbal medicine for resolution of cancers. Y. Liu1; 1Department of Medical Research; Graduate Institute of Integrated Medicine, China Medical University, Taichung, Taiwan

B701/P1685 Filamin and Valosin Containing Protein (VCP) interaction in inclusion Body Myositis. K. Britson1, E.H. Michelle1, C. Castro2, I. Aksentievich2, A. Schillenbauer4, A. Mankodi1, D. Kastner3, A. Mammen1, C.C. Weih1, R. Siegel1, T.E. Lloyd1; 1Johns Hopkins University School of Medicine, Baltimore, MD, 2National Institute of Arthritis Musculoskeletal Skin Diseases, National Institutes of Health, Bethesda, MD, 3National Human Genome Research Institute, National Institutes of Health, Bethesda, MD, 4National Institute of Environmental Health Sciences, National Institutes of Health, Bethesda, MD, 5Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD, 6Washington University School of Medicine, St. Louis, MO
B702/P1686 Compartment-specific regulation of neuronal autophagy during homeostasis and stress. A. Dong1, A. Kulkarni1, V. Kulkarni1, J. Chen1, S. Maday1; 1Neuroscience, Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA

B703/P1687 Compartment of autophagy and mTOR pathways in mouse embryonic stem cell, lung cancer and somatic fibroblast cell lines in molecular analysis base. F. Oltulu1, D. Çağılıl Koçatürk1, Y. Adalı1, B. Ozdil1, E. Açıkgöz1, C. Gürel4, A. Uysal1, A. Yavasoglu1, G. Oktem1, H. Aktug1; 1Faculty of Medicine, Histology and Embryology Department, Ege University, İzmir, Turkey, 2Faculty of Medicine, Histology and Embryology Department, Süleyman Demirel University, Isparta, Turkey, 3Faculty of Medicine, Histology and Embryology Department, Yüzüncü Yıl University, Van, Turkey, 4Faculty of Medicine, Histology and Embryology Department, Harran University, Şanlıurfa, Turkey

B704/P1688 Systematic analysis of human cells lacking ATG8 proteins uncovers roles for GABARAPs and the CCZ1/MON1 regulator C18orf8/RMC1 in macro and selective autophagic flux. L. Pontano Vaites1, J.A. Paulo1, E.L. Huttlin1, J.W. Harper1, Y. Feng1,2, D. Klionsky1,2; 1MCDB, University of California San Diego, San Diego, CA, 2Decibel Therapeutics, Boston, MA

B705/P1689 Microtubule-Associated Protein 1 Light Chain 3B (LC3B) is Necessary to Maintain Lipid Homeostasis in the Retinal Pigment Epithelium. A. Dhingra1, J. Reyes-Reveles1, D. Alexander1, R. Sharp1, A. Swarup2, K. Boesze-Battaglia1; 1Biochemistry, University of Pennsylvania., Philadelphia, PA, 2Department of Pathology, Anatomy and Cell Biology, Thomas Jefferson University, Philadelphia, PA

B706/P1690 Dhh1 regulates autophagy protein expression under long time starvation. Z. Yao1, X. Liu1, M. Jin1, D. Klionsky1; 1Life Science Institute, University of Michigan, Ann Arbor, MI

B707/P1691 Regulation of autophagy through post-translational modifications. Y. Feng1,2, D. Klionsky1; 1MCDB, University of Michigan Ann Arbor, Ann Arbor, MI, 2Life Sciences Institute, University of Michigan Ann Arbor, Ann Arbor, MI

B708/P1692 Natural genetic variation modifies polyglutamine aggregation via an imbalance in autophagy. J.J. Alexander-Floyd1, A. Entezari1, M. Ying1, S. Haroon1, T. Gidalewitz1; 1Biological Sciences, Drexel University, Philadelphia, PA, 2Department of Pathology and Laboratory Medicine, Children’s Hospital of Philadelphia, Philadelphia, PA

B710/P1693 Decoupling global biases and local interactions between cell biological variables. A. Zaritisky1,2,3, U. Obolski1, Z. Gan1,2,3, C.R. Reis1, Y. Du1, S.L. Schmid2, G. Danuser1,2; 1Molecular Cell Biology, Weizmann Institute of Science, Rehovot, Israel, 2Bioinformatics, UT Southwestern Medical Center, Dallas, TX, 3Cell Biology, UT Southwestern Medical Center, Dallas, TX, 4Department of Zoology, University of Oxford, Oxford, United Kingdom

B711/P1694 WITHDRAWN

B712/P1695 Inferring cell state by quantitative motility analysis reveals a dynamic state system and broken detailed balance. J.C. Kimmel1, A.Y. Chang1, A.S. Brack2, W.F. Marshall1; 1Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA, 2Orthapedic Surgery, University of California San Francisco, San Francisco, CA

B713/P1696 Identification of gene expression variability with phenotypic consequences using Luria-Delbrück-seq. S.M. Shaffer1, B. Emert1, R. Gupta1, A. Raj1; 1Bioengineering, University of Pennsylvania, Philadelphia, PA

B714/P1697 Monte Carlo simulations of Listeria monocytogenes cell-cell spread predict a stratified spreading behavior crucial for survival in the intestinal epithelium. F.E. Ortega1, E.F. Koslover2, J.A. Theriot3,4,5; 1Biochemistry, Stanford School of Medicine, Stanford, CA, 2Physics, University of California San Diego, San Diego, CA, 3Biophysics and Immunology, Stanford School of Medicine, Stanford, CA, 4Howard Hughes Medical Institute, Stanford, CA

B715/P1698 Semi-automatic Segmentation and Frequency Mapping of Murine Hair Cells in Multi-Channel Light Microscopy Images. T. Lancon1, N. Paz2, B. Holmes3; 1Materials Structural Analysis, Thermo Fisher Scientific, Waltham, TX, 2Decibel Therapeutics, Boston, MA

B716/P1699 Dealing with SNP’s - a Hurdle in Renin and ACE Inhibition. R. Razi1, M. Ahmed1; 1Microbiology and Molecular Genetics, University of the Punjab, Lahore, Pakistan

B717/P1700 Rational design of anti-diabetic agent. T. Redj1, R. Chaudhari1, Z. Li1, Z. Li1,2; 1Biological Sciences, University of the Sciences in Philadelphia, Philadelphia, PA, 2Chemistry and Biochemistry, University of the Sciences in Philadelphia, Philadelphia, PA, 3Pharmaceutical Sciences. University of the Sciences in Philadelphia, Philadelphia, PA

B718/P1701 Computational analysis of the membrane targeting domains of the phospholipase D family in Arabidopsis thaliana. C. Barreto1, K. Begum1, A. Cataldo1, S.M. Singh1; 1Biology, Brooklyn College, City University of New York, Brooklyn, NY

B719/P1702 Incoherent Inputs Enhance the Robustness of Biological Oscillators. Z. Li1, Q. Yang2; 1Department of Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor, MI, 2Department of Biophysics, University of Michigan, Ann Arbor, MI

B720/P1703 3D Computational Modeling of Bleb Initiation Dynamics. W. Strychalski1; 1Mathematics, Applied Mathematics, and Statistics, Case Western Reserve University, Cleveland, OH

B721/P1704 Mathematical Modeling of Phage-Assisted Continuous Evolution (PACE). H.S. Sinks1, A. Tutar1, A. Estrada2, D. Mattoon2, D. Sullivan2, D. Zweier1, A.M. Campbell1, T.T. Eckdahl2, J. Poel2, L.J. Heyer3; 1Mathematics and Computer Science, Davidson College, Davidson, NC, 2Computer Science, Mathematics and Physics, Missouri Western State University, St. Joseph, MO, 3Biology, Davidson College, Davidson, NC, 4Biology, Missouri Western State University, St. Joseph, MO

B722/P1705 Graph Fingerprints of Mitochondria and Mitochondrial-Like Networks. G.R. Lewis1, W.F. Marshall1; 1Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA

B723/P1706 Protein docking and molecular dynamics simulations of the extracellular domain of Na+-K+ ATPase β subunit reveals a reliable binding model for epithelial Na+K+-ATPases on adjacent cells. O. Paez1, L. Shoshani1, M. Martinez-Archundia2, J. Correa-Basurto2; 1Physiology, CINVESTAV-IPN, Mexico city, Mexico, 2Pharmacology, ESM-ipn, Mexico city, Mexico

B724/P1707 Structural and functional analysis of key proteins involved in ESX-1 protein secretion system of M. tuberculosis: novel targets for drug developments. V.K. Kashyap1, R. Sharma1, A.K. Saxena1; 1School of Life Sciences, Jawaharlal Nehru University, New Delhi, India

B725/P1708 Inquiry, Analysis, and Functional Characterization of the ORFs YLR407W and YGL101W in Saccharomyces cerevisiae. B. Haar1, A. Velamuri1, S. Shields1; 1Biology, Gustavus Adolphus College, Saint Peter, MN

Systems and Synthetic Biology and Tissue Engineering

B726/P1709 Pigment epithelium derived factor facilitates cornea limbal regeneration in a mouse mode through the activation of STAT3 and sonic hedgehog (SHH) signaling. Y. Tsao1; 1Ophthalmology, Mackay Memorial Hospital, Taipei, Taiwan
B727/P1710 The physical microenvironment influences plexus self-assembly in a 3D in vitro model of vasculogenesis. J. Shirazi1, J.T. Morgan1, E.M. Comber1, J.P. Gleghorn1, Biomedical Engineering, University of Delaware, Newark, DE

B728/P1711 Development of a Porous Hydrogel for Skeletal Muscle Regeneration. T.A. McEachern1,2, D.J. David2, K.M. Fischer1, Biology, Hampden-Sydney College, Hampden-Sydney, VA

B729/P1712 Acs2 controls mode of acetate utilization. N. Puthillathu1,2,3, R. Vengilote1,2,4, J.R. Moffett1,2,4, A. Peethambaran4, G. Sukumaran2,3, J. Singh2,3, C.L. Dalgaard1,2,4, M. Wilkerson2,3, J. te2, A.M. Namboodiri1,2,3,4, School of Medicine, USUHS, Uniformed Services University school of Medicine, Bethesda, MD, School of Medicine, USUHS, The American Genome Center, Bethesda, MD, School of Medicine, USUHS, Collaborative Health Research Initiative (CHIRIP), Bethesda, MD, Anatomy, Physiology and Genetics, Uniformed Services University of the Health Sciences, Bethesda, MD

B730/P1713 The Integration of Cellular and Subcellular Dynamics for Cell Migration. T. Lan1, S. Hung1, X. Su1, S. Wongs2, Y. Tseng1, Chemical Engineering, University of Florida, Gainesville, FL, Department of Statistics, University of Florida, Gainesville, FL

B731/P1714 Coupled control of mRNA and protein variability in single mammalian cells. D. Popovic1, L. Pelkmans1, Department of Molecular Life Sciences, University of Zurich, Zurich, Switzerland

B732/P1715 Chemotropism in yeast. D. Ghose1, D.J. Lew1, T.C. Elston1, Computational Biology and Bioinformatics, Duke University, Durham, NC, Pharmacology and Cancer Biology, Duke University, Durham, NC, Pharmacology, University of North Carolina, Chapel Hill, Chapel Hill, NC

B733/P1716 Visualizing and controlling calcium signaling dynamics after wounding in engineered stromal microtissues. S. Ghirlanda1,2, J. Eyckmans1,2, A.E. Grof1,2, Biological Design Center, Boston University, Boston, MA, Department of Biomedical Engineering, Boston University, Boston, MA, Wyss Institute for Biologically Inspired Engineering, Harvard University, Boston, MA

B734/P1717 Using phage assisted continuous evolution (PACE) to evolve riboswitches that function reliably in vivo. S.R. Bilby1, L.D. Doolan1, C.C. Mackley1, C. Watson1, S.S. Bent1, I.G. Cuellar1, F.C. Enriquez1, M.O. Hunter2, H.S. Sink1, A. Tutar1, L.J. Heyer1, A.M. Campbell2, J. Poet1, T.T. Eckdahl1, Biology, Missouri Western State University, St. Joseph, MO, Biology, Davidson College, Davidson, NC, Mathematics and Computer Science, Davidson College, Davidson, NC, Computer Science, Mathematics and Physics, Missouri Western State University, St. Joseph, MO

B735/P1718 Tuning DNA- and Membrane-binding proteins to sense cellular geometry. C.W. Sandlin1, M.C. Good1, Department of Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B736/P1719 Optogenetic control of protein activity in cell-like compartments. R.M. Caldwell1, J.G. Bermudez2, D.G. Thai1, M.C. Good1, Department of Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA, Department of Bioengineering, University of Pennsylvania, Philadelphia, PA

B737/P1720 Controllable phase separation and modular recruitment to form synthetic membraneless organelles. B.S. Schuster1, M. Good1, D.A. Hammer1, University of Pennsylvania, Philadelphia, PA

B738/P1721 A forward genetic screen identifies host factors that influence the lysis-lysogeny decision in phage lambda. N.T. Quach1, K. Bodner1, A. Miguel1, Y. Tanouchi1, M.R. Silvis2, C.A. Gross3, K.C. Huang4, M.W. Covert1, D.A. Van Valen1,2, Bioengineering, Stanford University, Stanford, CA, Microbiology and Immunology, University of California, San Francisco, San Francisco, CA, Biology and Bioengineering, California Institute of Technology, Pasadena, CA

B739/P1722 Characterization of the Gain-of-Function Toxicity of Optineurin in Yeast. M. Islam1, S. Chen1, Y. Kim2, S. Ju1, Q. Zhong1, Biological Sciences, Wright State University, Dayton, OH, Brandeis University, Waltham, MA

B740/P1723 Causes and consequences of slow-cycling cells within isogenic populations. M. Min1, S.L. Spencer1, Department of Chemistry and Biochemistry, University of Colorado-Boulder, Boulder, CO

B741/P1724 Mathematical models for tissue structure based on asymmetric cell division. B.M. Boman1,2, T. Dinh2, K. Decker2, B. Emerick2, C. Raymond2, J.Z. Fields1, G. Schleiniger2, Cancer Research, CATX Inc, Princeton, NJ, Center for Applications of Mathematics in Medicine, University of Delaware, Newark, DE

B742/P1725 Optogenetic platform to probe cytokinesis signaling in vitro. J.G. Bermudez1, M. Good1,2, Bioengineering, University of Pennsylvania, Philadelphia, PA, Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B743/P1726 Laser-based degradation for engineered vascularized hydrogels within microfluidic housing. K.A. Keller1, J.H. Slater1, Biomedical Engineering, University of Delaware, Newark, DE

Germ Cells, Gametogenesis, and Fertilization

B745/P1727 Molecular analysis of pollen grains from morphologically Androecious but functionally Dioecious Solanum species. J.R. Ndem1, M. Christopher1, J.E. Hall1, BIOLOGY, BUCKNELL UNIVERSITY, LEWISBURG, PA

B746/P1728 Proteomics of phosphorylation and protein dynamics during fertilization, activation, and meiotic exit in the Xenopus egg. M. Presler1, E. Van Italie1, A.M. Klein1, R. Kunz2, P. Coughlin1, L. Peshkin1, S.P. Gygi2, M.H. Wühr1,2,3, M.W. Kirschner1, Systems Biology, Harvard Medical School, Boston, MA, Department of Cell Biology, Harvard Medical School, Boston, MA, Department of Molecular Biology, The Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ

B747/P1729 Cell cycle–coupled changes of redistribution of inositol 1,4,5-trisphosphate receptor-1 and Ca2+-oscillatory activity in mouse zygotes. Y. Chang1, R. Fissore1, S. Yoon1, Industry Academic Cooperation Foundation, CHA university, Seongnam-si, Korea, South, Veterinary and Animal Sciences, University of Massachusetts, Amherst, MA, College of Life Science, CHA university, Seoul, Korea, South

B748/P1730 A proteomics approach identifies novel protein components of the Balbiani body. A. Jamieson-Lucy1, M.C. Mullins2, Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B749/P1731 Determining the function and regulation of polymers of nucleotide biosynthetic enzymes during Drosophila oogenesis. J.C. Simonet1, S.A. Anthony2, A.M. O’Reilly1, J.R. Peterson1, Cancer Biology, Fox Chase Cancer Center, Philadelphia, PA, Drexel School of Medicine, Philadelphia, PA

B750/P1732 Membrane rafts regulate acrosome reaction via glucose signaling pathways in chicken sperm. A. Ushiyama1, A. Tajima2, N. Ishikawa2, A. Asano2, Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan, Faculty of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan

B751/P1733 Intercellular communication in the mouse ovarian follicle analyzed by serial section electron microscopy. V. Baena1, M. Terasaki1, Biology, University of Connecticut Health Center, Bristol, CT
**B752/P1734** Guidance of stem cell niche assembly, position, and architecture.
L. Anito1, L. Wingert1, S. DiNardo1; 1Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

**B753/P1735** The Misshapen kinase is Essential for Normal Expansion and Stability of the Germline Ring Canals in the Developing Drosophila Egg Chamber. A.N. Kline1, T. Curry1, L. Lewellyn1; 1Biological Sciences, Butler University, Indianapolis, IN

**B754/P1736** Mitochondrial protein ATAD-3 facilitates germ granule formation in C. elegans embryo. X. Fan1, Y. Wu1, E.E. Griffin1; 1Biological Sciences, Dartmouth College, Hanover, NH

**B755/P1737** Utilization of the auxin-degradation system to eliminate P granules in C. elegans. E.A. Marnik1, C. Sharp1, D. Updike1; 1MDI Biological Laboratory, Bar Harbor, ME

**B756/P1738** Ovaries from diabetic mice exhibit loss of follicles leading to reproductive failure. E. De Jong1, C. Hart1, E. Yong1, A. Becker1, J. Fellmeth1; 1Biology, Hamilton College, Clinton, NY

**B757/P1739** Only Sertoli cells cultured at high density mimic in vivo conditions. A. Sriram1, H. Huynh1, J. Shadarevian1, D. Djaksigulova1; 1Cellular & Physiological Sciences, University of British Columbia, Vancouver, BC

**B758/P1740** Positive and Negative Regulation of Cell Fusion in Budding Yeast. M.D. Rose1,2, A.E. Hall1, J.A. Smith2; 1Biology, Georgetown University, Washington, DC, 2Molecular Biology, Princeton University, Princeton, NJ, 2Biology, UNC, Chapel Hill, NC

**B759/P1741** Finding required genes for proper sp-ut valve function in C. elegans. P.G. Castaneda1, E. Cram1; 1Biology, Northeastern University, Boston, MA

**B760/P1742** Complexes regulating C. elegans eggshell formation and egg activation are scaffolded by a common protein. D. Gonzalez2, H. Lamb1, D. Partida1, Z. Wilson1, J. Prieto1, S.K. Olson1; 1Biology, Pomona College, Claremont, CA

**B761/P1743** Comparison of fertilization in the invasive zebra and quagga mussels. M.J. Misamore1, E. Couch1, H. Quinn1; 1Biology, Texas Christian University, Fort Worth, TX

**B762/P1744** Localization of N-terminally arginylated beta-actin in mouse oocytes. S. Kurosaka1, T. Mltani1, Y. Hosoi1; 1Institute of Advanced Technology, Kindai University, Kainan, Japan

**B763/P1745** Sugar Cane Extract (SCE) influence steroidogenesis in the testicular interstitial cell of Japanese quail. S. Pu1,2, M. Mizu2, T. Furuta2, K. Nagaoka1,2, G. Watanable1,2; 1United Graduate School of Veterinary Sciences, Gifu University, Gifu, Japan, 2Department of Veterinary Medicine, Tokyo University of Agriculture and Technology, Tokyo, Japan, 2Research Development Division, Mitsui Sugar Co., Ltd., Tokyo, Japan

**B764/P1746** Patagonian blenny (Eleginops maclovinus) spermatozoa characterization and quality markers evaluation under chilling storage. P. Ulloa1, P. Contreras2, K. Dumorne1, M. Lee-Estevez1, E. Figueroa1, I. Valdebenito1, J. Risopatron1, J.G. Farías1; 1Chemistry Engineering, Universidad de La Frontera, Temuco, Chile, 2Center of Biotechnology in Reproduction (CEBIOR-BIOREN), Universidad de La Frontera, Temuco, Chile, 3School of Aquaculture, Catholic University of Temuco, Temuco, Chile

**B765/P1747** A Novel Centrosome Organizing Center Coordinates Mitosis, Meiosis and Cell Polarity in Early Oocyte Differentiation. Y.M. Elkoubi1, A. Jamieson-Lucy1, M.C. Mullins2; 1Developmental Biology and Cancer Research, The Hebrew University of Jerusalem, School of Medicine, Jerusalem, Israel, 2Cell and Developmental Biology, The University of Pennsylvania, Perelman School of Medicine, Philadelphia, PA

**B766/P1748** High saturated-fat diet induces hypercholesterolemia and impairs sperm motility in the Mongolian gerbil. A.C. Negrin1, M. Marcelo De Jesus1, M.E. Pinto-Fochi1, R.M. Góes1,2; 2Department of Structural and Functional Biology, University of Campinas (IB/UNICAMP), Campinas, Brazil, 1Department of Biology, State University of São Paulo (IBILCE/UNESP), Sao Jose do Rio Preto, Brazil

**Embryogenesis**

**B767/P1749** Focal adhesion proteins, vinculin and integrin β5, during early pregnancy in rat uterine epithelial cells: Anastrozole favors their normal distribution. A. Mwakkikunga1, G.A. Adelofalaju1, L. Schepartz1, M. Hosie1,2; 1Anatomical Sciences, University of the Witwatersrand, Johannesburg, South Africa, 2Pre-Clinical Sciences, University of Limpopo, Pietersburg, South Africa

**B768/P1750** Role of integrin-linked kinase in melanocyte development. M. Crawford1, L. Dagnino1; 1Physiology and Pharmacology, University of Western Ontario, London, ON

**B769/P1751** The role of Wolf-Hirschhorn Syndrome related genes in Xenopus development. A. Mills1, R. Cella1, F. Kim1, M. Selig1, L.A. Lowery1, S. Lee1; 1Biology, Boston College, Chestnut Hill, MA

**B770/P1752** Using Drosophila denticles as a model system to investigate the role of cytoskeletal proteins in the formation of actin-based protrusions. H. Majer1, B. Allen1, J.L. Salle1; 1Biology, North Central College, Naperville, IL

**B771/P1753** The role of spindel orientation in embryonic patterning. L.I. Rathbun1, X. Bai1, J.N. Bembenek1, J.D. Amack1, H. Hehly1; 1Cell and Developmental Biology, State University of New York Upstate Medical University, Syracuse, NY, 2Biochemistry Cellular and Molecular Biology, University of Tennessee at Knoxville, Knoxville, TN

**B772/P1754** Paternal chromosome loss in inviable Xenopus hybrids. R. Gibeaux1, M. Kitaoaka1, R. Heald1; 1Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA

**B773/P1755** DDX3 induces neural crest through activation of an Akt-Wnt signaling axis. M. Perfetto1,2, J. Li1,2, S. Weil1; 1Biological Sciences, University of Delaware, Newark, DE, 2Biology, West Virginia University, Morgantown, WV, 3Clinical Laboratory, Kuming University, Kuming, China

**B774/P1756** Vg1 ortholog Gdf3 is required for Nodal dependent developmental processes in zebrafish. J.L. Pelliccia1, G.A. Jindal1,2, R.D. Burdine1; 1Molecular Biology, Princeton University, Princeton, NJ, 2Chemical and Biological Engineering, Princeton University, Princeton, NJ

**B775/P1757** Drosophila Importin-7 is required for proper muscle attachment site formation. M.G. Zych1, E.R. Geisbrecht1, C. Liu1, N. Odell1, T. Sadikot1; 1Department of Biochemistry and Molecular Biophysics, Kansas State University, Manhattan, KS, 2Department of Cell Biology and Biophysics, University of Missouri-Kansas City, Kansas City, MO, 3Department of Biology, Washburn University, Topeka, KS

**B776/P1758** Using Xenopus laevis as a model for characterizing the function of C16orf52 during early embryonic development. M.C. Lasser1, J. Tiber1, C. Langdon1, R. Fuentes2, H.H. Zhang2, J.L. Sallee1; 1Biology, Pomona College, Chestnut Hill, MA, 2Biochemistry and Molecular Biology, Penn State University, State College, PA

**B777/P1759** Split top: A Maternal Regulator of Dorsal-Ventral Patterning and Cell Migration in Zebrafish. Y.G. Langdon1, R. Fuentes2, H.H. Zhang2, M.C. Mullins1; 1Biology, Millsaps College, Jackson, MS, 2Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA
B778/P1760 NLRP7’s Key Role in Primate Trophoblast Differentiation. A. Garipcan⁴, B. Ozicimen⁴, T. Onder⁵, N. Ozoren⁵; "Molecular Biology and Genetics, Bogazici University, Istanbul, Turkey, "School of Medicine, Koc University, Istanbul, Turkey

B779/P1761 microRNA cross regulation of gene regulatory network and signaling pathways. J.L. Song⁶, N.A. Stepecheva⁷; Biological Sciences, University of Delaware, Newark, DE

B780/P1762 MicroRNA regulation of Dishevelled in early embryonic development. N.F. Sampilo¹, N. Stepecheva⁷, S. Zaidi⁷, L. Wang⁸, W. Wu⁸, A. Wikramanayake⁷, J.L. Song⁶; "Biological Sciences, University of Delaware, Newark, DE, "Biological Sciences, University of Miami, Miami, FL

B781/P1763 Histone Abundance Adjusts the Timing of the Zygotic Genome Activation in Drosophila. H. Wilky⁹, S. Chari¹, A. Amodeo¹, ILSI, Princeton University, Princeton, NJ

B782/P1764 Identifying functional domains in the histone anchor Jobba. R.A. Stephenson¹, L. Chen¹, M. Johnson¹, M. Beller¹, M.A. Welte¹; "Department of Biology, University of Rochester, Rochester, NY, "Institute for Mathematical Modeling of Biological Systems, Heinrich Heine University Duesseldorf, Duesseldorf, Germany

B783/P1765 The functional and structural analysis of Drosophila robo2 in axon guidance. L.J. Howard¹, T.A. Evans¹; "Biological Sciences, University of Arkansas, Fayetteville, AR

B784/P1766 The role of MNL1 during neural crest cell developmental defects in mice. H. Noh¹, H. Kweon¹, s. Seo¹, M. Lee¹, G. Oh¹; "Life science, Ewha Womans University, Seoul, South Korea

B785/P1767 Role of Pep tidylglycine o-Amidating Monooxygenase in the Adaptive Plasticity of Embryonic Hatching in Zebrafish. R.T. Thomason¹,², D. Kumar³, J. Sloan³, J.D. Giftin³, R.E. Mains³,², B.A. Epper³,²; "Eugene Bell Center for Regenerative Biology and Tissue Engineering, Marine Biological Laboratory, Woods Hole, MA, "University of Virginia, Charlottesville, VA, "Molecular Biology and Biophysics, University of Connecticut Health Center, Farmington, CT, "Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA, "Neuroscience, University of Connecticut Health Center, Farmington, CT

B786/P1768 The effects of bisphenol A & alternatives, individually & in combination, on the development of Xenopus laevis (clawed frog). L. Thottumari¹, L.G. Chukrallah¹, F.S. Raleigh¹, L.H. Twersky¹; "Biology, Saint Peter’s University, Jersey City, NJ

B787/P1769 Physical and molecular mechanisms of cell cycle synchronization in early Drosophila embryos. V. Deneke¹, M. Vergassola², A. Puliatto², S. Di Talia²; "Cell Biology, Duke University, Durham, NC, "Physics, University of California of San Diego, San Diego, CA, "Oncology, IRCC, Turin, Italy

B788/P1770 Sperm Aster Growth and Dynamics during Pronuclear Migration. J.L. Meaders¹, R. Sean¹, D.R. Burgess¹; "Biology, Boston College, Chestnut Hill, MA

B779/P1771 Functional roles of hnRNPA2/B1 by RNA epigenetic modification in mammalian embryonic development. J. Kwon¹, Y. Jo¹, S. Namgoong¹; "Animal science, Chungbuk National University, Cheongju, South Korea

B790/P1772 The role of cadherin-based adhesions during trigeminal ganglia assembly. C. Wu¹, L.A. Tanehyill¹; "Animal and Avian Sciences, University of Maryland, College Park, MD

B791/P1773 Sonic hedgehog guides axons through release of a Dock-ELMO complex. S. Makihara¹,², S. Morin¹, J. Côté³,², P.T. Yam¹, F. Charron²,³,⁴; "Molecular Biology of Neural Development, Institut de Recherches Cliniques de Montréal, Montreal, QC, "Integrated Program in Neuroscience, McGill University, Montreal, QC, "Department of Anatomy and Cell Biology, McGill University, Montreal, QC, "Department of Medicine, University of Montreal, Montreal, QC, "Division of Experimental Medicine, McGill University, Montreal, QC

B792/P1774 Characterizing cell size dependent transcription with Xenopus embryos and cytoplasmic extracts. L.C. Einstein¹, H. Chen¹, M.C. Good²,³; "Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA, "Bioengineering, University of Pennsylvania, Philadelphia, PA

B793/P1775 Evolution of a morphogenesis pathway: comparative gastrulation studies in dipteran insects. K.R. Sullivan¹, S. Mathrani¹, F.Z. Gezahegn¹, W.S. Garrett¹, R.E. Hoang¹; "Biology Department, Haverford College, Haverford, PA

B794/P1776 Wolbachia infection status, embryo-wide distribution and subcellular localization patterns during early embryonic development in a variety of Drosophila species. M.A. Levine¹, M.L. Chien-Hale¹, M. Chenworth¹, R.M. Lewinson¹, J.H. Hofmann¹, J.T. Fingerut¹, S.P. McRoberts¹, R.E. Hoang¹; "Biology Department, Haverford College, Haverford, PA, "Department of Biology, Saint Joseph’s University, Philadelphia, PA

B795/P1777 Spatiotemporal Regulation of Zygotic Genome Activation During Early Embryogenesis. H. Chen¹, L.C. Einstein¹, M.C. Good²,³; "Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA, "Bioengineering, University of Pennsylvania, Philadelphia, PA

Tissue Development and Morphogenesis 1

B796/P1778 Characterization of epithelial cell rearrangements during lens placode invagination. N.S. Housin¹, T.F. Plageman¹; "Optometry, Ohio State University, Columbus, OH

B797/P1779 Determining how cellular phase transitions partition the myotube cytoplasm. J.A. Smith¹, S. Dundon², A.S. Gladfelter²; "Biology, The University of North Carolina at Chapel Hill, Chapel Hill, NC, "Cellular Developmental Biology, Yale University, New Haven, CT

B798/P1780 Exploring Posterior Growth in D. rerio Using a Live Cell Cycle Biosensor. E. Feiner³, R. Marabito³, A.G. Kohrman¹, B.L. Martin¹, D.Q. Matus¹; "Biochemistry and Cell Biology, Stony Brook University, Stony Brook, NY, "Horse Mann Mid Upper School, Bronx, NY

B799/P1781 The role of polycomb group ring finger 5 (Pcg5) in pressure overload hypertrophy. J. Jang¹, S. Seo¹, C. Lim¹, G. Oh¹; "Department of Life Sciences, Ewha Womans University, Seoul, Korea, "South Korea

B800/P1782 A fluorescence based cell cycle state biosensor in C. elegans and its use in characterizing cell cycle state during vulval morphogenesis. A.Q. Kohrman¹, D.Q. Matus¹, W. Zhang¹; "Biochemistry and Cell Biology, Stony Brook University, Stony Brook University, NY

B801/P1783 Myocardial-specific functions of Jarid2 in the heart. E. Cho¹, M.R. Mysliwiec¹, C.D. Carlson¹, A.Z. Ansari¹, R.J. Schwartz¹, Y. Lee¹; "Cell and Regenerative Biology, University of Wisconsin-Madison, Madison, WI, "Trinity Christian College, Palos Heights, IL, "Biochemistry, University of Wisconsin-Madison, Madison, WI, "Biology and Biochemistry, University of Houston, Houston, TX

B802/P1784 The Micropeptide Myomixer Controls Cell Fusion and Skeletal Muscle Formation. P. Bi¹, A. Ramirez-Martinez², H. Li¹, J. Cannavo¹, J. McAnally¹, J. Shelton¹, E. Sanchez-ortiz¹, R. Bassel-Duby¹, E.N. Olson¹; "Molecular Biology, University of Texas Southwestern Medical Center, Dallas, TX

B803/P1785 Tks5-Mediated Podosome Formation Governs Mammalian Myoblasts Fusion. M. Chuang¹, Y. Liu¹; "Institute of Molecular Medicine, College of Medicine, National Taiwan University, Taipei, Taiwan
B804/P1786 Acetylated Microtubule Regulates TGF-β1-induced Myofibroblast Acquisition on Soft Extracellular Matrix Environment. E. You1, J. Lee1, J. Jeong1, S. Keum1, J. Kim2, S. Rhee1. Life science, Chung-Ang University, Seoul, Korea

B805/P1787 Orchestrating regeneration: orthogonal subsets of muscle fibers have different instructive roles in restoring the planarian body plan. L.E. Cole1,2,3, M.I. Scimone1,2,3, P.W. Reddien1,2,3. Biology, MIT, Cambridge, MA, 1Howard Hughes Medical Institute, Chevy Chase, MD, 2Whitehead Institute for Biomedical Research, Cambridge, MA

B806/P1788 Deciphering Heart Regeneration by Histone Exchange Profiling. J.A. Goldman1, G. Kuzu2, N. Lee1, J. Karra1, A. Dickson1, M.Y. Tolstorukov1, K.D. Poss1. Cell Biology, Duke University Medical School, Durham, NC, 1Department of Biology, Massachusetts General Hospital, Boston, MA

B807/P1789 Preterm birth compromises cerebellar development: evidence from a pig model. I. Iskusnykh1, R. Buddington2, A. Zakharaeva1, L. Mukhatetzyanova1, V. Chizhikov1. Department of Anatomy and Neurobiology, University of Tennessee Health Science Center, Memphis, TN, 2Department of Neuroscience and Genetics, University of California, Berkeley, Berkeley, CA, 3Department of Physics, California Institute of Technology, Pasadena, CA, 4Max Planck Institute for Developmental Biology, Tübingen, Germany

B808/P1790 Identification of novel transcription factor in the generation of mid-brain during embryo development: Application of alternative transcription factor binding site-prediction method. Y. Shin1, J. Kang1, Y. Lee1, K. Kim1, H. Lee2. General Medical Research Institute, CHA Bundang Medical Center, Bundang, South Korea, 1Biomedical Research Institute, Seoul National University Hospital, Seoul, South Korea

B809/P1791 A genetic screen for morphogenesis-defective in Caenorhabditis elegans. M.C. Jud1, J. Lowry1, T. Padilla1, A. Miller1, H. Shao1, Z. Bao1, B. Bowerman1. 1Institute of Molecular Biology, University of Oregon, Eugene, OR, 2Developmental Biology, Memorial Sloan Kettering Cancer Center, New York, NY

B811/P1793 Cardiac transcriptome profiling during regeneration in zebrafish. D.A. Zuppo1, M.A. Missinato1, R.A. DeMoya1, M. SaydMohammed1, M. Tsang1. Department of Molecular Genetics and Developmental Biology, University of Pittsburgh, Pittsburgh, PA

B812/P1794 Understanding the molecular basis of human craniofacial disorders using Caenorhabditis elegans as a model organism. A.A. Alsusabi1, A.K. Corsi1. 1Department of Biology, The Catholic University of America, Washington, DC

B813/P1795 Breaking Hertwig’s Rule in the Drosophila Follicular Epithelium. T.M. Finegan1, D. Na2, A.V. Skeeters1, N.S. Dawney1, P.W. Oakes1, A.G. Fletcher1, D.T. Bergstrahl1. 1Department of Physiology, Development and Neuroscience, University of Cambridge, Cambridge, United Kingdom, 2Department of Biomedical Genetics, University of Rochester Medical Center, Rochester, NY, 3Department of Physics, Astronomy, University of Rochester, Rochester, NY, 4Department of Biology, University of Rochester, Rochester, NY, 5School of Mathematics and Statistics, University of Sheffield, Sheffield, United Kingdom

B814/P1796 Wnt Signaling in Migratory Neural Crest Cells In The Chick Spinal Cord. S.M. Goodfellow1, F.R. Santana1, L.M. Galli1, L.W. Burris1. Biology Dept, San Francisco State University, San Francisco, CA

B815/P1797 Mask and Yorkie are required for cell adhesion in the Drosophila retina. M.W. DeAngelis1, R.J. Johnson1. Biology, Wesleyan University, Middletown, CT

B816/P1798 Quantitative analysis of the contribution of apical constriction to neural tube closure. A.T. Baldwin1, J.B. Wallingford1. 1Molecular Biosciences, University of Texas at Austin, Austin, TX

B817/P1799 C-cadherin is required for localization of actomyosin contractility machinery during convergent extension. R.J. Huebner1, J.B. Wallingford1. Molecular Biosciences, University of Texas at Austin, Austin, TX

B818/P1800 Hedgehog signaling constrains cell movements during early eye development. S. Lusk1, H.B. Gordon1, E.O. Wirrick1, B. Froelich1, K.M. Kwan1. Human Genetics, University of Utah, Salt Lake City, UT

B819/P1801 Fetal programming and induction of inflammatory response in the gerbil prostate caused by n-6 fatty-acid intake from corn oil. M. Marcielo De Jesus1, A.C. Negrin1, R.M. Goes1. 1Department of Functional and Structural Biology, University of Campinas (IB/UNICAMP), Campinas, Brazil, 2Department of Biology, State University of São Paulo (IBILCE/UNESP), São José do Rio Preto, Brazil

B820/P1802 Mouse trophoblast lineage development requires Smad4-dependent signaling. J. Guo1, Y. Chen1. Neuroscience Center, University of North Carolina-Chapel Hill, Chapel Hill, NC, 2Dept. Biological Sciences, Kent State University-Trustbull, Warren, OH

B821/P1803 An antibacterial mechanism of bac8c via apoptosis-like response on Escherichia coli. H. Lee1, D. Lee1. 1School of Life Sciences, Kyungpook National University, Daegu, South Korea

B822/P1804 Understanding Role of VraT in Methicillin-Resistant Staphylococcus aureus. C.E. Wilson1, V.A. Segarra1, A. Sarkar1. Biology, High Point University, High Point, NC

B825/P1805 Apple cider vinegar changes Escherichia coli pathogenic protein expression profiles and curbs infected leucocyte cytokine secretion. D. Yagnik1, V. Serafin1, A. Shah1. 1Natural sciences, Middlesex University, London, United Kingdom

B826/P1807 The effects of acetic acid on biofilm formation and wound healing using a zebrafish model. A. Blake1, M. Belauzanar1, B. Schoffstall1. Department of Biology, Barry University, Miami, FL

B827/P1808 FZlA, an essential regulator of FtsZ filament curvature, controls constriction during Caulobacter division. P.J. Lariviere1, P. Szwedziak2,3, J. Löwe1. 1Biological Chemistry, Johns Hopkins University School of Medicine, Baltimore, MD, 2Structural Studies Division, MRC Laboratory of Molecular Biology, Cambridge, United Kingdom, 3Institute of Molecular Biology and Biophysics, ETH Zürich, Zürich, Switzerland

B828/P1809 Spatial-temporal regulation of bacterial cell division machinery by FtsZ treading dynamics. X. Yang1, Z. Lyu1, R.J. Quillen1, J. Mccausland1, J. Xiao1. Department of Biophysics, Biophysical Chemistry, Johns Hopkins University, School of Medicine, Baltimore, MD

B829/P1810 Dual labeling of bacterial peptidoglycan and tubulin FtsZ to study bacterial cell division. H. Liang1, X. Yang2, J. Xiao2, C.L. Grimes1. 1Chemistry and Biochemistry, University of Delaware, Newark, DE, 2School of Medicine, Johns Hopkins University, Baltimore, MD

B830/P1811 Mechanical strain sensing implicated in cell shape recovery in Escherichia coli. F. Wong1, L.D. Renner2,3, G. Žobaykal1, J. Paulese1, D.B. Weibel1,6, S. van Teeffelen4, A. Amir1. 1School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, 2Max Bergmann Center of Biomaterials, Leibniz Institute of Polymer Research, Dresden, Germany, 3Department of Biochemistry, University of Wisconsin-Madison, Madison, WI, 4Department of Microbiology, Institut Pasteur, Paris, France, 5Departments of Physics and Integrative Biology, University of California, Berkeley, Berkeley, CA, 6Department of Biomedical Engineering, University of Wisconsin-Madison, Madison, WI
B831/P1812 Brownian ratchet mechanism for faithful segregation of low-copy-number plasmids. L. Hu¹, A.G. Vecchiarelli², K. Mizuchi³, K.C. Neuman¹, J. Liu¹; ¹National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD; ²Department of Molecular, Cellular, and Developmental Biology, University of Michigan, Ann Arbor, MI; ³National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Bethesda, MD

B840/P1821 Strong Antimicrobial Activity Displayed By Newly Synthesized Hydroxyamic Acids And Their Derivatives. S. Dosanjh¹, J. Klinkerth¹, C. Ellainham¹, R. Asarian¹, M. Bendaoud²; ¹Biology, New Jersey City University, Jersey City, NJ

B841/P1822 Discovery of a Marine Bacteria with a Wide Spectrum Anti-Bacterial Activity. J. Klinkerth¹, S. Dosanjh¹, C. Ellainham¹, M. Bendaoud²; ¹Biology, New Jersey City University, Jersey City, NJ

Protists and Parasites

B842/P1823 Plasmodium falciparum GPCR-like receptor SR25 mediates extracellular K+ sensing coupled to Ca2+ signaling and stress survival. M.S. Morais¹, A. Budi¹, M.K. Singh¹, L. Borges Pereira¹, J.C. Levano Garcia¹, T. Pozzan², C.R. Garcia¹; ¹Physiology, University of Sao Paulo, Sao Paulo, Brazil; ²Scienze Biomediche, Università di Padova, Padova, Italy

B845/P1826 Adc26 homolog is required for completion of oral development during regeneration and cell division in the giant ciliate Stentor coeruleus. S.B. Reiff³, W.F. Marshall¹; ¹Biochemistry & Biophysics, UCSC, San Francisco, CA

B846/P1827 The localization and functional analysis of a novel centrin (TgCentrin2) in human pathogen Toxoplasma gondii. J. Liu¹, J.M. Murray¹, L. Florens³, K. Hu¹; ¹Biology, Indiana University Bloomington, Bloomington, IN; ²Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA; ³Stowers Research Institute, Kansas City, MO

B847/P1828 The activity and function of TgDCX, a component of non-tubular tubulin polymers in the human parasite, Toxoplasma gondii. E. Nagayasu¹, Y. Hwang², J.M. Leung³, L. Wu³, P.G. Pierce⁴, J.M. Murray¹, K. Hu¹; ¹Department of Infectious Diseases, University of Miyazaki, Miyazaki, Japan; ²Nikon Instruments Inc, Melville, NY; ³Biology, Indiana University Bloomington, Bloomington, IN; ⁴Seattle Structural Genomics Center for Infectious Disease, Seattle, WA; ⁵Beryllium Discovery, Seattle, United States

B848/P1829 Deciphering the role of proteasomal machinery in phagocytosis in Entamoeba histolytica. R. Kumari¹, S. Tiwari¹; ¹SCHOOL OF BIOTECHNOLOGY, JAWAHARLAL NEHRU UNIVERSITY, NEW DELHI, India

B849/P1830 Temporal and Spatial Prevalence of Giardia lamblia in Crassostrea virginica, and Geukensia demissa Collected from Orchard Beach and Soundview Park, NY from 2014 to 2016. J. Limonta¹, N. Dolce¹, M. Ng¹, G. Mayer¹; ¹Biology, Manhattan College, Riverdale, NY

B850/P1831 Parasites as an Alternative Model for Lipid Metabolism: Gene Expression Analysis of an Oyster Parasite Perkinsus marinus during Lipid Starvation. K.M. Noell², J.S. Pitula³; ²Department of Natural Science, University of Maryland Eastern Shore, Princess Anne, MD

B851/P1832 Farnesol inhibits both translation initiation and morphological differentiation in the human fungal pathogen, Candida albicans. N.E. Egbe¹, I.M. Asie¹; ¹Biology, University of Miyazaki, Miyazaki, Japan, ²Nikon Instruments Inc, Melville, NY, ³Biology, Indiana University Bloomington, Bloomington, IN; ⁴Fisiologia, Instituto de Biociencias, Universidade de São Paulo, São Paulo, Brazil; ⁵Department of Parasitology, National Institute of Infectious Diseases, Tokyo, Japan; ⁶Department of Biological Chemistry, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan; ⁷Department of Parasitology, National Institute of Infectious Diseases, Tokyo, Japan; ⁸Graduate School of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan; ⁹Biotechnology Research Institute for Drug Discovery, National Institute of Advanced Industrial Science and Technology, Tokyo, Japan
B855/P1836 A prospective lipid import mechanism of Plasmodium falciparum in erythrocytes stages. E.H. Hayakawa1, H. kato1, H. Matsuoka1, M. Mori2; 1Division of Med. Zoology, Dept. of Infection and Immunity, Jichi Medical University, Shimotsuke, Japan, 2Div. of Therapeutic Pharmacology & Cell Biological Pathology, Chiba Institute of Science, Choshi, Japan

B856/P1837 MicroRNA dynamics in oligodendrocytes in the context of autoimmune demyelination. A. Didonna1, J.R. Oksenberg2; 1Department of Neurology, University of California San Francisco, San Francisco, CA

B858/P1838 TRPV2 participates in T-independent B cell responses through the modulation of membrane potential. M. Zhao1, Y. Fang1, Z. Shen1, H. Wang1, Y. Xie1, M.J. CATERINA1, W. Liu2; 1School of life science, Tsinghua University, Beijing, China, 2School of Medicine, Johns Hopkins University, Baltimore, MD

B859/P1839 A novel IgG1 variant associates with autoimmune disease and modulates autoreactive B cell fate decision. X. Chen1, B. Yang1, S. Chen1, L. He1, X. Sun2, W. Yang1, W. Liu1; 1School of Life Sciences, Tsinghua University, Beijing, China, 2Department of Rheumatology and Immunology, Peking University People’s Hospital, Beijing, China

B860/P1840 Hepatokine induction mediates anti-inflammatory actions of Colchicine. J. Weng1, R. Jiang1, H. Tu1, T.J. Mitchison1; 1Department of Systems Biology, Harvard Medical School, Boston, MA, 2Alynylam Pharmaceuticals, Inc, Cambridge, MA

B861/P1841 Haploid genetic screens identify novel regulators of cell interaction and degradation during cytotoxic lymphocyte-mediated cell death. B.L. Monasché1, E.M. Davis1, J. Shen1; 1Molecular, Cellular, and Developmental Biology, University of Colorado Boulder, Boulder, CO

B862/P1842 Characterization of human immune cell survival and functionality in Danio rerio. C.D. Paul1, K. Tanner1; 1Laboratory of Cell Biology, National Cancer Institute, Bethesda, MD

B863/P1843 Triclosan alters the secretion of Tumor Necrosis Factor alpha from human immune cells. S.Z. Jamal1, W.J. Wilbur2, M.M. Whalen1; 1Chemistry, Tennessee State University, Nashville, TN, 2Biology, Tennessee State University, Nashville, TN

B864/P1844 Exposure of human immune cells to triclosan alters the secretion of Interferon gamma. F.A. Ismail1, W.J. Wilbur2, M.M. Whalen1; 1Chemistry, Tennessee State University, Nashville, TN, 2Biology, Tennessee State University, Nashville, TN

B865/P1845 Sodium bicarbonate is the factor in culture media that potentially regulates nitric oxide production in a mouse macrophage-like cell line, J774.1 cells, treated with LPS and IFNγ. T. Kawakami1, A. Koike1, F. Amano1; 1Laboratory of Biodefense and Regulation, Osaka University of Pharmaceutical Sciences, Osaka, Japan

B866/P1846 Mild electrical stimulation with heat shock ameliorates inflammation in immunqmod-induced psoriasi model. Y. Tsurekawa1, Y. Nakano1, M. Morita1, M. Morichii1, M. Piruzyan1, M. Takada1, M. Suico1, T. Shuto1, H. Kai1; 1Molecular medicine, Kumamoto University, Kumamoto, Japan

B867/P1847 IMPDH filament formation in human T cell activation. S.J. Calise1, E.K. Chan1; 1Oral Biology, University of Florida, Gainesville, FL, 2Anatomy and Cell Biology, University of Florida, Gainesville, FL

B868/P1848 HIV-1 gp120 HI/67/HIV-1 gp120, APL -mediated human α7-nAChR’s up-regulation in macrophages and its implications in the cholinergic anti-inflammatory response (CAR). S. Cotto-Ríos1, M. Delgado-Vélez2, J.O. Colón-Saéz2, O. Quesada1, J.A. Lasalde-Dominicci1, 2; 1Department of Chemistry, University of Puerto Rico-Rio Piedras Campus, San Juan, PR, 2Department of Biology, University of Puerto Rico-Rio Piedras Campus, San Juan, PR, 3Department of Pharmaceutical Sciences, University of Puerto Rico Medical Science Campus, School of Pharmacy, San Juan, PR, 4Department of Physical Sciences, University of Puerto Rico-Rio Piedras Campus, San Juan, PR

B869/P1849 HLA-DR in PMNs in autologous culture of total human leukocytes with positive serology for Chagas disease stimulated with LPS. F.M. Rodriguez1, R. Riner1, M.V. Reyna1, A.H. Vargas2, C.L. Carabajal-Miotitl3, N.E. Gonzalez-Silva3, S. Ruiz de Frattari1, I.T. Novak1; 1Institute of Cell Biology, Faculty of Medical Sciences, National University of Cordoba, Cordoba, Argentina, 2Institute of Hematology and Hemotherapy, National University of Cordoba, Cordoba, Argentina

B870/P1850 Fast (CD95) signaling pathway is involved along with BAG-1M in the regulation of Hsp70-mediated chaperoning of pAKC under pro-inflammatory conditions. A. Mashukova1, R. Forteza2, P.J. Salvat2; 1College of Medical Sciences, Nova Southeastern University, Fort Lauderdale, FL, 2Dept. of Cell Biology, Univ. of Miami Miller School of Medicine, Miami, FL

B871/P1851 Exploring the Role of Macrophages in Pregnancy Using a Rat Model System. G. Mishra1, A. Nguyen2, N. Nawaz3, B. Hussain4, E. Lee5, V. Yau5, S.J. Bacon5, 2; 1Department of Biochemistry, Mount Holyoke College, South Hadley, MA, 2Department of Biological Sciences, Mount Holyoke College, South Hadley, MA, 3Department of Sleep Medicine, Brigham and Women’s Hospital, Boston, MA, 4Rollins School of Public Health, Emory University, Atlanta, GA, 5College of Medicine, University of Arizona, Tucson, AZ, 6Department of Neuroscience and Behavior, Mount Holyoke College, South Hadley, MA

B872/P1852 Expansion of His48+CD11b/c+ myeloid cells in rats after vanadium and chromium salts administration. M.K. Balabekova1, A.N. Tokushova1, Y. Ostapchuk1, N. Abdolla1, R. Tukhvatshin1; 1Department of Pathophysiology, Askendiyarvo Kazakh National Medical University, Almaty, Kazakhstan, 2Laboratory of Molecular Immunology and Immunobiotechnology, M.A.Altkhuzhin’s Institute of Molecular Biology and Biochemistry, Almaty, Kazakhstan, 3Department of Pathophysiology, Krygzt State Medical Academy named after I.K. Askhunbaev, Bishkek, Kyrgyzstan

B873/P1853 NT-07-16 reduces NF-kB signaling in RAW264.7 macrophages. A. Gonye1, S.P. Gilmore1, S. Espinoza de Los Reyes1, E.C. Li1, M.M. Brown1, J.T. Gupton2, O.A. Quintero1, K. Fischer-Stenger1; 1Biological, University of Richmond, Richmond, VA, 2Chemistry, University of Richmond, Richmond, VA

B874/P1854 Induction of M2 regulatory macrophages through β-adrenergic receptor signaling in the RAW264.7 macrophage cell line. A.H. Pham1, E.C. Gonye1, L. Ward-Kavanagh1, J.K. Stewart1, K. Fischer-Stenger1; 1Biological, University of Richmond, Richmond, VA, 2Biological, Virginia Commonwealth University, Richmond, VA

B875/P1855 Asaronic acid ameliorates atherosclerotic inflammation by polarizing M1 macrophages to M2-like macrophages. H. Oh1, Y. Kang2; 1Food science and Nutrition, HALLYM UNIVERSITY, Chuncheon, Kangwon-do, SUNDAY
Monday Poster Session
Learning Center, Exhibit Halls C-E

Poster Set Up
Sunday 6:00–6:30 pm

Posters Displayed
Sunday 6:30–8:00 pm
Monday 7:30 am–5:30 pm

Author Presentation
Odd Boards 12:00–1:30 pm
Even Boards 1:30–3:00 pm

Poster Tear Down
Monday 5:30–6:00 pm

Board Numbers Session Titles
B1-B26 Science Education 2 B477-B487 Neuronal Degeneration - ALS, HSP, and SCA
B28-B38 New Techniques in Genomics and Proteomics B488-B493 Neuronal Signal Transduction, Cell-Cell Interactions
B58-B86 Actin and Actin-Associated Proteins B509-B530 Establishing and Maintaining Organelle Structure 2
B87-B101 Regulation of Actin Dynamics 1 B531-B555 Mitochondrial Metabolism and Physiology
B102-B111 Actin-Membrane Interactions B556-B572 Cellular Lipid Metabolism and Membrane Dynamics
B112-B126 Kinesins 1 B574-B590 Kinases and Phosphatases 2
B128-B142 Tubulin and Associated Proteins B591-B608 Signaling Receptors (RTKs and GPCRs)
B143-B155 Microtubules and Cell Division B609-B628 Cytoskeleton-Membrane Interactions: Septins
B157-B172 Assembly and Disassembly of Cilia/Flagella 2 B630-B653 Cytokinesis 1
B173-B192 Sensory and Signaling Functions of Cilia B654-B668 Cell-Cell Interactions
B194-B216 Kinetochore Assembly and Functions 2 B669-B683 Tumor Suppressors and Regulation of Oncogenes
B236-B252 Spindle Assembly 2 B684-B695 Tumor Invasion and Metastasis 2
B253-B267 G1, G1-S, and S Phase Regulation B696-B704 Tissue Mechanics
B269-B282 Tumor Suppressors and Regulation of Oncogenes B705-B717 Biophysical Approaches to Cell Biology
B283-B306 Tumor Invasion and Metastasis 2 B718-B725 Chromatin and Chromosome Organization
B307-B335 Cancer Therapy: Novel Techniques and Therapeutics B726-B730 Epigenetics and Chromatin Remodeling
B336-B350 Tumor Microenvironment 1 B731-B741 Nucleocytoplasmic Transport
B352-B361 Chromatin and Chromosome Organization B742-B751 The Nuclear Envelope and Nuclear Pore Complexes 1
B362-B373 Epigenetics and Chromatin Remodeling B752-B762 Membrane Fission and Coat Proteins
B375-B390 Nucleocytoplasmic Transport B763-B777 Membrane Fusion and Coat Proteins
B391-B413 The Nuclear Envelope and Nuclear Pore Complexes 1 B778-B790 Rab GTases
B415-B420 Membrane Fission and Coat Proteins B791-B805 Endocytic Trafficking 1
B421-B435 Rab GTases B806-B820 Establishment and Maintenance of Polarity
B436-B457 Endocytic Trafficking 1 B821-B831 Therapies: Design and Mechanisms for Normal and Diseased Organs 1
B459-B475 Establishment and Maintenance of Polarity

**Poster Presentation Guidelines**

- Presenters should ensure their posters are placed on the appropriate poster board for the duration of their assigned poster session and viewing. Please use the number starting with “B” for your poster board.
- Poster presenters should stand at their poster locations during the appropriate 90-minute time slot—odd board numbers, 12:00-1:30 pm or even board numbers, 1:30-3:00 pm. The specific time slot is included in the original poster notification emails sent on October 30. If presenters have to leave early, they should post a note on their boards with contact information or stating when they will be available to answer attendee questions.
- **IMPORTANT!** Poster presenters are solely responsible for placing and removing their poster according to the schedule provided above. If you are unable to set up your poster the evening before your session, please do so the morning of your presentation.
- Poster presenters should not leave any items unattended at their poster board, including poster tubes, meeting bags, Programs, Poster Guides, personal items, etc. The ASCB and EMBO are not responsible for any items left in the Learning Center.
- Cameras/Photography: Cameras and all other recording devices are strictly prohibited in all session rooms, in the Learning Center, and in all poster and oral presentation sessions.
Science Education 2

B1/P1865 Science Communication: A new writing exercise to highlight STEM literacy. M.T. Juarez1; 1Biomedical Education, City College of New York, New York, NY

B2/P1866 How Instructors Can Enhance Biology Students' Motivation, Learning, and Grades Through Brief Relevance Writing and Worked Examples Interventions. K. Mara1, A. Kaplan2, M.A. Balsai1, J.G. Cromley1, T. Perez2, T. Dafl3, Y. Davidson2; 1Biology, University of Southern Indiana, Evansville, IN, 2Psychological Studies in Education, Temple University, Philadelphia, PA, 3Biology, Temple University, Philadelphia, PA, 4Educational Psychology, University of Illinois Urbana-Champaign, Champaign, IL, 5Educational Foundations Leadership, Old Dominion University, Norfolk, VA, 6Educational Psychology, University of Illinois at Chicago, Chicago, IL

B3/P1867 Integration of Student-Led Independent Research Experiences in a Senior-Level Biotechnology Laboratory Course. J.A. Jordan1, Q.N. Robinson1, R.E. McFarlane1; 1Department of Biology, Clayton State University, Morrow, GA

B4/P1868 Cellular Construction Workshop – Modeling Cells as Biological Machines. J. Allen1, V. Srivastava1, R. Smith1; 1Science Health Education Partnership, University of California San Francisco, San Francisco, CA, 2Pharmacological Chemistry, University of California San Francisco, San Francisco, CA

B5/P1869 Broadening Interest in STEM in High School Students through Foldscope-Based Interdisciplinary Activities. Q.L. Aoh1, A. Schmitz1, N. Conklin1; 1Biology, Gannon University, Erie, PA, 2Biomedical Engineering, Gannon University, Erie, PA, 3Physics, Gannon University, Erie, PA

B6/P1870 Science, Biotechnology and Society, an active learning course for non-STEM undergraduates: A comparative study between first year and higher level students in term of their outcomes. G. Arroyo1, A. Gomez2, G. Ayarza1, R. Trinidad1, C. Ayarza1; 1Biological Sciences Department, University of Puerto Rico, San Juan, PR

B7/P1871 Light, Imaging, Vision: An interdisciplinary undergraduate course. P. Nelson1; 1Physics, Univ. Pennsylvania, Philadelphia, PA

B8/P1872 Use of community service projects in an introductory non-majors biology class. F. Norfus1, A. Miller1; 1Biology, Clayton State University, Morrow, GA, 2Psychology, Clayton State University, Morrow, GA

B9/P1873 Using animation to improve student learning of difficult concepts in undergraduate biology classrooms. J.P. Chan1, L.V. Palulis1; 1Biology, Juniata College, Huntingdon, PA, 2Biology, Bucknell University, Lewisburg, PA

B10/P1874 Formative evaluation of active-learning activities in the cell biology classroom. K.M. Cooper1; 1Biology, Loras College, Dubuque, IA

B11/P1875 Developing Future Biologists: creating and assessing a portable short course to engage underrepresented students in developmental biology. J.M. Pinskey1, E.A. Dulka2, S. Barolo2; 1Cell and Developmental Biology, University of Michigan, Ann Arbor, MI, 2Molecular and Integrative Physiology, University of Michigan, Ann Arbor, MI

B12/P1876 Development of a learning progression on cellular membranes and transport mechanisms for high school through undergraduate students. M.L. Aranda1, S. Guzey1,2; 1Biological Sciences, Purdue University, West Lafayette, IN, 2Curriculum and Instruction, Purdue University, West Lafayette, IN

B13/P1877 Promoting Leadership Development Within Undergraduate STEM Curricula. L.F. Barton1, K.S. McCain1; 1Biology Department, Austin College, Sherman, TX, 2Institutional Effectiveness, Austin College, Sherman, TX

B14/P1878 Learning in Large Introductory Biology Courses is Effectively Facilitated by Trained Undergraduate Learning Assistants. R.P. Donaldson1; 1Biological Sciences, George Washington University, Washington, DC

B15/P1879 Assessing the Effectiveness of Student Learning and Engagement in a Content Heavy Flipped Class. J.W. Monen1; 1Biology, Ramapo College of New Jersey, Mahwah, NJ

B16/P1880 A Flipped Classroom Approach in a Sophomore-Level Cell Biology Course to Enhance Concept Integration and Critical Thinking Skills. K.W. Adams1; 1Biological Sciences, Bridgewater State University, Bridgewater, MA

B17/P1881 The Effects of In-Class Group Problem Solving Sessions on Student Learning and Study Behaviors and Attitudes in Biochemistry. E. Fisher1, M. Reese2, K. Tift1; 1Department of Biology, Johns Hopkins University, Baltimore, MD, 2Center for Educational Resources, Johns Hopkins University, Baltimore, MD

B18/P1882 Building a core scaffold to achieve a real understanding of the cell by medical students. A. Garcia de Galdeano1, N. Andollo1; 1Cell Biology and Histology, University of the Basque Country UPV-EHU, Leioa, Spain

B19/P1883 Graduate Students in a Hybrid Histology and Cell Biology Course. H.M. Tavangar1, G. Butera1, L. Friedman1, A. Ren1, R.A. Jurjus1; 1Department of Anatomy and Regenerative Biology, George Washington University, Washington, DC

B20/P1884 Benefits of adaptive online learning modules. C. Priano1, L. Jayant1; 1Science, Borough of Manhattan Community College, New York, NY

B21/P1885 MAMS - a cell biology and interprofessional education rich bridge program to health professional school. M.A. Taylor1,2; 1Biomedical Sciences, Pacific Northwest University of Health Sciences, Yakima, WA, 2Science, Heritage University, Toppenish, WA

B22/P1886 Engaging community college students in an inquiry-based learning experience using NIH IRACDA postdocs expertise. C. Inda1, S.K. Donnelly2, N. Nunez Rodriguez1, T. Tomita1, E. Steidle1; 1Natural Science Dept, Hostos Community College, City University of New York, New York City, NY, 2Anatomy and Structural Biology, Albert Einstein College of Medicine, New York City, NY

B23/P1887 Bio-Bridge: A Research and Study Skills Bridge Program for Transfer Students. J. Hurst-Kennedy1, C. Achat-Mendes1, R. Simmons1; 1School of Science and Technology, Georgia Gwinnett College, Lawrenceville, GA

B24/P1888 The SIE Program: Supporting Inclusive Excellence in Biology, Biochemistry, and Neuroscience. C.B. Favero1, K.A. Goddard1, J.E. Round1,2, R.E. Kohn1,2; 1Biology Department, Ursinus College, Collegeville, PA, 2Neuroscience Program, Ursinus College, Collegeville, PA

B25/P1889 Yale Ciencia Academy: Leveraging a Hispanic Science Network to Enhance Graduate Biomedical Training, Career Success, and Diversity. G. Guerrero-Medina1,2, M. Feliu-Mojer1,4; 1Office of Diversity and Inclusion, Yale University School of Medicine, New Haven, CT, 2Ciencia Puerto Rico, San Juan, PR, 3Biology, San Francisco, CA, 4University of California, San Francisco, San Francisco, CA

B26/P1890 Academic boot-camps for undergraduate anatomy and physiology and introductory biology courses: paving pathways for student success. J.V. Ellison1, A.L. Dell1; 1Health Science, Mercy College, Dobbs Ferry, NY, 2Biology, St. Francis College, Brooklyn, NY

New Techniques in Genomics and Proteomics

B28/P1891 Predicting the cumulative output of biomedical research. T. Stoeger1,2, M. Gerlach1, R.I. Morimoto4, L.A. Amaral1,2; 1Center for Genetic Medicine, Northwestern University, Chicago, IL, 2Institute on Complex Systems, Northwestern University, Evanston, IL, 3Chemical and Biological Engineering, Northwestern University, Evanston, IL, 4Molecular Biosciences, Northwestern University, Evanston, United States

B29/P1892 Genome editing using linear DNA donors enables one-step GFP tagging without cloning or selection. A. Paix1, A.W. Folkmann1, D.H. Goldman1, D. Rasolon1, S. Paidey1, M. Grzelak1, H. Kulaga1, R. Green1, R.R. Reed1, G. Seydoux1; 1Molecular Biology and Genetics, HHMI, Johns Hopkins University, School of Medicine, Baltimore, MD
B30/P1903 Development of a pharmaco-proteomics platform for monitoring changes in thrombin-mediated signaling and aggregation of human platelets treated with dabigatran. J. Gonzalez1, A. Babinska2, M. Dziembatowska1, E. Ewul1, E. Timpo2, M.O. Saliu2, C.C. Clemente5,6; 1Department of Natural Sciences, LaGuardia Community College, Queens, NY, 2Division of Nephrology, Department of Medicine, State University of New York, Downstate Medical Center, Brooklyn, NY, 3Biological Mass Spectrometry Core Facility, University of Colorado Denver, Aurora, CO, 4Chemistry, Lehman College CUNY, Bronx, NY, 5Pathology, Albert Einstein College of Medicine Inc, Bronx, NY

New Technologies in Cell Biology: Education, Public Engagement, and General

B39/P1902 Quorum: Crowdsourcing image tracing through an engaging painting game. J.H. Iwasa1, K. Santiago1, J. Lin1; 1Biochemistry, University of Utah, Salt Lake City, UT

B41/P1904 The NIH Common Fund’s Extracellular RNA (exRNA) Communication Program. L. Kuo1; 1National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, VA

B2/P1905 Towards an Open-Access 3D Brain Cell Atlas: The BRAIN Initiative Cell Census Network. B. Singh1, Y. Yao2, M. Freund1, A. Beckel-Mitchener1; 1National Institute of Mental Health, NIH, Rockville, MD

B44/P1907 Toward the creation of the first 3D image-based data collection of drug induced signatures of endogenous fluorescently tagged human induced pluripotent stem cells lines. AICS Team1; 1Allien Institute for Cell Science, Seattle, WA

B45/P1908 Label-free psychographic imaging reveals a role for VGSV-mediated membrane potential depolarisation in enhancing the migratory capability of breast cancer cells. R. Suman12, M. Yang1, A. Glen1, W. Brackenbury1; 1Department of Biology, University of York, York, United Kingdom, 2Biological Applications, Phasefocou Ltd, Sheffield, United Kingdom

B46/P1909 Rapid inactivation of RNaseA by high irradiance UV LEDs. T.L. Thompson1, J. Pasquantonio1, G. Eliason1; 1Phoseon Technology, Hillsboro, OR

B47/P1910 Cold plasma eradication of Escherichia coli and Staphylococcus aureus biofilms. N. Zhao1, L. Nguyen1, C. Toorkey1, K. Fitzgerald1, N. Hickox1, T. Freeman1; 1Orthopaedic Research, Thomas Jefferson University, Philadelphia, PA

B48/P1911 Phage assisted continuous evolution (PACE) is a powerful tool for in vivo directed evolution. S.S. Bent1, I.G. Cuellar1, F.C. Enriquez1, M.O. Hunter1, H.S. Sink2, A. Tutar1, S.R. Bilby1, L.D. Doolan2, C.C. Mackley3, C. Watson2, J. Poet3, T.T. Eckdahl1, L.J. Heyer1, A.M. Campbell1; 1Biology, Davidson College, Davidson, NC, 2Mathematics and Computer Science, Davidson College, Davidson, NC, 3Biology, Missouri Western State University, St. Joseph, MO, 4Computer Science, Mathematics and Physics, Missouri Western State University, St. Joseph, MO

B49/P1912 Nano-Channel Electroporation System for Protein Delivery into Single Cells. J. Huang1, C. Yum1, M. Kim1, C. Park1, Y. Choi1; 1Biotecnology, CHA University, Seongnam-si, South Korea

B50/P1913 Synthetic biocompatible hydrogel network-defined spatiotemporal control to easily create structured cellular microenviroenvironments. A.M. Dang1, R.M. Gilbert2, J.P. Gleghorn3; 1Chemistry & Biochemistry, University of Delaware, Newark, DE, 2Biomedical Engineering, University of Delaware, Newark, DE

B51/P1914 Single cell RNA sequencing of zebrafish intestines reveals enhanced inflammatory signatures in chemically-induced intestinal injury. S. Nayar1, L. Chuang1, P. Labrias1, N. Hus1, M. Giri1, J. Cho1; 1Genetics and Genomics, Icahn School of Medicine at Mount Sinai, New York, NY

B52/P1915 Comparison of osteogenic differentiation supported by silk fibroin films derived from various silkworms for potential bone defect treatment. M. Dittmar1, J.A. Klavens1, D.J. Gigliotti1, F. Giginis2, A. Wellik2, D. Jao2, Y. Xue2, X. Hu2, C. Iftode3; 1Biological Sciences, Rowan University, Glassboro, NJ, 2Chemistry and Biochemistry, Rowan University, Glassboro, NJ, 3Biomedical Engineering, Rowan University, Glassboro, NJ, 4Physics and Astronomy, Rowan University, Glassboro, NJ, 5Molecular and Cellular Biosciences, Rowan University, Glassboro, NJ

B53/P1916 3D culture of human iPSCs using Vitrogel 3D. J. Huang1, P. Rajanahalli2; 1The Well Bioscience, LLC, Newark, NJ, 2Pathology, University of Florida, Gainesville, FL

B54/P1917 Predicting the Mechanical Response of DNA Origami Structures of Different Nick Stiffness. T.T. Walker1, O. Samuel-Ojo1, S. Gaitanaros1, Y. Chen1; 1Mechanical Engineering, Johns Hopkins University, Baltimore, MD
Actin and Actin-Associated Proteins

B58/P1920 Matrix remodeling and stress relaxation are impaired in vascular smooth muscle from Acta2-/- mice. M.P. Massett1, H. Gibbs1, S. Padgham2, H. Sreenivasappa3, J. Chen4, A. Yeh5, D.M. Milewicz1, A. Trache1,2; 1Department of Health and Kinesiology, Texas AM University, College Station, TX, 2Department of Biomedical Engineering, Texas AM University, College Station, TX, 3Department of Medical Physiology, Texas AM University Health Science Center, College Station, TX, 4Department of Internal Medicine, University of Texas Health Science Center at Houston, Houston, TX

B59/P1921 “Silent code” regulation: diverse functions of closely related actin isoforms are defined by their nucleotide, rather than their amino acid sequence. P. Vedula1, S. Kurosaka1, N.A. Leu1, J. Wang1, A. Kashina1; 1Biomedical Sciences, University of Pennsylvania, Philadelphia, PA

B60/P1922 Conformational landscape of actin monomers and its implications for filament assembly. G.M. Hocky1, B.J. Nolen1, G.A. Voith1; 1Department of Chemistry, and James Franck Institute, University of Chicago, Chicago, IL, 2Institute of Molecular Biology and Department of Chemistry and Biochemistry, University of Oregon, Eugene, OR

B61/P1923 Characterization of CARMIL-GAP, a Dictyostelium CARMIL isoform harboring a GTPase activating domain for Rac. G. Jung1, M. Par2, T. Jin3, J.A. Hammer III1; 1National Heart, Lung and Blood Institute, National Institutes of Health, Bethesda, MD, 2National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD

B62/P1924 The Drosophila Cortactin Binding Protein 2 (CTTNBP2/CTTNBP2NL) homolog, Nausicaa, regulates actin dynamics in a Cortactin-dependent manner. M.E. O’Connell1, D. Sridharan1, T. Driscoll1, I. Krishnamurthy1, W.G. Perry1, D.A. Applewhite3; 1Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL, 2Biology, Reed College, Portland, OR, 3Biology, Boston College, Chestnut Hill, MA, 4Cardiovascular Medicine, Yale University, New Haven, CT

B63/P1925 Mutation of arrad-15, a gene encoding an alpha-arrestin, suppresses actin disorganization phenotypes in unc-78 AIP1 mutants in C. elegans. K. Ono1, S. Iwase1, Z. Qin2, D.L. Baillie3, S. Ono1; 1Pathology, Emory University, Atlanta, GA, 2Molecular Biology and Biochemistry, Simon Fraser University, Burnaby, BC

B64/P1926 The tropomyosin isoform composition of cellular actin filaments is not a simple function of relative isoform abundance. J.C. Meiring1, N.S. Bryce1, J.H. Stear4, E.C. Hardeman1, P.W. Gunning1; 1School of Medical Sciences, University of New South Wales, Sydney, Australia, 2Belozersky Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia, 3Centre for Childhood Cancer and Blood Diseases, Nationwide Children’s Hospital, Columbus, OH, 4Division of Hematology/Oncology/Blood and Marrow Transplantation, Nationwide Children’s Hospital, Columbus, OH

B67/P1929 Ena/VASP proteins participate in the maintenance of actin network polarity. M. Abou-Ghali1, J. Plastino1; 1Institut Curie, Paris, France

B68/P1930 Characterizing the processive mechanism of Ena/VASP on diverse F-actin bundles. A.J. Harker1, J.D. Winkelman1, C.A. Anderson2, D.R. Kovan3; 1Biology and Molecular Chemistry, University of Chicago, Chicago, IL, 2Institute for Biophysical Dynamics, University of Chicago, Chicago, IL, 3Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL

B69/P1931 Single Molecule Analysis of B Cell Receptor Moton during Signaling Activation. B.A. Wheatley1, I. Rey Suarez2,3, P. Koo1, S. Zhou1, S. Mochrie1, W. Song1, A. Upadhyaya1,2; 1Institute of Physical Sciences and Technology, University of Maryland, College Park, MD, 2National Institute of Biomedical Imaging and Bioengineering, NIH, Bethesda, MD, 3Biophysics, University of Maryland, College Park, MD, 4Molecular and Cellular Biology, Harvard University, Cambridge, MA, 5Microbiology, University of Maryland, College Park, MD, 6Applied Physics, Yale University, New Haven, CT, 7Physics, University of Maryland, College Park, MD

B70/P1932 Twinfilin promotes Capping Protein association with actin filament barbed ends by attenuating the inhibitory effects of CARMIL. D. Hilton1, A. Johnston1, A. Simone1, P. McKechnie1, J.A. Cooper2, B.L. Goode1; 1Molecular Cellular Biology, Brandeis University, Waltham, MA, 2Biochemistry & Molec Biophysic, Washington University in St. Louis, St. Louis, MO

B71/P1933 Synergy between anti-tropomyosin and anti-microtubule drugs reveals an interaction between actin and microtubule networks. Y. Wang1, A. Swain1, J.H. Stear4, N.S. Bryce1, V.B. Dugina1, I.B. Alieva1, T.P. Cripe1,4, J.R. Stehn1, E.C. Hardeman1, P.W. Gunning1; 1School of Medical Sciences, University of New South Wales, Sydney, Australia, 2Belozersky Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia, 3Centre for Childhood Cancer and Blood Diseases, Nationwide Children’s Hospital, Columbus, OH, 4Division of Hematology/Oncology/Blood and Marrow Transplantation, Nationwide Children’s Hospital, Columbus, OH

B72/P1935 A Novel Actin Filament Sliding and Compaction Mechanism Jointly Catalyzed by Srv2/CAP and its Interacting Partner Abp1. S. Guo1, J. Gelles1, B.L. Goode1; 1Department of Biology, Brandeis University, Waltham, MA, 2Department of Biochemistry, Brandeis University, Waltham, MA

B73/P1934 Direct observation of actin structural deformation in response to mechanical force. P.S. Gure1, Y. Takagi1, J.E. Bird1, J.R. Sellers1, G.M. Alushin1; 1The Rockefeller University, New York, NY, 2Cellular Biology and Physiology Center, National Heart, Lung, and Blood Institute, Bethesda, MD, 3National Institute of Deafness and Other Communication Diseases, Bethesda, MD

B74/P1936 Vinculin forms a directionally asymmetric catch bond with F-actin. D.L. Huang1, N.A. Bax2, C.D. Buckley1, W.I. Weis1, A.R. Dunn2; 1Biophysics, Stanford University, Stanford, CA, 2Structural Biology, Stanford University, Stanford, CA, 3Chemical Engineering, Stanford University, Stanford, CA

B75/P1937 How do the actin- and microtubule-based transport systems communicate? A. Oberholzer1, P. Spieler1, Y. Rosenfeld1, W.L. Stepp1, A. Cleeus1, A.N. Hume2, F. Mueller-Planitz3, Z. Ökten1; 1Physik-Department E22, Technische Universität München, Garching, Germany, 2School of Life Sciences, University of Nottingham, Nottingham, United Kingdom, 3BioMedizinisches Zentrum, Molecular Biology, Ludwig-Maximilians-Universität München, Planegg-Martinsried, Germany
B76/P1938 Clues to Suppressor of IKK epsilon (SIEK): cytoskeletal interactions; Binding affinities and SIEK’s dimer interface. H.A. Sonnenschein1, F. Shikwana1, M.L. Machek1, J.E. Bell1, J.K. Bell1; Chemistry & Biochemistry, University of San Diego, San Diego, CA

B77/P1939 Profiling Mechanical Stress-Dependent Cytoskeleton Organization at Varying Curvatures Using Self-Induced Rolling Membrane (SIRM). J. Kim1, L. Vannozzii1, Y. Chen1,2; Mechanical Engineering, Johns Hopkins University, Baltimore, MD, 2The BioRobotics Institute, Sant’Anna School of Advanced Studies, Pisa, Italy, 3Center for Cell Dynamics, Johns Hopkins University, Baltimore, MD

B78/P1940 Phosphorylation of Sharpin acts as a molecular switch to control Linear Ubiquitination Assembly Complex (LUBAC) and Arp2/3 function. U. Butt1,2, M.H. Khan1,2, G. Jacquemet3, H. Sanmark4, U. Lamminmäki4, M.J. Humphries3, J.D. Winkelman2, M.L. Gardel2,3,4, D.R. Pouwels1; 1Department of Biology, The University of Chicago, Chicago, IL, 2Biochemistry, Molecular Biology, University of California, Los Angeles, CA, 3Molecular Biology Institute, University of California, Los Angeles, CA

B79/P1941 Molecular mechanism of LIM domain protein recruitment to stressed actin filament networks. C.A. Anderson1, J.D. Winkelman2, M.L. Gardel3,4, D.R. Pouwels1; 1Department of Biology, The University of Chicago, Chicago, IL, 2Biochemistry, Molecular Biology, University of California, Los Angeles, CA, 3Molecular Biology Institute, University of California, Los Angeles, CA

B80/P1942 Production and Single-Step Purification of Recombinant Human Beta-Actin from E. coli. E.E. ISLEK1, M. KASAP2, G. AKPINAR1, A. YAZICI KARADENIZLI1; 1DEPARTMENT OF MEDICAL BIOLOGY, KOCAELI UNIVERSITY MEDICAL FACULTY, KOCAELI, Turkey, 2DEPARTMENT OF MICROBIOLOGY, KOCAELI UNIVERSITY MEDICAL FACULTY, KOCAELI, Turkey

B81/P1943 Structural and functional studies of a β-III-spectrin spinocerebellar ataxia type 5 mutation reveal a dominant cytoskeletal mechanism that underlies dendritic arborization. A.W. Avery1, M.E. Fealey2, F. Wang3, A.A. Orlova4, A.R. Thompson2, E.H. Egelman1, D.D. Thomas2, T.S. Hays1; 1Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN, 2Biochemistry, Molecular Biology and Biophysics, University of Minnesota, Minneapolis, MN, 3Biochemistry and Molecular Genetics, University of Virginia, Charlottesville, VA

B82/P1944 Molecular mechanisms underlying formin-associated inherited deafness. C.C. Costea1, T. Jabeen1, C.L. Vizcarra2; 1Department of Chemistry, Barnard College, New York, NY

B83/P1945 Actin Filament Associated Protein 1 (AFAP1) and AFAP1L1 have distinct functions in the disassembly of actin stress fibers and the formation of podosomes in response to phorbol ester stimulation. J.M. Cunnick1, Y. Cho1; 1Basic Sciences, Geisinger Commonwealth School of Medicine, Scranton, PA

B84/P1946 Investigations into the Structure and Intermolecular Interface of Human Cofilin-2 Assembled on Actin Filaments Using Magic Angle Spinning NMR. J. Kraus1, J. Yehl1, E. Kudryashova2, E. Reisler1,4, D.S. Kudryashov1, T. Polenova1; 1Chemistry and Biochemistry, University of Delaware, Newark, DE, 2Chemistry and Biochemistry, The Ohio State University, Columbus, OH, 3Chemistry and Biochemistry, University of California, Los Angeles, CA, 4University of Delaware, Newark, DE

B85/P1947 Leiomodin-2 regulates thin filament assembly and is necessary for proper contractile force production in the hearts of adult mice. C.T. Pappas1, G.P. Farman1, R.M. Mayfield1, C.C. Gregorio1; 1Cellular and Molecular Medicine, University of Arizona, Tucson, AZ

B86/P1948 Structural basis of actin monomer re-charging by cyclase-associated protein. T. Kotila1, K. Kogan1, G. Enkavi1, S. Guo1, I. Vattulainen4, B.L. Goode1, P. Lappalainen1; 1Institute of Biotechnology, University of Helsinki, Helsinki, Finland, 2Department of Physics, University of Turku, Turku, Finland, 3Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom, 4Department of Biochemistry, University of Turku, Turku, Finland

B87/P1949 Bridging scales from molecules to movement: how the interplay between actin cappers, depolymerizers, fragmenters and elongators controls actin filament length. S. Shekhari1, M. Carlier1; 1Biochemistry, Brandeis University, Waltham, MA, 2Biochemistry, Biophysics and Structural Biology, I2BC, CNRS, Gif-sur-Yvette, France

B88/P1950 Length control of branched actin networks. A. Icheva1, A. Manhart2, C. Guérin1, T. Klar1, M. Thén1, L. Blanchon1, 2; 1MOBILABS, Biocat, Institute of BIOSCAT, Barcelona, Spain, 2European Molecular Biology Laboratory, European Molecular Biology Organization, Heidelberg, Germany

B89/P1951 Distinct VASP tetramers synergize in the processive elongation of individual actin filaments from clustered arrays. S. Bruhmann1, D. Ushakov2, M. Winterhoff2, R.B. Dickinson1, U. Curth1, J. Faix1; 1Institut of Physical Chemistry, Hannover Medical School, Hannover, Germany, 2Department of Chemical Engineering, University of Florida, Gainesville, FL

B90/P1952 Spatiotemporal Control of Actin Assembly at the Leading Edge by IQGAP. G. Hoeprich1, M.A. Juanes1, B.L. Goode1; 1Department of Biology, Brandeis University, Waltham, MA

B91/P1953 Phase separation enhances Arp2/3 complex-dependent actin polymerization by increasing N-WASP membrane dwell time. L.B. Case1, X. Zhang1, J.A. Ditlev1, M.K. Rosen1; 1Department of Biophysics, UT Southwestern Medical Center, Dallas, TX

B92/P1954 CYRIP5 (Fam49) proteins are local inhibitors of Rac1 and Scar/WAVE induced lamellipodia. L. Fort1, J. Batista1, P. Thomason1, H. Spence1, J. Greaves2, K. Strange3, K. Anderson1, P. Brown1, S. Lilla1, M. Nielsen2, P. Tafel/meyer1, S. Zavivan1, S. Ismail1, N. Tomkinson1, L.H. Chamberlain1, R.H. Insall1, L.M. Machesky1; 1Beatson Institute for Cancer research, Glasgow, United Kingdom, 2Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, Glasgow, United Kingdom, 3Crick Institute, London, United Kingdom, 4Hybrigencis Services, Paris, France, 5WestCHEM, Department of Pure and Applied Chemistry, University of Strathclyde, Glasgow, United Kingdom

B93/P1955 The F-BAR protein Hof1 and Bud8: negative and positive regulatory components in a feedback loop controlling formin-mediated actin assembly. M. Garabedian1, T. Rands1, B.L. Goode1; 1Biolog, Brandeis University, Waltham, MA

B94/P1956 Control of yeast actin cable formation by a novel forin regulator, Bil2. T.J. Rands1, B.L. Goode1; 1MCB, Brandeis, Waltham, MA

B95/P1957 Nance Horan Syndrome-Like 1 (NHS1L) protein is a novel Ena/VASP and Scar/WAVE ligand and negatively regulates cell migration. A. Law1, A. Jandke2, G. Pula3, A. Gun1, M. Krause2; 1Randall Division of Cell and Molecular Biophysics, King’s College London, London, United Kingdom, 2London Research Institute, Immuno-surveillance Laboratory, Cancer Research UK, London, United Kingdom, 3Pharmacy and Pharmacology Department, University of Bath, Bath, United Kingdom

B96/P1958 Rapid and dynamic arginylation of the leading edge β-actin is required for cell migration. I. Pavlyk1, N.A. Leu1, P. Vedula1, A. Kashina1, S. Kurosaka1; 1Department of Biomedical Sciences, University of Pennsylvania, Philadelphia, PA
**Monday Poster Session**

**Board No./Presentation No.**

**The 2017 ASCB | EMBO Meeting**

**B97/P1959** Ras activity stabilizes the actin fusion focus at cell contact sites prior to cell-cell fusion. L. Merlini1, S.G. Martin1; 1Department of Fundamental Microbiology, University of Lausanne, Lausanne, Switzerland

**B98/P1960** Deconvolution of subcellular protrusion heterogeneity reveals the role of VASP in accelerating cell protrusion. C. Wang1, H. Choi1, S. Kim1, Y. Bae1, K. Lee1; 1Biomedical Engineering, Worcester Polytechnic Institute, Worcester, MA, 2Pathology and Anatomical Sciences, University at Buffalo, Buffalo, NY

**B99/P1961** Coordinated formation and disassembly of a contractile actomyosin network mediates content release from large secretory vesicles. E.D. Scheijer1, D. Segal1, A. Zaritsky2,3, D. Meyen1, T. Rousso1, B. Shilo1; 1Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel, 2Lyda Hill Department of Bioinformatics, UT Southwestern Medical Center, Dallas, TX, 3Molecular Cell Biology, Weizmann Institute of Science, Rehovot, Israel

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**Actin-Membrane Interactions**

**B100/P1962** Simultaneous Imaging and Functional Studies Reveal a Tight Correlation Between Calcium and Actin Networks. C.S. Bascom Jr1,2, M. Bezanilla3, L. Winship4; 1UMass Plant Biology Graduate Program, Amherst, MA, 2Biology, University of Massachusetts, Amherst, MA, 3Biological Sciences, Dartmouth College, Hanover, NH, 4Biology, Hampshire College, Amherst, MA

**B101/P1963** CAP2 loss activates MRTF/SRF signaling in cardiomyocytes. X. Yiong1, A. Mu2, S. Berritt3, J. Field1; 1Department of Systems Pharmacology and Translational Therapeutics, University of Pennsylvania, Philadelphia, PA, 2Cardiovascular Institute, University of Pennsylvania, Philadelphia, PA, 3Department of Chemistry, University of Pennsylvania, Philadelphia, PA

**B102/P1964** Arp 2/3-dependent spatial organization of the B cell receptor (BCR) impacts immune synapse formation, BCR signaling output, and B cell activation. M. Bolger-Munro1, K. Choi1, R. Chappell1, J. Scurll1, L. Abraham1,2, M. Martin1,2, D. Coombs2, B. Shilo1; 1Department of Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA

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**Kinesins 1**

**B111/P1973** The collapsin response mediator protein 4 (CRMP4) is enriched at actin structures formed by bacteria at the plasma membrane of epithelial cells. M.D. Chu1, J.A. Guttmann1, 1Department of Biological Sciences, Simon Fraser University, Burnaby, BC

**B112/P1974** Cryo-Electron Microscopy 3-D Analysis of heterodimeric KIF3 Motor Head Domains on Microtubules. C. Page1, S. Guzik2, I. Rayment1, A. Hoenger1, S.P. Gilbert1; 1MCD-Biology, University of Colorado at Boulder, Boulder, CO, 2Biochemistry, University of Wisconsin, Madison, WI

**B113/P1975** Development of improved microscopy and data analysis tools for understanding multimotor transport. K.J. Molokajczyk1, Q. Feng1, J. Bernstein1, L. Cow1, J. Fricke1, W.O. Hancock2; 1Biomedical Engineering, Penn State University, University Park, PA, 2Applied Statistics, Lawrence Livermore National Lab, Livermore, CA, 3Statistics, Arizona State University, Tempe, AZ

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**B114/P1976** Super-resolution imaging reveals differential clustering of microtubule motors on vesicle membranes. G.A. Cordier1, M. Lakadamyali1,2, P.A. Gomez-García1, A. Sandoval1; 1Advanced Fluorescence Imaging Biophysics Group, ICFO, Barcelona, Spain, 2Physiology, Perelman School of Medicine (UPenn), Philadelphia, PA

**B115/P1977** Conformational switching of microtubule and cooperative binding of kinesin-1 as a base for polarized transport. T. Shima1, M. Morikawa2, J. Yamaguchi3, R. Nitta8,9, Y. Okada1,10, N. Hirokawa1; 1Laboratory for Cell Polarity Regulation, RIKEN Quantitative Biology Center, Osaka, Japan, 2Department of Cell Biology and Anatomy, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan, 3Laboratory for Comprehensive Bioimaging, RIKEN Quantitative Biology Center, Osaka, Japan, 4Department of Biological Sciences, Faculty of Science and Engineering, Chuo University, Tokyo, Japan, 5Department of Life Science, Faculty of Life and Environmental Sciences, Prefectural University of Hiroshima, Hiroshima, Japan, 6Life and Environmental Division, SPring-8, Japan Synchrotron Radiation Research Institute, Hyogo, Japan, 7Department of Biological Sciences, Graduate School of Science, The University of Tokyo, Tokyo, Japan, 8Structural Biology Group, RIKEN Center for Life Science Technologies, Kanagawa, Japan, 9Department of Physiology and Cell Biology, Graduate School of Medicine, Kobe University,
Hyogo, Japan, Department of Physics and Universal Biology Institute, Graduate School of Science, The University of Tokyo, Tokyo, Japan

B116/P1978 Phosphorylation of multiple sites of Alcadein α is required for kinesin-1 association and Golgi exit of Alcadein α. Y. Sobu1, A.C. Naim2, M. Kinjo1, S. Hata1, T. Suzuki1; Laboratory of Neurosciences, Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo, Hokkaido, Japan, Department of Psychiatry, Yale University School of Medicine, New Haven, CT, Laboratory of Molecular Cell Dynamics, Faculty of Advanced Life Science, Hokkaido University, Sapporo, Hokkaido, Japan

B117/P1979 Enhanced fast velocity of APP transport by kinesin-1 is regulated by KLC1 phosphorylation. S. Kato1, K. Chiba1, Y. Sobu1, K. Chien2, R. Wang2, A.C. Naim3, M. Kinjo1, S. Hata1, T. Suzuki1; Graduate school of Pharmacy, The University of Tokyo, Tokyo, Japan, 1Graduate School of Medicine, New Haven, CT, 2Faculty of Advanced Life Science, Hokkaido University, Laboratory of neuroscience, Sapporo, Japan, 1Cahn School of Medicine at Mount Sinai, Department of Genetics and Genomic 18 Sciences, New York, NY, 2Yale University School of Medicine, Department of Psychiatry, New Haven, CT, 3Faculty of Advanced Life Science, Hokkaido University, Laboratory of Molecular Cell Dynamics, Sapporo, Japan

B118/P1980 Kinesin-2 motors adapted their stepping behaviour for progressive transport on axonemes and microtubules. W.L. Stepp1, G. Merck1, F. Mueller-Planitz2, Z. Okten1; 1Department für Physik, Technische Universität München, Munich, Germany, 2Biomedical Center, Ludwig Maximilians Universität, Munich, Germany, 3Munich Center for Integrated Protein Science, Munich, Germany

B119/P1981 Axonal access is regulated by KIF13/KLP-4 in vivo. K.J. Perkins1, J.N. Pieczynski1; 1Department of Biology, Rollins College, Winter Park, FL

B120/P1982 Investigating Emergent Transport Properties for Molecular Motor Ensembles: A Semi-analytical Approach. S. Bhaban1, D. Materassi2, M. Li1, T.S. Hays1, M.V. Salapaka1; 1Electrical Engineering, University of Minnesota, Twin Cities, Minneapolis, MN, 2Electrical Engineering and Computer Science, University of Tennessee, Knoxville, Tennessee, 1Genetics, Cell Biology, and Development, University of Minnesota, Twin Cities, Minneapolis, MN

B121/P1983 Motor reattachment kinetics play a dominant role in multimotor-driven cargo transport. Q. Feng1, K.J. Mickolajczyk1, G. Chen1, W.O. Hancock1, B. Huck institute of life sciences, Penn State University, State College, PA, 1Intercollege Graduate Degree Program in Biotechnology, Penn State University, State College, PA

B122/P1984 Effect of membrane coupling on multiple-kinesin transport. J.D. Lopes1, D. Quint1, D.E. Chapman2, A. Gopinathan3, L. Hirsh1, J. Xu1; 1Physics, University of California, Merced, Merced, CA, 2Natural Science, University of California, Irvine, Irvine, CA

B123/P1985 Intracellular cargo transport by single-and multiple kinesin monomers. K.I. Schimenti1, B.G. Budailis2, K.J. Verhey1, 2Program of Cellular and Molecular Biology, University of Michigan, Ann Arbor, MI, 1Biophysics Program, University of Michigan, Ann Arbor, MI, 2Department of Cell and Developmental Biology, University of Michigan, Ann Arbor, MI

B124/P1986 The cover-neck bundle is important for teams of kinesin-1 motors to transport high-load in cells. B.G. Budailis1, K.I. Schimenti1, S. Jariwala1, B.J. Grant1, K.J. Verhey1, 2Program of Cellular and Molecular Biology, University of Michigan, Ann Arbor, MI, 3Department of Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor, MI, 2Department of Cell and Developmental Biology, University of Michigan, Ann Arbor, MI

B125/P1987 A fluid membrane enhances the velocity of cargo transport by small teams of kinesin-1. Q. Li1, K. Tseng2, S.J. King1, W. Qi1, J. Xu1; 1Physics, University of California, Merced, Merced, CA, 2Physics, Oregon State University, Corvallis, OR, 3Barnett School of Biomedical Sciences, University of Central Florida, Orlando, FL

B126/P1988 Origins of thermal stability of kinesin activity in cells. K. Chase1, F. Dova1, M. Vershinin1; 1Physics, Oregon State University, Corvallis, OR, 2Physics Astronomy, University of Utah, Salt Lake City, UT

Tubulin and Associated Proteins

B128/P1989 Native Kinesin-1 Does Not Bind Preferentially to GTP-Tubulin-Rich Microtubules In Vitro. O. Li1, S.J. King2, J. Xu1; 1Physics, University of California Merced, Merced, CA, 2Barnett School of Biomedical Sciences, University of Central Florida, Orlando, FL

B129/P1990 Mechanism of microtubule stabilization by kinesin-5. G. Chen1, A.B. Asero1, H.J. Sosa2, W.O. Hancock1; 1Biomedical Engineering, Pennsylvania State University, University Park, PA, 2Department of Physiology and Biophysics, Albert Einstein College of Medicine, Bronx, NY

B130/P1991 Investigating dynein function in a mouse model carrying a Charcot-Marie-Tooth type 2O linked mutation. S. Nandini1, J. Conley Calderon1, T.T. Sabbah1, L. Love1, E.E. King1, S.J. King1; 1Burnett School of Biomedical Sciences, University of Central Florida, Orlando, FL

B131/P1992 CLASP1 is Required for CLASP2 Localization and Function at Microtubules in Interphase Cells. R.J. Thoppil1, A.A. Sanders1, E.J. Lawrence1, K. Chang1, S. Narasimhan1, M. Zanic1, I. Kaverina1; 1Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B132/P1993 Microtubule acetylation induced by α-tubulin acetyltransferase overexpression impairs hepatic protein trafficking and lipid droplet motility. J.L. Grobner1, M.M. Girón Bravo1, M. Rothberg1, D.J. Tuma2, P.L. Tuma1; 1Department of Biology, The Catholic University of America, Washington, DC, 2Department of Internal Medicine, University of Nebraska, Omaha, NE

B133/P1994 Human γ-tubulin isoforms: differential expression during neuronal development and under oxidative stress. E. Drabero1, V. Sulimenko1, S. Vinopali1, T. Sulimenko1, V. Sladkova1, L. D’Agostino1, M. Sobol1, P. Hozak1, L. Kren1, C.D. Katsevo1, P. Drabert1; 1Department of Biology of Cytoskeleton, Institute of Molecular Genetics CAS, Prague, Czech Republic, 2Department of Pathology and Laboratory Medicine, Drexel University College of Medicine, Philadelphia, United States, 3Department of Biology of the Nucleus, Institute of Molecular Genetics CAS, Prague, Czech Republic, 4Department of Pathology, University Hospital Brno, Brno, Czech Republic

B134/P1995 Human tubulin isoforms A1B/B2B and A1B/B3 modulate sensitivity to MAP-dependent microtubule depolymerization. S. Ti1, V.G. Ghani1, M.C. Pamura1, T.M. Kapoor1; 1Laboratory of Chemistry and Cell Biology, The Rockefeller University, New York, NY

B135/P1996 Elucidating the Role of a Human β-tubulin, TUBB4B: Functional Analysis of a Novel Patient-Derived Mutation. S.M. Schreiner1, D.L. Sackett2, J.K. Moore1; 1Cell and Developmental Biology, University of Colorado Anschutz Medical Center, Aurora, CO, 2Cytoskeletal Dynamics Unit, Eunice Kennedy Shriver NICHD, National Institutes of Health, Bethesda, MD

B136/P1997 Targeted localization of microtubule severing enzymes in vivo. S.R. Advani1, J.L. Ross1, T.J. Maresca1; 1Molecular and Cellular Biology Program, University of Massachusetts Amherst, Amherst, MA, 2Department of Physics, University of Massachusetts Amherst, Amherst, MA, 3Department of Biology, University of Massachusetts Amherst, Amherst, MA

B137/P1998 TACC3 regulates the dynamic microtubule plus-end in an in-vitro environment. G. Cammarata1, B. Erdogan1, B. Pratt1, H. Nazarenko1, Q. Coughlin1, P. Ebbert1, L.A. Lowery1; 1Biology, Boston College, Chestnut Hill, MA
**Microtubules and Cell Division**

B143/P2004 UNC-45A is a novel spindle-associated microtubule destabilizing protein that antagonizes the effect of paclitaxel in cancer cells. A. Mooneyham,² Q. Yang,² Y. Iizuka,² C. Coombs,² M. McClellan,² V. Shridhar,² J. Meints,² M.K. Lee,² M.K. Gardner,² M. Bazzaro,² "Obestetics, Gynecology and Women's Health, University of Minnesota, Minneapolis, MN, ²Masonic Cancer Center, University of Minnesota, Minneapolis, MN, ³Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN, ⁴Experimental Pathology, Mayo Clinic College of Medicine, Rochester, MN, ⁵Neuroscience, University of Minnesota, Minneapolis, MN

B144/P2005 A Microtubule Organizing Center Directing Intracellular Transport in the Embryo. J. Zenker,² M.D. White,² R.M. Tempkin,² R.G. Parton,² O. Thorn-Sesoh³, S. Bissiere², N. Plachta³;¹ IMCB, A*STAR, Singapore, Singapore, ²IMB, University of Queensland, Brisbane, Australia, ³Department of Pharmacy, Ludwig-Maximilians-University, Munich, Germany

B145/P2006 Tissue-specific degradation of essential centrosome components in vivo reveals distinct microtubule populations at noncentrosomal MTOCs. M.D. Salle³, J.C. Zonka³, B. Raftrey,² J.L. Feldman³;¹ Biology, Stanford University, Stanford, CA

B146/P2007 Reconstitution of aster movement and cell division plane positioning in Xenopus egg extract. J.F. Pelletier²,³, C.M. Field²,³, N. Fakhri³, J.S. Oakley³, J.C. Gatlin³;⁴, T.J. Mitchison³,³;¹ Marine Biological Laboratory, Woods Hole, MA, ²Department of Physics, Massachusetts Institute of Technology, Cambridge, MA, ³Department of Systems Biology, Harvard Medical School, Boston, MA, ⁴Department of Chemical Engineering, University of Wyoming, Laramie, WY, ⁵Department of Molecular Biology, University of Wyoming, Laramie, WY

B147/P2008 Spindle morphology tailoring through time: Interplay between spindle architecture and microtubule dynamics of the mammalian brain. D.C. Vargas-Hurtado¹, V. Marthiens¹, C. Pennetrier¹, R. Basto¹;¹ UMR144, Subcellular structure and cellular dynamics, Institut Curie, Paris, France

B148/P2009 CENP-E-PRC1 interaction provides a temporal cue for central spindle assembly. Y. Liu², W. Wang², P.Y. Yao², D. Li², X. Wang², h. wang², Y. Li², X. Liu², X. Yao²;¹ Cellular Dynamics, Anhui Key Laboratory for Cellular Dynamics Chemical Biology, Hefei, China, ²Keck Center for Molecular Imaging, Morehouse School of Medicine, Atlanta, GA

**Assembly and Disassembly of Cilia/Flagella**

B157/P2017 Architecture of mammalian centriole distal appendages supports a matrix that gates the primary cilium. T.T. Yang⁴, W. Chong⁴, W. Wang⁴, G. Mazo⁴, B. Tanos⁴, Z. Chen⁴, T. Tran⁴, Y. Chen⁴, R.R. Weng⁴, C. Huang⁴, W. Jane⁴, M.B. Tsou⁴, J. Liao⁴;¹ Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan, ²Institute of Biochemistry and Molecular Biology, National Yang Ming University, Taipei, Taiwan, ³Cell Biology Program, Memorial Sloan-Kettering Cancer Center, New York, NY, ⁴Institute of Cancer Research, London, United Kingdom, ⁵Institute of Plant and Microbial Biology, Academia Sinica, Taipei, Taiwan, ⁶Genome and Systems Biology Degree Program, National Taiwan University, Taipei, Taiwan

B158/P2018 Myosin-Va is required for preciliary vesicle transportation to the mother cilium during ciliogenesis. C. Wu⁴, H. Chen⁴, T.K. Tang⁴;¹ Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan, ²Taiwan International Graduate Program in Interdisciplinary Neuroscience, National Yang-Ming University and Academia Sinica, Taipei, Taiwan

B159/P2019 Exploring PACSIN membrane tubulation regulation during intracellular ciliogenesis using 3D electron microscopy. C. Insinna-Kettenhofen¹, Q. Lu¹, I. Teixeira¹, A.S. Hamed¹, E. Semler¹, J. Stauffer¹, V. Magidson¹, K. Narayan², C. Westlake¹;¹ LCDS, NIH/NCI Frederick National Laboratory, Frederick, MD, ²ATRF, NIH/NCI Frederick National Laboratory, Frederick, MD

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**Microtubules**

**B135/P2006** Inhibitory effects of eucalyptol on diabetes-associated loss of glomerular slit junctions and podocyte foot process effacement. D. Kim¹, Food Science and Nutrition, Hallym University, Chuncheon, South Korea

**B139/P2000** SUMO interacts non-covalently with tubulin and the TOG protein Stu2. M. Greenlee¹, A. Alonso¹, M. Rahman¹, T. Tabbi¹, N. Meedni¹, S. Morris¹, R.K. Miller¹;¹ Biochemistry and Molecular Biology, Oklahoma State University, Stillwater, OK, ²Biology, University of Rochester, Rochester, NY

**B140/P2001** C. elegans microtubules are highly dynamic and have non-canonical lattices. S. Chaaban¹, C. Hsu¹, S. Redemann², T. Müller-Reichert¹, J.M. Kollman¹, H.K. Bui¹, G.J. Brouhard¹;¹ Biology, McGill University, Montréal, QC, ²Technische Universität Dresden, Dresden, Germany, ³Biochemistry, University of Washington, Seattle, WA, ⁴Anatomy and Cell Biology, McGill University, Montréal, QC

**B141/P2002** TACC3 mitigates Nocodazole-induced sonic crisis effects and is required for proper embryonic neural development. E. Lee¹, B. Erdogan¹, L.A. Lowery¹;¹ Biology, Boston College, Chestnut Hill, MA

**B142/P2003** Sequence-encoded charge patterning of the intrinsically disordered tail of FtsZ impacts polymerization and patterning of the intrinsically disordered Hill, MA

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**Monday Poster Session**

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B169/P2029 How cells control the size of their organelles: Flagellar length control in Chlamydomonas. D. Bauer1, W.F. Marshall1; 1Biophysics, University of California - San Francisco, San Francisco, CA

B170/P2030 THE ROLE OF SMALL GTPASE ARL3 IN THE FORMATION AND FUNCTION OF THE CHLAMYDOMONAS FLAGELLA. H. Qin1, X. Jiang; 1Department of Biology, Texas AM University, College Station, TX

B171/P2031 The contraction of Centrin filaments initiates assembly of the cilium by pumping IFT and flagellar precursors from the Zone of Exclusion (ZOE) into the ciliary/flagellar stubs. C. Wood1, J. Salisbury1, J.L. Rosenbaum1; 1Dept Cell Biology, Harvard University, Boston, MA, 2Cell Biology, Mayo Clinic Medical School, Rochester, MN, 3Dept MCDB, Yale University, New Haven, CT

B172/P2032 Biochemical and Structural Insights into the Interaction of Myristoylated Cargo with Unc119. D. Pentecost1, G. Gomez2, P. Ounjai3, H. Kirima1, H. Kojima2, K. Oiwa1,2; 1Department of Molecular Biology and Biophysics, University of Connecticut Health Center, Farmington, CT, 2Department of Neuroscience, University of Connecticut Health Center, Farmington, CT

B165/P2025 Phosphatidylinositol 4,5-bisphosphate (PIP2) is Essential for Cilium Assembly and Function in Drosophila melanogaster. A. Gupta1,2, J.A. Brill1; 1Cell biology, Hospital for Sick Children, Toronto, ON, 2Molecular Genetics, University of Toronto, Toronto, ON

B166/P2026 Identification and characterization of cilia proteins in Caenorhabditis elegans. T.Y. Su1, A. Dammermann1; 1Max F. Perutz Laboratories, University of Vienna, Vienna, Austria

B167/P2027 TrpyTag.org – Genome wide protein localisation reveals organelle sub-domains, with functional consequences in the flagellum. J.D. Sunter1, R.J. Wheeler2, S. Dean2; 1Sir William Dunn School of Pathology, University of Oxford, Oxford, United Kingdom, 2Department of Biological and Medical Sciences, Oxford Brookes University, Oxford, United Kingdom

B168/P2028 Mammalian primary cilia disassembly is heterogeneous but primarily occurs via rapid whole cilium shedding. M. Mirvis1, W.J. Nelson1; 1Molecular and Cellular Physiology, Stanford University, Stanford, CA, 2Biology, Stanford University, Stanford, CA

B169/P2029 Use of a new inducible Mchr1-CreER mouse model to study the role of primary cilia in obesity. S.E. Engle1, T.L. Masters1, P.J. Antonellis1, R. Bansal1, L.S. Whitehouse1, N.F. Berbari1; 1Biology, Indiana University Purdue University Indianapolis, Indianapolis, IN

B173/P2033 Loss of Arf4 causes severe degeneration of the exocrine pancreas but not cystic kidney disease or retinal degeneration. J.N. Pearring1, J.T. San Agustin1, E.S. Lobanova1, C.J. Gabriel1, W.J. Monis1, E.C. Lieu1, M.W. Stuck1, V.Y. Arshavsky1, G.J. Pazour2; 1Department of Ophthalmology, Duke University, Durham, NC, 2Program in Molecular Medicine, University of Massachusetts Medical School, Worcester, MA

B174/P2034 An uncharacterized transport pathway for membrane proteins in primary cilia revealed by high-speed super-resolution microscopy. A. Ruba1, W. Luo1, W. Yang1; 1Department of Biology, Temple University, Philadelphia, PA

B175/P2035 Ciliary GPCRs are required for adipogenesis. K.I. Hilgendorf1, P.K. Jackson1; 1Microbiology and Immunology, Stanford University, School of Medicine, Stanford, CA

B176/P2036 Identification of ciliary proteins from the transient primary cilium of differentiating 3T3-L1 pre-adipocytes. T.N. Browne1, B. Henderson1, L.B. Cook1; 1Biology, The College at Brockport, State University of New York, Brockport, NY

B177/P2037 The role of IFT54 in tubulin transport and cilia stability. J. Wingfield1, K.F. Lechtreck1; 1Cell Biology, Mayo Clinic Medical School, Rochester, MN, 2Department of Biology, Texas AM University, College Station, TX

B178/P2038 Deficiency of IFT-A protein, TIA1, sensitizes pre-adipocytes to insulin signaling and differentiation, and heightens adipose insulin sensitivity in a pre-obese state. D.T. Jacobs1, B.A. Allard1, L.M. Silva1, A. Al-Namaan1, E. Agborbesong1, T. Wang1, P.V. Tran1; 1Anatomy and Cell Biology, University of Kansas Medical Center, Kansas City, KS

B180/P2040 Unusual elemental composition of the statoliths of Mnemiopsis leidyi and Beroe ovata. A.G. Moss1; 1Biological Sciences, Auburn University, Auburn, AL

B181/P2041 Investigating the Biological Role of the Voltage Sensitive Phosphatase. W. Ratzan1, S.C. Kohout1; 1Cell Biology and Neuroscience, Montana State University, Bozeman, MT

B182/P2042 Adenylly Cyclase 3 Localizes to Osteocyte Primary Cilia and Contributes to Mechanotransduction. M.P. Duffy1, M.E. Sup1, C.R. Jacobs1; 1Biomedical Engineering, Columbia University in the City of New York, New York, NY

B183/P2043 Three dimensional architecture of primary cilia in kidney cells. S. Sun1,2; 1Cell biology, Hospital for Sick Children, Toronto, ON, 2Molecular Genetics, University of Toronto, Toronto, ON

B184/P2044 Multiple clinical, targeted kinase inhibitors influence ciliary dynamics. A.A. Kiseleva1,2, V.A. Korobeynikov1, A.S. Nikonova1, M.B. Einarson1, E. Nicola1, P. Zhang1, J.R. Peterson1, E.A. Golenis1; 1Molecular Therapeutics Program, Fox Chase Cancer Center, Philadelphia, United States, 2Biochemistry and Biotechnology, Kazan Federal University, Kazan, Russia

B185/P2045 Roles of Primary Cilia in the Oligodendrocyte Lineage. A. Subediak1, J.L. Fuchs1; 1Biological Sciences, University of North Texas, Denton, TX
B186/P2046 A Bioactive Peptide Amidating Enzyme is Specifically Released in Ciliary Ectosomes during Matting in *Chlamydomonas*. D. Kumar¹, R. Luxmi², M. Bartolotta¹, R.E. Mains¹, S.M. King¹, B.A. Eipper². ¹Department of Molecular Biology and Biophysics, University of Connecticut Health Center, Farmington, CT; ²Department of Neuroscience, University of Connecticut Health Center, Farmington, CT; *Wheaton College, Norwood, MA

B187/P2047 *Chlamydomonas* Secretes Amidated Peptides during Matting. R. Luxmi¹, D. Kumar¹, C.E. Biaby-Haas², R.E. Mains¹, S.M. King¹, B.A. Eipper². ¹Department of Neuroscience, University of Connecticut Health Center, Farmington, CT; ²Department of Molecular Biology and Biophysics, University of Connecticut Health Center, Farmington, CT; *Wheaton College, Norwood, MA

B188/P2048 Characterization of the role of Diaphanos-related formin (DIAPH) in cilia. O. Palander¹, W.S. Trimmer¹,². ¹Cell Biology, The hospital for sick children, Toronto, ON; ²Biochemistry, University of Toronto, Toronto, ON

B189/P2049 Regulation of INPP5E ciliary localization by phosphorylation. M.B. Sierra-Rodero¹,², D. Cilleros-Rodriguez¹,², R. Martín-Morales¹,², P. Barbeto¹,², F.R. Garcia-Gonzalo¹,²,³. Alberto Roldan Sol Flight Research Institute CSIC-UAM (IIBM), Madrid, Spain; ²La Paz University Hospital Research Institute (IiPpAZ), Madrid, Spain; ³Department of Biochemistry, Autonomous University of Madrid, Madrid, Spain

B190/P2050 RAB-28 regulates axonemal architecture and extracellular vesicle biogenesis in the extracellular vesicle releasing IL2 neurons of *C. elegans*. J. Akella¹, J. Wang¹, F. Ji¹, K. Nguyen¹, D. Half², M. Barr¹. ¹Genetics, Rutgers University, Piscataway, NJ; ²Albert Einstein College of Medicine, Bronx, NY

B191/P2051 Disruption of primary cilia components leads to reduced proliferation in myoblasts. C. Boyle¹, V. Zora¹, S. Dombush¹, Z. Gromley¹, A.S. Gromley¹. DeBusk College of Osteopathic Medicine, Lincoln Memorial University, Harrogate, TN

B192/P2052 Loss of neuronal cilia alters olfactory bulb morphology. J.C. McIntyre¹. ¹Neuroscience, University of Florida, Gainesville, FL

**Cytokinesis 1**

B194/P2053 Role of the Anillin Homologue in Cytokinesis of Cryptococcus neoformans. S. Altamirano¹, N. Paladugu¹, M. Gandhi¹, I. Abboobaker¹, J. Heitman¹, S. Chandrasekaran¹, L. Kozubowski¹. ¹Genetics and Biochemistry, Clemson University, Clemson, SC; ²Molecular Genetics and Microbiology, Duke University, Durham, NC; ³Biology, Furman University, Greenville, SC

B195/P2054 Role of Aurora Kinases in Single-Cell Regeneration of Stentor. A. Lin¹, W.F. Marshall¹,². ¹Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

B196/P2055 The role of mitotic cell-substrate adhesion remodelling in animal cell division. C.L. Dix¹, H.K. Matthews¹, S. McLaren¹, L. Wolf¹, P. Almada¹, R. Henriques¹, M. Boutros¹, B. Baum¹. ¹Medical Research Council Laboratory for Molecular Cell Biology, University College London, London, United Kingdom; ²Division of Signaling and Functional Genomics, German Cancer Research Center (DKFZ), and Department for Cell and Molecular Biology, Medical Faculty Mannheim, Heidelberg University, Heidelberg, Germany

B197/P2056 Aurora A kinase restricts contractile ring components to a narrow equatorial zone during cytokinesis in human cells. S. Mangal¹, E. Zanim¹. ¹Center for Integrated Protein Science CIPS, Department Biology II, Ludwig-Maximilians University, Munich (Planegg-Martinsried), Germany

B198/P2057 Programmed variations of cytokinesis contribute to morphogenesis in the *C. elegans* embryo. X. Bai¹, B. Chen¹, R. Simmons¹, B. Nebenfuehr¹, L. Klabanow¹, D. Mitchell¹, E. Betzig¹, J.R. Bemmelen¹. ¹Biochemistry and Cellular and Molecular Biology, the University of Tennessee, Knoxville, Knoxville, TN; ²Janelia Research Campus, HHMI, Ashburn, VA

B199/P2058 Systematic analysis of atx-2 suppressors reveal novel regulators of PAR-5/14-3-3sigma function during mitosis in Caenorhabditis elegans. M.F. Graziano¹, A.R. Skop¹, A.R. Villarreal¹. ¹Genetics, UW-Madison, Madison, WI

B200/P2059 Characterization of the mammalian midbody transcriptome reveals important factors necessary for cytokinesis and cell fate determination. R.D. Dahn¹, J.M. Gilbert¹, K.J. VanDenHeuvel¹, A. Jambhekar¹, J.M. Shivvas¹, L. Qin¹, O.K. Olukoga¹, M.D. Blower¹, A.R. Skop¹. ¹Genetics, UW-Madison, Madison, WI; ²Molecular Biology and Genetics, Harvard University, Boston, MA; ³Leica Microsystems, Allendale, NJ

B201/P2060 Studying the role of active Ran in cytokinesis in early *C. elegans* embryos. I. Ozugergin¹, K. Mastronard¹, B. Williams¹,², A.J. Pieken¹, D. Beaudet¹. ¹Biology, Concordia University, Montreal, QC

B202/P2061 Developing a Light-Induced Z-ring Disassembly (LIZRD) Assay to Probe FtsZ’s Role in E. coli Cell Division. R.J. McQuillen¹, C. Coltharp¹, C.H. Bohrer¹, J. Xiao¹. ¹Biophysics & Biophysical Chemistry, Johns Hopkins School of Medicine, Baltimore, MD

B203/P2062 Active Ran regulates anillin function during cytokinesis. D. Beaudet¹, T. Akshih¹, C. Law¹, A.J. Pieken¹. ¹Biology, Concordia University, Montreal, QC; ²Biochemistry, University of Toronto, Toronto, ON

B204/P2063 Cell-intrinsic and extrinsic control of cytokinetic diversity in the *C. elegans* embryo. T. Davies¹, N. Romano Spina¹, B. Lessa-Pringler¹, J. Dumont¹, M.M. Shirasu-Higa¹, J.C. Camann¹. ¹Pathology and Cell Biology, Columbia University Medical Centre, New York, NY; ²Institut Jacques Monod, Paris, France; ³Genetics, Columbia University Medical Centre, New York, NY

B205/P2064 Integrated cytoplasmic reorganization during human iPSC cell mitosis. S.M. Rafelski¹, Allen Inst. for Cell Science¹; ²Allen Institute, for Cell Science, Seattle, WA

B206/P2065 Microtubule tips act as signaling hubs for positioning the cleavage furrow. V. Verma¹, T.J. Maresca¹. ¹Biology, University of Massachusetts, Amherst, MA

B207/P2066 Vps4 Induces a Dynamic Subunit Turnover in ESCRT-III to Mediate Membrane Remodelling During Cytokinesis. D. Mierzwia¹,²,³, N. Chiaruttini¹,², L. Redondo-Morata¹,², J. Moser von Filsceck¹, J. König¹,², J. Larios¹, I. Poser¹, T. Müller-Reichert¹, S. Scheuring³,³, A. Roux¹,², D.W. Gerlich¹. ¹Institute of Molecular Biotechnology of the Austrian Academy of Sciences (IMBA), Vienna, Austria; ²Present address: Department of Cellular and Molecular Biology, University of California San Diego, La Jolla, CA; ³Present address: Ludwig Institute for Cancer Research, San Diego, CA; ⁴Department of Biochemistry, University of Geneva, Geneva, Switzerland; ⁵INSERM, Aix-Marseille Université, Marseille, France; ⁶Electron Microscopy Unit, Francis Crick Institute, London, United Kingdom; ⁷Experimental Center, Medical Faculty Cari Gustav Carus, Dresden University of Technology, Dresden, Germany; ⁸Max Planck Institute for Molecular Cell Biology and Genetics, Dresden, Germany; ⁹Departments of Anesthesiology and Physiology Biophysics, Well Cornell Medicine, New York, NY, ⁰Swiss National Centre for Competence in Research Programme Chemical Biology, Geneva, Switzerland. "Contribute equally to the work"

B208/P2067 Cdc42 GEFs Gef1 and Scd1 comprise a signaling network that coordinates sequential cytokinetic events. B.S. Hercyk¹, M. Das¹; ²Biochemistry & Cellular and Molecular Biology, University of Tennessee, Knoxville, TN

B209/P2068 Binucleation fails to activate a tetraploidy checkpoint and instead causes chromosome segregation errors in the mouse preimplantation embryo. L.G. Pain¹, G. FitzHarris¹,². ¹Centre de Recherche du CHUM, Montréal, QC; ²Department of Obstetrics and Gynaecology, Université de Montréal, Montréal, QC
B210/P2069 ROCK regulates cytokinesis through phosphorylation of ZIP kinase. T. Ono1, M. Matsushita1, K. Hamao1, 2Department of Biological Science, Graduate School of Science, Hiroshima University, Higashi Hiroshima, Japan

B211/P2070 Disruption of the division-to-growth transition in fission yeast yields a novel phenotype of precocious cell growth without cell separation. J. Rich1, M. Das1, 3Biochemistry & Cellular and Molecular Biology, University of Tennessee, Knoxville, Knoxville, TN

B212/P2071 A novel role of Wee1 in regulating actomyosin ring constriction. S.E. Dunodon1, T.D. Pollard1,2, 3Molecular, Cellular, and Developmental Biology, Yale University, New Haven, CT, 4Molecular Biophysics and Biochemistry, Yale University, New Haven, CT, 5Cell Biology, Yale University, New Haven, CT

B213/P2072 Cleavage-furrow formation without myosin or F-actin in Chlamydomonas. M. Onishi1, K. Pecan2, T. Jones1, V. Moi3, T.D. Pollard1,2, 3Molecular, Cellular, and Developmental Biology, Yale University, New Haven, CT, 4Molecular Biophysics and Biochemistry, Yale University, New Haven, CT, 5Cell Biology, Yale University, New Haven, CT

B214/P2073 Anillin and Septin Colocalize with Myosin II in Nodes and Filamentous Assemblages within the Forming Cyclokinetic Contractile Ring. C. Garno1,2, B. Samasa1,3, Z. Ions1,3, J.H. Henson1,3, C.B. Shuster1,2, 3Friday Harbor Laboratories, University of Washington, Friday Harbor, WA, 4Department of Biology, New Mexico State University, Las Cruces, NM, 5Department of Biology, Dickinson College, Carlisle, PA

B215/P2074 Imaging of bacterial cell division components reveals subcomplexes with distinct dynamics. M.J. Holmes1, E.C. Garner1, 1Department of Molecular and Cellular Biology, Harvard University, Cambridge, MA

B216/P2075 FLIRT: Fast local infrared thermotogenetics for spatiotemporal control of ts protein function during cytokinesis. S. Hirsch1, S. Sundaramoorthy1, Y. Zhuravlev1, T. Davies2, J.C. Waters3, M.M. Shirasu-Hizai1, J. Dumont1, J.C. Canman1, 2Department of Molecular and Cellular Biology, Harvard Medical School, Boston, MA, 3Cell Division and Reproduction, Institut Jacques Monod, Paris, France

B217/P2076 Human Replication Licensing Factor Cdt1 Serves as an Essential Link for Stabilizing Kinetochoore Microtubule Attachments. S. Agarwal1, K.P. Smith1, Y. Zhou2, A. Suzuki3, R.J. McKinney4, D. Varma1, 1Cell and Molecular Biology, Northwestern University Feinberg School of Medicine, Chicago, IL, 2Biochemistry and Biophysics, University of North Carolina at Chapel Hill, Chapel Hill, NC, 3Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC, 4Molecular and Cellular Biology, University of California - Davis, Davis, CA

B218/P2077 Role of the human RZZ complex in coordinating the formation of stable kinetochore-microtubule attachments and proper chromosome alignment. M.A. Amin1, R.J. McKinney2, D. Varma1, 1Cell and Molecular Biology, Northwestern University Feinberg School of Medicine, Chicago, IL, 2Molecular and Cellular Biology, University of California - Davis, Davis, CA

B219/P2078 Nonsense-mediated mRNA decay regulates mRNA levels for kinetochore proteins in Saccharomyces cerevisiae. S.I. Graves1, J.N. Dahiaseid1, 1Biology & Chemistry, Gustavus Adolphus College, Saint Peter, MN

B220/P2079 Regulation of PKA activity during Mitosis. D.A. Parmiter1, J. Choy1, S.B. Shah1, 1Biology, Catholic University of America, Washington, DC

B221/P2080 The molecular requirements for epigenetic establishment of centromeres depend on the type of underlying DNA. A.A. Glogson1, C.W. Gamburg1, E.J. Barrey2, P. Heun2, B.E. Black2, 1Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA, 2Wellcome Trust Centre for Cell Biology, University of Edinburgh, Edinburgh, United Kingdom

B222/P2081 RbAp46/48 (Lin-53) - Hat-1 complex is crucial for de novo centromere formation in C. elegans. Z. Lin1, K. Yuen1, 1School of Biological Sciences, The University of Hong Kong, Hong Kong, Hong Kong

B223/P2082 A potential new error correction mechanism for chromosome segregation anaphase. D. Papini1, M. Levasseur1, J.M. Higgins1, 1Institute for Cell and Molecular Bionsciences (ICaMB), Medical School, Framlingham Place, Newcastle upon Tyne NE2 4HH, UK, 2Newcastle University, Newcastle upon Tyne, United Kingdom

B224/P2083 Structural studies of the budding yeast kinetochore using single-molecule localization microscopy. K. Cieslinski1, J. Ries1, S. Hoerner1, 1CBB, EMBL, Heidelberg, Germany

B225/P2084 Investigating the role of kinetochore dynein-dynactin in Spindle Assembly Checkpoint function. A. Hodges1, T. Biebighaus1, L.R. Heasley1, R. Wimbish1, S.M. Markus1, J.G. DeLuca1, 1Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO

B226/P2085 Regulation of kinetochore plasticity during anaphase. K. Dhatchinamoorthy1, B. Slaughter1, J.J. Lane1, J. Unruh1, J.L. Gerton1,2, 3Stowers Institute for Medical Research, Kansas City, MO, 4Department of Biochemistry & Molecular Biology, The University of Kansas School of Medicine, Kansas City, KS

B227/P2086 Determining the Molecular Basis for Differences in Binding Affinity Between Human and Mouse Aurora Kinase B. S.S. Dipali1, A.L. Nguyen1, K. Schindler1, 1Genetics, Rutgers University, New Brunswick, NJ

B228/P2087 PCH-2 (TRIP13): an essential regulator of spindle assembly checkpoint strength. L. Defafches1, C. Nelson1, A. Russo1, N. Bhalia1, 2Department of Molecular, Cell and Developmental Biology, University of California Santa Cruz, Santa Cruz, CA, 3Fred Hutchinson Cancer Research Center, Seattle, WA

B229/P2088 MOLECULAR REQUIREMENTS FOR THE TRANSITION FROM LATERAL TO END-ON MICROTUBULE BINDING AND DYNAMIC COUPLING. M. Chakraborty1, A.V. Zaytsev1, M. Godzi2, E. Tarasovets1, F. Afigureido2, F. Ataullahkhanova2, E.L. Grishchuk1, 1Physiology Department, University of Pennsylvania, Philadelphia, PA, 2Center for Theoretical Problems of Physicochemical Pharmacology, Russian Academy of Sciences, Moscow, Russia, 3Chromosome Instability & Dynamics Laboratory, Universidade do Porto, Porto, Portugal

B230/P2089 Molecular mechanisms that prevent mislocalization of centromeric histone H3 variant CENP-A and chromosomal instability (CIN) in human cells. R.L. Shrestha1, J. Kim1, G.S. Ahn1, A. Rossi1, L. Ozbun1, G. Pegoraro1, D.R. Foltz2, M.A. Basrai1, 1National Cancer Institute, National institutes of health, Bethesda, MD, 2Department of Biochemistry and Molecular Genetics, Northwestern University, Chicago, IL

B231/P2090 Centromere dysfunction impacts the centromere causing PCM dispersion during mitosis and centriole loss in the following interphase. S. Gembile1, D. Fachinetti1, R. Basto1, 1UMR144, Institut Curie, Paris, France

B232/P2091 Defining The Physical and Spatial Properties of the Spindle Assembly Checkpoint Across Species. L.R. Heasley1, J.G. DeLuca1, S.M. Markus1, 1Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO
Spindle Assembly 2

B236/P2005 MAARS: A novel high content acquisition software for the analysis of mitotic defects in fission yeast. T. Li,1, H. Mary1, M. Grosjean1, J. Foucard1, S. Cabello1, C. Reyes1, Y. Gachet2, S. Tournier3; 1LBCMCP, Centre de Biologie Intégrative (CBI), Toulouse, France

B237/P2006 Microtubules push chromosomes apart in anaphase. C. Yu,1, S. Redemann2, H. Wu3, T.Y. Yeon1, T. Müller-Reichert1, D.J. Needlemann1,4; 1School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, 2Medical Faculty Carl Gustav Carus, Technische Universität Dresden, Dresden, Dresden, Germany, 3Department of Physics, Harvard University, Cambridge, MA, 4Department of Molecular and Cellular Biology and Center for Systems Biology, Harvard University, Cambridge, MA

B238/P2007 The mitotic spindle is chiral due to torques generated by motor proteins. J. Simunic1, B. Polak1, M. Novak2, Z. Boban3, B. Kuzmič3, N. Pavin1, I.M. Tolić1; 1Division of Molecular Biology, Ruder Bošković Institute, Zagreb, Croatia, 2Department of Physics, Faculty of Science, University of Zagreb, Zagreb, Croatia

B239/P2008 NuMA Targets Dynein to Microtubule Minus-Ends at Mitosis. C.L. Hueschen1,2, S.J. Kenny3, K. Xu3, S. Dumont1,4; 1Dept. of Cell Tissue Biology, University of California, San Francisco, San Francisco, CA, 2Biomedical Sciences Graduate Program, University of California, San Francisco, San Francisco, CA, 3Dept. of Chemistry, University of California, Berkeley, Berkeley, CA, 4Dept. of Cellular Molecular Pharmacology, University of California, San Francisco, San Francisco, CA

B240/P2009 Sensing of the Magnitude of Centromeric Tension at Metaphase Elicits a Graded Cellular Response. S. Mukherjee1, D. Tank1, Q. Yang1, M.K. Gardner1; 1Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN

B241/P2100 Mechanical maturation of the mammalian centromere regulates force signaling at metaphase. L.A. Harasymiw1,2, D. Tank1, M. McClellan1, N. Panigraphy1, M.K. Gardner1; 1Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN, 2Medical Scientist Training Program, University of Minnesota, Minneapolis, MN

B242/P2101 Microtubule destabilizing activity of selfish centromeres drives non-Mendelian segregation. T. Akera1, E. Trim1, M.A. Lampson2; 1Department of Biology, University of Pennsylvania, Philadelphia, PA

B243/P2102 Determining the molecular requirements for taxol-induced spindle multipolarity. C.M. Scibra2, J. Wan1,3, B.A. Weaver1,4; 1Cell and Regenerative Biology, University of Wisconsin, Madison, WI, 2Molecular and Cellular Pharmacology Training Program, University of Wisconsin, Madison, WI, 3Physiology Training Program, University of Wisconsin, Madison, WI, 4Oncology, University of Wisconsin, Madison, WI

B244/P2103 The Role of Actin-Microtubule Crosslinker Shortstop in Cell Division. E.B. Dewey1, C.A. Johnston1; 1Biology, University of New Mexico, Albuquerque, NM

B245/P2104 Most kinetochore fibers in human cells form via mechanisms intrinsic to the kinetochores and not by capture of astral microtubules. V. Sikrizhsky1, F. Renda1, I. Tikhonenko1, B.F. McEwen1, A. Khodjakov1; 1Translational Medicine, Wadsworth Center, Albany, NY

B246/P2105 Physical Confinement Impairs Chromosome Segregation during Cell Division. X. Wan1, K. Konstantopoulos1; 1Chemical & Biomolecular Engineering, Johns Hopkins University, Baltimore, MD

B247/P2106 Regulation of microtubule crosslinks during spindle assembly. A. Ismael1, J.E. Aiken1, J.K. Moore1; 1Cell & Developmental Biology, University of Colorado, Anschutz Medical Campus, Aurora, CO

B248/P2107 Minimal ingredients for coupled spindle assembly and chromosome bi-orientation in a computational model of fission yeast mitosis. C. Edelmaier1, A. Lamson1, Z.R. Gergely1, J.R. McIntosh1, M.A. Glaser1, M.D. Betterton1; 1Physics, University of Colorado Boulder, Boulder, CO, 2MCDB, University of Colorado Boulder, Boulder, CO

B249/P2108 Mechanisms of spindle assembly and scaling across Pipid frogs. K. Miller1, R. Head1; 1Molecular and Cell Biology, UC Berkeley, Berkeley, CA

B250/P2109 The Effects of Microtubule Length, Dynamics and Bundling on Spindle Assembly. Z.R. Gergely1,2, P.J. Flynn1, C. Edelmaier1, N. Santander1, J.R. McIntosh1, M.D. Betterton1; 1Department of Physics, University of Colorado at Boulder, Boulder, CO, 2Department of MCD Biology, University of Colorado at Boulder, Boulder, CO

B251/P2110 Adaptor binding sites in the clathrin terminal domain directly recruited the microtubule stabilizing protein GTSE1 to the mitotic spindle. Y. LIN1, A. Rondelet1, P. Brinkert1, A.W. Bird1; 1Mechanistic cell biology, Max Planck Institute of Molecular Physiology, Dortmund, Germany

B252/P2111 Clathrin promotes mitotic spindle assembly via interaction with the microtubule depolymerase inhibitor GTSE1. A. Rondelet1, Y. Lin1, S. Bendre1, P. Brinkert1, N. Schmidt1, A.W. Bird1; 1Mechanistic cell biology, Max Planck Institute of Molecular Physiology, Dortmund, Germany

G1, G1-S, and S Phase Regulation

B253/P2112 Assessing Reproductive Toxicity of Halogenated Flame Retardants Using a Novel in vitro Human Spermagenesis Model. A.N. Steves1, J.M. Bradner1, K. Fowler1,2, D. Clarkson-Townsend1,3, L. Colle1, A. Tupin1,2, W. Caudle1, G.W. Miller1, A.W. Chan1,2, C.A. Easley1,2,4; 1Genetics and Molecular Biology Program, Emory University, Atlanta, GA, 2Rollins School of Public Health, Emory University, Atlanta, GA, 3College of Public Health, University of Georgia, Athens, GA, 4Division of Neuropharmacology and Neurologic Diseases, Yerkes National Primate Research Center, Atlanta, GA

B254/P2113 Regulation of cell cycle progression by cell-cell and cell-matrix forces. M. Uroz1, S. Wistorf1, X. Serra-Picamal1, V. Conte1, M. Sales-Pardo1, P. Roca-Cusachs1,2, R. Guimerà2, X. Trepat3,4,5; 1Institute for Bioengineering of Catalonia (IBEC), Barcelona, Spain, 2Departement d’Enginyeria Quimica, Universitat Rovira i Virgili, Tarragona, Spain, 3Unitat de Biofísica i Bioenginyeria, Facultat de Medicina, Universitat de Barcelona, Barcelona, Spain, 4Institució Catalana de Recerca i Estudis Avançats, Barcelona, Spain, 5Center for Networked Biomedical Research on Bioengineering, Biomaterials and Nanomedicine, CIBER-BBN, Barcelona, Spain

B255/P2114 Temperature-induced uncoupling of cell cycle regulatory mechanisms. H. Falahahi1, S. Di Talia2, E. Wieschaus1,2; 1Quantitative and Computational Biology, Princeton University, Princeton, NJ, 2Cell Biology, Duke University, Durham, NC, 3Molecular Biology, HHMI/Princeton University, Princeton, NJ

B256/P2115 Elucidating the Role of Securin in Regulating Separase during Cortical Granule Exocytosis. C. Turpin1, J.N. Babemek1,4; 1BCMB, University of Tennessee-Knoxville, Knoxville, TN
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<td>B258/P2117</td>
<td>Cell fate decision via p53 status in response to nucleolar analog-inducing DNA replication stress.</td>
<td>M. Limori, Y. Kataoka, K. Matsuzuka, E. Oki, H. Saeki, Y. Maehara, H. Kitao, Department of Molecular Cancer Biology, Graduate School of Pharmaceutical Sciences, Kyusyu University, Fukuoka, Japan, T. Drug Discovery and Development I, Taiho Pharmaceutical Co., Ltd., Tsukuba, Japan, Department of Surgery and Science, Kyusyu University, Fukuoka, Japan</td>
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<td>B259/P2118</td>
<td>Phosphorylation regulates protein-RNA phase separation.</td>
<td>T.M. Gerbic, A.S. Gladfelter, Biology, UNC-Chapel Hill, Chapel Hill, NC</td>
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<td>B260/P2119</td>
<td>The p38 MAP kinase pathway promotes cell size uniformity by linking cell cycle progression to cell size.</td>
<td>S. Liu, M.B. Ginzberg, N. Patel, M. Hild, Z.L. J. Jenkins, M.J. Kirschner, R. Kafri, Cell Biology, The Hospital for Sick Children, Toronto, ON, Department of Molecular Genetics, University of Toronto, Toronto, ON, Novartis Institutes for BioMedical Research, Cambridge, MA, Department of Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor, MI, Department of Systems Biology, Harvard Medical School, Boston, MA</td>
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<td>B261/P2120</td>
<td>LKB1 links metabolic homeostasis to accurate chromosome segregation in mitosis.</td>
<td>Y. Huang, M. Wang, W. Wang, X. Liu, X. Yao, A. Anhui Key Laboratory for Cellular Dynamics &amp; Chemical Biology, University of Science and Technology of China, Hefei, China</td>
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<td>B262/P2121</td>
<td>Deletion of Cul3 in the mouse mammary gland.</td>
<td>K. Schmidt, N. Rosa, C.M. Cummings, Biology Program, Stockton University, Galloway, NJ</td>
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<td>B263/P2122</td>
<td>Protein kinase C delta drives HGF-induced proliferation of equine satellite cells.</td>
<td>A.M. Brandt, M. Gonzalez, S.E. Johnson, Animal and Poultry Sciences, Virginia Tech, Blacksburg, VA</td>
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<td>B264/P2123</td>
<td>Proximity based proteomic screen identifies novel associations of the pole like kinase 1 (Plk1).</td>
<td>Y.A. Garcia, N. Filbert, W. Cohn, J. Whitelegge, J.Z. Torres, Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles, CA</td>
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<td>B266/P2124</td>
<td>Details Matter: Noise and Model Structure Set the Relationship between Cell Size and Cell Cycle Timing.</td>
<td>F. Barber, P. Ho, A.W. Murray, A. Amir, Molecular and Cellular Biology, Harvard University, Cambridge, MA, School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, FAS Center for Systems Biology, Harvard University, Cambridge, MA</td>
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<td>B267/P2125</td>
<td>Functional characterization of the ORFs YJR141W &amp; YJL055W in Saccharomyces cerevisiae.</td>
<td>O. Rosenow, C. Baf financially, S. Shields, Biology, Gustavus Adolphus College, Saint Peter, MN</td>
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<td>B269/P2126</td>
<td>Is the Eicosanoid Producing Enzyme 12-Lipoxygenase (ALOX12) a Tumor Suppressor?</td>
<td>G.F. Gerlach, P. Niethammer, Cell Biology, Memorial Sloan Kettering Cancer Center, New York, NY</td>
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<td>B270/P2127</td>
<td>Tumor suppressive role of Sestrin2 during colitis and colon carcinogenesis.</td>
<td>S. Ro, X. Xue, Y.M. Shahi, J. Lee, Biochemistry, University of Nebraska, Lincoln, NE, Molecular Integrative Physiology, University of Michigan, Ann Arbor, MI</td>
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<td>B271/P2128</td>
<td>PLK1-mediated RIP3 phosphorylation promotes G2/M abundance of RIP3.</td>
<td>K. Gupta, B. Liu, Surgery, University of Wisconsin–Madison, Madison, WI</td>
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<td>B272/P2129</td>
<td>Novel Biogenic Role for the Retinoblastoma Protein Rb.</td>
<td>A.C. Lloyd, MRC Laboratory for Molecular Cell Biology, UCL, London, United Kingdom</td>
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<td>B273/P2130</td>
<td>Loss of SPINT2 promotes YAP activation and tolerance to aneuploidy.</td>
<td>H. Zhang, K. Kotlynkova, D. Peltman, N.J. Ganem, Department of Cell Biology, Harvard Medical School, Boston, MA, Department of Pharmacology and Experimental Therapeutics, Boston University School of Medicine, Boston, MA, Howard Hughes Medical Institute and Department of Pediatric Oncology, Dana-Farber Cancer Institute, Boston, MA, Department of Medicine, Division of Hematology and Oncology, Boston University School of Medicine, Boston, MA</td>
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<td>B274/P2131</td>
<td>Tumor suppressor cyclin C acts as a redox-sensitive antagonist.</td>
<td>J. Jezek, K. Chang, V. Ganesan, P. Kadiyam Sundarasivarao, A. Di Cristofano, K. Campbell, Molecular Biology, Rowan University SOM, Stratford, NJ, Albert Einstein Medical School, Bronx, NY, Fox Chase Cancer Center, Philadelphia, PA</td>
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<td>B275/P2132</td>
<td>Suppression of RAC1-driven malignant melanoma by Group A PAK inhibitors.</td>
<td>D. Araza Olvera Toro, Y. Feng, G. Seminov, T. Prudnikova, J. Rhodes, J. Christofferson, Instituto de Quimica, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico, Cancer Biology, Fox Chase Cancer Center, Philadelphia, PA</td>
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<td>B277/P2134</td>
<td>TP53 gene status is a critical determinant of phenotypes induced by ALKBH3 knockdown in non-small cell lung cancers.</td>
<td>T. Kogaki, I. Osahio, M. Kawaguchi, M. Kinoto, K. Kitae, H. Hase, Y. Ueda, K. Jinguishi, K. Tsujikawa, Graduate School of Pharmaceutical Sciences, Osaka University, Suita, Japan</td>
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<td>B320/P2137</td>
<td>Steroid receptors can facilitate the binding of other endogenous ligands and promote growth in breast cancer cell lines through a dynamic assisted loading mechanism.</td>
<td>E.E. Swinstead, V. Paakinaho, D.M. Presman, T.B. Miranda, S. Baek, D.A. Ball, T.S. Karpova, G.L. Hager, NCI, NIH, Bethesda, MD</td>
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<td>B322/P2139</td>
<td>Understanding the Role and Regulation of the SENP1 SUMO Isopeptidase in Pancreatic Cancer.</td>
<td>D.M. Bouchard, M.J. Matunis, Biochemistry and Molecular Biology, Johns Hopkins School of Public Health, Baltimore, MD</td>
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<td>B323/P2140</td>
<td>Matrix stiffness influences oral squamous cell carcinoma behaviour through EMT changes.</td>
<td>B. Franzen Matte, J.K. Placone, A. Kumar, L. Lamers, A.J. Engler, Bioengineering, University of California San Diego, San Diego, CA, Oral Pathology, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil</td>
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<td>B324/P2141</td>
<td>Differential Regulation of Mammary Cancer Invasivity due to Matrix Stiffness and Oncogenic Mutation.</td>
<td>C.M. Plunkett, A. Kumar, J.K. Placone, J. Yang, A.J. Engler, Bioengineering, University of California San Diego, La Jolla, CA, Pharmacology, University of California San Diego, La Jolla, CA</td>
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**Tumor Suppression and Regulation of Oncogenes**

**Tumor Invasion and Metastasis 2**
B287/P2144 GI1P3-induced mTORC augments caveolae-mediated endocytosis of E-cadherin to promote breast cancer metastasis. N. Chowdhury, J. McCullough, A. Davenport, V. Cheryath; Biological and Environmental Sciences, Texas AM University-Commerce, Commerce, TX

B287/P2145 Prostate Specific Membrane Antigen promotes prostate tumor progression and survival by conferring resistance to hypoxic stress. A.C. Lewis, A.M. Ponce, D. Anukam, L.H. Shapiro, L.A. Caromile; Center for Vascular Biology, UCONN Health, Farmington, CT; Biology, The University of Texas at El Paso, El Paso, TX

B289/P2146 The role of antioxidant enzymes in the proliferation and survival of extracellular matrix-detached SKOV3 cells. C.A. Davison-Versaggi, C.L. Libbing; Biology Department, Saint Mary’s College, Notre Dame, IN

B290/P2147 Role of NADPH Oxidase (NOX-1) in TNF-α-mediated cellular response in regulation of cell death and survival. B.N. Waghelia, C.M. Pathak; Department of Cell Biology, Indian Institute of Advanced Research (IIAR), Gandhinagar, India


B293/P2150 Insulin inhibits VEGF-induced endothelial permeability and metastasis by inhibiting TGFα in the lung of diabetic mice. H. Jeon, Y. Lee, Y. Kim, K. Ha; Molecular and Cellular Biochemistry, Kangwon National University of Medicine, Chuncheon-si, Gangwon-do, Korea, Korea, South

B294/P2151 Centrosome amplification triggers a non-canonical Senescence-Associated Secretory Phenotype and HiFI-1 activation. S.K. Wu, R. Picone, M.S. Levine, S. Papathanasiou, M. Kwon, M. Janiszewski, K. Polyak, A. Spektor, A.J. Holland, D. Pellman; Pediatric Oncology, Dana Farber Cancer Institute, BOSTON, MA; Cell Biology, Harvard Medical School, BOSTON, MA; Molecular Biology and Genetics, Johns Hopkins School of Medicine, Baltimore, MD; Medical Oncology, Dana Farber Cancer Institute, BOSTON, MA

B295/P2152 Metastatic melanoma cells commandeer p53 activity to promote the survival of a therapy resistant subpopulation. M.R. Webster, A. Kaur, B.L. Eckel, A. Ndoye, C. Kugel, S. Basu, A. Valga, J.L. Appleton, M.E. Murphy, A.T. Weeraratna; Tumor Microenvironment and Metastasis, The Wistar Institute, Philadelphia, PA; Department of Surgery, University of Pennsylvania, Philadelphia, PA; Molecular and Cellular Oncology, The Wistar Institute, Philadelphia, PA

B296/P2153 PLCδ1 mediated migration and invasion of HEK293 cells stably expressing non small cell lung cancer associated EGFR mutants. S. Mittal, M.S. Rajala; School of Biotechnology, Jawaharlal Nehru University, New Delhi, India

B297/P2154 Myoferlin depletion reduces autocrine TGF-β1 production to regulate epithelial-mesenchymal transition in breast cancer cells. J. Weist, V. Barnhouse, V. Shukla, S.N. Ghadiali, D.A. Kniss, J.L. Leight; Department of Biomedical Engineering, College of Engineering, The Ohio State University, Columbus, OH; The James Comprehensive Cancer Center, The Ohio State University, Columbus, OH; Dorothy M. Davis Heart and Lung Research Institute, College of Medicine and Wexner Medical Center, The Ohio State University, Columbus, OH; Department of Internal Medicine (Division of Pulmonary, Critical Care and Sleep Medicine), College of Medicine and Wexner Medical Center, The Ohio State University, Columbus, OH; Department of Obstetrics and Gynecology (Division of Maternal-Fetal Medicine and Laboratory of Perinatal Research), College of Medicine and Wexner Medical Center, The Ohio State University, Columbus, OH

B298/P2155 Hepatitis B virus-human chimeric transcript HBx-LINE1 serves as a molecular sponge specific for hepatocellular carcinoma progression via depleting miR-122. H. LIANG, X. Chen, Y. Liu, K. ZEN; Department of Biology, Georgia State University, Atlanta, GA; School of life science, Nanjing University, Nanjing, China

B299/P2156 Hepatitis B virus X protein induces the development of hepatocellular carcinoma by stabilizing HIF-1α. I. Kang, S. Kang, H. Park, J. Kim, J. Lee, J. Ahn; Department of Microbiology Molecular Biology, Chung-Nam National University, Daejeon, Korea, South

B300/P2157 Selected mitochondrial DNA landscapes activate the UPRTmt to promote metastasis. T.C. Kenny, D. German; Tisch Cancer Institute, Icahn School of Medicine at Mount Sinai, New York, NY

B301/P2158 Glioma mouse models reveal subtype specific cell dynamics. G.A. Shamsan, C.J. Liu, B.C. Braman, S.K. Rathe, R.L. Klanck, B.R. Tschida, H. Clark, S.S. Rosenfeld, D.A. Largaespada, D.J. Odde; Biomedical Engineering, University of Minnesota, Minneapolis, MN; Masonic Cancer Center, University of Minnesota, Minneapolis, MN; Laboratory Medicine and Pathology, University of Minnesota, Minneapolis, MN; Medical Oncology, Mayo Clinic, Jacksonville, FL; Pediatrics, University of Minnesota, Minneapolis, MN

B302/P2159 Characterization of anoikis-resistant endothelial cells after PIK3CA (phosphatidylinositol 4,5-bisphosphate 3-kinase, catalytic subunit alpha) gene silencing. A.S. Mesquita, A.S. Cruz, S.A. Lopes, P.C. Pernambuco Filho, J.O. Onyeisi, C.C. Lopes, H.B. Nader; Biobiquima, Universidade Federal de São Paulo, São Paulo, Brazil; Ciências Biológicas, Universidade Federal de São Paulo, São Paulo, Brazil

B303/P2160 Effect of MTA3 overexpression on B16 melanoma cells. B.A. Frommer, J.L. Cox; Biochemistry, ATSU, Kirksville, MO

B304/P2161 Differential effect of human and bovine lactoferrins on breast cancer cells MDA-MB-231 and MCF-7. N. Rodríguez-Ochoa, P. Cortes-Reynosa, J. Ramirez-Ricardo, M. Larewski, E. Perez Salazar; Cell Biology, Center for Research and Advanced Studies of the National Polytechnic Institute, Mexico City, Mexico

B305/P2162 Extracellular vesicles from MDA-MB-231 cell stimulated with linoleic acid promote migration and invasion through Src/FAK and PI3K/Akt signaling pathways. J. Ramirez-Ricardo, E. Leal-Orta, M. Thompson-Bonilla, E. Perez Salazar; Biologia Celluar, Centro de Investigación y de Estudios Avanzados del IPN, Ciudad de Mexico, Mexico; Medicina Genomica, Hospital “Regional 1º de Octubre” ISSSTE., Ciudad de Mexico, Mexico

B306/P2163 Role of PI3K/Akt2 on migration induced by extracellular vesicles from MDA-MB-231 breast cancer cells stimulated with linoleic acid in MCF10A cells. E. Leal-Orta, J. Ramirez-Ricardo, O. Galindo-Hernandez, E. Perez Salazar; Biologia Celular, Cinvestav-IPN, Mexico, Mexico
Cancer Therapy: Novel Techniques and Therapeutics

B307/P2164 Fast constitutive turnover of the potential ADC target Prolactin Receptor (PRLR) is mediated by a 21-amino acid region in its cytoplasmic domain. J. Andreve1, N. Thambir2, A. Perez Bay,3 G. Thurstoin3; 1Oncology & Angiogenesis, Regeneron Pharmaceuticals, Tarrytown, NY; 2Research, Advaxis, Princeton, NJ

B308/P2165 Characterization of a novel anti-cancer compound that targets ch-TOG/CKAP5. D. Jaunky1, K. Larocque1, B.B. Jaunky1, P. Forgione2, A.J. Piekn3; 1Biotechnology, Concordia University, Montreal, QC; 2Chemistry, Concordia University, Montreal, QC

B309/P2166 Hyperthermia upregulates SLC22A16 expression and downregulates ABCG2 expression via ROS production and enhances the cytotoxicity of doxorubicin. H. Kurokawa1, H. Ita2, H. Matsui3; 1Faculty of Medicine, University of TSUKUBA, 3058575, Japan; 2Graduate School of Medical and Dental Sciences, Kagoshima University, 8908544, Japan

B310/P2167 A novel anti-cancer drug disrupts or regresses a variety of multi-cellular tumor spheroids. K. Larocque1, D. Jaunky2, S. Hong3, J. Oh4, A.J. Piekn3; 1Biotechnology, Concordia University, Montreal, QC; 2Chemistry, Concordia University, Montreal, QC

B311/P2168 Peptide antagonists of AGR2 inhibit cancer cell migration. C. Garn5, S. Howell6, K. Tiemann7, A. Tiffany8, F. Jalali-Yazdi9, T. Takahashi10, R. Langraf11, D. Agus12, R. Roberts13, K. Kani14; 1Lawrence J. Ellison Institute for Transformative Medicine, University of Southern California, Los Angeles, CA; 2Department of Chemistry, University of Southern California, Los Angeles, CA; 3Mork Family Department of Chemical Engineering and Material Science, University of Southern California, Los Angeles, United States; 4Department of Biochemistry and Molecular Biology, University of Miami, Miami, FL; 5Norris Comprehensive Cancer Center, University of Southern California, Los Angeles, CA

B312/P2169 Stressed out: DNA damage delivered at ultrahigh dose rates reduces cellular stress and apoptosis. D.H. Al-Rawi2, M. Rafat3, S. Vemireddy4, E. Schuler5, P. Maxim6, B.W. Loo7, G. King8; 1Department of Radiation Oncology, Stanford Medical School, Stanford, CA

B313/P2170 9-Aminocacidine inhibits ribosome biogenesis and synergizes with cytotoxic drugs to induce selective killing of p53-deficient cells. L. Anikin2, D. Pestov3; 1Cell Biology Neuroscience, Rowan University School of Osteopathic Medicine, Stratford, NJ; 2Graduate School of Biomedical Sciences, Rowan University, Stratford, NJ

B314/P2171 Telomerase-dependent maintenance of telomeres: involvement of hnrNPA1 and hnrNPA2. T.V. Wang1, C. Chen2, Y. Hsiao3, P. Huang4, T. Wang5; 1Molecular and Cellular Biology, Chang Gung University, Kwei-San, Taiwan; 2Graduate Institute of Health Industry Technology, Chang Gung University of Science and Technology, Kwei-San, Taiwan; 3Tissue Bank, Chang Gung Memorial Hospital, Kwei-San, Taiwan

B315/P2172 HER2-targeting ADC containing cleavable linker for targeted therapy of HER2-positive gastric cancer. S. Shin1, Y. Park1, S. Park2, E. Ju3, S. Ko2, C. Chung3, S. Song3, S. Jeong2, E. Choi4,5; 1Institute for Innovative Cancer Research, Seoul, South Korea; 2Center for Advancing Cancer Therapeutics, Seoul, South Korea; 3New Drug Research Center, LegoChem Biosciences, Inc., Daejeon, South Korea; 4Radiation Oncology, University of Ulsan College of Medicine, Seoul, South Korea

B316/P2173 The Anti-melanoma Effects of Heat Shock Protein Inhibitors. Y. Xiao1, Y. Yan2, Y. Yang3; 1Department of Biological Sciences, Emporia State University, Emporia, KS

B317/P2174 Internalization of CD239, a laminin receptor, in human breast cancer: a novel antigen for antibody-drug conjugates. Y. Kikawa1,2, Y. Enomoto2, Y. Kikkawa1, Y.O. Tate1, Y. Negishi4, F. Katagiri1, K. Hozumi1, M. Nomizu1, Y. Tari1, Y. Kikkawa1, Y.O. Enomoto2, Y. Kikkawa1, Y. Negishi4, F. Katagiri1, K. Hozumi1, M. Nomizu1, Y. Tari1, Y. Kikkawa1, Y.O. Enomoto2, Y. Kikkawa1, Y.O. Tate1, Y. Negishi4, F. Katagiri1, K. Hozumi1, M. Nomizu1, Y. Tari1; 2Department of Clinical Biochemistry, Tokyo University of Pharmacy and Life Sciences, Hachioji, Japan; 3Graduate School of Science and Engineering, Kagoshima University, Kagoshima, Japan; 4Laboratory of Pharmacy and Life Sciences, Hachioji, Japan; 5Graduate School of Science and Engineering, Kagoshima University, Kagoshima, Japan; 6Faculty of Pharmacy and Life Science, Tokyo University of Pharmacy and Life Sciences, Hachioji, Japan; 7Department of Drug Delivery and Molecular Biopharmaceuticals, Tokyo University of Pharmacy and Life Sciences, Hachioji, Japan

B318/P2175 Dysregulation of human mitochondrial ClpP protease activity by acyldepsipeptides leads to apoptotic cell death. K.S. Wong1,2, M.F. Mabanglo1, F.B. Pu1; 1Department of Radiology, University of Southern California, Los Angeles, CA; 2Research, Advaxis, Inc., Malvern, PA

B319/P2176 Biomarker studies for identification of USP7i sensitive cancer cell lines. B. Cunnion1, T. Sokriny2, L. Wang3, J. Wu4, C. Grove4, S. Kumar4, W.W. Hancock5, F. Wang6; 1Progena Inc., Malvern, PA; 2Division of Transplant Immunology, Department of Pathology and Laboratory Medicine, Children’s Hospital of Philadelphia and University of Pennsylvania, Philadelphia, PA

B320/P2177 Toxicological Effects of NCKU-21, a Phenanthrene Derivative, on Cell Growth and Migration of A549 and CL1-5 Human Lung Adenocarcinoma Cells. C. Wu7; 1Pharmacy, Taipei Medical University, Taipei, Taiwan

B321/P2178 In Vitro Cytotoxicity Study of Mitochondria Targeted IR780-based NanoGUMBOS in Breast Cancer Cells. M. Chen1, N. Bhattarai1, K.C. McDonough2, R. Perez3, I.M. Warner4; 1Department of Chemistry, Louisiana State University, Baton Rouge, LA; 2Department of Food Science, Louisiana State University, Baton Rouge, LA

B322/P2179 Selective Killing of Cancer Cells by Mixed-Charge Gold Nanoparticles Targeting Endo-Lysosomal System. M. Borkowska1, M. Siek2, D. Kolygina3, S. Lach4, Y. Sobolev5, Y. Jeong6, K. Kandere-Gryżowska7,8, B.A. Gryżowskii1,2; 1Center for Soft and Living Matter, Institute of Basic Science (IBS), Ulsan, Ulsan-gun, South Korea; 2School of Life Sciences, Ulsan National Institute of Science and Technology (UNIST), Ulsan, Ulsan-gun, South Korea; 3Department of Chemistry, Ulsan National Institute of Science and Technology (UNIST), Ulsan, Ulsungun, South Korea

B323/P2180 Nanoparticle-Neural Stem Cells for Targeted Ovarian Cancer Treatment. Z.A. Patel1, J.M. Berlin1, W. Abidi1; 1Molecular Medicine, City of Hope, Duarte, CA

B324/P2181 Internalization and Uptake of Targeted Molecular Imaging Agents (TMIAs) Through Clathrin-Mediated Endocytosis. N.A. Omar1, E.A. Pattie1, T.C. Anderson1, C. Donahue1, H.F. Schmittener1, I.M. Evans1; 2GSOLS, Rochester Institute of Technology, Rochester, NY; 3Chemistry and Materials Science, Rochester Institute of Technology, Rochester, NY

B325/P2182 Arrayed CRISPR-based imaging screen reveals that the coatomer subunit alpha (COPA) regulates surface expression of the ADC target prolactin receptor (PRLR). A.E. Perez Bay1, A. Kalsy2, N. Thambir2, T. Young3, E. Pasnikowski1, J. Andreve1, C. Daly1; 1Oncology-Angiogenesis, Regeneron Pharmaceuticals, Tarrytown, NY

B326/P2183 Potential lung cancer therapy by the development of stigmasterol-soluble lipid nanoparticles as drug delivery system. Z. Torres1, Y. Delgado2, K.H. Griebenov1; 1Chemistry, University of Puerto Rico, Rio Piedras, PR; 2Biochemistry Pharmacology, San Juan Bautista School of Medicine, Caguas, PR

B327/P2184 A novel bicyclic binder of a prostate cancer marker Glutamate Carboxypeptidase II. K. Blažková1, P. Šácha1, J. Konvalinka1,2; 1Developmental and Cell Biology, Faculty of Natural Sciences, Charles University, Prague, Czech Republic; 2Proteases of Human Pathogens, Institute of Organic Chemistry and Biochemistry, Prague, Czech Republic

B328/P2185 A human full length preparation of ERCC1-XPF suitable to test compounds targeted to DNA repair mechanisms. D.J. Jay1, M. Weinfeld2; 1Experimental Oncology, Cross Cancer Institute, Edmonton, AB
Tumor Microenvironment 1

B336/P2193 Investigating the role of microenvironmental stress in transcriptional control and cancer progression. S. Chittiboyina1, S. Jayaraman1, K.B. Hodges1, S.A. Lelievre1; 1Basic Medical Sciences, Purdue University, West Lafayette, IN

B337/P2194 Oscillatory HIF-1alpha induction promotes proliferation of hypoxic cells through a lactate dependent quorum autophagy response. K. Soshtiz1,2, J. Afzali1, H. Chang1, Y. Suhaili1, M. Hubbi1, C. Dang1,3, A. Levchenko1; 1Medicine, The Johns Hopkins Medical Institutions, Baltimore, MD, 2Biomedical Engineering, Yale University, New Haven, CT, 3Abramson Cancer Center, University of Pennsylvania, Philadelphia, PA

B338/P2195 Environmental availability of cystine drives usage of glutamate as a TCA cycle substrate and causes glutamine addiction. A. Muir1, L.V. Danai1, D.Y. Gui1, C.Y. Waingarten1, C.A. Lewis2,3, M.G. Vanden Heiden1,3; 1Koch Institute for Integrative Cancer Research and Department of Biology, Massachusetts Institute of Technology, Cambridge, MA, 2Whitehead Institute for Biomedical Research and Department of Biology, Massachusetts Institute of Technology, Cambridge, MA, 3Dana-Farber Cancer Institute, Boston, MA

B339/P2196 One carbon metabolism-mediated protein methylation triggered by histidine regulates the filaments formation and preservation of CTP synthase. W. Lin1,2, A. Chakraborty1, P. Wang1,2, Y. Lee1, L. Pai1,2; 1Department of Biochemistry, College of Medicine, Chang Gung University, Taoyuan, Taiwan, 2Molecular Medicine Research Center, College of Medicine, Chang Gung University, Taoyuan, Taiwan, 3Graduate Institute of Biomedical Sciences, College of Medicine, Chang Gung University, Taoyuan, Taiwan

B340/P2197 G-O-GlcNAcylation plays a role in galecin expression regulation in human cancer cell lines. A.A. Sherazi1, K. Jariwala1, A.M. Cybulski1, A.V. Timoshenko1; 1Biology, The University of Western Ontario, London, ON

B341/P2198 LIPID IMAGING IN PROSTATE CANCER. C.A. Bader1, A. Sorvina1, R.D. Brooks1, I.D. Johnson1, E. Carter2, P. Lay2, E. Parkinson-Lawrence1, M. Massi3, S.E. Plush1, D. Brooks3; 1School of Pharmacy, University of Southern Adelaide, Australia, 2Australis, Australia, 3Department of Medicine, Medical University of South Carolina, Charleston, SC

B342/P2199 Optimization of a Chromatin Immunoprecipitation Assay to Assess Target Genes of the FOXO2 Transcription Factor in Melanoma. D.Z. Bushhouse1; 1K.M. Hargadon1; 1Biology, Hampden-Sydney College, Hampden-Sydney, VA

B343/P2200 Optogenetic manipulation and monitoring of YAP signalling in tumours. A.M. Dowbaj1, M. Montagner2, R. Jenkins1, M. Jiang1, K.M. Hahn3, M. Howell4; 1Department of Biomedical Engineering, Technology Faculty, Kocaeli University, Kocaeli, Turkey, 2Department of General Surgery, Derince Training and Research Hospital, Kocaeli, Turkey, 3Department of Medical Biology, Medical Faculty, Kocaeli University, Kocaeli, Turkey, 4Department of General Surgery, Medical Faculty, Kocaeli University, Kocaeli, Turkey, 5Department of Medical Pathology, Medical Faculty, Kocaeli University, Kocaeli, Turkey

B348/P2205 The importance of cellular oxygenation measurements in the analysis of hypoxia-induced signalling and related metabolic adaptation. M. Potter1, J. Hynes2, A. Nijhuis3, C. Carey4, C. Zois1, A. Harris1, H. Keun1, K. Morten1; 1University of Oxford, Oxford, United Kingdom, 2Luxcel Biosciences, Cork, Republic of Ireland, 3Imperial College London, London, United Kingdom

B349/P2206 Tuning Nanotubes (TNs) mediate bidirectional transfer of specific vesicular cargo and proteins between leukemia and stroma cells. M.D. Kolba1, M. Zareba-Kozio1, W. Dukda-Ruszkowska1, A. Kominic1, K. Srp1, J. Wlodarczyk2, D.M. Davis1, K. Piwocka1; 1Laboratory of Cytometry, Department of Biochemistry, Nencki Institute of Experimental Biology, Polish Academy of Sciences, Warszaw, Poland, 2Laboratory of Cell Biophysics, Department of Molecular and Cellular
**Chromatin and Chromosome Organization**

**B352/P2208** CRISPR-Based DNA Imaging in Living Cells Reveals Cell Cycle-Dependent Chromosome Dynamics. H. Ma,1, L. Tu,2, A. Naseni,1 Y. Chung,1 D. Grunwald1, S. Zhang1, T. Pederson1, 1Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School, Worcester, MA, RNA Therapeutics Institute, University of Massachusetts Medical School, Worcester, MA, 2Department of Computer Science, University of Central Florida, Orlando, FL, 1Department of Biomedical Engineering, University of Maryland, Baltimore County, Baltimore, MD

**B353/P2209** Measuring local chromatin compaction using fluorescence lifetime imaging. P. Choppakatla1, H. Funabiki1, 1Funabiki Lab, Rockefeller University, New York, NY

**B354/P2210** Structure and dynamics of the Polycomb body. J. Smigova1, P. Choppakatla1, 2Department of Medical Genomic, King County, Baltimore, MD, 1Genetics, University of Maryland, Baltimore, MD, 2Department of Biology, Johns Hopkins University, Baltimore, MD, 3Department of Biology, Johns Hopkins University, School of Medicine, Baltimore, MD

**B361/P2217** Characterization of nucleolar-localized H4 histone variant, H4G. M. Longi1, W. Shi1, X. Sun1, T. Ishibashi1, 1Life Science, The Hong Kong University of Science and Technology, HONG KONG, Hong Kong

**Epigenetics and Chromatin Remodeling**

**B362/P2218** Hippocampal Neuron Stimulation Promotes Intracellular Tip60 HAT Dynamics with Concomitant Genome Reorganization and Synaptic Gene Activation. A.M. Karnay1, F. Elefant2, 1Neurobiology and Anatomy, Drexel University, Philadelphia, PA, 2Biological Chemistry, Johns Hopkins University, Baltimore, MD

**B365/P2221** Chromatin dependent glucocorticoid receptor plasticity within the cancer genome. J.A. Hoffman1, K.W. Trotter1, T.K. Archer1, 1Epigenetics and Stem Cell Biology Laboratory, National Institute of Environmental Health Sciences, Research Triangle Park, NC

**B366/P2222** CEBPs orchestrates distinct enhancer landscapes in liver versus adipose tissue. D.M. Cohen1,2, J.R. Remsberg1,2, M.A. Lazzar2,3, B.A. Garcia4, D.J. Steger2,3, 1The Institute for Diabetes, Obesity, and Metabolism, University of Pennsylvania, Philadelphia, PA, 2Division of Endocrinology, Diabetes, and Metabolism, University of Pennsylvania, Philadelphia, PA, 3Genetics, University of Pennsylvania, Philadelphia, PA, 4Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA

**B367/P2223** Comparative chromatin proteome analysis in Xenopus egg extracts identified the bipartite nucleosome remodeling complex, composed of HELLS-CDC17, whose defects cause ICF syndrome. C. Jenness1, H. Funabiki1, 1Lab of Chromosome and Cell Biology, The Rockefeller University, New York, NY


**B369/P2225** Dissecting the synthetic lethality between hTERT and RPB2-2, the interplay between RNA Pol II and the nucleosome dynamics. M.S. Santisteban1, C.L. Bright1, E.G. Gerges1, 1Biology, University of North Carolina at Pembroke, Pembroke, NC

**B370/P2226** Investigating the role of NuA4 and Swr1 in regulating RNA splicing in Saccharomyces cerevisiae. T.S. Gunning1, L.M. Paffini1, R.S. Maisner1, X. Cheng2, J. Cote1, 1Biology, The College of New Jersey, Ewing, NJ, 2St-Patrick Research Group in Basic Oncology, Laval University Cancer Research Center, Quebec City, Canada

**B371/P2227** Elucidating the function of histone H4 acetylation in RNA splicing in Saccharomyces cerevisiae. A.G. Mendizabal1, J.S. Kopew1, N. Parmiati1, 1Biology, The College of New Jersey, Ewing, NJ.
Nucleocytoplasmic Transport

B375/P2230 Nuclear Envelope As A Physical Barrier In Electrotransfection. L.D. Cervia1, L. Wang1, C. Chang1, M. Mao1, F. Yuan1; 1Biomedical Engineering, Duke University, Durham, NC

B376/P2231 Characterizing mRNA export at high resolution in individual nuclear pores in single cells. R. Ben-Yisayah1, A. Ashkenazy2, A. Mor3, A. Shraga1, Y. Garini1, Y. Shav-Tal1; 1Faculty of Life Sciences, Bar-Ilan University, Ramat Gan, Israel, 2Department of Physics, Bar-Ilan University, Ramat Gan, Israel

B377/P2232 Identification of a small, PH domain-embedded region responsible for the nuclear-cytoplasmic distribution of RGNEF. M. Tavolieri1, C. Doppelman2, D. Campos-Melo1, K. Volkeng1, M. Strong1; 1Department of Clinical Neurological Sciences, Schulich School of Medicine Dentistry, Western University, London, ON, 2Molecular Medicine Group, Robarts Research Institute, London, ON

B378/P2233 The role of specific sequence patterns of FG Nups on transport through the NPC. M. Peyro1, V.S. Nibber1, M. Sohellypour1, M. Mofrad2; 1Bionengineering and Mechanical Engineering, University of California Berkeley, Berkeley, CA

B379/P2234 Quantitative analysis of nuclear translocation of ERK by using a novel single molecule technique. K. Mouri1, Y. Okada1,2, F. Yuan1; 1Animal Sciences Department, Texas A&M University, College Station, TX, 2Chemistry-BMC, Uppsala University, Uppsala, Sweden

B380/P2235 Super-resolution microscopy reveals the transport route of transmembrane proteins into the nucleus. K.C. Mudumbai1, R. Czapiewski2, W. Luo1, E. Schirmer1, W. Yang1; 1Biology, Temple University, Philadelphia, PA, 2The Wellcome Trust Centre for Cell Biology, University of Edinburgh, Edinburgh, United Kingdom

B381/P2236 High nuclear export efficiency and conformational changes of pre-ribosomal subunits revealed by high-speed super-resolution microscopy. J. Kelich1, A. Goryaynov1, K. Herbine1, W. Yang1; 1Biology, Temple University, Philadelphia, PA

B382/P2237 Karyopherins regulate nuclear pore complex barrier and transport function. L.E. Kapinos1, B. Huang1, C. Rencurel1, R.Y. Lim1; 1Biozentrum, University of Basel, Basel, Switzerland

B383/P2238 A novel role for the Calcinurin phosphatase at the nuclear pore. C.P. Wliginton1, J. Roy1, N.P. Damle1, I. Ulleng-Talkish1, S. El Chi1, N.E. Davey2, Y. Ivanov2, C.J. Wong2, A. Gingsr2, M.S. Cyert1; 1Biology, Stanford University, Stanford, CA, 2Conway Institute of Bimolecular and Biomedical Research, University College Dublin, Dublin, Republic of Ireland

B384/P2239 Soluble host factors CPS6 and CypA determine the HIV-1 nuclear import pathway. G. Xue1, H. Yu1, S. Goh1, A. Gres2, S. Sarafianos3, J. Luban2, V.N. KewalRamani1; 1Center for Cancer Research, National Cancer Institute, Frederick, MD, 2Program in Molecular Medicine, University of Massachusetts Medical School, Worcester, MA, 3Biochemistry, University of Missouri, Columbia, MO

B385/P2240 In vitro analysis of RanBP1 and RanBP3 roles in Ran-GTP gradient formation and Ran pathway function. K. Yau1, A. Amaoutov1, M. Dasso1; 1NICHD, NIH, Bethesda, MD

B386/P2241 Altering NTF2 levels in melanoma cell lines affects cancer cell characteristics. L.D. Vukovic1, B.A. Stoth1, D.L. Levy1; 1Department of Molecular Biology, University of Wyoming, Laramie, WY, 2Department of Pathology, University of California, San Francisco, CA

B387/P2242 Mechanistic Study of the Attenuation of Androgen Receptor Expression Level by TSG101-ART27 Interaction. Y. Lin1, P. Ouyang1; 1Bionegineering, Chang Gung University, Taoyuan, Taiwan

B388/P2243 Structural determinants of Dnae1L3 that alter its localization during inflammation. J.J. McCord1,2, F. Harsini1, K.N. Abbott2, S. Chebrolu2, R. Sutton2,3, P.A. Keyell1; 1Biological Sciences, Texas Tech University, Lubbock, TX, 2Cell Physiology and Molecular Biophysics, Texas Tech University Health Science Center, Lubbock, TX, 3Center for Membrane Protein Research, Texas Tech University Health Sciences Center, Lubbock, TX

B389/P2244 Tau protein disrupts nucleocytoplasmic transport in Alzheimer’s disease. B. Eftekharzadeh1, G. Daigle1, L.E. Kapinos2, C. Cook3, S. Dujardin2, Y. Carlomango4, A. Amaral1, S. Wegmann1, L. Petrucelli1, J. Rothstein1, B. Hyman1; 1Neurology, Massachusetts General Hospital/ Harvard Medical school, Boston, MA, 2Neurology, Johns Hopkins University/Brain Science Institute, Baltimore, MD, 3Division of Molecular and Cellular Biology, National Institute of Child Health and Human Development, Bethesda, MD

The Nucleolar Envelope and Nuclear Pore Complexes 1

B390/P2245 ROCK-dependent phosphorylation of NUP62 regulates p63 nuclear transport in squamous cell carcinoma. M. Hazawa1, A. Kobayashi1, R. Wong1; 1Institute for Frontier Science Initiative, Kanazawa University, Kanazawa, Japan

B391/P2246 A nuclear localization signal is sufficient to target membrane proteins to the nuclear envelope in plants. N.R. Groves1, J.F. McKenna2, I. Meier3,4; 1Molecular Genetics, The Ohio State University, Columbus, OH, 2Biological and Medical Sciences, Oxford Brookes University, Oxford, United Kingdom, 3Center for RNA Biology, The Ohio State University, Columbus, OH

B392/P2247 Biochemical fractionation of Xenopus extract to identify components limiting for nuclear growth. P. Chen1, K. Nelson2, M. Tomschik1, J.S. Oakey1, D.L. Levy1; 1Molecular Biology, University of Wyoming, LARAMIE, WY, 2Chemical Petroleum Engineering, University of Wyoming, LARAMIE, WY

B393/P2248 SPOP regulates the levels of the nuclear pore protein NupJ. J. Ong1, J.Z. Torres1; 1Department of Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles, CA

B394/P2249 Actin facilitates nuclear envelope breakdown by separating nuclear membranes from the lamina in starfish oocytes. N. Wesolowska1, P. Machado2, M. Mor1, U. Matti1, Y. Schwab2, P. Lénárt1; 1Cell Biology and Biophysics, European Molecular Biology Laboratory, Heidelberg, Germany, 2Electron Microscopy Core Facility, European Molecular Biology Laboratory, Heidelberg, Germany, 3Center of Developmental Biology, Riken, Japan

B395/P2250 Mixing of parental genomes after fertilization in C. elegans involves fusion and fenestration of pronuclear membranes. M.M. Rahman1, L. Chang1, A.S. Harned1, K. Narayan2, O. Cohen-Fix1; 1Laboratory of Cell Molecular Biology, National Institute of Diabetes Digestive Kidney Diseases, Bethesda, MD, 2Center for Molecular Microscopy, Frederick National Laboratories for Cancer Research, Frederick, MD

B396/P2251 Basket nucleoporins “fingerprints”. V. Aksenova1, A. Smith1, H. Lee1, S. Chen1, S.G. Regmi1, C. Echeverria1, A. Amaoutov1, M. Dasso1; 1Division of Molecular and Cellular Biology, National Institute of Child Health and Human Development, Bethesda, MD
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<td>B397/P2252</td>
<td>Analysis of individual subunits within the Nup107-160 complex of the Nuclear Pore. S.G. Regmi, V. Aksenova, S. Chen, A. Arnaoutov, H. Lee, A. Smith, C. Echeverria, E.A. Turcotte, M. Dasso; <em>Division of Molecular and Cellular Biology, National Institute of Child Health and Human Development, Bethesda, MD</em></td>
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<td>B398/P2253</td>
<td>Nucleoporin-dependence of Karyopherin Dynamics in Mammalian Cells. C. Echeverria, K. Plevock Haase, S.G. Regmi, S. Chen, V. Aksenova, A. Smith, A. Arnaoutov, M. Dasso; <em>NICHD, National Institutes of Health, Bethesda, MD</em></td>
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<td>B399/P2254</td>
<td>Functional analysis of nucleoporins on the cytoplasmic face of the nuclear pore complex. S. Chen, V. Aksenova, S.G. Regmi, A. Arnaoutov, H. Lee, A. Smith, C. Echeverria, E.A. Turcotte, M. Dasso; <em>Division of Molecular and Cellular Biology, National Institute of Child Health and Human Development, Bethesda, MD</em></td>
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<td>B400/P2255</td>
<td>Torsin A expression in budding yeast reveals a connection to conserved luminal domains of the nuclear pore complex. M. Chaiffant, C. Zhao, S. Borah, K.W. Barber, C.D. Schliemer, P. Lusk; <em>Department of Cell Biology, Yale School of Medicine, New Haven, CT</em></td>
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<td>B401/P2256</td>
<td>Chm7/CHMP7 is recruited to nuclear envelope herniations through the winged helix domain of Heh1/LEM2. D.J. Thaller, S. Borah, M. Allegretti, P. Ronchi, M. Beck, P. Lusk; <em>Cell Biology, Yale School of Medicine, New Haven, CT</em></td>
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<td>B402/P2257</td>
<td>Towards defining the interactome of LEM-domain proteins and ESCRTs during nuclear pore complex biogenesis. S. Borah, D.J. Thaller, Z. Hakhverdyan, M.P. Rout, P. Lusk; <em>Department of Cell Biology, Yale University, New Haven, CT</em></td>
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<td>B403/P2258</td>
<td>DNA-origami based platforms for investigating the properties of FG-nups within nuclear pore complex-like architectures. O. Shen, P.E. Fisher, B. Akpinar, K.K. Chung, T.J. Melia, B. Hoogenboom, C. Lin, P. Lusk; <em>Department of Cell Biology, Yale University School of Medicine, New Haven, CT</em></td>
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| B410/P2260               | Complete 3D mapping of FG domains for all eleven FG-Nups in living cell NPCs using super-resolution microscopy. J. Yu, J. Kelich, Y. Li, J. Kim, N. Guessaymi, M. Klein, W. Yang; *Biology, Temple University, Philadelphia, PA* |
| B405/P2261               | Correlative Light and Electron Microscopy at the Nuclear Envelope. M. Allegretti, D.J. Thaller, P. Ronchi, Y. Schwab, P. Lusk, M. Beck; *Structural and Computational Biology Unit, European Molecular Biology Laboratory, Heidelberg, Germany* |
| B406/P2262               | Opening windows into the Cell: taking the next step in Structural Biology. G. Heiss, A. Rigort, D. Rossumi; *Analytical Instruments, Thermo Fisher Scientific, Eindhoven, Netherlands* |
| B407/P2263               | On the microrheology of the Nuclear Pore Complex: Nature evolved a novel super nanopore. R. Moussavi-Baygi, M. Mofrad; *Applied Science & Technology, UC Berkeley, Berkeley, CA* |
| B408/P2264               | Genome-wide screen indicates that the spatial organization of genomes is dynamically regulated by transcription factors. D.G. Brickner, J.H. Brickner; *Molecular Biosciences, Northwestern University, Evanston, IL* |
| B410/P2265               | Sphingolipid homeostasis is critical for nuclear envelope integrity. S. Hwang, E.M. Torres; *Molecular, Cell and Cancer Biology, UMass Medical School, Worcester, MA* |
| B411/P2266               | Nuclear envelope defects on S. japonicus lagging chromosomes. I. Lee, E. Stokasimov, D. Peliman; *Pediatric Oncology, Dana-Farber Cancer Institute, Boston, MA* |

**Membrane Fission and Coat Proteins**

| B415/P2269               | The Structural Basis of an ESCRT-III Membrane Assembly. H.C. Nguyen, N. Talledge, J. McCullough, D.M. Wenzel, J.J. Skalicky, W.I. Sundquist, A. Frost; *Department of Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA* |
| B416/P2270               | A new model for COPI-mediated cargo export from the endoplasmic reticulum. O. Shom, I. Nevo-Yassaf, T. Aviad, J. Shepchelovich, Y. Yaffe, E. Perlson, A. Yeheskel, M. Pasmian-Chor, G.H. Patterson, C. Kaether, K. Hirschberg; *Pathology, Tel Aviv University, Tel Aviv, Israel* |

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| B417/P2271               | Cluesterase model of dynamin-mediated membrane fission. T. Takeda, T. Kozai, H. Yang, S. Kaho, K. Yusuke, T. Tada, Y. Hiroshi, T. Uchihashi, T. Ando; *Kakemi, Neuroscience, Okayama University, Okayama, Japan* |
| B418/P2272               | Structural Basis of Mitochondrial Receptor Binding and GTP-Driven Conformational Contraction by Dynamic-Related Protein 1. R. Kalia, R.Y. Wang, A. Yusuf, P.V. Thomas, D.A. Agard, J.M. Shaw, A. Frost; *Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA* |
B421/P2275 A Rab32 trafficking pathway that prevents bacterial infections. M. Baldassarre1, V. Solano-Collado1, D. Mancuso1, S. Spano1; 1Institute of Medical Sciences, University of Aberdeen, Aberdeen, United Kingdom

B422/P2276 Regulation of connecedn/DENND1 guanine nucleotide exchange factor activity by Arf5. G. Kulasekaran1, M. Girard1, M. Fotouhi1, P.S. McPherson1; 1Department of Neurology and Neurosurgery, Montreal Neurological Institute, McGill University, Montreal, QC

B423/P2277 Arf6 is a negative regulator of axonal elongation in cultured rat hippocampal neurons. S. Alvarez1, F. Bodaleo2, M. Fukuda3, C.E. Gonzalez-Billaut1; 1Biology, Universidad de Chile, Santiago, Chile, 2Gerossce Center for Brain Health and Metabolism, Santiago, Chile, 3Tohoku University, Sendai, Japan

B424/P2278 Cdk5-dependent phosphorylation of GRAB, a guanine nucleotide exchange factor for Rab8, regulates neuronal migration in the developing cerebral cortex. K. Furusawa1, A. Asada1, C. Gonzalez-Billaut1; 1Biology, Universidad de Chile, Las Palermas, Chile, 2FONDIAP Geroscience Center for Brain Health and Metabolism, Santiago, Chile, 3Developmental Biology and Neurosciences, Tohoku Medical College, Allenby, Japan

B425/P2279 Disruption of Rab8a and Rab11a causes formation of basolateral microvilli in neonatal enteropathy. Q. Feng1, E.M. Bonder1; 1A.C. Engevik1, L. Zhang1, M.J. Tyska1, J.R. Goldenring2; 2Department of Biological Sciences, Rutgers University, Newark, NJ, 3Department of Surgery, and Epithelial Biology Center, Vanderbilt University School of Medicine, Nashville, TN, 4Department of Pathology, University Medical Center of Princeton, Plainsboro, NJ, 5Rutgers Cancer Institute of New Jersey, Piscataway, NJ, 6Department of Cell Developmental Biology, Vanderbilt University School of Medicine, Nashville, TN, 7Nashville VA Medical Center, Nashville, TN

B426/P2280 Intracellular logistics of LIS1, cytoplasmic dynein, and unconventional microtubules. M. Yamada1; 1Cell Biology & Biochemistry, University of Fukui, Yoshida-Gun, Fukui Prefecture, Japan

B427/P2281 The small GTPase Rab10 regulates the formation of tubular endosomes. K. Etoh1, M. Fukuda1; 1Department of Developmental Biology and Neurosciences, Tohoku University, Sendai, Japan

B428/P2282 Rab4 and Rab14 effector Rabipi4 interacts with lysosomal small GTPase ArlBb and promotes cargo trafficking to lysosomes. R. Marwaha1, P. Chawla1, D. Khahtter1, M. Sharma1; 1Department of Biological Sciences, Indian Institute of Science Education and Research, Mohali, S.A.S Nagar, Mohali, 140306, India

B429/P2283 Role of Small GTPases on differentiation of pre-adipocyte. Y. Huang1, M. Veisaga2, M.A. Barbieri1,2,3; 1Chemistry and Biochemistry, FIU, Miami, FL, 2Biomolecular Science Institute, FIU, Miami, FL, 3Biological Sciences, FIU, Miami, FL, 4International Center for Tropical Botany, FIU, Miami, FL, 5Fairchild Tropical Botanic Garden, Miami, FL

B430/P2284 Early-sorting endosomes in cancer cells show drastically altered morphology, EGFR signaling and degradation but maintain significant organization of regulatory Rab-GTPases and recycling function. K.E. Tubbesing1, A. Malhotra1, J.M. Ward 1, A. Rudkouskaya1, I.C. Fromme1; 1Weil Institute for Cell and Molecular Biology, National Cancer Institute, Bethesda, MD, 2Weill Institute for Cell and Molecular Biology, National Cancer Institute, Bethesda, MD, 3TIGEM, Naples, Italy

B431/P2285 TRAPP complex substrate specificity is mediated by the Rab GTPase hypervariable domain. L.L. Thomas1, S. van der Vegt1, J.C. Fromme1; 1Weil Institute for Cell and Molecular Biology, National Cancer Institute, Bethesda, MD, 2Weill Institute for Cell and Molecular Biology, National Cancer Institute, Bethesda, MD, 3TIGEM, Naples, Italy

B432/P2286 The RAB2B-GARIL5 complex promotes cytosolic DNA-induced interferon responses. M. Takahama1, T. Saitoh1; 1Institute for Enzyme Research, Tokushima University, Tokushima, Japan

B433/P2287 Defining the PI3K-Rab5 Interface. S.D. Heitz1, J.M. Backer1,2; 1The RAB2B-GARIL5 complex promotes cytosolic DNA-induced interferon responses. M. Takahama1, T. Saitoh1; 1Institute for Enzyme Research, Tokushima University, Tokushima, Japan

B434/P2288 High dose of EGF ligand leads to greater EGFR degradation via Rab7 activation. C.C. Palsulesdesai1, T. Shideler2, R. Suderman3, T. Shi4, C.D. Nicora5, R.D. Smith1, S. BasuRay1, W. Hlavacek2, A. Wandinger-Ness1; 1Department of Pathology, University of New Mexico, Albuquerque, NM, 2Theoretical Biology and Biophysics Group, Theoretical Division, Los Alamos National Laboratory, Los Alamos, NM, 3Biological Sciences Division, Pacific Northwest National Laboratory, Richland, WA, 4Comprehensive Cancer Center, University of New Mexico, Albuquerque, NM

B435/P2289 Deciphering TRAPP complex function. A. Joiner1, L.L. Thomas1, J.C. Fromme1; 1Weil Institute for Cell and Molecular Biology, National Cancer Institute, Bethesda, MD, 2Weill Institute for Cell and Molecular Biology, National Cancer Institute, Bethesda, MD, 3TIGEM, Naples, Italy

Endocytic Trafficking 1

B436/P2290 TFEB regulates endocytic trafficking of essential LYNUS components to mediate mTORC1 signaling and autophagy flux. I.C. Nnah1, C. Saqena1, D. Medina Sanabria2, A. Ballabio3, R. Dobrowolski1; 1Biological Sciences, Rutgers University, Newark, NJ, 2TIGEM, Naples, Italy

B437/P2291 Functional analysis of PI3P effector candidate SNX in Entamoeba histolytica. N. Watanabo1,2,3, T. Nozaki2,3, K. Nakada-Tsukui2; 1Graduate School of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan, 2Department of Parasitology, National Institute of Infectious Diseases, Tokyo, Japan, 3Graduate School of Medicine, The University of Tokyo, Tokyo, Japan

B438/P2292 Syntaxin-6 defines a cellular compartment distinct from the trans-Golg network that accumulates internalized somatostatin receptor 2. W.A. Alshaffe1, V.G. Francis1, P.S. McPherson1, T. Strohi1; 1Neurology and Neurosurgery, McGill University, Montreal, QC

B439/P2293 Involvement of the HPV E6 protein in the trafficking of several cellular SNX27 cargoes through the PDZ binding motif. P. Massimi1, J. Bronarczyk2, L. Banks1; 1Tumour Virology, ICGEB, Trieste, Italy

B440/P2294 Loss of Myosin Vb Results in Alterations in Trafficking of Enterocyte Apical Transporters. A.C. Engevik1, M.A. Engevik1, B.C. Knowles1, V.G. Weis1, N. Ameen1, H. Koepell1, J.R. Goldenring1,2,3; 1Epithelial Biology Center, Vanderbilt University School of Medicine, Nashville, TN, 2Surgery, Vanderbilt University School of Medicine, Nashville, TN, 3Pathology, Baylor College of Medicine, Houston, TX, 4Pediatrics, Yale, New Haven, CT, 5Molecular Plant Physiology and Biophysics, University of Würzburg, Würzburg, Germany, 6Nashville VA Medical Center, Nashville, TN

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B447/P2305 TrkA signaling endosomes: Association with Rab7 and Rab11 and dynamic fusion and fission events as possible mechanisms of signaling endosome diversification. K.A. Barford1, A. Keller2, K. McDaniel1, C. Deppmann2, B. Winckler1; 1Cell Biology, University of Virginia, Charlottesville, VA, 2Biology, University of Virginia, Charlottesville, VA

B452/P2306 ApoER2 and Its Ligand Reelin Follow a Clathrin-Independent Endocytosis. J. Santana1, M. Marzol1; 1Cellular and Molecular Biology, Pontificia Catholic University of Chile, Santiago, Chile

B453/P2307 Alpha-arrestins Aly1 and Aly2 regulate trafficking of the glycophosphoinositol transporter, Git1 and impact lipid homeostasis in cells. B. Robinson1, S. Anakor1, A. Nikiforov1, P. Ziegler1, J. Patton-Vogt1, A.F. ODonnell1; 1Dept. of Biological Sciences, Duquesne University, Pittsburgh, PA

B454/P2308 Screening of the ScubiI yeast deletion library for modifiers of Aly1- or Aly2-mediated resistance to rapamycin in an undergraduate lab course. R.W. Bowman1, M. Hall1, A.F. ODonnell1; 1Dept. of Biological Sciences, Duquesne University, Pittsburgh, PA

B455/P2309 Systematic analysis of the molecular architecture of endocytosis reveals a nanoscale actin nucleation template that drives efficient vesicle formation. M. Mund1, J. van der Beek1, J. Deschamps1, S. Dmitrieff1, J. Monster1, A. Picco2, F. Nedelec1, M. Kaksonen1, J. Ries1; 1Cell Biology and Biophysics, European Molecular Biology Laboratory, Heidelberg, Germany, 2Department of Biochemistry, University of Geneva, Geneva, Switzerland

B456/P2310 NBEAL2 is required for retention of endocytosed and megakaryocyte synthesized α-granule cargo proteins. R.W. Lo1, L. Li2, R. Leung2, F.G. Pluthero2, W.H. Kahr1,2; 1Biochemistry, University of Toronto, Toronto, ON, 2Cell Biology Program, The Hospital for Sick Children, Toronto, ON, 3Paediatrics, University of Toronto, Toronto, ON

B457/P2311 Clathrin Light Chain A is Specifically Required for Efficient Cell Spreading and Migration. O. Taygankova1,2, J.H. Keen1,2; 1Biochem and Mol Biol, Jefferson University, Philadelphia, PA, 2Sidney Kimmel Cancer Center, Jefferson University, Philadelphia, PA

Establishment and Maintenance of Polarity

B459/P2312 Suppressors of pam-1: Uncovering the role of PAM-1 in regulation of anterior-posterior polarity in the one-cell C. elegans embryo. R.L. Lyczak1, A. Otto1, D. Ulbel1, D. Stephens1, D.M. Saturno1, E. Jaeger1; 1Biology Dept, Ursinus College, Collegeville, PA

B460/P2313 Suppressor screening to identify new regulators of anterior-posterior axis establishment in Caenorhabditis elegans. D. Benton1, Z. Lee1, A. Kliner1, A. Kimble1, K. Power1, E. Jaeger1, R.L. Lyczak1; 1Biology Dept, Ursinus College, Collegeville, PA

B461/P2314 Deciphering the role of centrosomes in symmetry breaking of the C. elegans zygote. K. Klinkert1, C. Busso1, S. Herrman1, L. von Tobel1, P. Gönçzy1; 1Swiss Institute for Experimental Cancer Research (ISREC), School of Life Sciences, Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland

B462/P2315 Microtubule Array/AP-1/SEC-15 Ensemble Regulates a Sorting Role of Rab-11-Enriched Apical Endosomal Intermediates in C. elegans Intestine. H. Ye1, P. Yi1, R. Zhang1; 1College of Life Science and Technology, Huazhong University of Science and Technology, Wuhan, China

B463/P2316 Assessing a role for membrane trafficking in polarization of the intestinal epithelium. M. Pickett1, J.L. Feldman1; 1Biology, Stanford University, Stanford, CA

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<td>Induction of apically mistrafficked epiregulin is sufficient to disrupt apico-basolateral polarity in MDCK cells in 3D.</td>
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<td>B. Singh1, G. Bogatcheva2, R.J. Coffey2, Medicine, Vanderbilt University Medical Center, Nashville, TN, 1Veterans Affairs Medical Center, Nashville, TN</td>
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<td>B465/P2318</td>
<td>Leptin signaling disrupts tight junctions in the mammary gland. I. Tenvooren1, M. Jenks1, K.L. Cook2, K. Wang3, K. Bonin1, V. Seewaldt2, S.A. Lelièvre3, P. Vidi1, Cancer Biology, Wake Forest University Health Sciences, Winston-Salem, NC, 2Department of Surgery, Wake Forest University Health Sciences, Winston-Salem, NC, 3Department of Physics, Wake Forest University, Winston-Salem, NC, 4Population Sciences, City of Hope, Duarte, CA, 5Basic Medical Sciences, Purdue University, West Lafayette, IN</td>
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<td>B466/P2319</td>
<td>Regulation of epithelial junctions and polarity by the Scribble/SGEF/Dlg complex. A.T. Lyons1,2, J.R. Prosperi1,2,3, Department of Molecular, Cellular Sciences, University of Toledo, Toledo, OH, 2Department of Molecular, Cellar and Developmental Biology, University of Michigan, Ann Arbor, MI, 3Department of Biochemistry, University of Iowa, Iowa City, IA, 4Tumour Virology Group, ICGEB, Trieste, Italy</td>
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<td>B467/P2320</td>
<td>Epithelial Membrane Protein 2 and Adenomatous Polyposis Coli interactions regulate apical-basal polarity. A.C. Lesko1,2, C.G. Ahlers1,2, A.T. Lyons1,2, J.R. Prosper1,2,3, College of Science, University of Notre Dame, Notre Dame, IN, 2Department of Biological Sciences, Harper Cancer Research Institute, University of Notre Dame, Notre Dame, IN, 3Department of Biochemistry and Molecular Biology, Indiana University School of Medicine- South Bend, South Bend, IN</td>
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<td>B468/P2321</td>
<td>Developing an assay to analyze the molecular events leading to establishment of polarity during polarized growth. X. Cheng1, M. Bezanilla1, Biology, Dartmouth College, Hanover, NH</td>
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<td>B469/P2322</td>
<td>Dissecting Roles for a Signalling Mucin and Effector Cdc42p-MAP Kinase Pathway in Polarity Establishment and Metabolic Reprogramming. A. Prabakhar1, N. Vadaie2, T. Krzyztek1, P.J. Cullen1, Biological Sciences, University at Buffalo, The State University of New York, Buffalo, NY, 1University of California, San Diego, San Diego, CA</td>
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<td>B470/P2323</td>
<td>Cellular Polarity is Directed by Electrophoresis and Electrically Driven Water Flow. A. Sarkar1, B.M. Kobylykovich1, B.R. Carlberg1, M.A. Messerli1, Biology Microbiology, South Dakota State University, Brookings, SD</td>
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<td>B471/P2324</td>
<td>Mechanisms connecting the conserved protein kinases Kin1, Pom1, and Spc1 in fission yeast cell polarity and division. M. Lee1, S.F. Rusin1, N. Jenkins1,2, A.N. Ketenbach1,2, J.B. Moseley1, Department of Biochemistry and Cell Biology, The Geisel School of Medicine at Dartmouth, Hanover, NH, 2Norris Cotton Cancer Center, The Geisel School of Medicine at Dartmouth, Lebanon, NH</td>
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<td>B472/P2325</td>
<td>Drosophila neuronal stem cells are polarised by their daughter cells. J. Januschke1, N. Loyier1, Cell &amp; Developmental Biology, University of Dundee, Dundee, United Kingdom</td>
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<td>B473/P2326</td>
<td>Characterising the molecular mechanism of the fission yeast membrane- based growth polarity landmarks Rx1 and Rax2. H.L. Johnson1, S. Ashraf1, C. Spanos1, K.E. Sawin1, Wellcome Centre Cell Biology, University of Edinburgh, Edinburgh, United Kingdom</td>
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<td>B474/P2327</td>
<td>MARK2 regulates directed cell migration and cytokinesis polarization through modulation of MYPT1-Mysin II activity. A.M. Pasapera-Limon1, T. Amos1, S.M. Heissler1, Y. Nishimura1, R.S. Fischer, J.R. Sellers1, C.M. Waterman1, Cell Biology, NHLBI-NIH, Bethesda, MD, 2Molecular Physiology and Biophysics, Thomas Jefferson University, Philadelphia, PA</td>
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<td>B475/P2328</td>
<td>Exploration and stabilization of Ras1 zone during fission yeast mating: a mechanism with positive and negative feedback regulation. B. Khalili1,2, L. Merlini1,2, S.G. Martin2, D. Vayvylon1, 1Physics, Lehigh University, 18015 PA, 2Fundamental Microbiology, University of Suanza, Lausanne, Switzerland</td>
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<td>B477/P2329</td>
<td>Enhanced Outgrowth and Regeneration in Adult Motor Neurons from Amyotrophic Lateral Sclerosis Mouse Models. Z. Osking1, K. Kruber1, J. Ayers1,2, R. Hildebrandt1, D. Borchelt1, T. Read1, E.A. Vitriol1, Department of Anatomy and Cell Biology, University of Florida, Gainesville, FL, 2Department of Neuroscience, University of Florida, Gainesville, FL, 3Center for Translational Research in Neurodegenerative Disease, University of Florida, Gainesville, FL, 4Department of Molecular Genetics and Microbiology, University of Florida, Gainesville, FL</td>
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<td>B478/P2330</td>
<td>Characterizing SMA patient-derived mutations to connect protemic environment with disease-related phenotypes. A.C. Raimer1, S. tan Have1, K. Gray1, A.M. Spring1, A. Lamond1, A.G. Matera1,4, 1Curriculum in Genetics and Molecular Biology, UNC Chapel Hill, Chapel Hill, NC, 2Centre for Gene Regulation</td>
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<td>B479/P2331</td>
<td>Rho guanine nucleotide exchange factor (RGN EF) as a pro-survival factor in vitro and in vivo models. B.M. Withers1,2, J.C. Droppellmann2, D. Campos-Melo2, M.J. Strong1,2, Neuroscience, Schulich School of Medicine and Dentistry, London, ON, 2Molecular Medicine Group, Robarts Research Institute, London, ON</td>
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<td>B480/P2332</td>
<td>A new genetic mouse model for SPAST-based Hereditary Spastic Paraplegia reveals the importance of toxic gain-of-function mechanisms. L. Qiang1, E. Piernarini1, L. Leo1, H. Muralidharam1, G.M. Alexander1, L.E. Hennessy1, L.V. Zhuludeva1, S. Fernandes1, W. Yu1, A.M. Lane1, T.D. Heiman-Patterson1, P.W. Baas1, 1Neurobiology and Anatomy, Drexel University College of Medicine, Philadelphia, PA</td>
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<td>B481/P2333</td>
<td>The RNA binding protein Zfp106 protects against neurotoxicity caused by C9orf72 GGGGCC repeats. B. Celona1, J. Von Dollen2, S.C. Vatsavayai1, R. Kashima1, J. Johnson2, A.A. Tang1, A. Hata1, B.L. Miller1, E.J. Huang1, N. Krogan2, W.W. Seeley3,4, B.L. Black1,2, 1Cardiovascular Research Institute, University of California, San Francisco, San Francisco, CA, 2Cellular and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA, 3Neurology, University of California, San Francisco, San Francisco, CA, 4Pathology, University of California, San Francisco, San Francisco, CA, 5Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA</td>
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<td>B482/P2334</td>
<td>SOD1G93A mouse model of ALS presents increased expression of NLRP1 and NLRP3 in cells from spinal cord. R. Barboza1, P.O. Castro1, R.S. Lima2, M.F. Ferrari2, 1Departamento de Ciencias Biológicas, Universidade Federal de Sao Paulo, Diadema, Brazil, 2Departamento de Genética e Biologia Evolutiva, Universidade de Sao Paulo, Sao Paulo, Brazil</td>
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<td>B483/P2335</td>
<td>Autophagolysosome disruption in Drosophila models of ALS/FTD caused by C9orf72 mutations. K.M. Cummings1, K. Zhang2, M. Senturk2, H. Sung1, K. Ruan1, Z. Zuo1, H.J. Bellen1, T.E. Lloyd1,4, 1Neurology, Johns Hopkins School of Medicine, Baltimore, MD, 2Developmental Biology, Baylor College of Medicine, Houston, TX, 3Neuroscience, Baylor College of Medicine, Houston, TX, 4Neuroscience, Johns Hopkins School of Medicine, Baltimore, MD</td>
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B484/P2336 The ataxin-1 interactome reveals direct connection with multiple disrupted nuclear transport pathways. S. Zhang1, N.A. Williamson2, D.A. Jans3, M.A. Bogoyevitch1; 1Cell Signalling Research Laboratories, Department of Biochemistry and Molecular Biology, University of Melbourne, Parkville, Victoria 3010, Australia, 2Bio21 Molecular Science and Biotechnology Institute, University of Melbourne, Parkville, Victoria 3010, Australia, 3Nuclear Signalling Lab., Department of Biochemistry and Molecular Biology, Monash University, Clayton, Victoria 3800, Australia

B485/P2337 Sirt1 restores proper calcium homeostasis to achieve neuroprotection in spinocerebellar ataxia type 7. C.A. Stoyas1, D. Bushart2, J. Auwerx3, V.G. Shakkottai2, A.R. La Spada1; 1Pediatrics, University of California San Diego, La Jolla, CA, 2Neurology, University of Michigan, Ann Arbor, MI, 3Laboratory of Integrative and Systems Physiology, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

B486/P2338 A neuroprotective agent that inactivates pro-degenerative TrkA and preserves mitochondria. K. Feinberg1, A. Kolaj1, W. Chan2, N. Grinshtein1, J.R. Krieger2, M.F. Moran3,4, L.L. Rubin2, F.D. Miller4,5, D.R. Kaplan1,1; 1Neurosciences and Mental Health Program, Hospital for Sick Children, Toronto, ON, 2Department of Stem Cell and Regenerative Biology and Harvard Stem Cell Institute, Harvard University, Cambridge, MA, 3Cell Biology, Hospital for Sick Children, Toronto, ON, 4Molecular Genetics, University of Toronto, Toronto, ON, 5Physiology, University of Toronto, Toronto, ON

B487/P2339 Post-Translational Modifications of Dipeptide Repeat Proteins in c9orf72-Associated ALS. M. Meykler1, M.P. Torrente1; 1Chemistry, CUNY Brooklyn College, Brooklyn, NY

Neuronal Signal Transduction, Cell-Cell Interactions

B488/P2340 Intra-Axonal Translational Control Mechanisms for ER Chaperone Protein mRNAs. A. Pacheco1, J.L. Twiss2, G. Gallo3; 1Shriners Hospitals Pediatric Research Center, Temple University, Philadelphia, PA, 2Dept of Biological Sciences, University South Carolina, Columbia, SC

B489/P2341 The adaptor protein FEZ1 links metabotropic glutamate receptors to the autophagy pathway. M. Donoso1, M. Kalinowska1, C. Castillo1, A. Francesconi1; 1Neuroscience, Albert Einstein College of Medicine, Bronx, NY

Dynamics of Proteins and Organelles in Neurons

B490/P2342 A pair of E3 ubiquitin ligase coordinate responses of DCC to its ligand, netrin-1. C. Monkiewicz1, N. Boyer2, S. Menon1, S.L. Gupton3,1; 1Cell Biology and Physiology, University of North Carolina at Chapel Hill, School of Medicine, Chapel Hill, NC, 2Neurobiology Curriculum, University of North Carolina at Chapel Hill, School of Medicine, Chapel Hill, NC, 3Neuroscience Center, University of North Carolina at Chapel Hill, School of Medicine, Chapel Hill, NC

B491/P2343 CHL1 and SLIT1 Co localize in the Intermediate Zone During Embryonic Development. C. Levinger1, P. Tran1, A.G. Wright1; 1Biology and Physical Sciences, Marymount University, Arlington, VA

B492/P2344 Glia and pioneer neurons direct hierarchical assembly of the C. elegans brain. G. Rapti1, C. Li1, A. Shan1, Y. Lu1, S. Shaham3; 1Laboratory of Developmental Genetics, The Rockefeller University, New York, NY

B493/P2345 PLCβ1 escorts Ago2 to stress granules to change the miR population in response to Osmotic Stress. A. Singila1, S. Scarlata1, C. Monaco1, 1Chemistry and Biochemistry, Worcester Polytechnic Institute, Worcester, MA

B494/P2346 The ataxia disease gene VPS13D plays an essential role in mitochondrial morphology and transport in Drosophila neurons. R. Insolera1, E. Seong2, L.M. Rivera-Perez3, D. Lozano1, M. Burmester2,3,4, C.A. Collins1; 1MCDB, University of Michigan, Ann Arbor, MI, 2Department of Human Genetics, University of Michigan, Ann Arbor, MI, 3Department of Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor, MI, 4Department of Psychiatry, University of Michigan, Ann Arbor, MI

B495/P2347 Fear conditioning affects adenosine receptor and glutamate transporter expression during memory consolidation. H.E. Merens1, L. De Falciso1, D. Cusmano1, S. Chatterjee4, T. Abel1, J.C. Tudor1; 1Cell Biology, University of Pennsylvania, Philadelphia, PA, 2Biology, Saint Joseph's University, Philadelphia, PA, 3Biology, University of Pennsylvania, Philadelphia, PA, 4Cell Biology and Biophysics, Cancer College of Medicine University of Iowa, Iowa City, IA

B496/P2348 Neurofilament transport may be regulated by the proximity of neurofilaments to their microtubule tracks. T.L. Nguyen1, P. Jung1, A. Brown1, 1Department of Physics and Astronomy and Quantitative Biology Institute, Ohio University, Athens, OH, 2Department of Neuroscience, Ohio State University, Columbus, OH

B497/P2349 In a preliminary association study in Turkish population: Do IL-17 and UCP2 Gene variants contribute to The Ethiology of Microtia? K. Ozdilli1, M. Bekerecoglu1, S. Pehlivan1, B. Buyukgural1; 1Medipol University Hospital, Istanbul, Turkey, 2Plastic and Reconstructive Surgery, Sutcu Imam University, Kahramanmaras, Turkey, 3Medical Biology, Istanbul University, Istanbul, Turkey, 4Plastic and Reconstructive Surgery, Private Clinic, Istanbul, Turkey

B499/P2351 Alterations in Protein Expression Levels Following Exposure to Mild Traumatic Brain Injury Simulation in 2.5D Culture System. K. Gilpin1, T.J. O’Shaughnessy2; 1Materials Science & Technology Division, Naval Research Laboratory, Washington DC, DC

B500/P2352 Expression of WIP12B counteracts age-related decline in autophagosome biogenesis in neurons. A.K. Stavole1, E.L. Holzbaur1; 1Physiology, University of Pennsylvania, Philadelphia, PA

B501/P2353 Autophagy at the synapse: from biogenesis to breakdown. S.E. Hill1,2, S. Yang1,2, D.A. Colon-Ramos1,2,3; 1Cell Biology, Yale University, New Haven, CT, 2Neuroscience, Yale University, New Haven, CT, 3Program in Cellular Neuroscience, Neurodegeneration and Repair, Yale University, New Haven, CT

B502/P2354 Clarification of the roles of γ-secretases associated with autophagy. B. H. Heo1, J. Chang1; 1Department of Biomedical Sciences, Ajou University School of Medicine, Suwon, Korea, South

B503/P2355 ER-mitochondria tethering by PDZD8 regulates Ca2+ dynamics in mammalian neurons. Y. Hirabayashi1, S. Kwon1, H. Paek2, W.M. Pernice3, M.A. Paul1, J. Lee1, P. Erfani1, A. Raczkowski4, D.S. Petrey1, L.A. Pon1, F. Polleux1; 1Department of Neuroscience, Columbia University, New York, NY, 2Department of Pathology and Cell Biology, Columbia University, New York, NY, 3Simons Electron Microscopy Center, New York Structural Biology Center, New York, NY, 4Department of Systems Biology, Columbia University, New York, NY

B504/P2356 A retrograde autophagic filter that removes mitochondria in distal nodes of Ranvier. N.A. Marahori1, S. Hannan1, B. Plomer2, T. Kleele3, M. Schifferer4,5, M. Lakadamyali5,6, M.S. Brill1, T. Misgeld1,2,6; 1Institute of Neuronal Cell Biology, Technical University Munich, Munich, Germany, 2Laboratory of Experimental Biophysics, École polytechnique fédérale de Lausanne, Lausanne, Switzerland, 3German Center for Neurodegenerative Diseases (DZNE) Munich, Munich, Germany, 4Macromolecular and Structural Biology, ETH Zurich, Zurich, Switzerland, 5Department of Neurology, University of Technology, Munich, Munich, Germany
Establishing and Maintaining Organelle Structure

By 2506/P2358 Identification of the NAB2 Nuclear Localization Signal. S. Grant1, S. Talukder2, A. Vinayak1, D. Hoffmann2, S. Mitterer2, D. Novotny2, N. Bawazir1,2, M. Myre2,3, L. Evershed1,3,4,5,6, S. Wimberley1, J. Hurley1,2,3,4,5,6,7,8,9

1Department of Biology, McGill University, Waltham, MA, 2Biological Sciences, University of Utah, Salt Lake City, UT, 3Department of Oncological Sciences, Huntsman Cancer Institute, Salt Lake City, UT

BS21/P2372 The role of DNA content in regulating cell shapes and sizes during zebrafish development. T. Menon1, S. Nair1,2, Department of Biological Sciences, Tata Institute of Fundamental Research, Mumbai, India

BS22/P2373 Inhibition of MEK1/2 and MLK3 impairs plasma membrane repair responses to bacterial pore-forming toxins. S. Ray1, P.A. Keyel1, Biological Sciences, Texas Tech University, Lubbock, TX

BS23/P2374 ESCRT membrane scission revealed by optical tweezers. J. Schöneberg1,2, S. Yan1,3,4, A.H. Bahrami1, M. Righini1,2, M.R. Pavlin2,3,4, J.H. Hurley2,5,6,7,8, Theoretical Biophysics, Max Planck Institute of Biophysics, Frankfurt a. M., Germany, 2California Institute for Quantitative Biosciences, UC Berkeley, Berkeley, CA, 3Molecular and Cell Biology, UC Berkeley, Berkeley, CA, 4Howard Hughes Medical Institute, UC Berkeley, Berkeley, CA, 5Department of Chemistry, UC Berkeley, Berkeley, CA, 6Biophysics Graduate Group, UC Berkeley, Berkeley, CA, 7Institute of Biophysics, Goethe University, Frankfurt/M, Germany, 8Molecular Biophysics and Integrated Bioimaging Division, Lawrence Berkeley National Laboratory, Berkeley, CA, 9Department of Physics, UC Berkeley, Berkeley, CA

BS24/P2375 The Mechanism of the Membrane Binding of the F-BAR Domain Protein GPS47. M. Ab Fadil1, S. Suescug1,2,1, Molecular Medicine and Cell Biology Laboratory, Nara Institute of Science and Technology, Nara, Japan

BS25/P2376 AMPK Regulates Peroxisomal Cargo Proteins Import via PEX5 Phosphorylation. J. Jing1, D. Tripathi1, R. Dere1, C. Walker1,2, CPEH, Baylor college of Medicine, Houston, TX, 2CTCR, Texas AM University, Houston, TX

BS26/P2377 The peroxisomal AAA-ATPase Pex1/PeX6 unfolds substrates by processive threading. B.M. Gardner1, D.T. Castanzo1, S. Chowdhury2, G. Štefanovic3, M.S. Stefely4, J.H. Hurley1,2,3,4, G.C. Lander5, A. Martin1,2,5,6,7,8,9, Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, 2Department of Integrative Structural and Computational Biology, The Scripps Research Institute, La Jolla, CA, 3Molecular Biophysics and Integrated Bioimaging Division, Lawrence Berkeley National Laboratory, Berkeley, CA, 4California Institute for Quantitative Biosciences, University of California, Berkeley, Berkeley, CA, 5University of California, Berkeley, Howard Hughes Medical Institute, Berkeley, CA
Mitochondrial Metabolism and Physiology

B532/P2383 Mitochondrial Calcium Uniporter controls AMPK activity and lipid metabolism. D. Tomar1,2, F. Jahar, Z. Dong1, N. Nemani1, S. Santhanam1, A. Tripathi1, E. Carvalho1, S. Rajan1, D.S. Wijesinghe3, R.S. Abima, M. Madesh1,2; Department of Medical Genetics Molecular Biochemistry, Temple University, Philadelphia, PA, 2Center for Translational Medicine, Temple University, Philadelphia, PA, 3Department of Surgery, Virginia Commonwealth University, Richmond, VA, 4Division of Endocrinology, Diabetes and Metabolism, John Hopkins University, Baltimore, MD

B533/P2384 Deciphering the function of CLYBL, a missing human gene and a mitochondrial orphan metabolic enzyme. H. Shen1, V. Mootha1; Department of Molecular Biology, Massachusetts General Hospital/Howard Hughes Medical Institute, Boston, MA

B534/P2385 Sulfotransferase 1C2 (SULT1C2) post-translationally increases mitochondria respiration. A.L. Kolb1, S.J. Atkinson1, Z. Pfaffengerber1, J. Collett1, D.P. Basi1, R.L. Bacallao2; Biology, Indiana University-Purdue University Indianapolis, Indianapolis, IN, 2Medicine, Indiana University School of Medicine, Indianapolis, IN, 3Cellular and Integrative Physiology, Indiana University School of Medicine, Indianapolis, IN

B535/P2386 Characterization of mitochondrial metabolic oscillations in live rodents. Y.S. Ng1, D. Chen2, N. Porat-Shliom1, W. Losert1, R. Weigert1; Laboratory of Cellular and Molecular Biology, National Cancer Institute, Bethesda, MD, 2College of Computer, Mathematical, and Natural Sciences, University of Maryland, College Park, MD, 3Intracellular Membrane Trafficking Section, National Institute of Dental and Craniofacial Research, Bethesda, MD

B536/P2387 S6 kinase 1 plays a key role in mitochondrial morphology and cellular energy flow. Q. Tran1, J. Jung2, J. Park3, H. Lee1, Y. Hong1, H. Cho1, M. Kim1, S. Park1, S. Kim2, K. Kim2, M. Cho4, J. Park1; Department of Pharmacology and Medical Science, Chungnam National University, Daejeon, South Korea, 2Department of Applied Chemistry, Kyunghee University, Yonin, South Korea, 3Department of Neurosurgery, Institute for Cancer Research, College of Medicine, Chungnam National University, Daejeon, South Korea, 4College of Veterinary Medicine, Seoul National University, Seoul, South Korea

B537/P2388 Deep mutational scanning reveals characteristics important for mitochondrial targeting of a tail-anchored protein. A. Keskini1, E. Akdogan1, C.D. Dunn1,2; Department of Molecular Biology and Genetics, Koç University, Istanbul, Turkey, 2Institute of Biotechnology/HILIFE, University of Helsinki, Helsinki, Finland

B538/P2389 Sengers syndrome associated mitochondrial acylglycerol kinase, is a subunit of the human TIM22 protein import complex. Y. Kang1, D. Stroud2, M.J. Baker1, D.P. De Souza3, A. Frazier1, M. Liem1, D. Tuill1, S. Mathivanan2, M. McConville1, D. Thorburn4, M.T. Ryan5, D. Stojanovski1; Department of Biochemistry and Molecular Biology, The Bio21 Molecular Science and Biotechnology Institute, Melbourne University, Melbourne, Australia, 2Department of Biochemistry and Molecular Biology, Monash Biomedicine Discovery Institute, Monash University, Melbourne, Australia, 3Metabolomics Australia, The Bio21 Molecular Science and Biotechnology Institute, Melbourne University, Melbourne, Australia, 4Department of Paediatrics, Murdoch Children’s Research Institute, Melbourne University, Melbourne, Australia, 5Department of Biochemistry and Genetics, La Trobe Institute for Molecular Science, La Trobe University, Melbourne, Australia

B539/P2390 Functional analysis of mitochondria subpopulations by novel nanoscale flow cytometry platform. J.A. MacDonal1, A.M. Bothun1, A.R. Ivanov2, J.L. Tilly1, D.C. Woods1; Biology Department, Northeastern University, Boston, MA, 2The Barnett Institute of Chemical and Biological Analysis, Northeastern University, Boston, MA

B540/P2391 Mitochondrial subpopulations exhibit differential dynamic responses to support increased energy demand during exocytosis. N. Porat-Shliom1, L.N. Malec1, O. Harding1, R. Weigert1; Laboratory of Cellular and Molecular Biology, National Institute of Health, NCI, Bethesda, MD

B541/P2392 Nutrient-regulated destruction of mitochondrial metabolite carriers by the MDC pathway. M. Schuler1, A.M. Liwiller1, T. Tedeschi1, T.J. Campbell1, J.M. Shaw1, A.L. Hughes1; Department of Biochemistry, University of Utah, Salt Lake City, UT

B542/P2393 From Dictyostelium to Human Airway Epithelium: Adenine Nucleotide Translocase as a Protector Against Cigarette Smoke. J. Nguyen1,2, C. Kim1, S. Claypool3, P. Iglesias1, R. Sidhaye1, D.N. Robinson1,2; Cell Biology, Johns Hopkins University, Baltimore, MD, 3Pharmacology and Molecular Sciences, Johns Hopkins University, Baltimore, MD, 4Medicine, Division of Pulmonary and Critical Care, Johns Hopkins University, Baltimore, MD, 5Electrical and Computer Engineering, Johns Hopkins University, Baltimore, MD, 6Chemical and Biomolecular Engineering, Johns Hopkins University, Baltimore, MD

B543/P2394 Tracking global changes in acetylated mitochondria by immunofluorescence provides new insight into HDAC class I and III crosstalk. H. Horton3, K. Middleton1; RD Department, Cytoskeleton Inc., Denver, CO

Mitochondrial Metabolism and Physiology

B531/P2382 Inter-ethnic variations of mitochondrial DNA polymerase (POLG1) in two large American populations and their functional analysis. P. Bajpai1, B. Singh1, K.M. Owens1, V. Srinivasasainagendra1, H.K. Tiwari1, K.K. Singh1,2; Department of Genetics, University of Alabama at Birmingham, Birmingham, AL, 2Department of Biostatistics, University of Alabama at Birmingham, Birmingham, AL, 3Departments of Pathology, Environmental Health, Center for Free Radical Biology, Center for Aging and UAB Comprehensive Cancer Center, University of Alabama at Birmingham, Birmingham, AL, 4Birmingham Veterans Affairs Medical Center, Birmingham, AL
Cellular Lipid Metabolism and Membrane Dynamics

B556/P2407 Phosphatidylinositol synthesis is controlled at the level of substrate availability. N. Sengupta1, D.J. Tóth1, J. Pemberton1, Y. Kim1, T. Balla1; *NICHD, NIH, Bethesda, MD

B557/P2408 Acute control of plasma membrane PtdIns(4,5)P2. R.C. Willis1, J.P. Zewel1, G. Boulen1, G. Hammond1; *Department of Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

B558/P2409 Uncovering a novel and Ca2+-dependent mechanism that regulates phosphatidylinositol 4-phosphate production at the plasma membrane. I. Ullengin-Talkish1, R.K. Bond1, A. Gingras2, N. St-Denis1, M.S. Cyert1; *Biological Sciences, Stanford University, Stanford, CA, *Lawrence Berkeley National Laboratory, Berkeley, CA, *University of California, Berkeley, CA

B559/P2410 Novel biosensors for an enigmatic phosphoinositide. B. Goolden1, J.P. Zewel1, R.C. Willis1, J.E. Pacheco1, G.R. Hammond1; *Department of Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

B560/P2411 Diffusion of lipids and GPI-anchored proteins in actin-free plasma membrane vesicles measured by STED-FCS. E. Sezgin1, C. Engelsing1; *Weatherall Institute of Molecular Medicine, University of Oxford, Oxford, United Kingdom

B561/P2412 Membrane scission activity of Endophilin A2 depending on phospholipid composition. K. Kida1, M. Kitamura2, A. Hanawa-Suetsugu1, S. Suetsugu1; *Molecular Medicine and Cell Biology Laboratory, Nara Institute of Science and Technology, Nara, Japan

B562/P2413 Rab1 is essential of lipid droplet biogenesis. I. Nevo-Yassaf1, A. Dukhovny2, K. Hirschberg1, E.H. Sklan2; *Pathology, Tel Aviv University, Tel Aviv, Israel, *Clinical Microbiology and Immunology, Tel Aviv University, Tel Aviv, Israel

B563/P2414 Rapid sterol transfer in vitro by a StAR-kim domain from Lam4p, a Lipid transfer protein Anchored at a Membrane contact site (LAM) in yeast. L.H. Wong1, T. Levine2; *UCL Institute of Ophthalmology, University College London, London, United Kingdom

B564/P2415 Recycling of lysosome membranes in neurons is regulated by lysosomal ganglioside levels. M. Bautry1,2,3,4, J. Branchu1,2,3,4, C. Lustremant1,2,3,4, J. Meunier1,2,3,4, H. Matusiak1,2,3,4, A. Seyler4, M. Poiret4, B. Colsch1,2,3,4, K. Dobrenis1,2,3,4, A. Dur1,2,3,4, A. Brice1,2,3,4, F. Mochel1,2,3,4, S. H. El Hachimi1,2,3,4, G. Stevanin1,2,3,4,5,9, F. darios1,2,3,4,5; *Laboratoire de Neurogénétique, École Pratique des Hautes Etudes, PSL Research University, F-75015, Paris, France, *Inserm, UMR 8217, F-75015, Paris, France, *CNSR, UMR 7225, F-75013, Paris, France, *Inserm, U1277, F-75015, Paris, France, *CNSR, UMR 7225, F-75013, Paris, France, *Institut du Cerveau et de la Moelle épineuse, ICM, F-75015, Paris, France, *Profilomic SA, F-92100, Boulogne-Billancourt, France, *CEA, DIF/Institut Joliot/SP/LEMM, Université Paris-Saclay, F-91191, Gif-sur-Yvette, France, *Rose F. Kennedy Intellectual and Developmental Disabilities Research Center, Albert Einstein College of Medicine, Bronx, NY, *Centre de référence de Neurogénétique, Fédération de génétique, APHP, La Pitié-Salpêtrière Hospital, F-75013, Paris, France

B565/P2416 Lipid-laden macrophages downregulate Akt phosphorylation and metabolize lipid droplets via autophagy. R. Sultana1, I. Ratnarayake2, M. Schenk1, P. Ahrenkief1, N. Thiek1; *Biological Microscopy Department, South Dakota State University, Brookings, SD, *Department of Nanoscience Nanoengineering, South Dakota School of Mines Technology, Rapid City, SD
B566/P2417 Mechanisms of selective death of tumor cells after COP1 complex depletion. A. Gasparian1, M. Aksenova1, D. Oliver2, E. Levina3, S. Lee3, K. Myrelithe3, M. Wyatt4, E. Broude5, M. Shutman1; Drug Discovery and Biomedical Sciences, University of South Carolina, Columbia, SC, 1Biological Sciences, University of South Carolina, Columbia, SC, 2Chemistry and Biochemistry, University of South Carolina, Columbia, SC

B567/P2418 The GOLPH3 oncogene controls the intra-Golgi recycling of sphingolipid glycosylating enzymes to promote proliferation. R. Rizzo1, D. Supino1, B. Lombardi1, D. Russo1, F. Russo1, M. Zhukovsky2, P. Potthukuchi1, L. Sticco3, I. Capasso1, L. Capolupo2, G. Boncompagni3, N. Dathain2, G. Turacchio1, F. Zito Marino1, G. Acquino1, C. Viltagliano1, P. Henklein2, H. Clausen3, U. Mandel3, A. Budillon1, S. Parashuraman1, F. Perez2, L.M. Obeid1, Y.A. Hannun1, A. Luini1, G. D’Angelo1; 1Institute of Protein Biochemistry, National Research Council of Italy, Naples, Italy, 2Instituto Curie, Paris, France, 3Istituto Nazionale Tumor ‘G. Pascale’, Naples, Italy, 4Biochemistry Department, Berlin University, Berlin, Germany, 5Department of Cellular and Molecular Medicine, University of Copenhagen, Copenhagen, Denmark, 6Medical Center, Stony Brook University, Stony Brook, NY

B568/P2419 Molecular mechanisms of scavenger Receptor-SR-BI regulation: linking HDL binding to cholesterol transport. P.E. Marques1, S. Nyegaard1, R.F. Collins1, W.S. Trimble1, S. Grinstein1; 1Cell Biology, The Hospital for Sick Children, Toronto, ON

B569/P2420 FUSEXINS, a family of sexual, somatic and viral cell fusion proteins. C. Valansi1, D. Moi2, E. Leikina3, E. Matveev3, M. Graña3, L.V. Chernomordik4, H. Romero3, P.S. Aguilar5, B. Podbilewicz1; 1Biology, Technion- Israel Institute of Technology, Haifa, Israel, 2Laboratorio de Biologia Celular de Membranas, Instituto de Investigaciones Bioc tacticas Dr. Rodolfo A. Ugalde” (IBI), Buenos Aires, Argentina, 3Section on Membrane Biology, Eunice Kennedy Shriver National Institute of Child Health and Human Development, Bethesda, MD, 4Unidad de Bioinformática, Institut Pasteur Montevideo, Montevideo, Uruguay, 5Ecologia y Evolución, Universidad de la República, Montevideo, Uruguay

B570/P2421 Short Chain Ceramides Disrupt Segregation of Liquid-ordered from Liquid-disordered Components in the Plasma Membrane. D. Holowka1, B.A. Baird1; 1Department of Chemistry and Chemical Biology, Cornell University, Ithaca, NY

B571/P2422 Pattern formation and stochastic geometry sensing in a lipid kinase-phosphatase competitive reaction. S.D. Hansen1,2, W. Huang2, Y. Lee3, P. Bieling1,4, J.T. Groves1,2; 1California Institute for Quantitative Biosciences, University of California Berkeley, Berkeley, CA, 2Chemistry and Biochemistry, University of Oregon, Eugene, OR, 3Chemistry, University of California Berkeley, Berkeley, CA, 4Systemic Cell Biology, Max Planck Institute of Molecular Physiology, Dortmund, Germany

B572/P2423 Ca2+ releases E-Syt1 autoinhibition to couple ER-plasma membrane tethering with lipid transport. X. Bian1,2, Y. Saheri3,4, P. De Camilli1,2,3,4; 1Department of Neurosciences and Cell Biology, Yale University School of Medicine, New Haven, CT, 2Howard Hughes Medical Institute, New Haven, CT, 3Program in Cellular Neuroscience, Neuroderegulation, and Repair, Yale University School of Medicine, New Haven, CT, 4Kavli Institute for Neuroscience, Yale University School of Medicine, New Haven, CT

Kinesins and Phosphatases 2

B574/P2424 WITHDRAWN

B575/P2425 The β4-subunit of the voltage-gated calcium channel down-regulates Wnt/β-catenin signaling and cell proliferation. M. Rima1,2,3, M. Daghshini4, A. Lopez5, Z. Fajloun2, L. Lefrancois5, M. Dunach1, Y. Mori1, P. Merlet6, L. Bruses1, M. De Waard1,3,9, M. Ronjat1,3,5,6,7,8,9; 1Institut de Neurosciences, INSERM, CRNS, University of Nantes, Nantes, France, 2Azm Center for Research in Biotechnology and Applications, Lebanese University, Tripoli, Lebanon, 3Institut du thorax, INSERM, CRNS, University of Nantes, Nantes, France, 4Laboratoire de Génétique Humaine, Université de Tunis El Manar - School of Medicine, Tunis, Tunisia, 5Institut de Neurosciences, INSERM, CRNS, University of Nantes, Nantes, France, 6Université de Lyon, Lyon, France, 7Department of Synthetic Chemistry and Biological Chemistry, Kyoto University - Graduate School of Engineering, Kyoto, Japan, 8Natural Sciences, Mercy College, Dobbs Ferry, NY, 9Smartox Biotechnology, Saint-Martin d’Hères, France

B576/P2426 Divergence in the temporal dynamics of Extracellular-signal regulated kinase (ERK) activity between subcellular compartments. J.D. Keyes1, A. Ganesan2, J. Zhang1,2; 1Pharmacology, University of California San Diego, San Diego, CA, 2Biomedical Engineering, The Johns Hopkins University School of Medicine, Baltimore, MD

B577/P2427 Transient activation of fission yeast AMPK is required for cell proliferation during osmotic stress. K.L. Schutt1, J.B. Moseley1; 1Biochemistry and Cell Biology, Dartmouth College, Hanover, NH

B578/P2428 Signal transduction of human Fc gamma RIIb for neutrophil extracellular trap (NET) formation. O. Alemán1, N. Mora1, E. Uribe-Quero1, C. Rosales1; 1Instituto de Investigaciones Biomédicas, Universidad Nacional Autónoma de México, Mexico City, Mexico, 2Facultad de Odontología, Universidad Nacional Autónoma de México, Mexico City, Mexico

B579/P2429 Testing a model of CK1 autoinhibition. S.N. Cullati1, Z.C. Elmore1, R.X. Guiller1, J. Chen1, K.L. Gould1; 1Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B580/P2430 ASK1 Activation in Platelets by Oxidized LDL is Independent of CD36. K. Golla1, R. Sharma1, M. Naik1, U. Naik1; 1Cardeza Foundation for Hematologic Research and Center for Vascular Biology Research, Department of Medicine, Thomas Jefferson University, Philadelphia, PA

B581/P2431 ARL11/ARLTS1 is a novel regulator of ERK signaling in macrophages. S.B. Arya1, H. Kaur1, A. Tuli1; 1Cell Biology and Immunology, CSIR-Institute of Microbial Technology, Chandigarh, India

B582/P2432 Cdk2 dependent activation of β-cell metabolism is eclipsed by its inhibitory effect on plasma membrane excitability and insulin secretion. S.M. Sdoo1, C. Poudel1, B.A. Schmidt1, K.M. Mortensen1, M.J. Merrins1; 1Department of Biomolecular Chemistry, University of Wisconsin-Madison, Madison, WI

B583/P2433 PTP activity for IRS-1 regulated by the interaction of C1-Ten with PIP3 via SH2 domain. E. Kim1, D. Kim2, H. Jeong2, A. Koh3, J. Lee4, W. Cho2, S. Ryu1; 1Division of Integrative Biosciences and Biotechnology, Pohang University of Science and Technology, Pohang, South Korea, 2Department of Life Sciences, Pohang University of Science and Technology, Pohang, South Korea, 3Departments of Chemistry, University of Illinois at Chicago, Chicago, IL

B584/P2434 Role of ERK Pathway Inhibition and Retinoic Acid on the Neuronal Differentiation of Mouse ES Cells. Author: Sri Kona, PI: Dr. Eduardo Martinez Ceballos, Southern University and A and M College, Btr LA. S.D. KONA1; 1Biology, Southern University and A and M College, Baton Rouge, LA

B585/P2435 Extracellular acidosis induces EMT of breast cancer cells via SRC/FAK pathway in vitro. D. Katoh1, R. Hashizume1, K. Imanaka-Yoshida1, T. Yoshida1; 1Department of Pathology and Matrix Biology, Mie University Graduate School of Medicine, Tsu, Mie, Japan
B586/P2436 Mechanisms of cross pathway regulation in *Saccharomyces cerevisiae*. B. Wang1, J.P. Shellhammer2, A.E. Allen1, S.K. Suzuki1, H.G. Dohman1, *Pharmacology, University of North Carolina at Chapel Hill, Chapel Hill, NC*

B587/P2437 The role of MAPK and SCF in the destruction of Med13 in cyclin C-mediated cell death. D.C. Stieg1, S.D. Willis1, J. Scuorzo2, M. Song2, V. Ganesan1, R. Strich1, K.F. Cooper1; *Molecular Biology, Stanford University Graduate School of Biomedical Sciences, Stanford, NJ, 3Medicine, Rowan University School of Osteopathic Medicine, Stratford, NJ*

B588/P2438 Snf1 dependent destruction of Med13 is required for programmed cell death following oxidative stress in yeast. S.D. Willis1, D.C. Stieg1, R. Shah1, A.K. Strich1, K.F. Cooper1; *Molecular Biology, Rowan University, Stratford, NJ*

B589/P2439 Cd1, by Stimulating Mitochondrial Respiration, Restricts the Metabolic Amplifying Pathways of Insulin Secretion. T. Gregg1, 4R.S. Dhillon2, H.R. VanDeusen1, B.A. Schmidt2, S.M. Sdao1, J.N. Larmie1, C. Poudel1, K.W. Elcevin1, J.M. Denu1, M.J. Merrins1,2; *Chemical Systems Biology, University of Wisconsin-Madison, Madison, WI, 3Biomedical Engineering, University of Wisconsin-Madison, Madison, WI, 4Department of Chemistry, University of Wisconsin-Madison, Madison, WI*

B590/P2440 Involvement of specific Akt isoforms in the decidualization mechanisms of the mouse uterus. P. Adam1, F. Fabi5, F. Demontigny5, L. Tardif5, S. Parent5, E. Asselin1; *Medical Biology, Université du Québec à Trois-Rivières, Trois-Rivières, QC*

**Signaling Receptors (RTKs and GPCRs)**

B591/P2441 Analysis of receptor tyrosine kinase and G-protein coupled receptor signaling dynamics on micro-structured surfaces. P. Lanzerstorfer1, Y. Yoneyama2, E. Sevcsik1, D. Zindel4, F. Hakuno2, G. Schütz2, C. Kraeli5, M. Bünemann5, S. Takahashi6, J. Weghuber6; *University of Applied Sciences Upper Austria, Wels, Austria, 1Department of Animal Sciences, The University of Tokyo, Tokyo, Japan, 2Institute of Applied Physics, Technical University Vienna, Vienna, Austria, 3Institute for Pharmacology, Philips-University Marburg, Marburg, Germany*

B592/P2442 Engineering Cell Sensing and Responses Using a GPCR-Coupled CRISPR-Cas System. P.P. Dingal1,2, N.H. Kipnis3, L. Labanieh4, Y. Gao4, L.S. Qi1,2,3; *Biotechnology, Stanford University, Stanford, CA, 1Chem-H, Stanford University, Stanford, CA, 2Chemical Systems Biology, Stanford University, Stanford, CA, 3Cancer Biology Program, Stanford University, Stanford, CA*

B593/P2443 Developing platforms to interrogate membrane protein oligomerization and its functional impact. A. Khan1, B. Hawes2, A. Weinglass1; *Screening and Compound Profiling, Merck Sharp Dohme Corp., Kenilworth, NJ, 2Project Management, Merck Sharp Dohme Corp., Kenilworth, NJ*

B594/P2444 Manipulating and quantifying cAMP in vivo in Caenorhabditis elegans. A. Cianciulli1, T.R. Buerkert1, R.J. Schuck1, E. Li1, M. Nelson1; *Biology, Saint Joseph’s University, Philadelphia, PA*

B595/P2445 Localization of MCHCR1 to a transient primary cilium in differentiating pre-adipocytes alters MCH signaling. H. Ophardt1, H. Abdullah1, L. Galbier1, R. Shen1, L.B. Cook1; *Biology, The College at Brockport, State University of New York, Brockport, NY*

B596/P2446 To investigate the Roles of Lynshophosphatidic Acid Type 2 Receptor in Cell Senescence. W. Chen1, H. Lee1; *Life Science, National Taiwan University, Taipei, Taiwan*

B597/P2447 Coagulation factor Vila-mediated protease-activated receptor 2 activation leads to enhanced topoisomerase1 level and contributes to breast cancer progression. A. ROY1, P. SEN1; *Department of Biological Chemistry, Indian Association for the Cultivation of Science, kolkata, India*

B598/P2448 Molecular Signatures of Opioid Receptors in Response to Ethanol. S.J. Tobin1, O. Goffetto1, S. Biswas1, D.L. Wakefield1, E.E. Cacao1, V. Vukojevic1, L. Terenius2, T. Jovanovic-Talisman1; *Molecular Medicine, Beckman Research Institute of the City of Hope Comprehensive Cancer Center, Duarte, CA, 1Clinical Neuroscience, Karolinska Institutet, Stockholm, Sweden*

B599/P2449 Activation of Airway T2R Bitter Taste Receptors by Pseudomonas aeruginosa Quinolones. J.R. Freund1, B. Chen1, D.B. McMahon1, N.D. Adappa1, J.N. Palmer2, D.W. Kennedy1, D.R. Reed2, R. Jiang2, R.J. Lee1; *Otorhinolaryngology, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA, 2Veterans Affairs Medical Center, Nashville, TN, 3Veterans Affairs Medical Center, Nashville, TN*

**B600/P2450 LAT-associated molecules show distinct kinetic and spatial recruitment during TCR signaling in T cells. J. Yi1, L. Balagopalan1, K. McIntire1, T. Nguyen1, E.S. Samelson1; *NCI, National Institutes of Health, Bethesda, MD*

**B601/P2451 Basigin (CD147) associates with toll-like receptor 4 (TLR4) via its transmembrane domain. J.D. Ochrietor1, J.M. Brown1; *Department of Biology, University of North Florida, Jacksonville, FL**
Rho-Family GTPases

B609/P2459 The RhoGAP SPV-1 acts through CDC-42 to regulate calcium signaling in the C. elegans spermatheca during embryo transits. J. Bouffard1, A.D. Cecchetti2, C. Clifford2, R. Zaidel-Bar3, A.J. Chua4, E.J. Cram5; 1Bioengineering, Northeastern University, Boston, MA, 2Biology, Northeastern University, Boston, MA, 3Mechanobiology Institute, Singapore, Singapore, 4Cell and Developmental Biology, Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv, Israel

B610/P2460 Flares of active Rho and F-actin locally reinforce the tight junction barrier in response to mechanical stress. R.E. Stephenson1, T. Higashi1,2, I. Erofeev3, T.R. Arnold1, B. Coy1, A. Goryachev1, A.L. Miller1; 1Molecular, Cellular, and Developmental Biology, University of Michigan, Ann Arbor, MI, 2Fukushima Medical University, Fukushima, Japan, 3Centre for Systems Biology, School of Biological Sciences, University of Edinburgh, Edinburgh, United Kingdom

B611/P2461 Cytokines augment GEF-H1 expression through a cytoskeleton-dependent self-regulatory cycle in the tubular epithelium. S. Venugopal1, Q. Dan1, P. Speight1, A. Kapus1, K. Szasz1; 1Surgery, Keenan Research Center for Biomedical Science, Toronto, ON

B612/P2462 RhoGDI Mediates Spatiotemporal Patterning of GTPase Activity During Cell Wound Repair. A.E. Goldberg1, W.M. Bement1,2,3; 1Graduate Program in Cell and Molecular Biology, University of Wisconsin-Madison, Madison, WI, 2Department of Zoology, University of Wisconsin-Madison, Madison, WI, 3Laboratory of Cell and Molecular Biology, University of Wisconsin-Madison, Madison, WI

B613/P2463 Identifying signaling connections in cancer cell motility using partial correlation analysis of simultaneously-imaged Rho GTPase and RhoGGE activities. D.J. Marston1, M. Vilela1, G. Danuser2, J. Sondek3, K.M. Hahn1; 1Pharmacology, UNC-Chapel Hill, Chapel Hill, NC, 2Cell Biology, UT Southwestern Medical Center, Dallas, TX

B614/P2464 Co-regulation of Rac and Rho Signalling in Cell Motility by a Scaffold RhoGAP BPGAP1. C.C. Pan1, P.J. Chua2, T.W. Chew1, S.Y. Er1, P. Chaudhuri1, D.C. Wong1, A. Salim1, A. Thike1, C. Koh1, C. Lim1, P.H. Tan1, B.H. Bay2, A.J. Ridley2, B.C. Low1; 1Biological Sciences, Mechanobiology Institute, National University of Singapore, Singapore, Singapore, 2Department of Anatomy, Yong Loo Lin School of Medicine, National University Health System, National University of Singapore, Singapore, Singapore, 3Department of Mathematics and Statistics, La Trobe University, Bundoora, Australia, 4Department of Pathology, Singapore General Hospital, Singapore, Singapore, 5Division of Molecular Genetics, Cell Biology, School of Biological Sciences, Nanyang Technological University, Singapore, Singapore, 6Department of Biomedical Engineering, Mechanobiology Institute, National University of Singapore, Singapore, Singapore, 7Randall Division of Cell and Molecular Biophysics, King’s College London, London, United Kingdom

B615/P2465 Rac3 GTPase regulates breast cancer invasion and metastasis by controlling adhesion and matrix degradation. S.K. Donnelly1,2, R. Cabrera3, S.P. Mao1, J.R. Christian1, B. Wu4, W. Guo5, J.J. Bravo-Cordero3, J.S. Condeelis12; 1S. Venugopal1, Q. Dan1, P. Speight1, A. Kapus1, K. Szasz1; 1Surgery, Keenan Research Center for Biomedical Science, Toronto, ON


B617/P2467 Proteins that Specify the Polarity GTPase Cdc42 to a Differentiation MAPK Pathway. S. Basu1, B. Li1, G. Kimble1, K.G. Kozminski1, P.J. Cullen1; 1Biological Sciences, University at Buffalo, Buffalo, NY, 2Schools of Med., Akita Univ., Akita, Japan, 3Cell Biology, University of Virginia, Charlottesville, VA, 4Cell Biology, University of Virginia, Charlottesville, VA

B618/P2468 Role of MYOGF in the regulation of membrane blebbing. M. Jiao1, D. Wu1, Q. Wei1; 1Department of Biological Sciences, Fordham University, Bronx, NY

B619/P2469 Complex Colony Morphology as a Multicellular Behavior with Macroscopic Benefits. J. Chow1, P.J. Cullen1, D.M. Ferkey1; 1Biological Sciences, SUNY Buffalo, Buffalo, NY

B620/P2470 Speaking and entering: a pore-matrix analysis. J. Gu1,2, S. Vadia2, S. Pan1, S. Pathak-Sharma1, E. McLaughlin1, X. Zhang1, J.A. Swanson1, S.M. Seveau1; 1Microbial Infection and Immunity, The Ohio State University, Columbus, OH, 2Institute of Molecular Medicine, The Ohio State University, Columbus, OH, 3Center for Biostatistics, The Ohio State University, Columbus, OH, 4Microbiology and Immunology, University of Michigan Medical School, Ann Arbor, MI

B621/P2471 Snf4 promotes Snf1/AMPK GEF activity for Arf3 activation during glucose starvation. Y. Chen1, J. Hsu1, F.S. Lee1; 1Institute of Molecular Medicine, National Taiwan University, Taipei, Taiwan, 2Department of Medical Research, National Taiwan University Hospital, Taipei, Taiwan

B622/P2472 Deregulation of Rho GTPase Family Members in Myelodysplastic Syndromes and Acute Myeloid Leukemia. L. Bueno de Paiva1, F.V. Pericole1, C.O. Torellö1, A.J. Ridley1, S.T. Saad1, M. Lazarini1,2; 1Hematology and Blood Transfusion Center, University of Campinas, Campinas, Brazil, 2Randall Division of Cell and Molecular Biophysics, King’s College London, London, United Kingdom, 3Department of Pharmaceutical Sciences, Federal University of São Paulo, São Paulo, Brazil

B623/P2473 Investigation of RhoA binding proteins using BIoID system. A. Kushiya1, S. Yamada1, K. Yoshino1, Y. Katoh1, A. Takeuchi2, L.A. Saabony1, A.V. Cybulsky1, M. Yamanoue1, Y. Shirai1, S. Ueda1; 1Department of Agrobiocscience, Kobe University, Kobe, Japan, 2Department of Biomedical Engineering, University of California, Davis, CA, 3Biosignal Research Center, Kobe University, Kobe, Japan, 4Analytical Laboratory, Kobe Pharmaceutical University, Kobe, Japan, 5Department of Cellular and Molecular Medicine, University of Ottawa, Ottawa, Canada, 6Department of Medicine, McGill University, Montreal, Canada

B624/P2474 Paclitaxel induces post-translational modifications of RhoGDI alpha as a mechanism to regulate RhoA activity. H. Horita1, A. Law1, K. Middleton1; 1RD Department, Cytoskeleton Inc., Denver, CO

B625/P2475 Intermolecular steric inhibition of Ephexin4 is relieved by Elm1. K. Kim1,2,3, J. Lee1,2,3, S. Lee1,2,3, H. Moon1,2,3, B. Park1,2,3, K. Kim1,2,3, Y. Jo0,4,5, D. Park1,2,3,5; 1School of Life Sciences, Gwangju Institute of Science and Technology, Gwangju, South Korea, 2Aging Research Center, Gwangju Institute of Science and Technology, Gwangju, South Korea, 3Research Center for Cellular Homeostasis, Ewha Womans University, Seoul, South Korea, 4Department of Internal Medicine, Chonnam National University Medical School, Gwangju, South Korea, 5Department of Biomedical Science and Engineering, Gwangju Institute of Science and Technology, Gwangju, South Korea

B626/P2476 GTPase Steering by an Enzymatic Corral. T.A. Burke1, N.R. Davenport1, W.M. Bement1; 1Laboratory of Cell and Molecular Biology, The University of Wisconsin at Madison, Madison, WI

B627/P2477 The dual Rho GEF/Rac GAP protein Bcr regulates p38 MAPK signaling and cell proliferation. S.E. Koh1, A.D. Dubash1; 1Biology, Furman University, Greenville, SC
**Monday Poster Session**

### B628/P2478 An artificial cell-like system linking cell size and GTPase signaling pathways.
P. Torre1, M. Good1, J.G. Bermudez2; 1Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

### B631/P2480 Membrane reshaping by curvature sensitive septin filaments.
C. Tavenear1, A. Beber1, H. Isambert1, P. Bassereau1, D. Levy1, P. Milhiet2, A. S. Bermudez1

### B633/P2482 Deciphering the regulatory role of Septin9 N-terminus in mammalian septin polymerization.
F. Soroor1,2, W.S. Trimble1; 1Department of Biochemistry, University of Toronto, Toronto, ON, 2Cell Biology Program, Hospital for Sick Children, Toronto, ON

### B634/P2483 Mechanisms controlling micron-scale membrane curvature recognition by septins.
K. Cannon1, A.S. Gladfelter1; 1Biophysics, University of North Carolina at Chapel Hill, Chapel Hill, NC

### B635/P2484 Analysis of septin assembly using optogenetics and in vitro reconstitution.
B. Woods1, A.S. Gladfelter1; 1Biophysics, University of North Carolina at Chapel Hill, Chapel Hill, NC

### Mechanotransduction 1

#### B636/P2485 The role of focal adhesion-localized calcium sparks in the sensing of extracellular matrix

**Mechanotransduction 1**

#### B637/P2486 Substratum stiffness modulates proliferation downstream of Wnt3a by regulating integrin-linked kinase and frizzled-1. T. Shani1, M. Pang2, C.M. Nelson1; 1Molecular Biology, Princeton University, Princeton, NJ, 2Chemical and Biological Engineering, Princeton University, Princeton, NJ

#### B638/P2487 Stopping Transformed Growth with Rigidity Sensing Modules: Turning a Devil into an Angel.
B. Yang1, H. Wolfenson2, N. Nakazawa3, S. Liu4, J. Hu3, M.P. Sheetz2,1; 1Mechanobiology Institute, National University of Singapore, Singapore, Singapore, 2Department of Biological Sciences, Columbia University, New York, NY, 3Department of Mechanical Engineering, Columbia University, New York, NY

#### B639/P2488 Myofibrillar Obliteration of Fetal Fibroblasts is Inhibited in Response to ECM Rigidity and TGF-b1.
R.J. Jerrell1, M.J. Leib1, A. Parekh1,2,1; 1Otolaryngology, Vanderbilt University Medical Center Nashville, TN, 2Vanderbilt-Ingram Cancer Center, Vanderbilt University Medical Center Nashville, TN, 3Biomedical Engineering, Vanderbilt University, Nashville, TN, 4Department of Cancer Biology, Vanderbilt University, Nashville, TN

#### B640/P2489 Plasma Membrane and Cell Surface Mechanics in Embryonic Stem Cells.
H. DeBelly1, M. Wini2, J. Guck1, C. Lamazee1, K. Chalut3, E.K. Paluch4; 1LMB, University College London, London, United Kingdom, 2Cellular Machines, Technical University Dresden, Dresden, Germany, 3Laboratoire Trafic, Signalisation et Ciblage Intracellulaires, Institut Curie, Paris, France, 4Cambridge Stem Cell Institute, Wellcome Trust/Medical Research Council, Cambridge, United Kingdom

#### B641/P2490 Fibrillar Force Generation by Fibroblasts Depends on Microenvironmental Stiffness.
V. Maruthamuthu1, M. Eftekhari1, D. Palmer2, B. McCoy3; 1Mechanical Aerospace Engineering, Old Dominion University, Norfolk, VA, 2Biological Sciences, Old Dominion University, Norfolk, VA

#### B642/P2491 Force triggers YAP nuclear entry by mechanically regulating transport across nuclear pores.
A. Elogegui-Artola1,1, I. Andreu2,1, A. Beeder1, A. Lezamiz1, M. Uroz2, A. Kosmalska1, R. Orila1, J.Z. Kechagia1, P. Rico-Lastres1, A. Le Roux2, C.M. Shanahan1, X. Trepat1,2,3, D. Navajas1,2, S. Garcia-Manyes1,4, P. Roca-Cusachs1,2; 1Institute for Bioengineering of Catalonia, Barcelona, Spain, 2Mondragon University, Arastase, Spain, 3CEIT and TECNUN (University of Navarra), San Sebastian, Spain, 4Randall Division of Cell and Molecular Biophysics, King's College London, London, United Kingdom, 5University of Barcelona, Barcelona, Spain, 6King's College London, King's College London, United Kingdom, 7Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain

#### B643/P2492 Modulation of T cell Priming by Dendritic Cell Stiffness.
D. Blumenthal1, V. Chandra1, J.K. Burkhardt1; 1Pathology and Laboratory Medicine, Children's Hospital of Philadelphia, Philadelphia, PA, 2Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, PA

#### B644/P2493 Force Dynamics During T Cell Activation.
D.A. Garcia1, A. Upadhyaya1; 1Physics, University of Maryland, College Park, MD

#### B645/P2494 B cell mechanosensing: is it a myth?
S. Shaheen1, Z. Wan1, Z. Li1, W. LIU1; 1School of Life Sciences, Institute for Immunology, Tsinghua University, Beijing, China

#### B646/P2495 The lamellipodium is a myosin independent mechanosensor.
P.W. Oakes1,2,3,4, T.C. Bidone1,2,3, Y.M. Beckham1,2,3, A.V. Skeeters4, G. Ramirez-San Juan1,2,3, S.P. Winter2,4, G.A. Voth1,2, M.L. Gardel1,2; 1Institute for Biophysical Dynamics, University of Chicago, Chicago, IL, 2James Franck Institute, University of Chicago, Chicago, IL, 3Department of Physics, University of Chicago, Chicago, IL, 4Department of Physics Astronomy, University of Rochester, Rochester, NY, 5Department of Biology, University of Rochester, Rochester, NY, 6Department of Chemistry, University of Chicago, Chicago, IL, 7Interdisciplinary Scientist Training Program, University of Chicago, Chicago, IL

#### B647/P2496 Control of cell morphology, stiffness, and differentiation by substrates with independently tunable elasticity and viscous dissipation.
E.E. Charrier1, P.A. Janney1, K. Pogoda1, R.G. Wells2; 1Institute for Medicine and Engineering, University of Pennsylvania, Philadelphia, PA, 2School of Medicine, University of Pennsylvania, Philadelphia, PA

#### B648/P2497 Microtubule-based control of motor-clutch system mechanics in glioma cell migration.
L.S. Prah1,2, P.F. Bangasser1, M. Hemmati1, S.S. Rosenfeld3,4, D.J. Odde1,2; 1Physical Sciences-Oncology Center, University of Minnesota, Minneapolis, MN, 2Biomedical Engineering, University of Minnesota, Minneapolis, MN, 3Cancer Biology, Cleveland Clinic, Cleveland, OH, 4Medical Oncology, Mayo Clinic, Jacksonville, FL

#### B649/P2498 Sea anemone as a model to study inner ear hair bundle mechanotransduction and Usher proteins interactions.
V. Michel1,2, C. Sabourault1, C. Petit1,2,3,5,6, 1UMRS1120, INSERM, Paris, France, 2Université Pierre et Marie Curie - Paris 6, Sorbonne Universités, Paris, France, 3Neuroscience - Génétique et Physiologie de l'Audition, Pasteur Institut, Paris, France, 4UMR7138, Equipe Symbiose Marine, Université Côte d'Azur, Nice, France, 5Collège de France, Paris, France, 6Syndrome de Usher et Autres Atteintes Rétino-Cochléaires, Institut de la Vision, Paris, France
B650/P2499 Magnetic BEad Pulling Forces on SOft Substrates Calibrated Using Traction Force Microscopy. V. Maruthamuthu1, J. Bush1, J. Poole1; Mechanical & Aerospace Engineering, Old Dominion University, Norfolk, VA

B651/P2500 Normal extracellular matrix restricts cancer cell proliferation via mechanosensitive epigenetic reprogramming. R. Kaukonen1, A. Isomursu1, A. Malt1, H. Sihto2, H. Joensuu2,3, J. Ivaska1; Centre for Biotechnology, University of Turku, Turku, Finland, Laboratory of Molecular Oncology, Translational Cancer Biology program, University of Helsinki, Helsinki, Finland, Department of Oncology, Helsinki University Central Hospital, Helsinki, Finland, Department of Biochemistry and Food Chemistry, University of Turku, Turku, Finland

B652/P2501 Using proximity based biotin identification (BioID) to identify mechano-sensitive interactions surrounding γ-catenin. J.S. Cheah1, S. Yamada1; Biomedical Engineering, University of California, Davis, Davis, CA

B653/P2502 The epithelial circumferential actin belt regulates YAP/TAZ through nucleocytoplasmic shuffling of Merlin. K. Yamashita1, K.T. Furukawa1, N. Sakurai1, S. Ohno1; Department of Molecular Biology, Yokohama City University, Yokohama, Japan

B654/P2503 Mechanosensing in endothelial cells involves novel heparin receptor transmembrane protein 184A. B.E. Tsao2, C.J. Brown1, S.N. Farwell1, L.J. Lowe-Krentz1; Department of Biological Sciences, Lehigh University, Bethlehem, PA

B655/P2504 Mechanical behaviors of catch bonds under varied loads. B. Chen1; Engineering Mechanics, Zhejiang Univ., Hangzhou, China

B656/P2505 Mechanosensitivity in LIM domain proteins. J.D. Winkelman1, C.A. Anderson2, D.R. Kovar2,3, M.L. Gardel1,2; Institute for Biophysical Dynamics, The University of Chicago, Chicago, IL, Molecular Genetics and Cell Biology, The University of Chicago, Chicago, IL, James Franck Institute, The University of Chicago, Chicago, IL, Physics, The University of Chicago, Chicago, IL

Intermediate Filaments

B657/P2506 ADP-ribosylation of vimentin induces changes in morphology and motility of microglia through enhancing phosphorylation of vimentin at Ser56 and disassembly of vimentin filaments. L. Xie1, F. Yang1, C.Y. Chung1; The School of Pharmaceutical Science and Technology, Tianjin University, Tianjin, China, Pharmacology, Vanderbilt University, Nashville, TN

B658/P2507 The role of vimentin intermediate filaments in confined cell migration. A.E. Patteson1, P.A. Janmey1; Physiology, University of Pennsylvania, Philadelphia, PA

B659/P2508 A role for 14-3-3 in recruitment of keratin filaments to mechanically sensitive cadherin junctions. R.A. Mariani1, G.F. Weber1; Biological Sciences, Rutgers University-Newark, Newark, NJ

B660/P2509 Influence of nebulin on the assembly mechanics of desmin intermediate filaments. M.A. Caragea1, D.A. Hernandez1, R. Kirmse1, H. Herrmann1, G.M. Conover1; Department of Chemistry, Texas AM University, College Station, TX, Department of Molecular, Cellular and Developmental Biology, University of Colorado, Boulder, CO, Molecular Genetics, German Cancer Research Center, Heidelberg, Germany

B661/P2510 Adaptive Multiple Orientation Analysis for the Segmentation of Intermediate Filament Networks. M. Kittisopikul1, T. Shimi1, A.E. Goldman1, S. Kim1, Y. Ohno1, R. Kaukonen1, A. Poole1,2; Biomedical Engineering, Zhejiang University, Hangzhou, China, Department of Molecular Biology, Feinberg School of Medicine, Northwestern University, Chicago, IL, Biophysics, University of Texas Southwestern Medical Center, Dallas, TX

B662/P2511 The Effects of Vimentin Serine 72 phosphorylation in OxLDL uptake mechanism in macrophage. S. Kim1, Y. Park1; School of Medicine, Ewha Womans University, Seoul, South Korea

B663/P2512 Keratin intermediate filament recruitment to cell-cell contacts is dependent on proper actin localization and function. H.U. Mücahit1, G.F. Weber1, A.J. Rodriguez1; Biology, Rutgers University, Newark, NJ

B664/P2513 Optogenetic perturbation of intermediate filament networks. R. Sanghvi-Shahi1, S. Paranjpe1, J. Baek1, R. Dobrowolski1, G.F. Weber1; Biological Sciences, Rutgers University-Newark, Newark, NJ

Cell-Cell Junctions 2

B666/P2514 The gap junction Nexus controls localization and mobility of neural proteins. R.F. Stout1,3, D.C. Spray2; Biomedical Sciences, New York Institute of Technology College of Osteopathic Medicine, Old Westbury, NY, Dominick P. Purpura Department of Neuroscience, Albert Einstein College of Medicine, Bronx, NY

B667/P2515 Molecular machinery of gap junction turnover. M.M. Falk1, J.T. Fong1, R.M. Kells1, W. Nimlaool1, A.F. Thevenin1; Biological Sciences, Lehigh University, Bethlehem, PA

B668/P2516 Desmoplakin bears tension under externally applied load but not during epithelial monolayer growth and homeostasis. A.J. Price1, A.R. Dunn1,2; Biophysics, Stanford University, Stanford, CA, Chemical Engineering, Stanford University, Stanford, CA

B669/P2517 Proximity Labeling Proteomics of Desmosomes Reveals Novel Components Essential for Epidermal Integrity. K.A. Badu-Nkansah1,2, T.H. Lechler1,2; Cell Biology, Duke University Medical Center, Durham, NC, Dermatology, Duke University Medical Center, Durham, NC

B670/P2518 Increased cardiac arrhythmogenesis associated with gap junction remodeling with upregulation of RNA binding protein XR1. M. Chu1, S.M. Novak1, C. Cover1, A. Wang1, I. Chiniyere2, E. Junemann2, D.C. Zarnescu2, P. Wong3, C.C. Gregorio1; Cellular Molecular Medicine, University of Arizona, Tucson, AZ, Sarver Heart Center, University of Arizona, Tucson, AZ, Molecular and Cellular Biology, University of Arizona, Tucson, AZ, Department of Biomedical Engineering, Pennsylvania State University, University Park, PA

B671/P2519 Dynamic Equilibrium of Endothelial Cell Junctions is Required for Vascular Morphogenesis. J. Yang1, F. kilker1, A. Horowitz1; Medicine, Thomas Jefferson University, Philadelphia, PA

B672/P2520 Miniaturized Permeability Assay for Whole Genome Screening. C.M. Simonneau1, A. Horowitz1,2; Medicine, Thomas Jefferson University, Philadelphia, PA, Cancer Biology, Thomas Jefferson University, Philadelphia, PA

B673/P2521 Desmosomal Regulation of Gap Junctions via Ras: Implications for Cardiocutaneous Disease. C.Y. Kam1, A.D. Dubash2, F. Sheikh1, P.D. Lamar3, S. Polo3, K.J. Green1,4; Department of Pathology, Northwestern University, Chicago, IL, Department of Biology, Furman University, Greenville, SC, Department of Medicine, University of California-San Diego, La Jolla, CA, Translational Research Program, Fred Hutchinson Cancer Research Center, Seattle, WA, IFCRC Institute of Molecular Oncology, Milan, Italy, Department of Dermatology, Northwestern University, Chicago, IL

B674/P2522 Connexin 43 loss induces proliferation and invasion pathways in non-neoplastic breast epithelium. S.F. Fostok1, D.B. Bazzoun1,2; F.A. Yassine1, S.A. Lelievre1,2, M. El-Sibai3, R.S. Talhouk1; Department of Biology, American University of Beirut, Beirut, Lebanon, Department of Basic Medical Sciences, Purdue University, West Lafayette, IN, Purdue University Center for Cancer Research, Purdue University, West Lafayette, IN, Department of Natural Sciences, Lebanese American University, Beirut, Lebanon

B675/P2523 Dynasore disrupts gap junction-mediatated cell-cell communication. C.L. Bell1, D.O. Osakue1, S.A. Murray1; Cell Biology, University of Pittsburgh, School of Medicine, Pittsburgh, PA
B676/P2524 Using concatemerization as a tool to investigate the dominant effect of the mutation N188T of Connexin46. Y. Stahl1, P. Schadzek1, M. Preller2, A. Ngezahayo1,2; 1Institut für Biophysik, Leibniz Universität, Hannover, Germany, 2Institute of Biophysical Chemistry, Medical School (MHH), Hannover, Germany, 3Center for Structural Systems Biology, German Electron Synchrotron (DESY), Hamburg, Germany, 4Center for System Neuroscience (ZSN), Hannover, Germany

B677/P2525 Understanding the Molecular Mechanisms Regulating Gap Junction Turnover and its Relevance to Disease in an Animal Model. C.A. Hyland1, A. Madaan1, M. Falk1; 1Biological Sciences, Lehigh University, Bethlehem, PA

B678/P2526 Connexin43 (Cx43) and Zebrashif Fin Regeneration. A.D. Hoptak-Solga1; 1Biological Sciences, Kutztown University, Kutztown, PA

B679/P2527 Desmoplakin promotes cell migration via coordinated control of p38 MAPK and Rho GTPase signaling. J.L. Bendnick1, N.B. Haigh1, A.D. Dubash1; 1Biology, Furman University, Greenville, SC

B680/P2528 The MAL/UTF pathway regulates desmosomal gene expression and protein localization in cancer cells. L. Eldredge1, A.D. Dubash1; 1Biology, Furman University, Greenville, SC

B681/P2529 Investigating the Role of Connexin32 in Cell Cycle, Cell Viability and Epithelial to Mesenchymal Transition of Normal Breast and Breast Cancer Cells. A. Adak1, E. Ozciviç1, G. Mese1; 1Molecular Biology and Genetics, İzmir Institute of Technology, İzmir, Turkey, 2Bioengineering, İzmir Institute of Technology, İzmir, Turkey

B682/P2530 The cell-cell adhesion component PLEKHA7 regulates the pro-tumorigenic MiR17HG long non-coding RNA in colon epithelial cells. M.C. Bridges1, J. Nair-Menon1, A. Kourtidis1; 1Regenerative Medicine and Cell Biology, The Medical University of South Carolina, Charleston, SC

B683/P2531 The role of calcium in Rhe-dependent remodeling of epithelial tight junctions. S. Varadarajan1, R.E. Stephenson1, T. Higashi1, A.L. Miller1; 1Molecular, Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI, 2Fukushima Medical University, Fukushima, Japan

Integrins and Cell-ECM Interactions 1

B684/P2532 Myosin-X filopodia during cancer cell invasion. G. Jacquelet1, I. Paatero1, E. Peuhu1, J. Ivaska1; 1Turku Centre for Biotechnology, University of Turku and Abo Akademi University, Turku, Finland

B685/P2533 Actin retrograde flow actively aligns and orients ligand-engaged integrins in focal adhesions. V. Swaminathan1, J.K. Mathew2, S. Mehta3, P. Nordenfelt4, T.I. Moore5, N. Koga6, D. Baker7, R. Oldenburg1, T. Tani1, S. Mayor2, T.A. Springer3, C.M. Waterman1; 1Cell Biology and Physiology Center, National Heart Lung and Blood Institute, Bethesda, MD, 2National Centre for Biological Sciences, Bangalore, India, 3Eugene Bell Center, Marine Biological Laboratory, Woods Hole, MA, 4Division of Infection Medicine, Lund University, Lund, Sweden, 5Program in Cellular and Molecular Medicine, Harvard Medical School, Boston, MA, 6Institute for Molecular Science, Okazaki, Japan, 7Department of Biochemistry, University of Washington, Seattle, WA

B686/P2534 Increase in the protein levels of an anti-sprouting factor and integrin receptor, Thy-1, with age in the supraoptic nucleus: implications for a role in collateral axonal sprouting. T. Dalziell1, S. Whiteman1, M. Andersen1, J. Askvig1; 1Biology, Concordia College, Moorhead, MN

B687/P2535 Spatial-temporal regulation of focal adhesions disassembly at the G2/M transition of the cell cycle. H.R. Thiam1, A.M. Pasapera-Limon1, E.K. Degaga2, J.S. Urbach2, A.L. Hoptak-Madon1, H.R. Thiam1; 1Biological Sciences, Kutztown University, 2Department of Physics and The Institute for Soft Matter Synthesis and Metrology, Georgetown University, Washington, DC

B688/P2536 Extracellular Matrix Substrates Affect Focal Adhesion Kinase (FAK) Distribution in Prostatic Smooth Muscle Cells. D.A. Osorio Rodriguez1, A.M. Santos1, H.F. Carvalho1; 1Structural and Functional Biology, State University of Campinas, Campinas, Brazil

B689/P2537 Alternative splicing of tenascin-C modulates cell-matrix interactions during inflammation and disease. S.P. Giblin1, K.S. Midwood1; 1Kennedy Institute of Rheumatology, University of Oxford, Oxford, United Kingdom

B690/P2538 Germline stem cell maintenance control by adipocyte collagen in adult Drosophila females. L.N. Weaver1, D. Drummond-Barbosa1; 1Biochemistry and Molecular Biology Department, The Johns Hopkins University, Baltimore, MD

B691/P2539 BMP4-induced differentiation sensitizes glioblastoma tumor initiating cells to mechanical inputs. J.H. Hughes1, S.Y. Wong1, S. Kumar1; 1Bioengineering, University of California, Berkeley, Berkeley, CA, 2UC Berkeley - UCSF Graduate Program in Bioengineering, Berkeley, CA, 3Chemical and Biomolecular Engineering, University of Berkeley, Berkeley, CA

B692/P2540 Mechanical modulation of glycolysis through phosphofructokinase and its activators in a KRAS-dependent manner. J. Park1, T. Isogai1, C.J. Burckhardt1, B. Gao1, R. Bacho1, G. Danuser1; 1The Lyda Hill Department of Bioinformatics, University of Texas Southwestern Medical Center, Dallas, TX

B693/P2541 A Cautionary Tail: Changes in Integrin Behavior with Labeling. C.G. Galbraith1, M.W. Davidson2, J.A. Galbraith1; 1OCSSB/BME, OHSU, Portland, OR, 2National High Magnet Laboratory, FSU, Tallahassee, FL

B694/P2542 Directly measuring integrin conformational change on the cell surface using Interferometric Photocactivation Localization Microscopy (iPALM). T.I. Moore1,2, J. Aaron1, T. Chew1, H.F. Hess1, T.A. Springer1,2; 1Biological Chemistry and Molecular Pharmacology, Harvard Medical School, Boston, MA, 2Program in Cellular and Molecular Medicine, Boston Children’s Hospital, Boston, MA, 3Advanced Imaging Center, Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA, 4Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA

B695/P2543 A regulatory mechanism in the inside-out integrin signaling pathway. P. Zhang1, J. Wu1; 1Molecular Therapeutics Program, Fox Chase Cancer Center, Philadelphia, PA

Chaperones, Protein Folding, and Quality Control 1

B697/P2544 Polyphosphate protects organisms against DNA-damaging agents. F. Beaufay1, A. Franz1, U. Jakob3,4; 1Department of Molecular, Cellular, and Developmental Biology, University of Michigan, Ann Arbor, MI, 2Department of Biological Chemistry, University of Michigan, Ann Arbor, MI

B698/P2545 GIV/Girdin Mediates Cell Survival during Endoplasmic Reticulum Stress. P. Nguyen1, R. Calderon1, Y. Rodriguez1, D. Bhandari1; 1Chemistry and Biochemistry, California State University Long Beach, Long Beach, CA

B699/P2546 Cytosolic proteostasis through importing of misfolded proteins into mitochondria. L. Ruan1,2, C. Zhou1, E. Jin1, A. Kucharavy1,2, Y. Zhang1, Z. Wen3, L. Florens3, R. Li1,2; 1Department of Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD, 2Department of Chemical and Biomolecular Engineering, Johns Hopkins University Whiting School of Engineering, Baltimore, MD, 3Advanced Institute for Medical Research, Kansas City, MO

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B708/P2555 Adaptive unfolded protein response facilitates melanogenesis.
A. KRISHNAN, J. TANWAR, R.K. MOTIANI, V.T. NATARAJAN, R.S. GOKHALE
1CSIR-Institute of Genomics Integrative Biology, New Delhi, India
2National Institute Of Immunology, New Delhi, India

B709/P2556 Exploring and enhancing the metazoan disaggregation system to combat protein aggregation. E. CHUANG, J. SHORTER 1Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA, 2Pharmacology, University of Pennsylvania, Philadelphia, PA

B710/P2557 A guardian factor that protects folding polypeptides from promiscuous degradation. S. ZHANG, C. XU, K.E. LARRIMORE, D. NG
2Department of Biological Sciences, National University of Singapore, Singapore, Singapore, 3Temasek Life Sciences Laboratory, Singapore, Singapore

B711/P2558 Defining conserved and divergent functions of Hsp104. Z.M. MARCH, J. SHORTER 1Department of Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA, 2Department of Pharmacology, University of Pennsylvania, Philadelphia, PA

B712/P2559 Recognition of transmembrane domains by HRD1 E3 ligase during the membrane protein quality control. M. Mariapppan, S. Sun 1Cell Biology, Yale University, New Haven, CT

B713/P2560 Induction of Activator of G-Protein Signaling 3 Puncta: Role of Serine/Threonine Residues in the G-Protein Regulatory Domain and Lysosomal Inhibition. A. VURAL, S.S. ONER, D. MA, S.S. LANIER 1Department of Biochemistry and Biophysics, Perelman School of Medicine at University of Pennsylvania, Philadelphia, PA, 2Temasek Life Sciences Laboratory, Singapore, Singapore


B715/P2562 The activated endoplasmic reticulum stress sensor Ire1 oligomerizes into filaments contained in 30 nm membrane tubes of complex topology. N.T. TRAN, S.D. CARTER, V. BELLY, D. ACOSTA-ALVAREZ, G.J. JENSEN, P. SHORTER 1Biochemistry and Biophysics, University of California Santa Barbara, San Francisco, CA, 2Howard Hughes Medical Institute, Chevy Chase, MD, 3Biophysics and Biotechnology, California Institute of Technology, Pasadena, CA, 4Molecular, Cellular, and Developmental Biology, University of California Santa Barbara, Santa Barbara, CA

B716/P2563 Autoregulatory transcriptional control of prions by G-Quadruplex motifs in prion promoter. P. PRADHAN, V. PERUMAL, B. KUNDU, KUSUMA SCHOOL OF BIOLOGICAL SCIENCES, INDIAN INSTITUTE OF TECHNOLOGY DELHI, NEW DELHI, INDIA

Cell Death

B717/P2564 Potential mechanisms of platelet-activating factor induced neutrophil NETosis. Y. LI, V.P. WERTH 1, M. LIU, 2Department of Dermatology, Perelman School of Medicine at University of Pennsylvania, Philadelphia, PA, 3Department of Dermatology, Michael J. Crescenz V.A. Medical Center, Philadelphia, PA

B718/P2565 Antiapoptotic proteins' expression profile upon FGF1 and FGF2 translocation. A.M. LAMPART, J. SLAWSKI, M. ZAKRZEWSKA 1Protein Engineering, University of Wroclaw, Wroclaw, Poland

B719/P2566 The role of nuclear localization of translocated FGF1 and FGF2 for their antiapoptotic activity. A.M. LAMPART, J. TOMALA, J. SLAWSKI, M. ZAKRZEWSKA 1Protein Engineering Department, University of Wroclaw, Wroclaw, Poland

B720/P2567 The csfd-1 gene regulates physiological apoptosis in a CED-13 dependent manner within the germline of Caenorhabditis elegans. S.D. King, C.F. GRAY, L. SONG, R. MITTIER, P.A. PADILLA 1Department of Biological Sciences, University of North Texas, Denton, TX

B721/P2568 Two small GTPases function antagonistically in corpse removal of a developmental non-apoptotic dying cell. L.M. KUTSCHER, W. KEIL, S. SHAHAM 1Laboratory of Developmental Genetics, The Rockefeller University, New York, NY

B722/P2569 Modifiers of proteotoxicity associated with multisystem proteinopathy. O.Y. ZHOU, A.F. FORD, J. SHORTER 1Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA, 2Neuroscience Graduate Group, Perelman School of Medicine at University of Pennsylvania, Philadelphia, PA

B723/P2570 HMA induces changes in the nuclei and mitochondria of BHK21 cells in a caspase3-independent manner. E.A. PETSON, Z.C. SMITH, E.M. KONIECZKO, M.J. JUDY 1Gannon University, Erie, PA, 2University of Rochester, Rochester, NY

B724/P2571 The importance of isoflavone metabolism to regulate lactating mammary epithelial cells. Y. TSUGAMI, K. MATSUO, T. SUZUKI, T. NISHIMURA, K. KOYABASHI 1Hokkaido University, Research Faculty of Agriculture, Sapporo, Japan
B725/P2572 The intrinsic ability of the Bax family to activate caspase 8-mediated cell death. A.T. Nelson1, A. Mañas1, S. Wang2, J. Xiang3; 1Biology, Illinois Institute of Technology, Chicago, IL; 2Human Genetics, Computation Institute, University of Chicago, Chicago, IL
B726/P2573 Development of assays to detect apoptosis and necrosis in real time using a plate reader. D.F. Lazar1, K. Kupcho1, J. Shultz1, J. Hartnett1, R. Hurst1, W. Zhou1, R. Akiyoshi2, A. Niles1; 1Promega Corporation, Madison, WI; 2Promega Biosciences, San Luis Obispo, CA; 3Olympus Corporation, Tokyo, Japan
B727/P2574 Co-receptors are dispensable for tethering receptor-mediated phagocytosis of apoptotic cells. J. Lee1,2, B. Park1,2, H. Moon1,2, D. Lee1, J. Cho1, D. Park1,2; 1School of Life Sciences and Bio Imaging Research Center, Gwangju Institute of Science and Technology, Gwangju, South Korea; 2Research Center for Cellular Homeostasis, Ehwa Womans University, Seoul, South Korea; 3Department of Surgery and Pharmacology and Cell Biology, University of Pittsburgh, Pittsburgh, PA; 4Department of Biology Education, Chosun University, Gwangju, South Korea
B728/P2575 Behavior of labile ferrous ions and reactive oxygen species during ferroptotic response of cells. M. Sato1, T. Hirayama1, T. Fujii1, H. Nagasawa2, I. Minoura3; 1Goryo Chemical Inc., Sapporo, Japan; 2Laboratory of Pharmaceutical and Medical Chemistry, Gifu Pharmaceutical Univ., Gifu, Japan
B729/P2576 Peroxidasin (PXDN) Promotes Prostate Cancer Progression. J. Dougan1,2, L.J. Burton1,2, O.A. Hawasaw1, K. Jones1, J. Zou1, P. Nagappan1, G. Wang1, Q. Zhang1, N.L. Bowen1, C. Hinton1, V. Odoro-Marah1; 1Center for Cancer Research and Therapeutic Development, Biological science, Clark Atlanta University, Atlanta, GA; 2School of medicine, Emory University, Atlanta, GA; 3Chemistry, Xavier University, New Orleans, LA
B730/P2577 Assaying free radical scavenging abilities of herbal remedies and anti-apoptotic gene expression effects of Ginkgo biloba in an in vitro stroke model. K.M. McIntyre1, V. Kloski1, A. Brown1, A. Ross1, T. Johnson1, K.J. Karnas1, A.J. Ettinger1; 1Biological Sciences, Cedar Crest College, Allentown, PA
B731/P2578 Actin nucleation factors are important for caspase activation and cell death. N.L. Lecair1,2, V.L. King1,2, K.G. Campbellone1,2; 1Department of Molecular and Cell Biology, University of Connecticut, Storrs, CT; 2Institute for Systems Genomics, University of Connecticut, Storrs, CT
B732/P2579 Structure-function relationship of Hsp27 mutations involved in neurodegenerative Charcot-Marie-Tooth disease. J.M. Bhatt1, B. Holguin1, A.K. Orta1, J. Villalobos1, R.A. Bernal1; 1Chemistry, The University of Texas at El Paso, El Paso, TX
B733/P2580 Molecular Principles behind the Emergence of Contractility in Activin Networks. J. Korniano1, G. Papoian1; 1Chemistry and Biochemistry, University of Maryland at College Park, College Park, MD
B735/P2581 Stress Relaxation Mechanism of Single Collagen Fibris and Relaxation Induced Morphological Changes. S. Iqbal1, L. Krepplak1; 1Physics and Atmospheric Science, Dalhousie University, Halifax, NS
B736/P2582 Supergrowth: Effect of osmotic oscillations on the rate of cell growth and the regulation of the proteome. B. Knapp1, E.R. Rojas1, K.C. Huang2, F. Chang1; 1Cell and Tissue Biology, UCSC, San Francisco, CA; 2Bioengineering, Stanford, Stanford, CA
B737/P2583 Temporal control of cellular phenotype. G. Li1, B.K. Kessler1, A. Thiemicke1; 1Department of Pharmacology and Bioengineering, University of Illinois at Chicago College of Medicine, Chicago, IL
B738/P2584 Soft matrix facilitates the activation of mesenchymal stromal cells into anti-fibrotic phenotypes by tumor necrosis factor-α. S. Wong1, A. Elujoba1, J. Shin1; 1Department of Pharmacology and Bioengineering, University of Illinois at Chicago College of Medicine, Chicago, IL
B739/P2585 CRYPTOCHROMES: FROM LIGHT-DEPENDENT FLAVIN REDUCTION TO CIRCADIAN CLOCK REGULATION. S. Foroutannejad1, B. Crane1, R.A. Maillard1; 1Chemistry, Georgetown University, Washington, DC; 2Chemistry and Chemical Biology, Cornell University, Ithaca, NY
B740/P2586 Soft matrix enhances autocrine production of transforming growth factor-β1 to facilitate tumor necrosis factor-α activation of mesenchymal stromal cells. S. Wong1, A. Elujoba1, J. Shin1; 1Department of Pharmacology and Bioengineering, University of Illinois at Chicago College of Medicine, Chicago, IL
B741/P2587 Integration of single molecule binding events in T cell activation. S. Low-Nam1, J.J. Lin1, D.B. McAfee1, S. Alvarez2, S.D. Hansen1, J.T. Groves1; 1Chemistry, University of California, Berkeley, CA
B742/P2588 Inferring emergent evolutionary features from alignments of intrinsically disordered regions despite poor sequence conservation. A.S. Holehouse1, R.M. Kiersten1, M.O. Richardson1; 1Center for Biological Systems Engineering, Washington University in St. Louis, St. Louis, MO
B743/P2589 Mobility of DNA-binding species in the nucleus: the transient anomalous subdiffusion model. M.J. Saxton1; 1Biochemistry & Molec Med, University of California, Davis, CA
B744/P2590 Oscillatory heat dissipation by cell cycle signaling during early vertebrate embryogenesis. J. Rodenfels1, J. Howard1, K.M. Neugebauer1; 1Molecular Biophysics & Biochemistry, Yale University, New Haven, CT
B745/P2591 Building the phase diagram of a cellular body in vivo. A. Ladouceur1, S.G. Thope1, S.C. Weber1; 1Biology, McGill University, Montreal, QC
B746/P2592 How cells jump? Unraveling biophysical limits of cell motility in an ultra-fast swimming ciliate Halteria grandinella. D. Krishnamurthy1, F. Cockenpot2, M. Prakash1; 1Bioengineering, Stanford University, Stanford, CA; 2ISAE-SUPAERO, Toulouse, France
B747/P2593 mTORC1 controls rheology and phase separation by tuning ribosome concentration. G. Brittingham1, M. Delarue1, S. Pfeffer2, I.V. Surovtsev3, K.J. Kennedy4, S. Pinglay1, I. Gutiérrez4, D. Sang5, G. Poterewicz6, J. Chung1, J.T. Groves4, C. Jacobs-Wagner7, B.D. Engel1, L.J. Holt1; 1Institute for Systems Genetics, NYU Langone Medical Center; 2New York, NY; 3Department of Molecular Structural Biology, Max Planck Institute of Biochemistry, Munich, Germany; 4Department of Molecular, Cellular and Developmental Biology, Yale University, New Haven, CT; 5Department of Molecular and Cell Biology, U.C. Berkeley, Berkeley, CA; 6Howard Hughes Medical Institute, Chevy Chase, MD
B748/P2594 Impact of compressive stress on the C. albicans transdifferentiation. M. Delarue1, N.M. Chabot1, G. Brittingham1, L. Holt1; 1Institute for Systems Genetics, NYU Langone Medical Center; 2New-York, NY
B749/P2595 Cytoplasmic density dynamics in fission yeast studied by quantitative phase imaging. P.D. Odermatt8,9, K.C. Huang5, F. Chang1; 1Cell and Tissue Biology, University of California San Francisco, San Francisco, CA; 2Bioengineering, Stanford University, Stanford, CA; 3Chemistry and Biochemistry, University of California, Berkeley, CA
B750/P2596 A two-step mechanism to activate PARP-1 and stabilize it on a DNA break. L. Zandarashvili1, M. Langelier1, P.M. Aguilar2, B.E. Black1, J.M. Pascale2; 1Department of Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA; 2Department of Biochemistry and Molecular Medicine, University of Montreal, Montreal, QC; 3Department of Chemistry, University of Montreal, Montreal, QC
B751/P2597 Morphological Changes of Epithelia Cells Induced by Viscous Conditions. J. Floumoy1, G. Suni1, D. Maily1, Y. Chen1; 1Mechanical Engineering, Johns Hopkins University, Baltimore, MD; 2Chemical and Biomolecular Engineering, Johns Hopkins University, Baltimore, MD
Tissue Development and Morphogenesis 2

B758/P2603 Sheath Cell Invasion and Trans-differentiation Repair Mechanical Damage Caused by Loss of Caveolae in the Zebrafish Notochord. J.N. Garcia1, J. Bagwells1, B. Njaine2, J. Norman1, D. Levic1, S. Wopat1, S. Miller1, X. Liu1, J. Locasale1, D. Stainer2, M. Baghatt3, Department of Cell Biology, Duke University, Durham, NC, Department of Developmental Genetics, Max Planck Institute for Heart and Lung Research, Bad Nauheim, Germany, Department of Pathology, Duke University, Durham, NC, Department of Pharmacology and Cancer Biology, Duke University, Durham, NC.

B759/P2604 Wnt5b regulates basal constriction during neuroepithelial tissue folding. M.R. Visetsouk1, R.J. Garde1, E.J. Falat1, J.L. Wendick1, C. Kwasi1, J.H. Gutzman1, Biological Sciences, University of Wisconsin-Milwaukee, Milwaukee, WI.

B760/P2605 Apical cell-cell adhesions reconcile symmetry and asymmetry in zebrafish neuroepithelium. C. Guo1, X. Wei1, Ophthalmology, University of Pittsburgh, Pittsburgh, PA.

B761/P2606 Rho signaling is fine-tuned by multiple feedback mechanisms during epithelial morphogenesis. K.L. Ong1, C. Collier1, S. DiNardo1, Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA.

B762/P2607 Direct quantification of swelling pressures that drive chick neural tube morphogenesis. W.G. Stewart1, J.L. Pelesko1, J.P. Gleghorn1, Biomedical Engineering, University of Delaware, Newark, DE.

B763/P2608 Interphase localization of Abnormal Spindle to the nucleus is important for proper brain size. T. Schoborg1, S. Smith1, L. Smith2, C.J. Fagerstrom1, Y. Yu1, T. Lee2, N.M. Rusan1, Cell Biology Physiology Center, National Institutes of Health, Bethesda, MD, Janelia Research Campus, Ashburn, VA.

B764/P2609 IPSC Derived Cerebral Organoids Reveal Early Developmental Malformations In Schizophrenia. A. Dimitri1, L. Bayona Chuye1, S. Dimhan1, P. Sarder1, M.K. Stachowiak1, E.K. Stachowiak1, Pathology and Anatomical Sciences, State University of New York at Buffalo, Buffalo, NY.

B765/P2610 Smc5/6 complex maintains genome stability in the stem and progenitor cells of developing mouse cerebral cortex. A. Boyko1, M. Xu1, M. Pryzhkova1, P.W. Jordan1, Biochemistry and Molecular Biology, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD.

B766/P2611 Glial cell remodeling and peripheral nerve re-organization during metamorphosis in Drosophila. A. Subramaniam1, M. SIEFERT1, S. BANERJEE1, K. VISHAL1, K. BERGMANN1, C. CURTS1, BIOLOGY, MIAMI UNIVERSITY, Oxford, OH.

B767/P2612 Tissue macrophasges modulate alveolar epithelial and myofibroblast differentiation during fetal lung sacculation. C. Borges-Pereira1, S. Liborio-Ramos1, C. Barbosa-Matos2, C. Ribeiro-Freitas1, F. Morais-Santos1, C. Antunes1, A. Longatto-Filho1, S. Granja1, J. Correa-Pinto1, S. COSTA1, Pathology and Anatomical Sciences, State University of New York at Buffalo, Buffalo, NY.

B768/P2613 A Novel Role for Paxillin during Mammalian Gland Morphogenesis. W. Xu1, G.J. Goreczny1, E.C. Olson1, C.E. Turner1, Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY.

B769/P2614 Smooth muscle differentiation guides domain branching in the embryonic mouse lung. K. Goodwin1, C.M. Nelson2, Chemical and Biological Engineering, Princeton University, Princeton, NJ, Molecular Biology, Princeton University, Princeton, NJ.

B770/P2615 Extracellular matrix remodeling and activation of focal adhesion kinase direct airway epithelial branching morphogenesis. J.W. Spurni1, III1, M.J. Siedlik1, M. Pang1, J. Jayaraman1, C.M. Nelson2, Chemical and Biological Engineering, Princeton University, Princeton, NJ, Molecular Biology, Princeton University, Princeton, NJ.

B771/P2616 A microfluidic ex vivo culture model of neonatal mouse lungs to investigate alveolar development. R.A. McKe2, M.D. Athanasopoulos1, J.P. Gleghorn1, Biomedical Engineering, University of Delaware, Newark, DE.

B772/P2617 Epithelial deformation during lung development as a driver of localized growth signaling. R.M. Gilbert1, Z.A. Sexton1, J.P. Gleghorn1, Biomedical Engineering, University of Delaware, Newark, DE.

B773/P2618 Precision abscission for cell surface integrity and plant fitness. Y. Lee1, T. Yoon1, J. Lee1, M. Lee1, J. Lee1, S. Oh1, H. Chen1, S. Jeon1, H. Cho1, H. Mang1, J. Kwak1, Center for Plant Aging Research, IBBS, Deagu, South Korea, Department of New Biology, DGIST, Deagu, South Korea.

B774/P2619 Alterations in indices of internal aneurysm of Brachypodium distachyon and Kazakhstani varieties of soft wheat under the action of Puccinia recondita pathogen. N. Omirkobekova1, A. Akhmetova2, Z. Zhunusbaeva1, A. Zhussupova1, S. Kenzhembayeva1, A. Sailauova1, S. Zhangsinsiz1, Institute of Ecology, al-Farabi Kazakh National University, Almaty, Kazakhstan, al-Farabi Kazakh National University, Almaty, Kazakhstan.

B775/P2620 Epithelial Cell Reintegration: Stray Cells Find Their Way Home. N.S. Dawney1, D. Na2, D.T. Bergstrahl1, Department of Biology, University of Rochester, Rochester, NY.

B776/P2621 Mafa transcription factor as a marker of differentiated β-cells of islets of Langerhans in rats. M. Kalig1, A. Plushkina1, M. Titova1, A. Gumerova1, A. Kiyasov1, Morphology and general pathology, Kazan Federal University, Kazan, Russia.

B777/P2622 Cxcl12a induces Sna1b1b expression to initiate collective migration and sequential FGF-dependent neuromast formation in the zebrafish Lateral Line primordium. U.M. NEELATHI1, M.J. Siedlik1, D. Dalle Nogare1, A.B. Chintis1, NICHD, National Institutes of Health, Bethesda, MD.

B778/P2623 A Strain Map of Zebrafish Gastrulation Describes the Mechanics of Convergence and Extension and Emergence of Left-Right Chirality during Epiboly. J. ZHONG1, D. Bhattacharya2, A.J. Kabla1, T. Tavakoli1, P.T. Matsuaida1, Mechanobiology Institute, National University of Singapore, Singapore, Singapore, Center for Biomaging.
B779/P2624 Histone methyltransferase G9a is essential for osteoblastic differentiation and skull bone formation during development. H. Ideno1, K. Komatsu2, A. Shimada1, Y. Arai2, K. Nakashima1, M. Tachibana1, H. Kimura4, A. Nifuj1, 1Department of Pharmacology, Tsumori University School of Dental Medicine, Yokohama, Japan, 2Graduate School of Dentistry, Nihon University, Chiyoda, Japan, 3Institute for Enzyme Research, The University of Tokushima, Tokushima, Japan, 4Department of Biological Sciences, Tokyo Institute of Technology, Tokyo, Japan

B780/P2625 Effect of Sugar Cane Extract (SCE) Supplementation on Corticosterone Secretion in induced by ACTH injection Male Rats. M. Zheng1,2, M. Mizu3, T. Furuta1, G. Watanabe1,2, K. Nagaoa1,2, 1Department of Basic Veterinary Science, Gifu University, Tokyo, Japan, 2Department of Veterinary Medicine, Tokyo University of Agriculture and Technology, Tokyo, Japan, 3Product Development Division, Mitsui Sugar Co., Ltd., Tokyo, Japan

B781/P2626 Systematically modulating cell-cell adhesion reveals cellular mechanisms of epithelial remodeling in Drosophila. X. Wang1, K.E. Kasza1, 1Department of Mechanical Engineering, Columbia University, New York, NY

B782/P2627 Microtubule Dynamics in Developing Mammary Epithelium. A.K. Fraser1, A.J. Ewald2, 1Cell Biology and Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, MD

B783/P2628 Emergence of tissue mechanics from cellular processes: shaping a fly wing. M. Merkel1,2, R. Etournaux3,4, M. Popovic3, G. Salbreux3,4, S. Eaton1, F. Julicher2, 1Department of Physics, Syracuse University, Syracuse, NY, 2Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, 3Institut Pasteur, Paris, France, 4Crick Institute, London, United Kingdom

B784/P2629 Role of dynamics on the formation of zebrafish organ of asymmetry. G. Erdemci-Tandogan1, J.D. Amack2, L. Manning1, 1Department of Physics, Syracuse University, Syracuse, NY, 2Department of Cell and Developmental Biology, State University of New York, Upstate Medical University, Syracuse, NY

B785/P2630 Coordinated cell area fluctuations drive junction extension in epithelial cell quadruplets. J. Großhans1, D. Kong2, S. Eule2, F. Wolf2, 1Institute for Developmental Biochemistry, University of Göttingen, Göttingen, Germany, 2Dynamics and Self organisation, Max Planck Institute, Göttingen, Germany

B786/P2631 Ultra-fast contractions and emergent pattern dynamics: Primitive epithelium in Trichoplax adherence as a "living active solid". S. Armon1, M. Bull2, B. Marty1, M. Prakash1, 1Bio Engineering, Stanford University, Stanford, CA, 2Applied Physics, Stanford University, Stanford, CA, 3Computer Science, Ecole Polytechnique, Paris, France

B787/P2632 Identifying the molecular and mechanical requirements for coordinated tissue invagination. M.A. Fuentes1, B. He1, 1Biological Sciences, Dartmouth College, Hanover, NH

B788/P2633 A collective solid-fluid transition in confluent 3D tissues. M. Merkel1, L. Manning1, 1Department of Physics, Syracuse University, Syracuse, NY

B789/P2634 Epithelial cell spatiotemporally coordinate molecular activities and mechanical forces to drive radial intercalation during dactyl elongation. N.M. Neumann1, M.C. Perrone1,2, J.H. Veldhuis1, R.J. Huebner1, H. Zhan1, P.N. Devreotes1, G.W. Brodland2,3, A.J. Ewald1, 1Cell Biology and Center for Cell Dynamics, Johns Hopkins University School of Medicine, Baltimore, MD, 2Centre for Bioengineering and Biotechnology, University of Waterloo, Waterloo, ON, 3Civil and Environmental Engineering, University of Waterloo, Waterloo, ON

B790/P2635 Exploring the cell mechanics behind the T1 transition. K. Cavanaugh1, M.L. Gardel1,2, 1Cell and Molecular Biology, University of Chicago, Chicago, IL, 2Physics, University of Chicago, Chicago, IL

B791/P2636 A role for desmosomal cadherins in creating complex tissues. J.A. Broussard1, O. Nekrasova1, J.L. Koetsier2, J.K. Green3, 1Pathology and Dermatology, Northwestern University, Chicago, IL, 2Pathology, Northwestern University, Chicago, IL

B792/P2637 Apical myosin activation induces Rab11 puncta accumulation near the apical cortex. W. Chen1, B. He1, 1Biological Sciences, Dartmouth College, Hanover, NH

B793/P2638 Differential Regulation of Actin Dynamics during Collective Cell Migration. H. Olson1, H. McCraw2, A. Nechiporuk1, 1Cell, Developmental Cancer Biology, Oregon Health Science University, Portland, OR, 2School of Biological Sciences, Division of Cell Biology Biophysics, University of Missouri-Kansas City, Kansas City, MO

B794/P2639 A Rho GAP with a curved membrane-binding domain regulates morphogenesis via CDC-42. H. Radwan1, M. Soto1, 1Pathology and Lab. Med., Rutgers - RWJMS, Piscataway, NJ

B795/P2640 Dynamic imaging of actin cytoskeleton in cardiac progenitors reveal the importance of intercellular tension during organogenesis. E.S. Koo1,2, S.E. Fraser1,2,3, L.A. Trinh1,2, 1Translational Imaging Center, University of Southern California, Los Angeles, CA, 2Biomedical Engineering, University of Southern California, Los Angeles, CA, 3Molecular and Computational Biology, University of Southern California, Los Angeles, CA

B796/P2641 Tissue architecture of the C. elegans syncytial germline is maintained by actomyosin contractility of an extra-cellular inner tube. P. Agarwal1, R. Zaidel-Bar1,2, 1Mechanobiology Institute, National University of Singapore, Singapore, 2Cell and Developmental Biology, Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv, Israel

B797/P2642 Cell-nonautonomously tunable actomyosin flows orient distinct cell division axes. K. Sugioka1, B. Bowerman1, 1Institute of Molecular Biology, University of Oregon, Eugene, OR

B798/P2643 Cell Type-Specific Response to Spindle Misorientation and Effects on Tissue Growth. A.S. Parra1, C.A. Johnston1, 1Biology, University of New Mexico, Albuquerque, NM

B799/P2644 Phosphatidylinositol transfer proteins control Apical Golgi Distribution, Polarity and division of Neural Stem Cells During Neurogenesis. S.K. Hur1, Z. Xie1, V.A. Bankaitis1, 1Molecular and Computational Biology Department, College of Medicine, Texas AM University, College Station, TX

B800/P2645 Regulation of cell division by the intrinsic and extrinsic activities of small ovari is required for germline development. L. Benner1,2, E.A. Castro3, C. Whitworth2, K.R. Cook3, B. Oliver2, D.A. Lent1, 1Department of Biology, Johns Hopkins University, Baltimore, MD, 2National Institute of Diabetes and Digestive and Kidney Diseases, NIH, Bethesda, MD, 3Department of Cell Biology, Emory University, Atlanta, GA, 4Department of Biology, Indiana University, Bloomington, IN

B801/P2646 Activity of the Arp2/3 complex is necessary for embryonic stem cell differentiation. F.M. Aloisio1, D.L. Barber1, 1Department of Cell & Tissue Biology, University of California San Francisco, San Francisco, CA
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<td>B802/P2647</td>
<td>The Expression of Sarcomeric Proteins During Myogenesis in C2C12 Myogenic Stem Cells. G.R. Walker, J.E. Budde, R. Nyaboke, V. Silvius, N.T. Osborne, A.M. Mossor; Biological Sciences, Youngstown State University, Youngstown, OH, 1Department of Curriculum and Instruction, University of Toledo, Toledo, OH</td>
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<td>B803/P2648</td>
<td>Glutamine sustains Cripto expression and function, enabling MyosinIIa/RAB11A-dependent endosomal/exosomal trafficking in stem cells to promote tissue regeneration. E. Duell, M. Hoover, E. Booker, B. Williams, C. Arellano-García, W. Fischer, P. Gray, J.A. Kelber; Biology, California State University Northridge, Northridge, CA, 2Salk Institute for Biological Studies, La Jolla, CA</td>
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<td>B804/P2649</td>
<td>Quantification of Nuclear Morphology Changes During Induced Pluripotent Stem Cell Differentiation. C. Wesley, D.L. Levy; 1Molecular Biology, University of Wyoming, Laramie, WY</td>
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<td>B805/P2650</td>
<td>Nuclear transport protein, Transportin Serine-Aргinine rich, is required for germine stem cell proliferation and self-renewal in Drosophila. T.D. Hinnant, E.T. Ables; 1Biology, East Carolina University, Greenville, NC</td>
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<td>B806/P2651</td>
<td>Placenta derived mesenchymal stem cells increases invasion ability of trophoblast via alteration of stem cells increases invasion ability of trophoblast via alteration of mitochondria. J. Seok, J. Choi, J.J. Kim, S. Lim, H. Jeong, S. Park, G. Kim; 1Biomedical Science, CHA University, Seongnam, South Korea, 2Dermatology, Northwestern University, Chicago, IL, 3Pathology, University of Ulsan College of Medicine, Seoul, South Korea</td>
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<td>B807/P2652</td>
<td>BCP1 is a positive regulator of Notch signaling pathway in the regulation of mammalian neural stem cells. J. Kim, D. Han, S. Byun, M. Kwon, K. Yoon; 1Genetic Engineering, Sungkyunkwan University, Suwon, South Korea</td>
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<td>B808/P2653</td>
<td>A Hoxc dependent skin zip code controls regional adult stem cell regeneration. Z. Yu, Z. Xu, H. Huang, D. Chen, K. Jiang, Z. Du, W. Xie, T. Kunieda, F. Wang, T. Chen; 1National Institute of Biological Sciences, Beijing, Beijing, China, 2Tsinghua University, Beijing, China, 3Okayama University, Okayama, Japan</td>
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<tr>
<td>B809/P2654</td>
<td>Tousled-like Kinase 1-Regulated Differentiation in Murine Embryonic Stem Cells. J. Lee, S. Park, Y. Jang; 1Initiative for Biological Function and Systems, Yonsei University, Seoul, Korea, South, 2Department of Systems Biology, Yonsei University, Seoul, Korea, South, 3Center for Genomic Integrity, Institute for Basic Science, Ulsan National Institute of Science and Technology, Ulsan, Korea, South</td>
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<td>B811/P2656</td>
<td>Toxic effect of titanium dioxide nanoparticles (TiO2) on Wharton Jelly mesenchymal stem cells. A.B. Peralta-Vega, J.R. Cáceres-Cortés, A. Parra-Barrera, M. Ramos-Godinez, R. López-Murare, G. Gutiérrez-Iglesias; 1Posgrado, Instituto Politecnico Nacional. Escuela Superior de Medicina, Mexico, Mexico, 2Microscopia, Instituto Nacional de Cancerología, Mexico, Mexico, 3Fisiologia, Instituto Nacional de Cardiología INCIH., México, Mexico</td>
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<td>B812/P2657</td>
<td>Is a microtubule-dependent mechano-transduction involved in early human Hematopoietic Stem Cells differentiation? S. Biedzinski, B. Vianay, J. Larghero, S. Brunet, M. Théry; 1IHU Hopitai St Louis, INSERM U 1160, PARIS, France, 2LPCV CEA CNRS INRA, CytomorphoLab, GRENOBLE, France, 3IHU Hopitai St Louis; U Paris Diderot, Cell Therapy Unit, PARIS, France</td>
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<tr>
<td>B813/P2658</td>
<td>Molecular and cellular phenotyping of mouse embryonic stem cells from diverse inbred laboratory mouse strains reveals strain-specific differences in cellular traits. A. Czechanski, N. Raghupathy, C. Olivier, C. Byers, L. Reinholdt; 1The Jackson Laboratory, Bar Harbor, ME</td>
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<td>B814/P2659</td>
<td>Silencing Spermine Synthase in Mesenchymal Stem Cells mimics Snyder-Robinson Syndrome by showing impaired osteogenesis. A.L. Ramsay, A.M. McEneny, F.A. Fierro; 1Institute for Regenerative Cures, University of California Davis, Sacramento, CA</td>
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<td>B815/P2660</td>
<td>Isolation and Expansion of Human Skeletal Stem Cells. A.M. McEneny, C. Schumacher, F.A. Fierro; 1Institute for Regenerative Cures, University of California Davis, Sacramento, CA</td>
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<tr>
<td>B816/P2661</td>
<td>Successful enrichment of cardiac progenitors following differentiation of EGFP-expressing transgenic mouse ES cells. D. Sridharan, P.B. Seshagiri; 1Department of Molecular Reproduction, Development and Genetics, Indian Institute of Science, Bangalore, India</td>
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<td>B817/P2662</td>
<td>Genome-wide CRISPR-Cas9 Screens Reveal Genes Promoting Entry into a G0-like State in Human Neural Progenitors. H.M. Feldman, P.J. Padisson; 1Human Biology Division, Fred Hutchinson Cancer Research Center, Seattle, WA</td>
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**Host-Pathogen/Host-Commensal Interactions 1**

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<td>B818/P2663</td>
<td>Analysis of marker gene transcripts and 35 cytokines in adipose tissue mesenchymal stem cells spanning 15 consecutive passages. H. Xia, J.L. Myers, T. Hu, M.Y. Caballero, S. Vallier, G.J. Chaudry; 1Center for Advanced Molecular Detection, 59 Medical Wing, San Antonio, TX, 2Medicine, University of Texas Health Science Center, San Antonio, TX, 3Science and Technology, 59 Medical Wing, San Antonio, TX</td>
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**Host-Pathogen/Host-Commensal Interactions 2**

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<td>B820/P2664</td>
<td>Cell surface vimentin is involved in matrix stiffness dependent infection of endothelial cells by Listeria monocytogenes. E.E. Bastouinis, J.A. Theriot, Y. Yeh; 1Biochemistry, Stanford University School of Medicine, Stanford, CA, 2Department of Microbiology and Immunology, Stanford University School of Medicine, Stanford, CA, 3Howard Hughes Medical Institute, Stanford University School of Medicine, Stanford, CA, 4Department of Bioengineering, University of California San Diego, La Jolla, CA</td>
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<td>B821/P2665</td>
<td>Identification of polyubiquitinated species at sites of Listeria monocytogenes cell-to-cell spreading. A.S. Dhanda, K.T. Lulic, J.A. Gutman; 1Biological Sciences, Simon Fraser University, Burnaby, BC</td>
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<td>B822/P2666</td>
<td>Spatial organization of the human tongue dorsum microbiome at the micron scale. S.A. Wilbert, J.L. Mark Welch, F.E. Dewhirst, G.G. Borisy; 1The Forsyth Institute, Cambridge, MA, 2Marine Biological Laboratory, Woods Hole, MA, 3Harvard School of Dental Medicine, Boston, MA</td>
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<td>B823/P2667</td>
<td>Proteins in soy resistant to the digestive protease enzymes interact with intestinal epithelial cells and modulate metabolite absorption and microbiome profile in gut. J. Lim, J. Ma; 1Food Biomaterials, Kyungpook University, Daegu, Korea, South</td>
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<td>B824/P2668</td>
<td>Chlamydia uses ARF GTPases as a switch to control microtubule stabilization and actin polymerization. F. Paument, J.T. Wosolowski, C. Xander; 1Microbiology and Immunology, Sidney Kimmel Medical College of Thomas Jefferson University, Philadelphia, PA</td>
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<td>B825/P2669</td>
<td>A Chlamydia trachomatis protein mediates the remodeling of epithelial cytoskeleton and cell junctions. L. Dolat, V.K. Carpenter, Y.S. Chen; 1Department of Molecular Reproduction, Development and Genetics, Indian Institute of Science, Bangalore, India</td>
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<td>B826/P2670</td>
<td>Neisseria gonorrhoeae modifies its infectivity based on the properties of human cervical epithelial cells. Q. Yu, L. Wang, D.C. Stein, W. Song; 1Cell Biology and Molecular Genetics, University of Maryland, College Park, MD</td>
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B827/P2671 Toxoplasma gondii dysregulation of endothelial cell barrier function. A. Franklin-Murray1, M. Lodoen1, C. Schneider1, C. Tran1; ‘Molecular Biology & Biochemistry, University of California, Irvine, Irvine, CA

B828/P2672 Studying the effect of the obligate endocellular bacteria Wobachia on its host. C. Urbe-Alvarez1, N. Chiquete-Felix1, A. Perla1, S. Uribe-Carvajal1; ‘Molecular Genetics, Cellular Physiology Institute, Mexico City, Mexico

B829/P2673 Shedding light on redox-sensitive MarR protein regulating EmR and RND efflux pumps in B. thailandensis. A. Sabrin1, A. Gupta1, A. Grove1; ‘Biological Sciences, Louisiana State University, Baton Rouge, LA

B830/P2674 Thermodynamic protein instability is a pathogen-associated molecular pattern targeted by human defensins. E. Kudryashova1, W. Lu1, D.S. Kudryashov1; ‘Chemistry and Biochemistry, The Ohio State University, Columbus, OH; ‘Biochemistry and Molecular Biology, University of Maryland School of Medicine, Baltimore, MD

B831/P2675 BPX-01 Topical Minocycline Gel Reduces P. acnes-induced inflammatory Lesions in Mice. M. Hermsmeier1,2,3; ‘Department of Pediatrics, The Pennsylvania State University College of Medicine, Hershey, PA; ‘Department of Obstetrics and Gynecology, The Pennsylvania State University College of Medicine, Hershey, PA

B832/P2676 Innate immune variants of the surfactant protein in airway function after Klebsiella pneumoniae infection. N. Thorenno1, X. Zhang1, T.M. Umstead1, S. Halstead1, D.S. Phelps1, J. Flores2; ‘Department of Pediatrics, The Pennsylvania State University College of Medicine, Hershey, PA; ‘Department of Obstetrics and Gynecology, The Pennsylvania State University College of Medicine, Hershey, PA

B833/P2677 Plasma membrane remodeling by Neisseria meningitidis is driven by a wetting process along type IV pili fibers. A. Charles-Oroz1,2, F. Tsai4,5,6, D. Bonazzi2,3, V. Mannrique2,3, M. Sachse1, C. Aillet1, C. Millien1, S. Gousard1, P. Lafaye1, J. Krijnse-Locker1, M. Piel7,8, F. Brochard-Wyart5,6, P. Bassereau1, G. Dumellen1,2; ‘U1225, INSERM, Paris, France; ‘Unit of Pathogenesis of Vascular Infections, Institut Pasteur, Paris, France; ‘Université Paris Descartes, Paris, France; ‘Laboratoire Physico Chimie, Institut Curie, Paris, France; ‘P3L Research University, Paris, France; ‘UMR 168, CNRS, Paris, France; ‘ULB, Université Libre de Bruxelles, Brussels, Belgium; ‘Université Paris Descartes, Paris, France; ‘Institut Cardiovasculaire d’Orsay, Paris, France; ‘Institut Cardiovasculaire d’Orsay, Paris, France; ‘Institut de Cardiologie, Paris, France; ‘Société de Recherche sur les Infections, Institut Pasteur, Paris, France; ‘Laboratoire d’Immunologie, Institut Pasteur, Paris, France; ‘Unité de Recherches sur les Infections, Institut Pasteur, Paris, France; ‘Unité de Recherches sur les Infections, Institut Pasteur, Paris, France; ‘Unité de Recherches sur les Infections, Institut Pasteur, Paris, France; ‘Laboratoire d’Immunologie, Institut Pasteur, Paris, France; ‘Physiology, Institute Pasteur, Paris, France; ‘Institut de Cardiologie, Paris, France; ‘Université Paris Descartes, Paris, France; ‘Institut Pasteur, Paris, France; ‘Institut Pasteur, Paris, France; ‘Institut Pasteur, Paris, France

B834/P2678 Cell-specific defense cascade in Verticillium-infected grated tomato. E.J. Robb1, X. Xu1, J. Blaya Fernandez1, H. Shittu1, A. Kurosky1, R.N. Nazar1; ‘Molecular Cellular Biology, University of Guelph, Guelph, ON, ‘Department of Biochemistry and Molecular Biology, University of Guelph, Guelph, ON

B835/P2679 High Content Screening Implicates the PI3K-Akt Pathway in FAST Protein-Mediated Cell-to-Cell Fusion. D.P. MacKenzie1, R. Duncan1; ‘Microbiology and Immunology, Dalhousie University, Halifax, NS

Organ/Disease Biology and Therapeutic Targets 1

B837/P2680 c-Abi kinase in Niemann-Pick type A disease: its implication in the pathogenic mechanisms leading to neurodegeneration. T.A. Marín1, C. De la Fuente2, M.L. Acuria1, J.F. Castro1, A.R. Alvarez2, S. Zanlungho1; ‘Facultad de Medicina, Pontificia Universidad Catolica de Chile, Santiago, Chile; ‘Facultad de Ciencias biologicas, Pontificia Universidad Catolica de Chile, Santiago, Chile

B838/P2681 Analysis and modulation of cathepsin B and D in liver damage in in-vitro and in-vivo models of Niemann-Pick type C disease. J.E. Oyarzun1, M. Acurna1, J.F. Castro1, S. Zanlungho1; ‘Gastroenterología, Pontificia Universidad Catolica de Chile, Santiago, Chile

B839/P2682 REVEALING NOVEL FUNCTIONS OF GLUTAMATE CARBOXYPEPTIDASE II, A DIAGNOSTIC AND THERAPEUTIC TARGET IN NEUROPATHOLOGIES AND PROSTATE CANCER. B. Vorlova1,2, F. Sledák1,2,2, P. Kasperek1, R. Sliedacek1, P. Sachá1, J. Konvalinka1; ‘Institute of Organic Chemistry and Biochemistry of the CAS, Prague, Czech Republic; ‘First Faculty of Medicine, Charles University, Prague, Czech Republic; ‘Czech Centre for Phenomenomics BIOCEV, Vestec, Czech Republic

B840/P2683 PYROXID1; a novel cause of congenital myopathy highlights oxidative distress as a core mechanistic pathway in muscle and neurodegenerative disorders. F.J. Evesson1,2, H.A. Best1,2, J. Zhang1, G.X. Fu1, F.A. Lemkert1, N. Fossat1, M.E. Graham4,5, P.P. Tam3,4, S.T. Cooper1,2; ‘Institute for Neuroscience and Muscle Research, Children’s Hospital at Westmead, Sydney, Australia; ‘Discipline of Child and Adolescent Health, Faculty of Medicine, University of Sydney, Sydney, Australia; ‘Embryology Unit, Children’s Medical Research Institute, Sydney, Australia; ‘Discipline of Medicine, Sydney Medical School, University of Sydney, Sydney, Australia; ‘Synapase Proteomics Group, Children’s Medical Research Institute, Sydney, Australia

B841/P2684 Inhibition of histone acetyltransferases specifically targeting H4K5 acetylation rescue myogenic differentiation of emerin-null myogenic progenitors. K.A. Bosson1, J.M. Holaska1; ‘Pharmaceutical Sciences, University of the Sciences, Philadelphia, PA

B842/P2685 Myosin replacement in myofibrils is induced by Hsp90 activity. K. Ojima1, E. Ichimura1, S. Muraya1, M. Oe1, T. Suzuki1, T. Nishimura2; ‘Animal Products Research Division, Institute of Livestock and Grassland Science, NARO, Tsukuba, Japan; ‘Research Faculty of Agriculture, Hokkaido University, Sapporo, Japan

B843/P2686 The lipid kinase PIKfyve in cardiac fibroblasts activation: a potential target to control cardiac fibrosis. M. Cinato1, L. Guitou1, A. Timotin1, O. KUNDUZOA1, H. Tronchere1, F. BOA1; ‘Institute of Cardiovascular and Metabolic Diseases (I2MC - UMR1048), Inserm / Université Toulouse III Paul Sabatier, TOULOUSE, France

B844/P2687 MUTATIONAL AND BIOCHEMICAL ANALYSIS OF THE DUAL KINASE REGION OF UNC98 (OBSCURIN). Y. Matsunaga1, H. Qadota1, J.C. Moody1, J.Q. Kwong2, G.M. Benian1; ‘Pathology, Emory University, Atlanta, GA; ‘Pediatrics, Emory University, Atlanta, GA

B845/P2688 Nuclear receptor interaction protein (NIRIP) maintains Z-disc width through α-actinin-2 bound with CapZ. S. Chen1; ‘Microbiology, National Taiwan University, Taipei, Taiwan

B846/P2689 Roles of Interleukin-1 in the regulation of myoblast fusion and actin dynamics. C. CHAWEWANAKORN1,2, H. HATAKEYAMA1, M. TSUCHIYA1, Y. HAGIWARA2, M. KOIDE3, S. YOSHIDA3, M. KANZAKI1, K. SASAKI1; ‘Division of Advanced Prosthetic Dentistry, Tohoku University Graduate School of Dentistry, Sendai, Japan; ‘Tohoku University Graduate School of Biomedical Engineering, Sendai, Japan; ‘Frontier Research Institute for Interdisciplinary Science, Tohoku University, Sendai, Japan; ‘Department of Nursing, Tohoku Fukushima University, Sendai, Japan; ‘Department of Orthopaedic Surgery, Tohoku University Graduate School of Medicine, Sendai, Japan

B847/P2690 Glucose-dependent insulinotropic polypeptide stimulates the differentiation of mammalian skeletal muscle cells. M. Aoshima1, Y. Ohnno1, S. Yokoyama1, K. Ohashi1, R. Ito2, K. Nakamura1, R. Fujimoto1, K. Goto1; ‘Department of Physiology, Graduate School of Health Sciences, Toyoohasi SOZO University, Toyohashi, Japan; ‘Department of Physiology, School of Health Sciences, Toyoohasi SOZO University, Toyohashi, Japan; ‘Biological Sciences, Graduate School of Sciences and Technology for Innovation, Yamaguchi University, Yamaguchi, Japan
B848/P2691 Effects of acute hypoxia on zebrafish cardiac tissue. G. Hernandez1, S. Britz2, F. Frech1, B. Schoffstall1; 1Department of Biology, Barry University, Miami, FL

B849/P2692 Role of Monocarboxylate Transporter 4 (MCT4) in muscle metabolism and physiology. S. Bisetto1, E. Loro1, T.S. Khurana2, R.A. Nowak3, N.J. Philip4; 1Department of Pathology, Anatomy and Cell Biology, Thomas Jefferson University, Philadelphia, PA, 2Department of Physiology and Pennsylvania Muscle Institute, University of Pennsylvania, Philadelphia, PA, 3Department of Animal Sciences, University of Illinois, Urbana, IL

B850/P2693 Matriptase-2 suppresses hepcidin expression by cleaving multiple components of the hepcidin induction pathway. M. Wahedi1, A.W. Wortham2, M.D. Klevén3, N. Zhao2, S.Jue1, C.A. Enns1, A. Zhang1; 1Cell, Developmental, and Cancer Biology, Oregon Health & Science University, Portland, OR, 2Department of Nutritional Sciences, University of Arizona, Tucson, AZ

B851/P2694 Predictors of inflammatory obesity and the protective role of catecholaminergic receptors expression in immune cells for its development. F. Leite1,2,3, M. Lima1, F. Marino4, M. Costantino5, L. Ribeiro1,2,3; 1135-Instituto de Investigación e Innovación en Saúde, I3S-Instituto de Investigación e Innovación en Saúde, University of Porto, Porto, Portugal, 2Biomedicine Department, Faculty of Medicine University of Porto Portugal, Porto, Portugal, 3Clinical Hematology Department, Centro Hospitalar do Porto, Porto, Portugal, 4UMIB - Unit for Multidisciplinary Investigation in Biomedicine, ICABS - Instituto de Ciências Biomédicas Abel Salazar, Porto, Portugal, 5Center of Research in Medical Pharmacology, University of Insufria, Varese, Italy

B852/P2695 Expression and regulation of the novel adipocytokine enriched gene NRPN1. N.S. Cain1, V. Kalman-Maltsev1, C.M. Smas1; 1Department of Cancer Biology, University of Toledo College of Medicine and Life Sciences, Toledo, OH

B853/P2696 Blocking Ca2+-channel β subunit reverses diabetes. K. Lee1, J. kim2, M. Köhler3, S. Ryu4, P. Berggren2; 1Division of Integrative Bioscience and Biotechnology, POSTECH, Pohang, South Korea, 2The Rolf Luft Research Center for Diabetes and Endocrinology, Karolinska Institutet, Stockholm, Sweden, 3Life Science, POSTECH, Pohang, South Korea

B854/P2697 A role in olfaction for DLK in resistance to diet induced obesity. H.N. Wong1, L.B. Holzman1; 1Medicine, University of Pennsylvania, Philadelphia, PA

B855/P2698 High Throughput Idiosyncratic Drug-Induced Hepatotoxicity and Investigations of Chronic Proliferation of Cells with a Non-Invasive Approach. C.T. Bot1, St. Stölze-Feix2, K. Juhaszt3, L. Dönır1, M. Becker1, R. Haedo3, M. George3, A. Brüggemann2, N. Fettig1; 1Nanion Technologies Inc., Livingston, NJ, 2Nanion Technologies GmbH, Munich, Germany

B856/P2699 Mutation of dgt2 uncouples lipolysis and lipoprotein synthesis in the zebrafish embryonic digestive organ resulting in excess ectopic lipid droplets. M.H. Wilson1, J.H. Thierr1,2; 1Embryology, Carnegie Institution for Science, Baltimore, MD, 2Biology, The Johns Hopkins University, Baltimore, MD

Hematopoietic System

B857/P2700 Targeting lipoprotein(a)-induced endothelial cell metabolic changes to reduce inflammation and leukocyte migration. J.G. Schnitzler1, R.M. Hoogeveen2, I. Nicorescu1, M. Versloot1, E.S. Stroes3, J. Kroon4; 1Dept. of Experimental Vascular Medicine, Academic Medical Centre, Amsterdam, Netherlands, 2Dept. of Vascular Medicine, Academic Medical Centre, Amsterdam, Netherlands

B858/P2701 Plasma sdLDL (small dense LDL) induced to modification of cellular cholesterol transport in foam cells. M. Mori1, S. Takizawa1, R. Yamazaki1, Y. Yamamoto1, K. Imai1, J. kasahara1, K. Shimizu1, M. Takahashi1; 1Cell biological Pathology, Chiba Inst. Sci., Chiba, Japan


B860/P2703 Pharmacological activation of LPA receptors regulates murine erythropoietic megakaryocyte differentiation in myeloid lineage. J. Chiang1, W. Chen1, K. Lin1, H. Lee1; 1Department of Life Science, National Taiwan University, Taipei, Taiwan

B861/P2704 Changes in the Proliferation and Gene Expression of HUVECs in Response to Treatment with Plant Secondary Metabolites. C. Howard1, D. Nozjiger1, P. Joyner1; 1Natural Science Division, Pepperdine University, Malibu, CA

B862/P2705 Characterization of the mechanistically-induced shape change of erythrocytes into polyhedrocytes. V. Tutwiler1, A.R. Mukhtio1, A.D. Peshkov2, G. Le Minh1, J. Vicksman1, C. Nagaswami2, R.I. Litvinov3, J.W. Weisel1; 1University of Pennsylvania, Philadelphia, PA, 2Kazan Federal Research University, Kazan, Russia

B863/P2706 Immuno-suppressive drug causes Hepatic iron overload. N. Sheikh1, T. Akhtar1; 1Department of Zoology, University of the Punjab, Lahore, Pakistan

B864/P2707 Apoptosis Signal-Regulating Kinase 1 (ASK1) is a novel regulator of heparin-induced thrombocytopenia and thrombosis in mice. P. Patel1, Y. Zhou1, S. McKenzie1, U. Naik1; 1Cardesa Foundation for Hematologic Research and Center for Vascular Biology Research, Department of Medicine, Thomas Jefferson University, Philadelphia, PA

B865/P2708 Vitronectin regulates the fibrinolytic system and inflammation during the repair of cerebral cortex in stab-wounded mice. K. Hashimoto1,2,3, M. Tanabe1, N. Ikeda1, M. Nakashima1,2, H. Ikeksima-Kakaota1,2, Y. Miyamoto1,2,4; 1Graduate School of Humanities and Sciences, Ochanomizu University, Tokyo, Japan, 2Institute for Human Life Innovation, Ochanomizu University, Tokyo, Japan, 3Research Fellow of Japan Society for the Promotion of Science, Tokyo, Japan, 4Program for Leading Graduate Schools, Ochanomizu University, Tokyo, Japan, 5Faculty of Science and Engineering, Waseda University, Tokyo, Japan, 6Department of Pharmacology and Neuroscience, Keio University School of Medicine, Tokyo, Japan

B866/P2709 Neuropeptide Y induces hematopoietic stem/progenitor cell mobilization by regulating matrix metalloproteinase-9 activity through Y1 receptor in osteoblasts. H. Jin1, M. Park2, J. Bae2, J. Lee2, M. Jeong3, S. Han2; 1College of Veterinary Medicine, Kyungpook National University, Daegu, Korea, 2South, Physiology, Kyungpook National University School of Medicine, Daegu, Korea, South

B867/P2710 Partial Refractoriness of Platelets in Thrombotic Conditions. A.D. Peshkova1, G. Le Minh1, I.A. Andrianova1, J.W. Weisel1, R.I. Litvinov3; 1Institute of Fundamental Medicine and Biology, Kazan Federal University, Kazan, Russia, 2Department of Cell and Developmental Biology, University of Pennsylvania School of Medicine, Philadelphia, PA

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Therapies: Design and Mechanisms for Normal and Diseased Organs 1

B868/P2711 A non-saponin fraction from Korean red ginseng prevents TNF-α-induced muscle atrophy via regulation of Akt/mTOR signaling in C2C12 myotubes. M. Yeom1, D. Cho2, D. Hahn3,4; 1Acupuncture and Meridian Science Research Center, College of Korean Medicine, Kyunghee University, Seoul, Korea, South, 2Department of Biomedical Science, Graduate School, Kyunghee University, Seoul, Korea, South, 3Department of Physiology, School of Medicine, Kyunghee University, Seoul, Korea, South

B869/P2712 Transmembrane BAX Inhibitor Motif-6 (TMBIM6) protects against Cisplatin-induced testicular toxicity. H.K. Kim1, P.K. Yadav2, K.R. Bhattachar1, H.W. Jung1, H.R. Kim1, H.J. Chae1; 1Pharmacology, Chonbuk National University, Jeonju-si, Korea, South, 2Graduate School, DGIST, Jeonju-si, Korea, South

B870/P2713 Immune Enhancement of Fucoidan in Raw264.7 cells. H. Kim1, H. An1, s. Ahn1, S. Yu1; 1Department of Microbiology & Immunology, Pusan National University School of Medicine, Yangsan, South Korea

B871/P2714 In vivo cellular reprogramming to restore respiratory function after SCI. S. Fernandes1, L.V. Zholudeva1, M.A. Lane1, P.W. Baas1, L. Qiang1; 1Neurobiology and Anatomy, Drexel University College of Medicine, Philadelphia, PA

B872/P2715 The study of new quaternary ammonium compounds specific activity to gram positive and gram negative bacteria in vitro and in vivo. M. Agafonova1, R. Kazakova1, A. Lyubina1, N. Shytyn1, M. Zeld1, Y. Shytyn1; 1Scientific and Educational Center of Pharmaceutics, Kazan (Volga region) Federal University, Kazan, Russia

B873/P2716 Ametryn causes alterations of the prostatic constituents percentage of adult Wistar rats. L. Cuquetto-Leite1, F.J. Paiva da Silva1, C. Capucho1, I.B. Reis1, K.M. Freitas2, M.H. Dolder1; 1Department of Structural and Functional Biology, University of Campinas, Campinas, Brazil, 2Brazilian Agricultural Research Corporation, Embrapa, Seropédica, Brazil

B874/P2717 Polyglutamine length dependent structural properties and phase behavior of huntingtin exon 1. K.M. Ruff1, J.B. Warner2, A.E. Posey3, E.A. Newcomb4, P. Tan4, E.A. Lemke5, P.R. Gooley6, D.M. Hatters2, H.A. Lashuel2, R.V. Pappu7; 1Biomedical Engineering, Washington University in Saint Louis, Saint Louis, MO, 2Laboratory of Molecular and Chemical Biology of Neurodegeneration, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, 3Department of Biochemistry and Molecular Biology, The University of Melbourne, Melbourne, Australia, 4Structural and Computational Molecular Biology Unit, European Molecular Biology Laboratory, Heidelberg, Germany

B875/P2718 Human adipose-derived multipotent mesenchymal stromal cells as a new target for a cell-mediated drug delivery. L.S. Litinova1, V.V. Shupletsova1, O.G. Khazakhmatova1, K.A. Yurova1, V.V. Malashchenko1, N.M. Todosenko1, A.S. Timin1, V.L. Kudryavtseva2, G.B. Sukhorukov2,3, A.J. Gow4,5, E.N. Atochina-Vasserman4,6, I.A. Khlusov1,2; 1Department of Immunology and Cell Biotechnology, Immanuel Kant Baltic Federal University, Kaliningrad, Russia, 2RASA Center in Tomsk, Tomsk Polytechnic University, Tomsk, Russia, 3School of Engineering and Materials Science, Queen Mary University of London, London, United Kingdom, 4Department of Pharmacology and Toxicology, Rutgers University, Piscataway, NJ, 5RASA Center, Kazan Federal University, Kazan, Russia, 6Department of Morphology and General Pathology, Siberian State Medical University, Tomsk, Russia, 7Department of Polymers and Composite Materials, Tomsk State University, Tomsk, Russia

B876/P2719 Ultrastructural studies of phagocytosis of synthetic microcapsules by human polymorphonuclear leukocytes. T.A. Nezvoro2, M.Y. Nikitina1, A.A. Ponomareva1, Y.V. Tarakanchikova1, A.J. Gow4,5, G.B. Sukhorukov4,5, E.N. Atochina-Vasserman4,6, R.I. Litvinov4,5; 1RASA Center, Kazan Federal University, Kazan, Russia, 2Saratov State University, Saratov, Russia, 3Department of Pharmacology and Toxicology, Rutgers University, Piscataway, NJ, 4RASA Center, Kazan Federal University, Kazan, Russia, 5RASA Center, Kazan Federal University, Kazan, Russia, 6Pharmacology, Rutgers University, Piscataway, NJ, 7Department of Pharmacology and Toxicology, Rutgers University, Piscataway, NJ, 8School of Engineering and Materials Science, Queen Mary University of London, London, United Kingdom, 9Perelman School of Medicine, University of Pennsylvania, Philadelphia, United States

B877/P2720 Inhibitory effects of oleuropein on interleukin-4-induced asthmatic inflammation and emphysema in a smoke/OVA mouse model. Y. Kim1, Y. Kang2; 1Food science and Nutrition, Hallym University, Gangwon-do, South Korea

B878/P2721 Developing Novel Inhibitors of Gamma-Glutamyl Transpeptidase. M.H. Hanigan1, N. Wakeham1, B.H. Mooers2, S.S. Terzyan3; 1Cell Biology, University of Oklahoma Health Sciences Center, Oklahoma City, OK, 2Biochemistry and Molecular Biology, University of Oklahoma Health Sciences Center, Oklahoma City, OK, 3Laboratory of Biomolecular Structure and Function, University of Oklahoma Health Sciences Center, Oklahoma City, OK

B879/P2722 Differentiation of human induced pluripotent stem cells (hiPSCs) with a 57 kb ctns deletion. M.L. Taub1, R. Thiagarajan1, R. Duve1, J. Mulkin1, A. Kocaj2; 1Biochemistry, University at Buffalo, Buffalo, NY, 2The University of Buffalo, Buffalo, NY

B880/P2723 Use of submicron vaterite particles serves as an effective delivery vehicle to the respiratory portion of the lung. O. Gusalikova1, O. Sidneeva1, O. Sidnee2, N. Pitaev1, O. Kulikov2, E. Tutylaev2, G.B. Sukhorukov4,5, E. Atochina-Vasserman4,6, D. Gorin4,5, A.J. Gow4,5; 1Chemistry, Saratov State University, Saratov, Russia, 2Engineering, Ogariev Mordovia State University, Saransk, Russia, 3School of Engineering and Material Sciences, Queen Mary University, London, United Kingdom, 4RASA Center, Tomsk Polytechnic University, Tomsk, Russia, 5RASA Center, Kazan Federal University, Kazan, Russia, 6Pharmacology, Rutgers University, Piscataway, NJ

B881/P2724 Overproduction of biologically active human bone morphogenetic protein-4 in Chinese hamster ovary cells. N. Han1, J. Pi1, K. Bae2, J. Yoon1; 1Graduate School of Biotechnology, Kyunghee University, Yongin, South Korea
**Tuesday Poster Session**

**Learning Center, Exhibit Halls C-E**

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*TUESDAY PRESENTERS: REMOVE ALL POSTERS BY 4:00 PM OR THEY WILL BE DISCARDED. THERE WILL BE ABSOLUTELY NO ACCESS TO THE LEARNING CENTER AFTER 4:00 PM. NO EXCEPTIONS! PLEASE REMOVE YOUR POSTER FOLLOWING YOUR POSTER SESSION IF YOU CANNOT RETURN BEFORE 4:00 PM TO PICK UP YOUR POSTER

**Board Numbers**

**Session Titles**

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**Poster Presentation Guidelines**

- Presenters should ensure their posters are placed on the appropriate poster board for the duration of their assigned poster session and viewing. Please use the number starting with “B” for your poster board.
- Poster presenters should stand at their poster locations during the appropriate 90-minute time slot—odd board numbers, 12:00-1:30 pm or even board numbers, 1:30-3:00 pm. The specific time slot is included in the original poster notification emails sent on October 30. If presenters have to leave early, they should post a note on their boards with contact information or stating when they will be available to answer attendee questions.
- IMPORTANT! Poster presenters are solely responsible for placing and removing their poster according to the schedule provided above. If you are unable to set up your poster the evening before your session, please do so the morning of your presentation.
- *Tuesday presenters must take down their posters between 3:00 pm and 4:00 pm. Posters that are not removed from their boards at the designated time or that are left in the Exhibit/Poster Hall will be discarded. No Exceptions!*
- Poster presenters should not leave any items unattended at their poster board, including poster tubes, meeting bags, Programs, Poster Guides, personal items, etc. The ASCB and EMBO are not responsible for any items left in the Learning Center.
- Cameras/Photography: Cameras and all other recording devices are strictly prohibited in all session rooms, in the Learning Center, and in all poster and oral presentation sessions.
New Technologies in Single Molecule and Super-Resolution

B1/P2725 A DNA origami platform for quantitative super-resolution microscopy. F. Cella Zanacchi1,2, C. Manzo1,2, N.D. Derr1, M. Garcia Parajo1,2, M. Lakadamyali1,2; Nanophysics Department, Italian Institute of Technology, Genova, Italy, 1ICFO-Institut de Ciencies Fotoniques, Barcelona, Spain, 2Universitat de Vic - Universitat Central de Catalunya, Vic, Spain, 3Smith College, Northampton, MD, 4ICREA, Barcelona, Spain

B1/P2734 Developing a single-molecule imaging technology for early cancer detection in blood samples. S. Wang1, C. Mao2, Y. J. Chong3, R. W. J. Wu4, J. Xia1; Biophysics and Biophysical Chemistry, Johns Hopkins School of Medicine, Baltimore, MD, 2Pathology, Johns Hopkins School of Medicine, Baltimore, MD, 3Oncology, Johns Hopkins School of Medicine, Baltimore, MD, 4Department of Pathology, Georgetown University School of Medicine, Washington, DC

B1/P2735 Obtaining 3D super-resolution information from 2D single-molecule Localizations through a 2D-to-3D Transformation Algorithm. A. Ruba1, J. Kellich1, W. Luo2, W. Yang1; Department of Biology, Temple University, Philadelphia, PA

B12/P2736 Absolute Quantification of Transient Membrane Protein Interactions in Single Living Cells Using Co-Immunomobilization. S. Park1, D. Kim2, D. Kim3, M. Jeong1, N. Ho1, Y. Kwon1, K. Zhou1, N. Lee1, S. Ryu1; Department of Life Sciences, POSTECH, Pohang, South Korea, 2School of Interdisciplinary Bioscience and Bioengineering, POSTECH, Pohang, South Korea, 3Division of Integrative Biosciences and Biotechnology, POSTECH, Pohang, South Korea, 4Department of Chemistry, Seoul National University, Seoul, South Korea

B13/P2737 High Dimension, High Precision, Three-Dimensional Super-Resolution Imaging and Particle Tracking with the Double Helix SPINDLE™ Module. K. Heiser1, A. Agrawal1, S. Gaumer1, L. Kimerling1, R. Pietsch1; Double Helix LLC, Boulder, CO, 2Electrical, Computer, and Engineering, University of Colorado at Boulder, Boulder, CO

B16/P2740 Immunoprecipitation high performance liquid chromatography (IP-HPLC) analysis in the postoperative ex vivo analysis of bisphosphonate related osteonecrosis of mandible. S. Kim1, M. Eo1, Y. Cho1, Y. Kim2, S. Lee1; School of Dentistry, Dental Research Institute, Seoul National University, Department of Oral and Maxillofacial Surgery, Seoul, South Korea, 2Cheongju University, Department of Dental Hygiene, Cheongju, South Korea, 3College of Dentistry, Ganganewon-Wonju National University, Department of Oral Pathology, Ganganewon, South Korea

B17/P2741 Engineering the MS2 System to follow the Life Cycle of Single mRNAs. M. Vera1, E. Tutuc1, J. Biswas1, R. Parker2, R.H. Singer2; Anatomy and Structural Biology, Albert Einstein College of Medicine, New York, NY, 3Chemistry and Biochemistry, University of Boulder, Boulder, CO

B18/P2742 Microfluidic Imaging Windows: A New Method for Imaging and Controlling the Tumor Microenvironment. L. Butt1, L. Sfakis1, Y. Wang2, D. Entenberg3, J. Castracane1, J.S. Condeelis2,3,4; Nanobiology Constellation, SUNY Polytechnic Institute, Albany, NY, 2Department of Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, 3Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, 4Integrated Imaging Program, Albert Einstein College of Medicine, Bronx, NY

B19/P2743 Fluorescent cell-labeling strategies live-cell analysis. D.M. Appledorn1, D. Trezise2, H. Campwala2, M. Roddy1, J. Rauch1, T. Dale2, K. Wicklund1, J. Essen BioScience, Ann Arbor, MI, 2Essen BioScience, Welwyn Garden City, United Kingdom

B20/P2744 An enclosed system for long-term brain slice culture: viral-mediated transgene expression and precisely localized repetitive cell imaging. B.B. Fixman1, I.W. Babcock1, A. Minamide1, A.E. Shaw2, M.I. Oliveira da Silva3, J.J. Field1, J.R. Bamburg1,2; Molecular, Cellular and Integrative Neuroscience, Colorado State University, Fort Collins, CO, 2Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO, 3Nerve Regeneration Group, University of Porto, Portugal

B21/P2745 Flagella standards for quantitative fluorescence microscopy. Y. Liu1, P. Yang1; Biological Sciences, Marquette University, Milwaukee, WI

B22/P2746 Properties of Near-Infrared Fluorescent Proteins Engineered From Bacterial Photo receptors in Mammalian Cells. A.A. Shemetov1,2, O.S. Oliinyk3, V.V. Verkhusha1,2,3; Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, 2Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, 3Department of Biochemistry and Developmental Biology, Faculty of Medicine, University of Helsinki, Helsinki, Finland

New Technologies in Cell Biology: Fluorescence

B14/P2738 Imaging Minimally-Engineered mRNA and long non-coding RNA transcripts at the single-molecule level using phosphorothioate-optimized 2'-O-methyl RNA molecular beacons. M. Chen1,2, C.J. Krueger1,4, A.K. Chen1; Department of Biomedical Engineering, College of Engineering, Peking University, Beijing, China, 2Peking-Tsinghua Center for Life Sciences, Peking University, Beijing, China, 3Department for Advanced Interdisciplinary Studies, Peking University, Beijing, China, 4Wallace H Couter Department of Biomedical Engineering, Georgia Institute of Technology, Atlanta, United States

B15/P2739 Genetically Encoded Tools to Control and Reveal Cellular Dynamics in iPSC Disease Model Systems. H. Leung1, Y. Chong2, H. Huang3, Y. Chang4, X. Wang5, J. Wang1, F. Shen1; 1Molecular Biophysics and Bioengineering, University of California, San Francisco, CA, 2Department of Chemistry, Harvard University, Cambridge, MA, 3Department of Molecular and Cellular Biology, Harvard University, Cambridge, MA, 4Department of Biomedical Engineering, Columbia University, New York, NY, 5Department of Chemistry, University of Alberta, Edmonton, Canada

B16/P2740 Immunoprecipitation high performance liquid chromatography (IP-HPLC) analysis in the postoperative ex vivo analysis of bisphosphonate related osteonecrosis of mandible. S. Kim1, M. Eo1, Y. Cho1, Y. Kim2, S. Lee1; School of Dentistry, Dental Research Institute, Seoul National University, Department of Oral and Maxillofacial Surgery, Seoul, South Korea, 2Cheongju University, Department of Dental Hygiene, Cheongju, South Korea, 3College of Dentistry, Ganganewon-Wonju National University, Department of Oral Pathology, Ganganewon, South Korea

B17/P2741 Engineering the MS2 System to follow the Life Cycle of Single mRNAs. M. Vera1, E. Tutuc1, J. Biswas1, R. Parker2, R.H. Singer2; Anatomy and Structural Biology, Albert Einstein College of Medicine, New York, NY, 3Chemistry and Biochemistry, University of Boulder, Boulder, CO

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B21/P2745 Flagella standards for quantitative fluorescence microscopy. Y. Liu1, P. Yang1; Biological Sciences, Marquette University, Milwaukee, WI

B22/P2746 Properties of Near-Infrared Fluorescent Proteins Engineered From Bacterial Photoreceptors in Mammalian Cells. A.A. Shemetov1,2, O.S. Oliinyk3, V.V. Verkhusha1,2,3; Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, 2Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, 3Department of Biochemistry and Developmental Biology, Faculty of Medicine, University of Helsinki, Helsinki, Finland
B23/P2747 Light-activated protein interaction with high spatial subcellular confinement. L. Benedetti1,2,3,4,5, A.E. Barentine1,6, M. Mesar1,2,4,6, H. Wheller1,2,3, J. Bewersdorff1, P. De Camilli1,2,3,4,5; 1Yale University in Cell, Neuroscience, Neurodegeneration and Repair, New Haven, CT, 2Department of Neuroscience, Yale University School of Medicine, New Haven, CT, 3Department of Cell Biology, Yale University School of Medicine, New Haven, CT, 4Howard Hughes Medical Institute, New Haven, CT, 5Kavli Institute for Neuroscience, New Haven, CT, 6Department of Biomedical Engineering, Yale University, New Haven, CT, 7Nanobiology Institute, Yale University, West Haven, CT.

B24/P2748 Optogenetic systems for regulation of cellular surfactinomyces with near-infrared light. A.A. Kabernik1, A.A. Shemetov1, T.A. Redchuk2, V.V. Verkhusha2,3; 1Department of Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, 2Department of Biochemistry and Developmental Biology, Faculty of Medicine, University of Helsinki, Helsinki, Finland, 3Gross-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY.

B25/P2749 Development and application of doxycycline binding protein for live-cell imaging and manipulation of authentic RNAs. A. Tabak1; 1Quantitative Biology Center, RIKEN, Suita, Japan, 2Graduate School of Science, The University of Tokyo, Tokyo, Japan.

B26/P2750 An improved methodology for determining migration defects after in utero electroporation by utilizing an internal randomized control. R. Taylor1, K. Taylor1, J. Carrington1, E.W. Dent2,3; 1Neuroscience Training Program, University of Wisconsin, Madison, WI, 2Neuroscience, University of Wisconsin, Madison, WI.

B27/P2751 Intravital imaging of the Tumor Microenvironment using Endogenous Fluorescence. J. Szulczewski1,2,3, D.R. Inman1, D. Entenberg1, J. Aguirre-Ghiso1, J. Castracane1,3, J.S. Condeelis1, S.M. Ponik1, K.W. Elleiri1, P.J. Keely1; 1Molecular and Cellular Pharmacology Graduate Program, University of Wisconsin-Madison, Madison, WI, 2Cellular and Regenerative Biology, University of Wisconsin-Madison, Madison, WI, 3Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, 4Department of Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY.

B28/P2752 Single-cell fluorescence thermometry visualizing intracellular events associated with heat production in brown adipocytes. M. Suzuki1; 1PRESTO, Japan Science and Technology Agency (JST), Saitama, Japan.

B29/P2753 Mechanisms of milk-lipid secretion in live mice unraveled by intravital subcellular microscopy (ISMic). A. Masedunskas1, Y. Chen1, R. Weigert1, I.H. Mather1,2; 1National Cancer Institute, Bethesda, MD, 2Mechanical Engineering, Johns Hopkins University, Baltimore, MD, 3Animal and Avian Sciences, University of Maryland, College Park, MD.

B30/P2754 Live-cell and single-molecule imaging reveal contrasting localization and kinetics of Tet proteins in naive mouse embryonic stem cells. J. Ryan1, C.B. Mulholland1, S. Buitmann1, H. Leonhardt1; 1Biocenter, LMU Munich, Munich, Germany.

B31/P2755 Development of bifc system based on a bright and photo-stable fluorescent protein for detecting a limited number of protein-protein interactions. S. Okada1, S. Nakagawa1, S. Kaminov2, T. Itt2; 1Department of Biochemistry, Kyushu University Graduate School of Medical Sciences, Fukuoka, Japan, 2Department of Medicine, Kyushu University School of Medicine, Fukuoka, Japan.

B32/P2756 Dissecting molecular determinants of signaling dynamics via optogenetic control of innate immunity. H.R. Clark1,2, M. DeFelice3, S. Regot4, M. Covert3; 1Biotechnology and Molecular Biology Graduate Program, Johns Hopkins, Baltimore, MD, 2Molecular Biology and Genetics, Johns Hopkins, Baltimore, MD, 3Bioengineering, Stanford University, Palo Alto, CA.

B33/P2757 Exploring the possibility of co-cultivating the green moss Physcomitrella patens with human fibroblasts. I. Chustakhina1, E. Zakirova1, L. Varsolova1, A. Palotas2, A. Rizvanov1, E. Shakirov1,2; 1Institute of Fundamental Medicine and Biology, Kazan (Volga region) Federal University, Kazan, Russia, 2Asklepios-Med (Private Medical Practice and Research Center), Szeged, Hungary, 3Department of Integrative Biology, University of Texas at Austin, Austin, TX.

B34/P2758 Homoharringtonine enhances transdermal absorption in the skin by regulating epidermal tight junction barriers. K. Yagi1, A. Watanai1, K. Fujiwara1, N. Suzuki1, M. Kondo1; 1Graduate School of Pharmaceutical Sciences, Osaka University, Suita, Japan.

B35/P2759 Development of a stretchable device for live-cell imaging. N.A. Almaslamani1, H. Horn1; 1College of Science and Engineering-Life Science Division, Hamad bin Khalifa University, Doha, Qatar.

B36/P2760 Functional characterization of an in vitro generated 3-D nerve scaffold using capillary alginate gel on a microelectrode array. D.S. George1, W.A. Anderson1, A.J. Bosak2, A.R. Willenberg2, F. Sommerhage1, B.J. Willenberg1, S. Lambert1; 1Burnett School of Biomedical Sciences, University of Central Florida, Orlando, FL, 2Department of Internal Medicine, University of Central Florida, Orlando, FL, 3NanoScience Technology Center, University of Central Florida, Orlando, FL, 4College of Medical Education, University of Central Florida, Orlando, FL.

B37/P2761 Properties of Compressed Melanin Sheets. C.H. Hou1, Z. Trinh1, J. Boligitz2, K. Wilson1, A. Bhandari1, Y. Zhu1, S. Assaria1, K. Darvishi1, J.B. Sheffield2, M.F. Kiani2, S.A. Baranowitz2; 1Drexel University, Philadelphia, PA, 2College of Engineering, Temple University, Philadelphia, PA.

B38/P2762 Cell culture confluency estimation using embedded application on the InCellis® Smart Cell Imaging System. O. Varet1, S. DUBACQ2, L. Antanaviciute1; 1Bertin Instruments, Rockville, MD.


B40/P2764 High-throughput open source analysis of 3D structures using CellProfiler. A. Goodman1, C. McGillin2, S. Singh3, A.E. Carpenter1; 1Imaging Platform, Broad Institute of MIT and Harvard, Cambridge, MA.

B41/P2765 Assessing autophagic flux in 2D and 3D cell culture models with a novel plate-based assay. D.F. Lazar1, A.A. Gilliette1, B.L. Butler1, C.T. Effers1, B.F. Binkowski2, G. Vidugiris1, M.R. Slater2, D. Ma3, T. Riss4, J.J. Cali4; 1Promega Corporation, Madison, WI, 2University of Wisconsin, Madison, WI.

B42/P2766 Combining impedance-based viability measurements and flow cytometric analyte quantitation to evaluate effector cell killing of T lymphocytes. L. Jachimowicz2, G. Guenther1, W. Tang1, P. Ye1, M. Lei1, F. Cerignoli1, B. Xi1, L. Zhao1, Y. Abassi1; 1Acea Biosciences, San Diego, CA.

B43/P2767 Expansion and Optimization of DIVA DNA Sequence Validation Services. A.L. Large1, N. Kaplan2, J. Chiniquy2, G. Goyal2, N. Hillson2,3,4; 1University of Tennessee, Knoxville, TN, 2DOE Joint BioEnergy Institute, Emeryville, CA, 3DOE Agile BioFoundry, Emeryville, CA, 4DOE Joint Genome Institute, Walnut Creek, CA.

Tuesday Poster Session

Corp., Cambridge, MA, 1Translational Research Department, Institut Curie, Paris, France, 2Hybrigenics Services SAS, Paris, France, 3CRCT, INSERM, Toulouse, France, 4UMR144, Institut Curie, CNRS, Paris, France

B45/P2769 Engineering Vero Cell Line to Enhance Vaccine Production. A. Sicari1, J. Pickens2, L. Jones3, S. Bell4, R. Trip2, 1Proventius Bio, Athens, GA, 2Department of Infectious Diseases, University of Georgia, Athens, GA

B46/P2770 A novel rapid cell ablation model for eliminating one or two maker-labelled cell populations in mice—a model for studying the pathogenesis of human diseases. F. Liu1, S. Dai1, D. Feng2, A. Kearns3, X. Feng1, B. Gao4, X. Qin1 1Neuroscience, Temple University School of Medicine, Philadelphia, PA, 2Laboratory of Liver Diseases, National Institute on Alcohol Abuse and Alcoholism, Bethesda, MD

B47/P2771 Nourseothricin and its resistance gene Sat2, a novel antibiotic selection marker for C. elegans gene transfer. H. Obinata1, S. Niwa1 1Life Science, Tohoku University, Sendai, Japan

B48/P2772 SUMO-TARGETING OF A STRESS-TOLERANT SUMO PROTEASE. R. Yin1, J.L. Peek1, D. Gray1, C. Harvey1, R. Levy-Myers1, D. Rosenberg1, L. Kolla1, 1Department of Infectious Diseases, University of California, Los Angeles, Los Angeles, CA, 2Department of Biophysics, Acibadem University School of Medicine, Istanbul, Turkey, 3Molecular Biology Institute, University of California, Los Angeles, Los Angeles, CA

B49/P2773 Development and functional analysis of novel PEI-based mammalian cell transfection reagents. T. Suk-in1, A. Tan1, B. Franca2, A. Gemma3, S. Granados-Focil4, R. Bellini2, 1Chemistry, Clark University, Worcester, MA, 2Biology, College of the Holy Cross, Worcester, MA

B50/P2774 Matching refractive index of mounting media improves axial resolution and image quality in 3D biological samples. O. Golub1, M. Wickman1, A. York1, D. Cash1, 1Molecular Probes Labeling & Detection, Thermo Fisher Scientific, Eugene, OR

B51/P2775 Engineered Cell Penetrating Peptides for Molecular Delivery. N. Chada1, W. Ma1, W.H. Suh1, 1Department of Bioengineering, Temple University, Philadelphia, PA

B52/P2776 POST-STIM1 interactions modulate Ca2+ oscillation frequency via modulation of PMCA4 function. T. Cangoz1, C.K. Go1, J. Soboloff1, 1Fels Institute for Cancer Research and Molecular Biology, Temple University, Philadelphia, PA

B53/P2777 A Novel Approach for Characterizing the Cell-Implant Adhesion. J.Y. Chen1, Y. Pan2, L.S. Penn3, N. Xi4, J. Xi1, 1Department of Chemistry, Drexel University, Philadelphia, PA, 2Department of Biology, Drexel University, Philadelphia, PA, 3Department of Industrial and Manufacturing System Engineering, The University of Hong Kong, Pok Fu Lam, Hong Kong

Actin Nucleating Proteins

B55/P2778 Arp2/3 complex- and formin-mediated actin networks tune actin-binding protein sorting in fission yeast. K.E. Homa1, C. Suarez2, D.R. Kovar1,2, 1Molecular Genetics and Cell Biology, The University of Chicago, Chicago, IL, 2Biochemistry and Molecular Biology, The University of Chicago, Chicago, IL

B56/P2779 Arp2/3 complex and the nucleation promoting factor Wash are involved in the formation of MTOC-TMA during Xenopus oocyte maturation. Y. Yamagishi1, H. Abe1, 1Dept. of Nanobio., Grad. Sch. of Advanced Integration Sci., Chiba Univ, Chiba, Japan

B57/P2780 Abp1 stimulates Arp2/3 complex nucleation of actin filament branches and protects them from debranching by GMF. S. Guo1, O.S. Sokolova1, J. Chung1, S. Padrick1, J. Gelles1, B.L. Goode1, 1Department of Biology, Brandeis University, Waltham, MA, 2Department of Biology, Moscow State University, Waltham, MA, 3Department of Biochemistry, Brandeis University, Waltham, MA, 4Department of Biochemistry and Molecular Biology, Drexel University, Philadelphia, PA

B58/P2781 Arp2 Phosphorylation is Not Essential for Arp2/3 Complex Activity in Fission Yeast. A. Epstein1, S. Espinoza1, T.D. Pollard1,2, 1Molecular, Cellular and Developmental Biology, Yale University, New Haven, CT, 2Molecular Biophysics and Biochemistry, Yale University, New Haven, CT

B59/P2782 Multiscale Model of the Formin Homology 1 Domain Illustrates its Role in Regulation of Actin Polymerization. B.G. Horan1, G. Zerze2, G.L. Dignon2, Y.C. Cheong1, D. Vavylonis1, J. Mittal2, 1Physics, Lehigh University, Bethlehem, PA, 2Chemical and Biomolecular Engineering, Lehigh University, Bethlehem, PA, 3Naval Research Laboratory, Center for Materials Physics and Technology, Washington, DC

B60/P2783 Force dependence of filopodia adhesion: involvement of myosin II and forms. N.O. Alieva1, A.K. Efremov1,2, M. Natarajan1, S. Hu1, D. Oh1, Z. Chen1, H. Ong1, A. Jégou3, G. Romet-Lemonne3, T.D. Pollard1,2, 1Cell and Developmental Biology, Drosophila The Formin Fhod-1 Domain Illustrates its Role in Regulation of Actin Polymerization. B.G. Horan1, G. Zerze2, G.L. Dignon2, Y.C. Cheong1, D. Vavylonis1, J. Mittal2, 1Physics, Lehigh University, Bethlehem, PA, 2Chemical and Biomolecular Engineering, Lehigh University, Bethlehem, PA, 3Naval Research Laboratory, Center for Materials Physics and Technology, Washington, DC

B61/P2784 The interaction of FHOD1 with nesprin-2G activates a cryptic actin binding site and stimulates potent actin bundling activity: implications for nuclear movement. S. Antoku1, G.G. Gunderson1, 1Pathology & Cell Biology, Columbia University, New York, NY

B62/P2785 Understanding muscle cell size regulation by the Caenorhabditis elegans formin FHOD-1. C.V. Yingling1, D. Pruyne1, 1Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY

B63/P2786 The Drosophila Formin Fhod Nucleates Actin Filaments. A.A. Patel1, Z.A. Ozug Durer2, A.P. van Loon1, M.E. Quinlan1, 1Molecular Biology Interdepartmental Doctoral Program, University of California, Los Angeles, Los Angeles, CA, 2Department of Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles, CA, 3Department of Biophysics, Acibadem University School of Medicine, Istanbul, Turkey, 4Molecular Biology Institute, University of California, Los Angeles, Los Angeles, CA

B64/P2787 Intracellular zinc regulates actin nucleation during mouse oocyte maturation and fertilization via Spire. Y. Jo1, N. Kim1, S. Namgoong2, 1Animal Science, Chungbuk National University, Cheongju, Korea, South

B65/P2788 Epidermal specific knock out of N-WASP expression caused atopic dermatitis like inflammation in mice. P. Kalailingam1, H. Tan1, N. Jain1, S. Keat1, J. Chan1, T. Soon1, T. Thanabal1, 1School of Biological Sciences, Nanyang Technological University, Singapore, Singapore

B66/P2789 Identifying Functions of a Chlamydomonas Formin in Flagellar Assembly. G.L. Witter1, B. Jack1, T. Kersten1, S. Dutta1, P. Avasthi1, 1Chemistry, Spring Hill College, Mobile, AL, 2INBRE Summer Scholar Program, Kansas City, KS, 3Anatomy and Cell Biology, University of Kansas Medical Center, Kansas City, KS, 4School of Biological Sciences, Nanyang Technological University, Singapore, Singapore

B67/P2790 Screening for function-altering INF2 mutants using a live-cell actin polymerization assay. T. Fung1, R. CHAKRABARTI1, H.N. Higges1, 1Department of Biomechanics & Cell Biology, Geisel School of Medicine at Dartmouth, Hanover, NH

B68/P2791 Actin nucleation factors that control autophagy are important for zebrafish organ development. A. Mathiowetz1, K.G. Campbell1, D. Daggett1, 1Molecular and Cell Biology, University of Connecticut, Storrs, CT

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Actomyosin and Contractility

B72/P2795 A novel interaction between NMLIB and Survivin is essential for proper cell division. A. Babkoff1, E. Cohen-Kfir1, D. Ronen1, S. Ravid1; 1Department of Biochemistry, The Hebrew University of Jerusalem, Jerusalem, Israel

B77/P2799 Composition of LAT clusters regulates their movement within actomyosin networks. J. Ditlev1,2, A.R. Vega3, D.V. Koester4, X. Su3,2, R.D. Vale3,2, S. Mayor2,4, K. Jaqaman2, M.K. Rosen3,2; 1Department of Biophysics and Howard Hughes Medical Institute, UT Southwestern Medical Center, Dallas, TX; 2Howard Hughes Medical Institute, Summer Institute, Marine Biological Laboratory, Woods Hole, MA; 3Department of Biophysics, University of California San Diego, La Jolla, CA; 4Howard Hughes Medical Institute, UT Southwestern Medical Center, Dallas, TX; 5National Centre for Biologocial Sciences, Bangalore, India

B79/P2802 Optimal adhesion stability is required for proper sarcomere assembly in cardiomyocytes. A.C. Neininger1, N. Taneja1, D.T. Burnett1; 1Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B80/P2803 How is apical constriction triggered? Possible roles for afadin and zyxin. M.M. Slabodnick1, T.D. Cupp1, A. Babkoff1, E. Cohen-Kfir1, D. Ronen1, S. Ravid1; 1Department of Molecular and Cell Biology, UC Berkeley, Berkeley, CA; 2Institute for Regenerative Medicine, Vanderbilt University, Nashville, TN

B81/P2804 The pre-metazoan origin of animal cell contractility. T. Brunet1, N. King1; 1Molecular and Cell Biology, University of California Berkeley/HHMI, Berkeley, CA

Regulation of Actin Dynamics 2

B82/P2805 Septins as modifiers of actin dynamics. T. Kogan1, K. Nakos2, E. Spiolitis2, S.B. Padrick1; 1Biochemistry, Drexel University, Philadelphia, PA; 2Biological Sciences, Drexel University, Philadelphia, PA

B83/P2806 BMW is an exceptionally potent actin assembly factor from a human parasite. M. Winterhoff1, S. Brünnh1, M. Kollmar2, R. Schnabel1, U. Curth1, J. Faß1; 1Institut der Biophysikalische Chemie, Hannover Medical School, Hannover, Germany; 2Department of NR-MR-based Structural Biology, Max-Planck-Institute for Biophysical Chemistry, Göttingen, Germany; 3Institute for Genetics, Technical University Braunschweig, Braunschweig, Germany

B84/P2807 Effect of altering sialylation levels on cytoskeletal organization of the cell. S.S. Devi1, R. Arya1; 1School of Biotechnology, Jawaharlal Nehru University, New Delhi, India

B85/P2808 The scaffold protein RACK1 influences F-actin dynamics and degranalization in mast cells. E.G. Freitas Filho1,2, I.S. Ambudkar1, C. Olivier1, M.C. Jamur1; 1Secretory Physiology Section, Molecular Physiology and and Therapeutics Branch, National Institute of Dental and Craniofacial Research, National Institutes of Health, Bethesda, MD; 2Department of Cell and Molecular Biology and Pathogenic Biologagents, Ribeirão Preto Medical School, University of São Paulo, Ribeirão Preto, Brazil

B86/P2809 Morphodynamics of cell edge protrusion in Lamellodinid (Lpd) knockout cells. G. Dinchev1,2, B. Amiri1, M. Schaks1,2, V. Dinchev1, T.E. Stradal4, M. Krause1, M. Faike1, K. Rotter1; 1Division of Molecular Cell Biology, Technische Universität Braunschweig, Braunschweig, Germany; 2Department of Cell Biology, Helmholtz Centre for Infection Research, Braunschweig, Germany; 3Department of Physics, Max-Debrü-Centrum für Molekulare Medizin, Berlin, Germany; 4Randall Division of Cell and Molecular Biophysics, King’s College London, London, United Kingdom

B87/P2810 Characterization of cell lines lacking ubiquitous WAVE complex. K. Rotter1,2, F. Kage1, M. Schaks1,2, F. Grüner3,4, A. Steffen1, T.E. Stradal4; 1Department of Cell Biology, Helmholtz Centre for Infection Research, Braunschweig, Germany; 2Division of Molecular Cell Biology, Technische Universität Braunschweig, Braunschweig, Germany

B88/P2811 Building and burning bridges: Adaptor protein Bbc1 regulates endocytotic actin patch assembly by disrupting interactions of Wsp1/ Vrp1 with Myo1. C.D. MacQuarrie1, R.T. Carroll1, M. Mangione2, K.L. Gould2, V. Sirotkin1; 1Department of Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY; 2Department of Cell Biology, Cornell University, Ithaca, NY

B89/P2812 Viable mice and primary cells in the absence of beta-actin protein. X. Patrinostro1, C.G. Starker2, D.F. Voytas2, B.J. Perrin1, J.M. Ervasti1; 1Department of Biochemistry, Molecular Biology, and Biophysics, University of Minnesota, Minneapolis, MN; 2Department of Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN; 3Department of Biotechnology, Indiana University - Purdue University Indianapolis, Indianapolis, IN

B90/P2813 Vav2-RhoG-mediated cytoskeleton and nuclear skeleton remodeling. I. Prabakaran1, G. Koo1, S. Xu1, M.A. Guvakova1; 1Surgery, University of Pennsylvania, Philadelphia, PA
B91/P2814 WITHDRAWN

B92/P2815 MRTF/SRF transcription promotes cell-in-cell invasion for entosis through Ezrin-dependent bleb-dynamics. L. Soto Hinojosa1, M. Holst1, C. Baarlink1, R. Grosse1; 1Institute of Pharmacology, University of Marburg, Marburg, Germany

B93/P2816 The Role of Actin Trails in Mediating Bulk Axonal Actin Transport. N. Chakrabarty1, P. Dubeys2, A. Ganguly1, Y. Tang1, K. Ladf1, P. Jung1, S. Roy1; 1Department of Physics and Astronomy, Ohio University, Athens, OH, 2Department of Pathology and Laboratory Medicine, University of Wisconsin-Madison, Madison, WI, 3Department of Pathology, University of California, San Diego, La Jolla, CA, 4Department of Molecular and Cellular Physiology, Stanford University, School of Medicine, Stanford, CA, 5Department of Neurosciences, University of California, San Diego, La Jolla, CA, 6Quantitative Biology Institute, Ohio University, Athens, OH, 7Department of Neuroscience, University of Wisconsin-Madison, Madison, WI

B94/P2817 Nanotopography biases cell migration, cytoskeletal dynamics, and focal adhesion distribution. W. Losert1; 1Physics, University of Maryland, College Park, MD

B95/P2818 Exploring actin dynamics of thin filaments in Caenorhabditis elegans striated muscle. S. Sundaramurthy1, S. Ono2, D. Pруyme1; 1Department of Cell and Developmental Biology, Upstate Medical University, Syracuse, NY, 2Department of Pathology and Department of Cell Biology, Emory University, Atlanta, GA

B96/P2819 Characterization of the cytoskeleton of Porphyra umbilicalis and comparison to other red algae based on analysis of the completed Porphyra genome. H.V. Goodson1, S.H. Brawley2; 1Chemistry Biochemistry and Biological Sciences, University of Notre Dame, Notre Dame, IN, 2School of Marine Sciences, University of Miami, Orono, ME

B97/P2820 Mechanosensory role of alpha-actinin 4 in pancreatic cancer cell migration. D.G. Thomas1, N. Good1, E.S. Schifflhauer1, A. Surcel1, Q. Zhu2, D.N. Robinson1; 1Cell Biology, Johns Hopkins School of Medicine, Baltimore, MD, 2Pathology, Johns Hopkins School of Medicine, Baltimore, MD

B98/P2821 Determining Concentration-Dependent Effects of Thymosin β4 in Living Cells through Quantitative Protein Delivery. K. Kruber1, E.A. Vitirol1; 1Anatomy and Cell Biology, University of Florida, Gainesville, FL

Kinesins 2

B100/P2822 Inhibitable kinesin motors to study intracellular trafficking. M.F. Engelke1, B. Waas1, B.L. Allen1, K.J. Verhey1; 1Cell & Developmental Biology, University of Michigan Medical School, Ann Arbor, MI

B101/P2823 Regulated autoinhibition of kinesin-1 is essential to polarized dendritic transport. M.T. Kellie1, Y. Yue2, A. Ng1, D. Kamiyama3, B. Huang4, K.J. Verhey1, J. Wildonger1; 1Biochemistry, University of Wisconsin-Madison, Madison, WI, 2Cell and Developmental Biology, University of Michigan, Ann Arbor, MI, 3Cellular Biology, University of Georgia, Athens, GA, 4Department of Pharmaceutical Chemistry, University of California - San Francisco, San Francisco, CA

B102/P2824 Phospho-regulation of a Mitotic Kinesin-5 motor Probed by Synthetic-Evolution Approach. A. Goldstein1, D. Goldman1, E. Valk1, M. Loog2, L.J. Holt1, L. Gheber1; 1Department of chemistry and Iise Katz Institute for Nanoscale Science and Technology, Ben-Gurion University of the Negev, Beer Sheva, Israel, 2Institute of Technology, University of Tartu, Tartu, Estonia, 3Molecular Pharmacology Institute for Systems Genetics, New York University, New York, NY

B103/P2825 Macromolecular crowding modules intracellular transport by teams of kinesin-1 motors. G. Nettesheim1, G. Jaffe1, S.J. King2, G.T. Shubeita3,4; 1Physics, The University of Texas at Austin, Austin, TX, 2Burnett School of Biomedical Sciences, University of Central Florida, Orlando, FL, 3Physics, New York University Abu Dhabi, Abu Dhabi, United Arab Emirates

B104/P2826 Aplip1 (Drosophila JIP1) regulates myoneural positioning and muscle stability. A.L. Auld1, S.A. Roberts1, C.B. Murphy1, J.M. Camuglia1, E.S. Folker1; 1Biology, Boston College, Chestnut Hill, MA

B105/P2827 BORC regulates the axonal transport of synaptic vesicle precursors by activating ARL-8. S. Niwa1, L. Tao2, S.Y. Lu2, G. Liew2, W. Feng3, M.V. Nachury1; 1Frontier Research Institute for Interdisciplinary Sciences and Graduate School of Life Sciences, Tohoku University, Sendai, Japan, 2Department of Biology, Stanford University, Stanford, CA, 3Department of Molecular and Cellular Physiology, Stanford University, Stanford, CA, 4Chinese Academy of Sciences, Institute of Biophysics, Beijing, China

B106/P2828 Motility and kinetic properties of the kinesin-4 members KIF27 and KIF7. Y. Yue1, T.L. Blaisius1, S. Zhang2, S. Janiwal1, B. Walker2, B.J. Grant1, J.C. Cochran1, K.J. Verhey1; 1Department of Cell and Developmental Biology, University of Michigan, Ann Arbor, MI, 2Department of Molecular and Cellular Biochemistry, Indiana University, Bloomington, IN, 3Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor, MI

B107/P2829 Analysis of plus end directed motor proteins Cin8 and Kip3 reveals their unique role in maintaining the integrity of the chromosome specifically during meiosis. P. Mittal1, S.K. Ghosh1; 1Department of Biochemistry and Bioengineering, Indian Institute of Technology, Bombay, Mumbai, India

B108/P2830 VLDL Secretion from Hepatocytes is Controlled by Phosphatidic Acid. M. Kumar1, P. Rai1, P. Barak2,3, S.S. Kamat1, R. Mallik1; 1Department of Biological Sciences, Tata Institute of Fundamental Research, Mumbai, India, 2Department of Physiology, Anatomy and Genetics, Oxford University, Oxford, United Kingdom, 3Departments of Biology Chemistry, Indian Institute of Science Education and Research, Pune, India

B109/P2831 The unique N-terminal extension of the oncogenic KIF14 kinesin motor domain is an F-actin bundler elongator, and nucleator. J. Hellinga1, I. Kahril1, B.H. Kwok1, J. Allingham1; 1Graduate Studies, Queen’s University, Kingston, ON, 2CHEMICAL BIOLOGY OF CELL DIVISION, Research for Immunology and Cancer, University of Montreal, Montreal, QC

B110/P2832 Geometry Matters for Cargo Navigating 3D Microtubule Intersections. M.J. Boyvin1, 2, J. Bergman1, F. Doval1, M. Gudtheti1, S.P. Gross1,2, J.F. Allard1,2, M. Vershinin1,2,3,4; 1Physics and Astronomy, University of California - Irvine, Irvine, CA, 2Center for Complex Biological Systems, University of California - Irvine, Irvine, CA, 3Biology, University of Utah, Salt Lake City, UT, 4Physics and Astronomy, University of Utah, Salt Lake City, UT, 5Developmental and Cell Biology, University of California - Irvine, Irvine, CA, 6Mathematics, University of California - Irvine, Irvine, CA, 7Center for Genome Science, University of Utah, Salt Lake City, UT

B111/P2833 Target-Based Screen to Identify Small Molecule Inhibitors of the Mitotic Kinesin Kif15. M. Dumas1, N. Kendrick1, A. Watson1, G. Sulikowski2, R. Ohi3; 1Cell and Developmental Biology, Vanderbilt University, Nashville, TN, 2Department of Chemistry, Vanderbilt University, Nashville, TN, 3Cell and Developmental Biology, University of Michigan, Ann Arbor, MI

B112/P2834 Effects of post-translational modification on the mitotic kinesin Eg5. A.F. Thompson1, J.M. Muretta2, B. Narayanareddy1, G. Scarabelii, S. Jarwala1, J. Major2, M. Venere1, J.N. Rich1, B. Willard2, D.D. Thomas2, B.J. Grant1, S.P. Gross1, J. Stumpf3, S.S. Rosenfeld3; 1Molecular Physiology and Biophysics, University of Vermont, Burlington, VT, 2Biochemistry, Molecular Biology, and Biophysics, University of Minnesota, Minneapolis, MN, 3Developmental and Cell Biology and Physics, University of California, Irvine, CA, 4Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor, MI
Myosins 2

B116/P2838 Myosin 1A-alpha targets the Rac GEF Beta-PIX to the dendritic spines of cerebellar Purkinje neurons and is required for normal spine morphology. C.J. Alexander, M. Barzik, J.A. Hammer III, National Heart Lung and Blood Institute, National Institutes of Health, Bethesda, MD, National Institute on Deafness and Communication Disorders, National Institutes of Health, Bethesda, MD

B117/P2839 Genomic knockout of Myosin-X in mouse results in semi-lethality and decreased filopodia. E.G. Heimsath, Jr., R.E. Cheney, Y.Yim, J.A. Hammer III, M. Mustapha; Cell Biology and Physiology, UNC School of Medicine, Chapel Hill, NC, Cell Biology and Physiology Center, National Institutes of Health - NHLBI, Bethesda, MD, Otolaryngology, Stanford University, Stanford, CA

B118/P2840 The proteolysis of Myo10, by Calpain, under low calcium conditions is activated by its FERM domain Ayc-CoA Binding Protein Motif. M.M. Tovar, K. Gousse; Biology, California State University, Fresno, Fresno, CA

B119/P2841 Mitochondria distribution to filopodia by the actin-based motor Myo19. B.I. Shneyer, M. Usaj, N. Wiesel-Motuk, R. Regev, A. Henn; Biology, Technion-Israel Institute of Technology, Haifa, Israel

B120/P2842 Uncovering a Myosin XI-Mediated Transport Mechanism Conserved between Physcomitrella patens and Arabidopsis thaliana. R. Orr, F. Furt, M. Munson, L. Vidal; Biology and Biotechnology, Worcester Polytechnic Institute, Worcester, MA, Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School, Worcester, MA

B121/P2843 Drosophila myosin 7a in Phagocytosis and Eye Development. A.S. Hong, J.R. Sellers; NHLBI, National Institutes of Health, Bethesda, MD

B122/P2844 The mechanism of asymmetric cell division. T.T. Pham, J. Helenius, N. Lee, E. Lund, D. Mueller, C. Cabernard; Biozentrum, University of Basel, Basel, Switzerland, Department of Biology, University of Washington, Seattle, WA, ETH Zurich, Basel, Switzerland

B123/P2845 The cytokinetic localization of Sid2p and Mob1p of the fission yeast Hippo like pathway requires both formin and type V myosin. Z.J. Morris; Department of Biological Sciences, University of Toledo, Toledo, OH

B124/P2846 Dissecting the Molecular and Cellular Basis of Familial Cardiomyopathies. S.R. Clipping, P.E. Clonan, L. Greenberg, V. Rogers, M.J. Greenberg; Biochemistry and Molecular Biophysics, Washington University School of Medicine, St. Louis, MO

B125/P2847 HSPB1 protein increases actomyosin ATPase activity of myofibrils fraction. Y. Kato, K. Yoshito, K. Yoshino, A. Takeuchi, M. Yamanoue, Y. Shirai, S. Ueda; Department of Agrobioscience, Kobe University, Kobe, Japan, Biosignal Research Center, Kobe University, Kobe, Japan, Analytical Laboratory, Kobe Pharmaceutical University, Kobe, Japan

B126/P2848 Normal cardiac physiology of mice with one allele of mouse α-cardiac myosin replaced with human β-cardiac myosin. F. Haque, M. Sarikhani, S. Mukherjee, L.A. Leinwand, N.R. Sundaresan, J.A. Spudich, J.A. Mercer; Centre for Cardiac Biology and Disease, Institute for Stem Cell Biology and Regenerative Medicine, Bangalore, India, National Centre for Biological Sciences, TIFR, Bangalore, India, Department of Microbiology and Cell Biology, Indian Institute of Science, Bangalore, India, Molecular, Cellular and Developmental Biology, University of Colorado, Boulder, CO, Biochemistry, Stanford University, Stanford, CA

B127/P2849 Dictyostelium Myosin Heavy Chain Kinase D Phosphorylates Myosin II and Localizes to Leading Edge Structures. E. Lehman, R. Muthukumar, P. Steimle; Biology, University of North Carolina at Greensboro, Greensboro, NC

B128/P2850 Actin and microtubule crosstalk mediates persistent polarized growth. S. Wu, M. Bezanilla; Biological Science, Dartmouth College, Hanover, NH

B129/P2851 Functional relationship of MyTH-FERM myosin and VASP during filopodia initiation. A.L. Arthur, K.J. Petersen, G. Luxton, A. Houdusse; M.A. Titus; Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN, Biochemistry, Molecular Biology, and Biophysics, University of Minnesota, Minneapolis, MN, Structural Motility, Institut Curie, Paris, France, France

B130/P2852 UNC-45A oligomerizes at the neck. K.Z. Chen, M. Bazzaro, A. Mooneyham; Biology, University of Maryland, Baltimore County, Baltimore, MD, OBGYN, University of Minnesota, Twin Cities, Minneapolis, MN

Microtubules Nucleation and Organization 2

B132/P2853 XMAP215 is a microtubule nucleation factor that functions synergistically with the gamma-tubulin ring complex. A. Thawani, R.S. Kadzik, S. Petry; Department of Chemical and Biological Engineering, Princeton University, Princeton, NJ, Department of Molecular Biology, Princeton University, Princeton, NJ

B133/P2854 Characterization of a plant-specific microtubule-nucleating protein MACET. S. Schmidt, A. Smertenko; Institute of Biological Chemistry, Washington State University, Pullman, WA

B134/P2855 Spectraplakin Shot anchors a perinuclear MTOC in Drosophila polyplid cells. T. Sun, Y. Song, X. Liang, J.C. Pastor-Pareja; School of Life Sciences, Tsinghua University, Beijing, China

B135/P2856 Adopting proximity labeling techniques to identify novel non-centrosomal MTOC proteins in C. elegans. A.D. Sanchez, T. Branon, A. Ting, J.L. Feldman; Biology, Stanford University, Stanford, CA, Chemistry, Massachusetts Institute of Technology, Cambridge, MA

B136/P2857 Non-random γ-TuNA-dependent spatial patterning of microtubule nucleation at the Golgi. A.A. Sanders, K. Chang, X. Zhu, R.J. Thompson, W.R. Holmes, I. Kaverina; Cell and Developmental Biology, Vanderbilt University, Nashville, TN, Physics and Astronomy, Vanderbilt University, Nashville, TN

B137/P2858 Non-centrosomal microtubules and not the centrosome control endothelial cell polarity and sprouting angiogenesis. M. Martin, A. Veloso, J. Wu, F. Dequiedt, E. Katrukha, A. Akhmanova; Cell Biology, Utrecht University, Utrecht, Netherlands, GIGA-Molecular Biology in Diseases, University of Liège, Liège, Belgium
B138/P2859 Stability and function of a putative microtubule organizing center in the human parasite *Toxoplasma gondii*. J.M. Leung1, Y. He1, F. Zhang2, Y. Hwang3, E. Nagayasu4, J. Liu1, J.M. Murray1, K. Hu1; 1Biology, Indiana University, Bloomington, IN, 2Nuclear and Molecular Cell Biology, University of Miami, Miami, FL, 3Nikon Instruments Inc., Melville, NY, 4Infectious Diseases, University of Miyazaki, Miyazaki, Japan

B139/P2860 A novel perinuclear non-centrosomal MTOC in *Drosophila* fat body cells maintains nuclear positioning through pericentriolar material proteins and the LINC complex. Y. Zheng1, R.A. Buchwalter1, T.L. Megraw1, J.V. Chen1, L. Mamchaoui1, F. Nedelec4, S. Shackleton5; 1Biology, Indiana University, Bloomington, IN, 2Department of Biomedical Sciences, Florida State University, Tallahassee, FL

B140/P2861 Nesprin-1α-dependent microtubule nucleation from the nuclear envelope via Akap450 is necessary for nuclear positioning in muscle cells. P. Gimpel1, Y. Lee2, R.M. Sobota2, K. Mamchaoui1, F. Nedelec3, S. Shackleton4, J. Schmoranzer5, B. Burke6, E.R. Gomes7, B. Cadot1; 1Center for Research in Myology, Sorbonne Universités UPMC Univ Paris 06, INSERM U974, CNRS FRE3617, PARIS, France, 2Institute of Medical Biology, Agency for Science, Technology and Research (A*STAR), SINGAPORE, Singapore, 3Institute of Molecular and Cell Biology, Agency for Science, Technology and Research (A*STAR), SINGAPORE, Singapore, 4Cell Biology and Biophysics Unit, European Molecular Biology Laboratory, HEIDELBERG, Germany, 5Department of Molecular and Cell Biology, University of Leicester, LEICESTER, United Kingdom, 6Charité, Charité-Universitätsmedizin, BERLIN, Germany, 7Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, LISBON, Portugal

B141/P2862 Distinct roles of pericentriolar proteins in acentriolar MTOC of mouse meiotic spindle formation. I. Lee1, Y. Jo1, S. Namgoong2, N. Kim1; 1Animal Science, Chungbuk National University, Cheongju, Korea, South

B142/P2863 Golgi-derived microtubules in pancreatic β-cells are regulated by glucose through cAMP and EPAC2. K.P. Trogden1, G. Gu1, I. Kaverina1; 1Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B143/P2864 Comparison of migration rates and microtubule nucleation in MDA-MB-231 and MCF-7 breast cancer cells. B. Bell1, L. Zahn1, C. Grady1, S. Lundin-Schiller1; 1Biology, Austin Peay State University, Clarksville, TN

**Microtubules Dynamics and Its Regulation**

B144/P2865 Septin-microtubule interplay enables initiation of branching morphogenesis. D.K. Bogorodskaya1, J.P. Wiegartner1, L. Ligon1; 1Biological Sciences, Rensselaer Polytechnic Institute, Troy, NY

B145/P2866 Effects of Microtubule Stabilizers in Neurodevelopment and Injury. Y. Song1, J.J. Pineda1, T.J. Mitchison2; 1Systems Biology, Harvard Medical School, Boston, MA, 2Harvard Program in Therapeutic Science, Harvard Medical School, Boston, MA

B146/P2867 The microtubule plus-end-tracking protein TACC3 promotes persistent axon outgrowth and mediates responses to axon guidance signals during development. B. Erdogan1, G. Cammarata1, E. Lee1, B. Pratt1, L.A. Lowery1; 1Biology, Boston College, Chestnut Hill, MA

B147/P2868 Trim9 participates in a microtubule quality control pathway that ensures local nucleation in dendrites does not disrupt uniform polarity. C. Feng1, M.M. Rolls1, 5BMB, Penn State University, University Park, PA

B148/P2869 TACC3, a microtubule plus-end-tracking protein, regulates neural crest cell motility in vitro and in vivo. E.A. Bares1, E.L. Rutherford1, L. Carandang1, B. Pratt1, L.A. Lowery1; 1Biology, Boston College, Chestnut Hill, MA

B149/P2870 EB1 and EB3 regulate microtubule minus end organization and Golgi morphology. C. Yang1, J. Wu1, C. Heus1, I. Grigoriev1, N. Liu1, Y. Yao3, I. Smal3, E. Meijering3, J. Klumperman1, Z. Qi4, A. Akhmanova1; 1Biology, Cell Department of Biology, United States University, London, England, 2Department of Cell Biology, University Medical Center Utrecht, Utrecht, Netherlands, 3Department of Medical Imaging and Radiology, Erasmus University Medical Center, Rotterdam, Netherlands, 4Division of Life Science, The Hong Kong University of Science and Technology, Hong Kong, China

B150/P2871 Rac1 promotes septin-mediated guidance of CAMSAP-associated microtubules to focal adhesions. D.G. Merenich1, S. Donovan1, A. Jacobs1, K.A. Myers2; 1Biological Sciences, University of the Sciences in Philadelphia, Philadelphia, PA

B151/P2872 The Golgi Outpost Protein TPPP Mediates Uniform Microtubule Polarity and Branching in Oligodendrocytes. M. Fu1, J.A. Oses-Prieto1, C. Lee1, N.L. Saw1, R. Shi1, M. Nori1, M. Shamilov1, A. Burlingame2, B.A. Barres1; 1Neurobiology, Stanford University, Stanford, CA, 2Pharmaceutical Chemistry, University of California, San Francisco, CA, 3Neurosurgery, Stanford University, Stanford, CA

B152/P2873 Mechanism of Catalytic Microtubule Depolymerization via KIF2-tubulin Translational Conformation. T. Ogawa1, S. Sajo1, N. Shimizu1, X. Jiang1, N. Hirokawa1; 1Department of Cell Biology and Anatomy, Graduate School of Medicine, University of Tokyo, Tokyo, Japan, 2High Energy Accelerator Research Organization, Photon Factory, Institute of Materials Structure Science, Tsukuba, Japan

B153/P2874 Cytoskeleton Dynamics and Cytoskeleton Dynamics. A.T. Molines1, B. Knapp1, F. Chang1; 1Cell and Tissue Biology, UCSF, San Francisco, CA, 2Biophysics PhD program, Stanford, Stanford, CA

B154/P2875 Distinct regions of the yeast kinesin-8, Kip3, tail regulate the stability of astral microtubules spatially and the spindle midzone temporally. S. Dave1, S. Anderson1, R.S. Roy1, E. Nsamba1, A. Bunning1, M. Gupta1; 1Genetics Development and Cell Biology, Iowa State University, Ames, IA

B155/P2876 Investigating the Structure and Functional Role of the C-Terminal Domain of the Drosophila XMAP215 Protein Family Member Minisindles. Z. Xue1, R.C. Adikes1, B.F. Saway1, A.N. Gwyn1, K.C. Slep1; 1Department of Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC

B156/P2877 Structure, biochemistry, and activity of a CLASP family TOG. S. Majumdar1, L.M. Rice1; 1Biophysics, UT Southwestern Medical Center, Dallas, TX

B157/P2878 Reconstitution of Microtubule Dynamics from Budding Yeast Lysate. Z.J. Bergman1, J. Wong1, D.G. Drubin1, G. Barnes2; 1Molecular and Cell Biology, University of California-Berkeley, Berkeley, CA

B158/P2879 Behaviors of Microtubules and other Steady-State Polymers Depend on Multiple Critical Concentrations. E.M. Jonasson1, E.C. Norby1, A.J. Mauro2, S.M. Mahserejian1, M.S. Alber2, H.V. Goodson1; 1Chemistry and Biochemistry, University of Notre Dame, Notre Dame, IN, 2Applied & Computational Mathematics Statistics, University of Notre Dame, Notre Dame, IN

B159/P2880 Site-occupancy calibration of taxane pharmacology. J.J. Pineda1, M.A. Miller2, R. Weissleder2, T.J. Mitchison1; 1Dept. Systems Biology, Harvard Medical School, Boston, MA, 2Center for Systems Biology, Massachusetts General Hospital, Boston, MA

B160/P2881 Mechanisms to localize and regulate katanin activity. G.M. Burkart1, R.V. Dixit1; 1Biology, Washington University in St. Louis, St. Louis, MO

B161/P2882 Aurora B kinase modulates an extended conformation of lattice-bound Kinesin-13 MCAK. T. McHugh1, J. Zou1, J. Rappsilber1, A. Bertin2, J.P. Welburn1; 1Wellcome Trust Centre for Cell Biology, University of Edinburgh, Edinburgh, United Kingdom, 2Institut Curie, Paris, France
B162/P2883 Monte Carlo simulations of the dynamic microtubule cytoskeleton: The critical roles of the cell boundary and rescue transitions in shaping the array. J.C. Leung1, L. Cassimeris1, D.J. Odde2; 1Biological Sciences, Lehigh University, Bethlehem, PA, 2Biomedical Engineering, University of Minnesota, Minneapolis, MN

B163/P2884 Investigating the role of the GTP hydrolysis rate in regulation of microtubule stability. V. Farmer1, A. Rahaman1, M. Zanic1,2; 1Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN, 2Department of Chemical and Biomolecular Engineering, Vanderbilt University, Nashville, TN

B164/P2885 H+ - and Na+- elicited rapid changes of the microtubule cytoskeleton in the biflagellated green alga Chlamydomonas. Y. Liu1, P. Yang2; 1Biological Sciences, Marquette University, Milwaukee, WI

B165/P2886 A chemical synthetic lethality screen identifies a new pharmacological agent that sensitizes cells to paclitaxel. L. Peronne1, E. Denarier2, P. Suzanne3, A. Vernet4, A. Martinez1, C. Boscheron1, M. Billaud1, P. Dallemande1, R. Prudent1, A. Andrieux2, L. Lafanèchere1; 138, Institute for advanced biosciences, Grenoble, France, 238, Grenoble Institut des Neurosciences, Grenoble, France, 314, Centre d’Etudes et de Recherche sur le Médicament de Normandie, Caen, France, 469, Centre de recherches en Cancérologie de Lyon, Lyon, France, 538, Cellipse, Grenoble, France

B166/P2887 Regulation of MT assembly dynamics is sensitive to extracellular matrix density, controls MMP14 trafficking, and is associated with MMP14 activity at focal adhesions. A. Braun1, K.A. Myers2; 1Biological Sciences, University of the Sciences in Philadelphia, Philadelphia, PA

B167/P2888 Analysis of Cytoskeletal Filament Bending via Curvature. P. Wisanpitayakorn1, K.J. Mickolajczyk2, W.O. Hancock2, L. Vidali3; 1Physics, Worcester Polytechnic Institute, Worcester, MA, 2Biomedical Engineering, Pennsylvania State University, University Park, PA, 3Biology and Biotechnology, Worcester Polytechnic Institute, Worcester, MA

Ciliary/Flagellar Motility

B169/P2889 Multiple Functions of the Striated Rootlet Proteins of the Paramaecium Basal Body. M. Nabi1, M.S. Valentine1, J. Yano1, J. Van Houten1; 1Biology, University of Vermont, Burlington, VT

B170/P2890 The generation and sensation of fluid flow by cells: roles in development and disease. D.T. Grimes1, R.D. Burdine1; 1Molecular Biology, Princeton University, Princeton, NJ

B171/P2891 Biophysical interactions between cilia and mucus underlie directed fluid transport in the ventral epithelium of the planaria Schmidtea mediterranea. G.R. Ramirez-Sanjuan1, J.A.2, W.F. Marshall1, M. Prakash1; 1Bioengineering, Stanford University, Stanford, CA, 2Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA

B172/P2892 FB818, a homologue of C21orf59, regulates cytoplasmic preassembly of outer and inner dynein arms in Chlamydomonas. L. Wang1, G. Liu1, J. Pan1,2; 1MOE Key Laboratory of Protein Sciences, Tsinghua-Peking Center for Life Sciences, School of Life Sciences, Tsinghua University, Beijing, China, 2Laboratory for Marine Biology and Biotechnology, Qingdao National Laboratory for Marine Science and Technology, Qingdao, China

B173/P2893 Repetitive buckling of microtubules driven by axonemal dynein arms reconstituted on a microtubule. M. Shiraga1, Y. Matsuda1, J. Kirima1, K. Oiwa1,2; 1Graduate School of Life Science, University of Hyogo, Harima, Japan, 2Advanced ICT Research Institute, National Institute of Information and Communications Technology, Kobe, Japan

B174/P2894 Conserved complexes regulating ciliary motility and waveform asymmetry. K.R. Augspurger1, J. Sakizadeh1, J.T. Reck1, R. Bower1, D. Tritschler1, G. Fu2, D. Nicastro2, M.E. Porter1; 1Genetics, Cell Biology, and Development, University of Minnesota Medical School, Minneapolis, MN, 2Cell Biology and Biophysics, University of Texas Southwestern Medical Center, Dallas, TX

B175/P2895 Comparative proteomics reveals candidates for novel ciliary central apparatus components. L. Zhao1, Y. Hou1, T. Picariello1, B. Craige1, G.B. Witman1; 1Division of Cell Biology and Imaging, Department of Radiology, University of Massachusetts Medical School, Worcester, MA

B176/P2896 Antioxidant treatment prevents alcohol-induced ciliary dysfunction in Chlamydomonas reinhardtii. C. Scarbrough1, M. Wirschl1; 1Biochemistry, University of Mississippi Medical Center, Jackson, MS

B177/P2897 EFHC1 and EFHC2 are necessary for motile cilia function and A-tubule MIP recruitment. B.A. Bayless1, D. Stoddard2, Y. Zhao2, J. Gaertig2, D. Nicastro2, M. Winey1; 1Molecular and Cellular Biology, University of California, Davis, Davis, CA, 2Cell Biology and Biophysics, University of Texas Southwestern Medical Center, Dallas, TX, 3Biology, Brandeis University, Waltham, MA, 4Molecular, Cellular and Developmental Biology, University of Colorado, Boulder, CO, 5Cellular Biology, University of Georgia, Athens, GA

B178/P2898 FMG-18 glycoprotein is necessary for expression of force at the Chlamydomonas flagellar surface. R.D. Sloboda1, M. Sa-eed1, R.A. Bloodgood2; 1Biological Sciences, Dartmouth College, Hanover, NH, 2Cell Biology, University of Virginia School of Medicine, Charlottesville, VA

B179/P2899 Exploring the role of FoxJ1 transcription factor in a new species of planarian “Dugesia guanajautiensis”. C. Guerrero-Hernández1,2, E.M. Duncan1, S.H. Nowotarski1, V. Dodidhal1, L. Guo1, E. Ross1, A. Sánchez Alvarado1,2; 1Stowers Institute for Medical Research, Kansas City, MO, 2Howard Hughes Medical Institute, Kansas City, MO

B180/P2900 A phase separated organelle for dynein arm assembly in ciliated cells. R.L. Huizar1, C. Lee1, J.B. Wallingford1; 1Department of Molecular Biosciences, University of Texas at Austin, Austin, TX

Ciliopathies

B181/P2901 Altered centrosomal trafficking disrupts cilia assembly and signal transduction in Down syndrome. D.F. Galati1,2, A.T. Pham1,2, K.D. Sullivan1,3, J. Espinosa1,3, C.G. Pearson1,2; 1Linda Crnic Institute for Down Syndrome, University of Colorado-Anschutz Medical Campus, Aurora, CO, 2Cell and Developmental Biology, University of Colorado-Anschutz Medical Campus, Aurora, CO, 3Pharmacology, University of Colorado-Anschutz Medical Campus, Aurora, CO

B182/P2902 Cardiac valve abnormalities in PKD are due to defects in ciliogenesis, and ciliogenic programs involving the exoyct are conserved across organs. D.B. Fulmer1,2, B. Fogelgren3, K.A. Toomer1, L. Guo1,2, R.A. Norris2, J.H. Lipschutz1,4; 1Department of Medicine, Medical University of South Carolina, Charleston, SC, 2Department of Regenerative Medicine and Cell Biology, Medical University of South Carolina, Charleston, SC, 3Department of Anatomy, Biochemistry, and Physiology, University of Hawaii at Manoa, Honolulu, HI, 4Ralph H. Johnson VAMC, Charleston, SC

B183/P2903 Two-Color STORM Reveals that Disruption of Ciliary Transition Zone Architecture Causes Joubert Syndrome. X. Shi1, G. Garcia1,2, J.F. Reiter1,2, B. Huang3, D.F. Lou4, K.A. Toomer1, L. Guo1,2, R.A. Norris2, J.H. Lipschutz1,4; 1Department of Medicine, Medical University of South Carolina, Charleston, SC, 2Department of Regenerative Medicine and Cell Biology, Medical University of South Carolina, Charleston, SC, 3Department of Anatomy, Biochemistry, and Physiology, University of Hawaii at Manoa, Honolulu, HI, 4Ralph H. Johnson VAMC, Charleston, SC

B184/P2904 Primary Ciliary Deficits in the Dentate Gyrus of the Fragile X Syndrome Mouse Model. B. Lee1, H. Lee1; 1Physiology, UTHSCSA, San Antonio, TX

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Cytokinesis 2

B191/P2910 Rab14 is a Midbody-Associated Rab that is Required for Completion of Cytokinesis. P. Gibeža1, I. Antanaviciute1, A. Skerberdis1, M. Valius1, R. Prekeris1; 1Lithuanian Health Sciences University, Kaunas, Lithuania, 2Vilnius University Institute of Biotechnology, Vilnius, Lithuania, 3Cell and Developmental Biology, University of Colorado Anschutz Medical Campus, Aurora, CO

B199/P2918 Modeling contractile ring dynamics in the Caenorhabditis elegans zygote. D.B. Cortes1, S. Ryan1, F. Nedelec2, A.S. Maddox3; 1Department of Pediatrics and Genetics, Yale School of Medicine, New Haven, CT, 2Department of Molecular, Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI, 3Department of Medicine (Nephrology), Washington University in St. Louis, St. Louis, MO, 4Department of Chemical Biology, Scripps Research Institute, La Jolla, CA

B200/P2919 Regulation of Abscission by Class 1 Rab11-Family-Interacting-Proteins. N.V. Iannantuono1, C. Laflamme2, G. Emery3; 1Biologie Moléculaire, Université de Montréal, QC, 2Biochemistry and Molecular Biology, McGill University, Montréal, QC, 3Pathologie et Biologie Cellulaire, Université de Montréal, Montréal, QC

B189/P2909 Identifying activity of targeted cancer therapies in regulation of ciliary dynamics. A.S. Nikonova1, A.Y. Deneka1, V.A. Korobeynikov2, A.A. Kisleva1, E.A. Golemis1; 1Molecular Therapeutics, Fox Chase Cancer Center, Philadelphia, PA, 2Pathology and Cell Biology, Columbia University, New York, NY

B193/P2912 Actin isoform-specific array organization during cytokinesis is differentially controlled by the formins DIAPH1 and DIAPH3. A. Chen1, A.R. Wilde2; 1Biochemistry, University of Toronto, Toronto, ON, 2Molecular Genetics, University of Toronto, Toronto, ON

B194/P2913 Hold Me Tight!PIP2 and Skt1 Are Required for Association of Plasma Membrane with the Contractile Ring During Cytokinesis. L.L. Fabian1, S. Yildirim1, R. Wong2, H. Wei3, G. Polevoy4; 1Department of Biology, Ludwig-Maximilians University, Munich, Germany, 2Department of Cellular and Molecular Medicine, Ludwig Institute for Cancer Research, La Jolla, CA

B196/P2915 Phosphorylation of a linker region masks Cdc15's F-BAR domain to regulate its membrane and protein binding capacity, oligomerization, and contractile ring localization. M. Mangione1, N.A. McDonald1, K.L. Gould2; 1Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B197/P2916 CCDC11 is Essential for Cytokinesis and Cell-cell Adhesion via Regulation of RhoA Protein Stability. S.S. Kulkarni1, R.E. Stephenson2, E. Belloja3, J. Moresco4, J. Yates3; 1Department of Anthropology, University of Minnesota, Minneapolis, MN, 2Department of Cellular and Molecular Biology, Washington University in St. Louis, St. Louis, MO, 3Department of Chemical Biology, Scripps Research Institute, La Jolla, CA

B198/P2917 The F-BAR domain of Cdc15 simultaneously scaffolds protein partners and binds membrane to promote cytokinesis. C.E. Snider1, N.A. McDonald1, A.H. Willet1, S.E. Collier1, M.D. Ohi1, K.L. Gould1; 1Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B201/P2920 The recruitment and organization of ESCRT-III abscission machinery is spatiotemporally regulated by septins. E.P. Karasmanis1, D. Hwang1, J.R. Bowen2, K. Nakos1, E.T. Spilotten2; 1Biochemistry, Drexel University, Philadelphia, PA

B202/P2921 Adaptor proteins are essential for Septin-mediated cytokinesis. D. Safavi1, K. Fung2, W.S. Trimble1; 1Cell Biology program, The Hospital for Sick Children, Toronto, ON, 2Department of Biochemistry, University of Toronto, Toronto, ON

B203/P2922 Direct visualization and characterization of branching microtubule nucleation during cytokinesis. V. Verma1, T.J. Maresca1; 1Biology, University of Massachusetts, Amherst, MA

B204/P2923 Role of Arp2/3 actin networks in symmetric and atypical cleavages during early development. L. Toledo1, A. Ellis1, A. Wilson1, T. Salgado2, J.H. Henson2, C.B. Shuster3; 1Biology, New Mexico State University, Las Cruces, NM, 2Biology, Dickinson College, Carlisle, PA

B205/P2924 Cytokinesis in plants involves exquisitely choreographed intracellular transport. C. Triplet van Oostende1, D. Guillet1, T. Triplet1, E. Pandzic2, P.W. Wiseman3, A. Geitmann1,4,5; 1Department of Biological Sciences, Université de Montréal, Montréal, QC, 2Department of Chemistry, McGill University, Montreal, QC, 3Computer Research Institute of Montreal, Montreal, QC, 4University of New South Wales, Sydney, Australia, 5Department of Plant Science, McGill University, Ste-Anne-de-Bellevue, QC

B206/P2925 Precise tuning of cortical contractility regulates mechanical equilibrium during cell division. N. Taneja1, M.R. Bers1, A.M. Fenix1, J.C. Snider1, J.A. Cooper1, R. Ohi1, V. Gama1, W.D. Merryman1, D.T. Burnette1; 1Cell and Developmental Biology, Vanderbilt University, Nashville, TN, 2Biomedical Engineering, Vanderbilt University, Nashville, TN

B207/P2926 An optogenetic tool for studying asymmetric cell division. A. Monnard1,2, C. Cabernard1; 1Department of Biology, University of Washington, Seattle, WA, 2Biozentrum, University of Basel, Basel, Switzerland

B208/P2927 Study of cisplatin induced ROS using C. elegans as a post-mitotic cell model. D. Raj1, J. Warzucha2, G. Kao1, P. Naredi1, 1Sahlgrenska Cancer Center, Gothenburg University, Gothenburg, Sweden

B209/P2928 Ceda mediated mechanism of cell division in E. coli under chromosomal over replication condition. P. Sharma1, B. Kundu1; 1KUSUMA SCHOOL OF BIOLOGICAL SCIENCES, INDIAN INSTITUTE OF TECHNOLOGY DELHI, NEW DELHI, India
B210/P2929 The regulation of Z ring dynamics in bacterial cytokinesis.
G.R. Squyres1, S.R. Barger2, B.R. Pennycook3, J. Ryan4, A.W. Bisson-Filho5, E.C. Gamer6, 1Department of Molecular and Cell Biology, Harvard University, Cambridge, MA, 2Department of Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY, 3MRC Laboratory for Molecular Cell Biology, University College London, London, United Kingdom, 4Department of Biology, Massachusetts Institute of Technology, Cambridge, MA, 5Department of Cell Biology, The Scripps Research Institute, La Jolla, CA

B217/P2936 A role of Kinesin-5 in controlling Ndc80 functions at kinetochores.
A. Suzuki1, A. Gupta2, S. Biggins3, K.S. Bloom4, E.D. Salmon5; 1Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC, 2Basic Science, Fred Hutchinson Cancer Research Center, Seattle, WA, 3Howard Hughes Medical Institute, Seattle, WA

B218/P2937 Centromeric Protein Dynamics Change in Response to Physiological Changes of Early Embryogenesis in C. elegans.
L. Smith6, C. Barnhardt7, P.S. Maddox8; 6Genetics and Molecular Biology, University of North Carolina, Chapel Hill, NC, 7Biology, University of North Carolina, Chapel Hill, NC

B219/P2938 Mad1 promotes tumor progression through destabilization of p53.
J. Wan9, B.A. Weaver10; 9Cell and Regenerative Biology, University of Wisconsin-Madison, Madison, WI

B220/P2939 Identification of drivers of Chromosome Instability in Breast Tumors.
K. Pfister11, J.L. Pipka12, C. Chiang13, R. Clark14, M.J. Guertin15, I. Hall16, T. Stukenberg17; 11Biochemistry and Molecular Genetics, University of Virginia, School of Medicine, Charlottesville, VA, 12McDonnell Genome Institute, Washington University, St. Louis, MO

B221/P2940 Spatial architecture of the biochemical pathways that recruit the Ndc80 complex in human kinetochores.
A.A. Kukreja18, A.P. Joglekar19,20, S. Kavuri21; 18Biophysics, University of Michigan, Ann Arbor, MI, 19Cell Developmental Biology, University of Michigan, Ann Arbor, MI, 20Biomedical Engineering, University of Michigan, Ann Arbor, MI

B222/P2941 HPV oncoproteins cause specific types of chromosomal instability in head and neck cancer.
L.G. Funk21-23, D.L. Lee24, F.P. Lambert25, R.J. Kimple26, B.A. Weaver27,28; 21Cell and Regenerative Biology, University of Wisconsin-Madison, Madison, WI, 22Molecular and Cellular Pharmacology, University of Wisconsin-Madison, Madison, WI, 23Oncology, University of Wisconsin-Madison, Madison, WI, 24Carbone Cancer Center, University of Wisconsin-Madison, Madison, WI, 25Human Oncology, University of Wisconsin-Madison, Madison, WI

B223/P2942 Ndc80 complex as an intrinsic regulator of molecular friction at mitotic kinetochores.
V.M. Demidov29, S.K. Tripathy30, F.I. Ataullahkhanov31, E.L. Grishchuk32; 29Physiology, University of Pennsylvania, Perelman School of Medicine, Philadelphia, PA, 30Center for Theoretical Problems of Physicochemical Pharmacology, Moscow, Russia

B224/P2943 Investigating in vivo variation in the strength of the spindle assembly checkpoint.
A.R. Gerhold33, J. Labbé34, P.S. Maddox35; 33Institute for Research in Immunology and Cancer, University of Montreal, Montreal, QC, 34Department of Biology, University of North Carolina, Chapel Hill, Chapel Hill, NC

B225/P2944 Spatiotemporal delay of chromosome alignment causes chromosomal instability.
K. Kuniyasu36, K. Iemura1, K. Tanaka1; 1Department of Molecular Oncology, Institute of Development, Aging and Cancer, Tohoku University, Sendai, Japan

B226/P2945 Mechanisms of quantitative transmission of CENP-A nucleosomes through the germline.

B227/P2946 The kinetochore-dependent and-independent formation of the CDC20-MAD2 complex and its functions in Hela cells. J. Li1, N. Dang1, D. wood9; 1Newcastle University, institute for Cell and Molecular Biosciences, Newcastle, United Kingdom, 2Newcastle University, Northern Institute for Cancer Research, Newcastle Upon Tyne, United Kingdom

B228/P2947 Spindle assembly checkpoint function in the mouse preimplantation embryo.
C. Vázquez-Diez1, G. FitzHarris2; 1Centre de Recherche du Centre Hospitalier de l’Université de Montréal, Montréal, QC, 2Département d’Obstétrique et Gynécologie, Université de Montréal, Montréal, QC

B229/P2948 Quantitative analysis of the biochemical cascade that generates the Mitotic Checkpoint Complex.
C. Chen1, A. Fontan2, I.M. Cheeseman34, A.P. Joglekar1,2; 1Biology, University of Michigan, Ann Arbor, MI, 2Cell Developmental Biology, University of Michigan, Ann Arbor, MI

Spindle Assembly 3

B230/P2949 KIF18B is regulated by distinct interactions with EB1 and importin α through its tail domain.
S. Shrestha40, A.L. Yount1, S.C. Ems-McClung41, C.E. Walczak42; 1Medical Science Program, Indiana University, Bloomington, IN

B231/P2950 Chromosome velocities in the absence of microtubules in Mesostoma ehrenbergii spermatocytes are affected by drugs that alter myosin. E. Fegaras5, A. Forer6; 5Biology, York University, Toronto, ON
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<td>Elastic tethers extend between the telomeres of separating anaphase chromosomes in a broad range of animal cells. E. Fegaras¹, M.L. Duquette², L.V. Pailulis³, M. Onô³, D. Preece³, M.W. Berns⁴, A. Forer¹</td>
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<td>B233/P2952</td>
<td>Double spindle formation around zygotic pro-nuclei explains parental genome separation. J. Reichmann¹, B. Nijmeijer², J.M. Hossain¹, M. Eguren¹, I. Schneider¹, A.Z. Politi¹, L. Hufnagel¹, T. Hiragi², J. Ellenberg¹</td>
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<td>B234/P2953</td>
<td>GTSE1 regulates spindle microtubule dynamics to control Aurora B kinase and KIF4A chromokinesis on chromosome arms. A.R. Tipton¹, J.D. Wren², J.R. Daum¹, J.C. Siefert³, G.J. Gorbsky¹</td>
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<td>B235/P2954</td>
<td>Interplay between microtubule bundling and sorting factors ensures centriolar spindle stability during C. elegans oocyte meiosis. T.J. Mullen¹, S.M. Wignall¹</td>
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<td>Chromokinesis Kif4 is required for faithful chromosome segregation in mammalian oocytes. C.M. Heath¹, S.M. Wignall¹</td>
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<td>Proper rotation of the mitotic spindle requires an equatorial spindle centering mechanism in human cells. I. Zulkılıp¹, R.L. Shrestha², J. Clark¹, V.M. Draviam³</td>
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<td>Rapid degradation of gamma-TuRC component GCP2 causes spindle collapse in mitosis. E.A. Turcotte¹, S.G. Regmi¹, V. Aksenova¹, A. Arnaoutov¹, M. Dasso¹</td>
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<td>B239/P2958</td>
<td>Cortical Pulling Drives Pronuclear Migration and Rotation, and Spindle Positioning and Oscillation. H. Wu¹, E. Nazockdast¹, C. Yu², R. Farhadifar³, H. Chang¹, M. Shelley², D.J. Needleman², A. Department of Physics, Harvard University, Cambridge, MA, ²FAS Center for Systems Biology, Harvard University, Cambridge, MA, ³Center for Computational Biology, Simons Foundation, New York, NY, ¹John A. Paulson School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, ²Department of Molecular and Cellular Biology, Harvard University, Cambridge, MA, ³Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan, ⁴Courant Institute of Mathematical Sciences, New York University, New York, NY</td>
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<td>B240/P2959</td>
<td>Colorectal cancer cells require glycolgen synthase kinase-3 for sustaining mitosis via translocated promotor region (Tpr)-dynein interaction. F. Dewi¹, T. Domoto¹, M. Hazawa², A. Kobayashi¹, T. Douwaki¹, M. Minamoto¹, R. Wong²,³,⁴</td>
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<td>B241/P2960</td>
<td>Ectopic JNK activity during aging increases symmetric divisions by altering spindle pole orientation. D.J. Hu¹, H. Jasper¹</td>
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<td>Activated Ezrin controls cortical MISP levels to ensure correct NuMA localization and spindle orientation. I.M. Hoffmann¹, Y.T. Schlosser¹</td>
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<td>Importin alpha/beta regulates XCKT2 localization within the spindle and promotes parallel microtubule cross-linking and sliding. S.C. Ems-McClung¹, L.N. Weaver², C.E. Walczak²</td>
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<td>B244/P2963</td>
<td>Xenopus borealis egg extracts: a new system to investigate spindle variation. M. Kitakoa¹, R. Gibeaux¹, R. Heald¹</td>
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<td>CENP-E-PRC1 interaction provides a temporal cue for central spindle assembly. Y. Liu¹,², W. Wang¹,², P. Yao¹, D. Li², W. Wang³, H. Wang³, X. Liu¹,², X. Yao¹,²</td>
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<td>B246/P2965</td>
<td>She1 Preferentially Crosslinks Parallel Microtubules to Ensure Spindle Stability for Spindle Positioning. Y. Zhu¹, A. Tomaszewski², P.K. Hepler²</td>
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### Centrosome Assembly and Functions 2

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<td>Vesicular trafficking plays a role in centriole disengagement and duplication. S. Xie¹, J. Reinecke², K. Bahl², N. Naslavsky¹, G.C. Rogers³, S. Caplan¹</td>
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<td>B248/P2967</td>
<td>The small ovary (sov) gene is essential for centrosome function and cell cycle progression during embryogenesis. E.A. Castro¹, D.A. Lent²</td>
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<td>Proximity labeling to define the nucleoporin-interactome at centrioles. N. Vishnoi¹, K. Dhanasesan¹, M.K. Khokha², P. Lusk²</td>
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<td>B250/P2969</td>
<td>Activation of the centrosome’s microtubule-assembly activity by the Zika virus (ZIKV). R.A. Buchwalter¹, J.V. Chen¹, C. Hammack², S.C. Ogden², H. Tang², T.L. Magraw²</td>
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<td>B251/P2970</td>
<td>Identification of novel regulators of centriole duplication in Caenorhabditis elegans. J. Iyer¹, N. Peel¹, Y. Liu², K.F. O’Connell¹</td>
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<td>B252/P2971</td>
<td>Using Genome Wide CRISPR/Cas9 Screens to Elucidate How Cells Arrest Following Centrosome Amplification. L.T. Evans¹, T. Anglen¹, A.J. Holland¹</td>
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B253/P2972 Structural and functional analyses of the C. elegans Spindle-Defective Protein 2 ASH domain. M. Murph1, S.M. Singh1, M. Schwarzenbach1,2; Biology, Brooklyn College, City University of New York, Brooklyn, NY

B254/P2973 Pericentrin reduction is essential for efficient spermatogenesis. B.J. Galletta1, J.M. Ortega1, R. Varadarajan1, K. Plevock Haase1, C.J. Fagerstrom1, N.M. Rusan1; Cell Biology and Physiology Center, NHLBI, Bethesda, MD

B255/P2974 Unravelling the structural aspects of core Centriole proteins using various biophysical techniques. P. Sankaralingam1, K.F. O’Connell1; National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Bethesda, MD

B256/P2975 A centrosome-localized PLK1 scaffold ensures mitotic fidelity. E.G. Colicino1, A. Garrastegui1, J. Fressour1, P. Santra1, D. Perout2, L. Kotula1, H. Hehny1; 1Cell and Developmental Biology, State University of New York Upstate Medical University, Syracuse, NY; 2Urology, State University of New York Upstate Medical University, Syracuse, NY; 3Biochemistry and Molecular Biology, State University of New York Upstate Medical University, Syracuse, NY

B257/P2976 Genetic Analysis of a ras-6 Mutant Suggests an Instructive Role for the Mother Centriole in Centriole Assembly. N. DaVaul1, G. Fabigi1, T. Müller-Reichert1, K.F. O’Connell1; 1Laboratory of Biochemistry and Genetics, National Institute of Diabetes & Digestive & Kidney Diseases, Bethesda, MD; 2Experimental Center, Technische Universität Dresden, Dresden, Germany

B258/P2977 Genetic screen for centrosomin synthetic lethality reveals novel proteins required for acentrosomal cell division. M.M. Tillery1, B.A. Dietrick2, C. Zheng1, C.N. Blake-Hedges1, R.A. Buchwalter1, L. Kao2, Y. Zheng1, W.M. Khaid1, K.E. Huetteman1, B.J. Whitehead3, T.L. Megraw1; 1Biomedical Sciences, Florida State University, Tallahassee, FL; 2Johns Hopkins, Baltimore, MD; 3Fisk University, Nashville, TN

B262/P2980 Oncogenic role of R-Ras in melanoma tumorigenesis. K.S. Hill1, X. Wang1, E.R. Roberts1, Y. Kim2, J. Messina1, M. Kim1; 1Molecular Oncology, Moffitt Cancer Center, Tampa, FL; 2Biostatistics and Bioinformatics, Moffitt Cancer Center, Tampa, FL; 3Anatomic Pathology, Moffitt Cancer Center, Tampa, FL

B263/P2981 To identify the subcellular EGTF interactome in NSCLC cells by quantitative proteomics. C. Chen1,2, C. Wu1, T. Wang1,2, Y. Lin1, T.V. Wang1; 1Graduate Institute of Health Industry Technology and Research Center for Industry of Human Ecology, Chang Gung University of Science and Technology, Taoyuan City, Taiwan; 2Tissue Bank, Chang Gung Memorial Hospital, Taoyuan City, Taiwan; 3Department of Medical Biotechnology and Laboratory Science, Chang Gung University, Taoyuan City, Taiwan; 4Department of Molecular and Cellular Biology, Chang Gung University, Taoyuan City, Taiwan

B264/P2982 Quantitative analysis of calcium signaling to identify specific pathways that promote drug resistance in neuroblastoma. I.A. Espinoza-Fuenzalida1, I. Lange1, D.L. Komoroski1; 1The Daniel K. Inouye School of Pharmacy, University of Hawaii at Hilo, HI

B265/P2983 Hbx-induced Ca2+ aberrancy in hepatocellular carcinoma. Y. Lin1, P. Tsai1, F. Tsai2; 1Department of Pharmacology, College of Medicine, Taipei, Taiwan; 2Department of Internal Medicine, National Taiwan University Hospital, Taipei, Taiwan

B266/P2984 Long noncoding RNA HOTAIR and mir-203 regulate tumorigenesis in renal cell carcinoma by targeting the epithelial-to-mesenchymal transition pathway. P. Dasgupta1, P. Kulkarni1, S. Majid1, V. Shahryari1, Y. Hashimoto1, N.S. Bhat1, M. Shiina1, G. Deng1, S. Saini1, S. Yamamura1, Y. Tanaka1, R. Dahiya1; 1Urology, University of California San Francisco and VA Medical Center, San Francisco, CA

B267/P2985 Influence of breast cancer drivers on mammary gland architecture. V. Srivastava1, C. van der Putten1, J. Garbe1, J.L. Hu1, M.A. LaBarge1, Z.J. Gartner1; 1Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA; 2Life Science Division, Lawrence Berkeley National Laboratory, Berkeley, CA; 3Population Sciences, City of Hope National Medical Center, Duarte, CA

B268/P2986 Mir-133a function in the pathogenesis of dedifferentiated liposarcoma. P.Y. Yu1, J. Fenger1, G. Lopez2, A.M. Strohecker2, O.H. Iwenfons3, R.E. Pollcock4, D.C. Guttridge4; 1Medicine, Ohio State University, Columbus, OH; 2Veterinary Clinical Sciences, Ohio State University, Columbus, OH; 3Surgical Oncology, Ohio State University, Columbus, OH; 4Arthur G. James Comprehensive Cancer Center, Columbus, OH; 5Pathology and Laboratory Services, Ohio State University, Columbus, OH; 6Cancer Biology and Genetics, Ohio State University, Columbus, OH

B269/P2987 BRCA1 regulation of miRNA expression in breast cancer. L. Delgado-Cruzata1, L. Durán1; 1Sciences, John Jay College, City University of New York, New York, NY

B270/P2988 A Genome-Wide miRNA Screen to Identify Regulators of Tetraploid Proliferation. M.A. Vittoria1; E. Shenk1, K.P. O’Rourke2, A.F. Bolgioni1, S. Lim1, V. Kacprzak1, R.J. Quinot1, N.J. Ganem1; 1Department of Pharmacology Experimental Therapeutics, Boston University School of Medicine, Boston, MA; 2Department of Cancer Biology & Genetics, Memorial Sloan Kettering Cancer Center, New York, NY; 3Department of Medicine, Division of Hematology, Boston University School of Medicine, Boston, MA

B271/P2989 Evolution of genetic instability through single-hit mutations. M.C. Coelho1, A.W. Murray1; 1MBI, Harvard University, Cambridge, MA

B272/P2990 Stereotyped p53 binding tuned by chromatin accessibility. J. Stewart-Omstein1, A. Hafner1, G. Lahav1; 1Systems Biology, Harvard Medical School, Boston, MA

B273/P2991 E6 Proteins from Diverse High-Risk HPV Types Differ in their Target Specificities. M. Thomas1, M.P. Myers1, P. Massimi1, C. Guarnaccia1, L. Banks1; 1Tumour Virology, ICGEB, Trieste, Italy; 2Protein Networks, ICGEB, Trieste, Italy; 3Biotechnology Development, ICGEB, Trieste, Italy

B274/P2992 IDENTIFICATION OF CANDIDATE GENES ASSOCIATED WITH TRIPLET NEGATIVE BREAST CANCER. A. Player1, N. Abraham1, K. Burrell1, L. Nunez1, A. Williams1, T. Williams1, S. Kwende1, W. Walls1; 1Biology, Texas Southern University, Houston, TX

Tumor Invasion and Metastasis 3

B275/P2993 TGF-beta determines the pro-migratory potential of bFGF signaling in medulloblastoma. K. Santhana Kumar1, A. Neve1, A. Guerreiro Stucklin2,3,4, C.M. Kuzan-Fischer2,4, J. Rushing2, M.D. Taylor2,3,4, D. TripoliSti1, L. Behrmann1, D. Kirschenbaum5, M.A. Grotzer1, M. Baumgartner1; 1Oncology, University Children’s Hospital Zürich, Zürich, Switzerland; 2Department of Laboratory Medicine and Pathobiology, The Hospital for Sick Children, Toronto, Canada; 3The Division of Haematology/Oncology, The Hospital for Sick Children, Toronto, Canada; 4Department of Surgery, The Hospital for Sick Children, Toronto, Canada; 5Institute of Neuropathology, University Hospital Zürich, Zürich, Switzerland

B276/P2994 Illuminating the role of neurogenic regulator REST in Medulloblastoma dissemination. K. Callegari1, T.H. Dobson1, J.B. Bravo1, S. Shaik1; V. Gopalakrishnan1; 1Experimental Pediatrics, UHealth Sciences Center/Md Anderson, Houston, TX
B277/P2995 Optimized Isolation of Plasma Extracellular Vesicles for Use as Potential Biomarkers in Patients with Glioblastoma. L.M. Cumba Garcia, T.E. Peterson, A.J. Johnson, I.F. Parney. Immunology, Mayo Clinic Graduate School of Biomedical Sciences, Rochester, MN. Neurosurgery, Mayo Clinic, Rochester, MN. Immunology/Neurology, Mayo Clinic, Rochester, MN.

B278/P2996 Emerging role of a sulfhydryl oxidase in glioma cell behavior. R. Dutt, C. Thorpe, D.S. Galileo. Department of Chemistry and Biochemistry, University of Delaware, Newark, DE. Department of Biological Sciences, University of Delaware, Newark, DE.


B280/P2998 Mechanisms Involved in Microglia Stimulation of Glioblastoma Invasion. S.J. Coniglio, M. Patel, D. Patel, D. Habib, J. Merritt, J.E. Segall, U. Rathi. NJCSTM, Kean University, UNION, NJ. Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY.


B282/P3000 Over-Expression of the βII Isotype of Tubulin and Especially Its Localization in Cell Nuclei Correlates with Poorer Outcomes in Colorectal Cancer. K. Rukska, A. Mezheyueksii, A. Nerovnya, T. Bich, G. Tur, J. Gorgun, R.F. Luduena, A. Portyanko; 1N.N. Alexandrov National Cancer Centre of Belarus, Minsk, Belarus, 2Immunology, Genetics and Pathology, Uppsala University, Uppsala, Sweden, 3Pathology, Belarusian State Medical University, Minsk, Belarus, 4Minsk City Clinical Oncologic Dispensary, Minsk, Belarus, 5Gastroenterology and Nutrition, Belarusian Medical Academy of Post-Graduate Education, Minsk, Belarus, 6Biochemistry, University of Texas Health San Antonio, San Antonio, TX.

B283/P3001 Association of cell stiffness and migratory potential of head and neck and prostate cancer cells exposed to cytostatics. J. Gumulec, M. Raudenska, M. Kratochvillova, J. Pribytl, B. Peltanova, T. Vicaf, M. Masark. 1Faculty of Medicine, Dept. of Pathological Physiology, Masaryk University, Brno, Czech Republic, 2Central European institute of Technology, Brno University of Technology, Brno, Czech Republic, 3Faculty of Medicine, Dept. of Physiology, Masaryk University, Brno, Czech Republic, 4Faculty of electrical engineering and communication - Department of Biomedical Engineering, Brno University of Technology, Brno, Czech Republic.

B284/P3002 Oncosomes as a Biomarker for Quantifying Metastatic Cancer Dynamics in Real-Time. H.S. Leong, K. Deng, Y. Kim. 1Urology, Mayo Clinic, Rochester, MN. 2Surgery, Western University, London, ON.


B286/P3004 Overexpression of VRK1 promotes mammary epithelial cell proliferation in three-dimensional culture, slows cell migration and induces a partial mesenchymal to epithelial transition (MET) phenotype. A.M. Mon, P. Traktman. Department of Biochemistry, Medical University of South Carolina, Charleston, SC.

B287/P3005 The effects of bisphenol (BPA) and BPA structural analogs on metastasis of the MCF-7 breast cancer cell line. J. Lachowicz, S. Parikh, C. Leahy, A. Koper, E. Frees, J. Saunders, A. Goldstein, R. Roberts. 1Biochemistry Molecular Biology Program, Ursinus College, Collegeville, PA. 2Biology Department, Ursinus College, Collegeville, PA.

B288/P3006 Role of mDia2 at Adherens Junctions in Epithelial Ovarian Cancer. Y. Zhang, K.M. Eisenmann. 1Biochemistry and Cancer Biology, University of Toledo, Toledo, OH.

B289/P3007 Melanoma cell malignancy does not correlate with migratory rates in three different cell lines. A.M. Pasapera-Limon, T. Amos, C.M. Waterman, M.A. Baird. 1Cell Biology, NHLBI-NIH, Bethesda, MD. 2Chantilly High School, Chantilly, VA.

B290/P3008 Role of AMPK isofoms during breast cancer cell migration. C.D. Williams, M.M. Fox. 1Biology, Wingate University, Wingate, NC.

B291/P3009 Expression and roles of lectin galactoside-binding soluble 3 binding protein (LGALS3BP) in cholangiocarcinoma cell lines. W. Parvongsai, K. Sueksen, S. Boworkapitaya, A. Chairoungdua. 1Toxicology Graduate Program, Faculty of Science, Mahidol University, Bangkok, Thailand. 2Excellent Center for Drug Discovery (ECDD), Faculty of Science, Mahidol University, Bangkok, Thailand. 3Physiology, Faculty of Science, Mahidol University, Bangkok, Thailand.

B292/P3010 Thy-1/CD90 induces metastatic breast cancer cell migration. M. Brenet, S. Martinez, A.F. Quest, L. Leyton. 1Cellular Communication Laboratory, Advanced Center for Chronic Diseases (ACCDD), Center for Molecular Studies of the Cell (CEMC), Institute of Biomedical Sciences, Faculty of Medicine, University of Chile, Santiago, Chile.

B293/P3011 CX, CR1 chemokine receptor antagonist inhibits migration and contact-independent growth in pancreatic cancer epithelial cells. M.C. Stout, S. Narayan, E.S. Pillet, C. Qian, J.A. Sawicki, J.M. Salvino, A. Fatatis, P.M. Campbell. 1Pharmacology Physiology, Drexel University, Philadelphia, PA. 2Lankenau Institute for Medical Research, Wynnewood, PA. 3The Wistar Cancer Center Molecular Screening, Wistar Institute, Philadelphia, PA.

B294/P3012 Differential Expression of miRNAs and EMT-Related Targets in Cutaneous Squamous Cell Carcinoma Tissues. C.S. Pulford, M.R. Montgomery, C.K. Uppalapati, A.S. Pascual, E.E. Hull, K.J. Leyva. 1Biomedical Sciences Program, Midwestern University, Glendale, AZ. 2Department of Microbiology Immunology, AZCOM, Midwestern University, Glendale, AZ. 3Department of Nutritional Sciences, Oklahoma State University, Stillwater, OK.

B295/P3013 DDR1 regulates tumor dormancy by balancing p38/ERK signaling. J.S. Di Martino, C. Mondal. 1Department of Pathology, Mount Sinai School of Medicine at Mount Sinai, New York, NY. 2Department of Medical Oncology, Icahn School of Medicine at Mount Sinai, New York, NY. 3Department of Urology, Icahn School of Medicine at Mount Sinai, New York, NY. 4Department of Medicine, Icahn School of Medicine at Mount Sinai, New York, NY. 5United States.

B296/P3014 The role of srpGAP1 in regulating cancer cell motility and invasion. C. Mondal, J.S. Di Martino, J.J. Bravo-Cordero. 1Hematology Oncology, Icahn school of medicine at Mount Sinai, New York, NY. 2Biomedical Sciences, Midwestern University, Glendale, AZ.

B297/P3015 Properties of Lipid Rafts in Two Epigenetically Distinct Subtypes of the Oncogenic Cell Line SW13. L. Espejo, E.E. Hull. 1Biomedical Sciences, Midwestern University, Glendale, AZ.
Cancer Therapy: Targeting the Tumor Microenvironment

B329/P3016 SIRPA-inhibited, morpher-derived macrophages engorge, accumulate, and differentiate in antibody-targeted regression of solid tumors.
C. Alvey1, D.E. Discher2; 1Pharmacology, University of Pennsylvania, Philadelphia, PA

B299/P3017 Extracellular matrix-binding peptide conjugation to immune checkpoint blockades enhances anti-tumor efficacy and reduces adverse events.
J. Ishihara1,2, K. Fukunaga3, A. Ishihara1, H.M. Larsson2, L. Potin3, P. Hosseinch, M. Swartz2, J.A. Hubbell1,3; 1Institute for Molecular Engineering, The university of Chicago, Chicago, IL, 2Institute of Bioengineering, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, 3Department of Bioengineering, Tokyo Institute of Technology, Kanagawa, Japan

B300/P3018 Extracellular matrix-binding form of anti-CD40 agonistic antibody reduces systemic damages and increases anti-tumor efficacy.
A. Ishihara1, J. Ishihara1, K. Fukunaga1,2,3, J.A. Hubbell1; 1Institute for Molecular Engineering, University of Chicago, Chicago, IL, 2Department of Bioengineering, Tokyo Institute of Technology, Yokohama, Japan

B301/P3019 NMK-057, a novel triazole derived γ-secretase inhibitor attenuates Notch-mediated-EMT and stemness in triple negative breast cancer cells by inducing autophagic cell death.
A. Das1, P. Mukherjee1, N.M. Kumar1, A. Ganguli1, D. Ghoshdastidar2, B. Basu3, U. Chatterji1, S. Banerjee1, D. Kumar1, G. Chakrabarti2; 1Biotechnology, National Institute of Technology, Sikkim, Ravangla, India, 2Biotechnology, Calcutta University, Kolkata, India, 3Chemistry, Birla Institute of Technology and Science, Pilani, Rajasthan, India, 4Amity Institute of Biotechnology, Amity University, Noida, UP, India, 5Cancer Research Unit, VA Medical Center, Kansas City, MO

B302/P3020 Hematopoietic cell kinase (HCK) inhibitor as a potent antiproliferative compound for the development of novel acute myeloid leukemia treatment.
F.M. Roversi1,2, A.K. Calgarotto2, C.O. Torello1, K.V. Ferro1, F.I. Delia Via1, F.V. Pericole1, G.P. Santos2, A.d. Duarte1, A. Longhiní1, A. Molinari1, M. Botta1, S.T. Saad1; 1Universidade São Francisco, Bragança Paulista, Brazil, 2Hematology and Hemotherapy Center-University of Campinas, Campinas, Brazil, 3Dipartimento di Biotechnologie, Chimica e Farmacia, Università degli Studi di Siena, Siena, Italy

B303/P3021 Programmed death ligand 1 (PD-L1) immune checkpoint blockade with Combination Therapy in Syngeneic Colon Carcinoma Model.
W.H. Ka1; 1WJ RD Center, WOOJUNGBSC, Suwon, South Korea

B304/P3022 HDAC6/DPHS signaling drives hypusination and nuclear export of elf5A to promote TGFβ-signaling induced EMT and associates with a novel SOX2 signature to predict de-veased breast cancer patient survival.
L. Kutscher1, Y. Adamian1, K. Meade1, K. Bhakta1, R. Guehö1, J.A. Kelber1; 1Biology, California State University Northridge, Northridge, CA

B305/P3023 Cordycepin induces human lung cancer cell apoptosis by inhibiting nitric oxide mediated ERK/Slg signaling pathway.
S. Kang1, I. Jang1; 1Division of Bioconvergence, Korea Basic Science Institute, Daejeon, South Korea

B306/P3024 Expressional assessment of mouse embryonic stem cell, lung cancer and somatic fibroblast cell lines on the basis of EMT, MAPK and inflammation.
F. Oltulu1, B. Ozdili2, C. Gürel1,3; 1Faculty of Medicine Histology and Embryology Department, Ege University, Izmir, Turkey, 2Faculty of Medicine Histology and Embryology Department, Süleyman Demirel University, Isparta, Turkey, 3Faculty of Medicine Histology and Embryology Department, Harran University, Harran, Turkey, 4Faculty of Medicine Histology and Embryology Department, Yüzüncü Yıl University, Van, Turkey, 5Faculty of Medicine Stem Cell Department, Ege University, Izmir, Turkey

P. Ko1, E. You1, J. Jeong1, S. Keum1, J. Lee1, J. Kim1, S. Rhee1; 1Life Science, Chung-Ang University, Seoul, South Korea

B308/P3026 Therapeutic effect of FCH domain only 1 shRNA in Kras146 mice.
S. Park1, A. Lee2, K. Cho3, Q. Tran3, H. Lee1, Y. Hong1, H. Cho1, M. Kim1, J. Park1, K. Kim1, M. Cho2, J. Park2; 1Department of Pharmacology and Medical Science, Chugnam National University, Daejeon, Korea, 2Institute for Veterinary Science and College of Veterinary Medicine, Seoul National University, Seoul, Korea, 3Department of Pathology, Johns Hopkins University, Baltimore, MD, 4Department of Applied Chemistry, Kyung Hee University, Yongin, Korea, 5Division of Pathology, Johns Hopkins University, Baltimore, MD

B309/P3027 A New Targeting Agent that Specifically Binds to Breast Cancer Cells? E.A. Pattie1, N.A. Omar1, T.C. Anderson1, C. Donahue1, H.F. Schmittgen1, I.M. Evans1; 1GSOLS, Rochester Institute of Technology, Rochester, NY, 2Chemistry and Materials Science, Rochester Institute of Technology, Rochester, NY

B310/P3028 GLE regulates stemness properties in inflammatory Breast Cancer cells via STAT3 regulation.
M.M. Martínez-Montemayor1, P. Lopez1,2, V. Rivera-Amill2, Y. Yamamura2, T.J. Rios1; 1Department of Biochemistry, Universidad Central del Caribe School of Medicine, Bayamon, PR, 2Basic Sciences, Ponce Health Sciences University, Ponce, PR

B311/P3029 CTLA-4 in cancer cells transmits high forces via the bond to CD80.
S. Park1, Y. Shi1, Y. Joo1, L. Lin1, B. Kim1,2, D. Reich1, T. Har1, L. Lu1, Y. Chen1; 1Department of Mechanical Engineering, Johns Hopkins University, Baltimore, MD, 2Henry A. Rowland Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD, 3Division of Biological Sciences, University of California San Diego, San Diego, CA, 4Thomas C. Jenkins Department of Biophysics, Johns Hopkins University, Baltimore, MD

B312/P3030 Therapeutic strategies for osteosarcoma stem cells by regulating adipocyte differentiation based on actin dynamics.
H. Nobusue1, N. Takahashi1, H. Kunitomi1, E. Sughira1, T. Shimizu2, N. Onishi1, S. Iwai-Yamaguchi1, H. Saya2; 1Division of Gene Regulation, Institute for Advanced Medical Research, Keio University School of Medicine, Tokyo, Japan, 2School of Pharmacy and Pharmaceutical Sciences, Hoshi University, Tokyo, Japan

B313/P3031 Inhibition of IL-8 uptake by breast cancer cells suppresses vasculogenic mimicry.
A.R. Akins1,2, M. Kim2, B. Raymund2, C.W. Kim2; 1Biotechnology, Cell and Molecular Biology, University of Ghana, Accra, United States, 2Biotecnologia, Korea University, Seoul, United States

B314/P3032 Investigating mitotic kinesins as therapeutic targets for triple negative breast cancer.
F. Cindy1, C. Marquis1, L. Wood1, C.J. Anker2, J.E. Clayton1, J. Stumpf1; 1Molecular Physiology and Biophysics, University of Vermont, Burlington, VT, 2Division of Radiation Oncology, University of Vermont, Burlington, VT, 3Pharmacology, University of Vermont, Burlington, VT, 4BioTek Instruments, Inc., Winooski, VT

B315/P3033 Telomerase inhibitors TMPyP4 and Thymoquinone decreased cell proliferation and induced cell death in NSCLC cell line LC-HK2, modifying the pattern of focal adhesion.
A.M. Gamique1, P. Rezende-Teixeira1, G.M. Machado-Santelli1; 1Cell and Development Biology, University of Sao Paulo, Sao Paulo, Brazil

B316/P3034 A "Trojan Horse" strategy to target lysosomes in cancer mediated by acidotropic nanomedicine.
E. Yang1, X. Zhang1, M. Feng1, C. Wang1; 1School of Pharmaceutical Sciences, Sun Yat-sen University, Guangzhou, China

B317/P3035 Pharmacological effect of three tryptophan analogues with HDAC inhibitory activity in MDA-MB-231 triple negative breast cancer cells.
E. Mera-Jiménez1, C.R. Trejo-Muñóz1, G. Gutiérrez-Iglesias1, T. Mancilla-Percino1,2; 1POSGRADO, INSTITUTO POLITECNICO NACIONAL. ESCUELA SUPERIOR DE MEDICINA, MEXICO, 2QUIMICA, CENTRO DE ESTUDIOS AVANZADOS DEL IPN, MEXICO, MEXICO
**Tumor Microenvironment 2**

**B321/P3039 Tunneling Nanotubes, a Novel Mode of Tumor Cell-Macrophage Communication in Tumor Cell Invasion.**
S. J. Hannan1, K. McCoy-Simandle1, E. Leung1, J. S. Condeelis1, D. Cox1; Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY.

**B322/P3040 Substratum stiffness and tumor dormancy.**
A. A. Antis1, C. M. Nelson1-2, R. R. Gabbasova1, T. Kupriyanova1, A. Akhunzyanov1, M. Pugachev1, N. Shtyrlin1, K. Balakin1, Y. Shtyrlin1; Scientific and Educational Center of Pharmaceutics, Kazan (Volga region) Federal University, Kazan, Russia.

**B323/P3041 Interplay between mechanotransduction and force generation underlies mitosis in three-dimensional microenvironments.**
S. Nam1, V. K. Gupta1, H. Lee1, C. Davis1, O. Chaudhuri1; Chemical and Biological Engineering, Princeton University, Princeton, NJ, Molecular Biology, Princeton University, Princeton, NJ.

**B324/P3042 Early stage breast cancer spheroids mechanically remodel the microenvironment more significantly compared to their normal and metastatic counterparts.**
N. Yam1, D. Maty1, Y. Chen1; Mechanical Engineering, Johns Hopkins University, Baltimore, MD.

**B325/P3043 Meaningful connections: Homotypic cell-cell interactions in pancreatic ductal adenocarcinoma’s desmoplasic stroma.**
J. C. Gardiner1, R. Francescence1, J. Franco-Barraza1, E. Cukierman1; Cancer Biology, Fox Chase Cancer Center, Philadelphia, PA.

**B326/P3044 Age-related gene expression and cancer susceptibility in luminal epithelial cells is driven by a microenvironment made from myoepithelial cells.**
M. Miyano1, R. Sayaman1, M. A. LaBarge1, Population Sciences, City of Hope, Duarte, CA, Biological Systems and Engineering, Lawrence Berkeley National Laboratory, Berkeley, CA.

**B327/P3045 Targeting the alliance between tumor cell sub-populations.**
J. Davis1, C. Duong1, M. Ahmad1, J. Pfannenstein1, Y. Mojarad1, L. Colarossi1, V. Espina1, L. Liotta1, M. D. 1, C. Mueller1; Center for Applied Proteomics and Molecular Medicine, George Mason University, Manassas, VA.

**B328/P3046 Desmoplasia meets nerves in pancreatic cancer progression.**
D. Barbosa Vendramini Costa1, R. A. Francescence1, N. Shah1, T. Luong1, C. Matullo2, G. Rai1, K. Campbell1, E. Cukierman1; Cancer Biology, Fox Chase Cancer Center, Philadelphia, PA, Blood Cell and Developmental Program, Fox Chase Cancer Center, Philadelphia, PA.

**B329/P3047 Desmoplasmic expression of NtrinG1 fuels pancreatic cancer growth and promotes metastasis through nutritional supply and immunosuppression.**
R. A. Francescence1, J. Wagner1, D. Barbosa Vendramini Costa1, J. Franco-Barraza1, L. Gabbiova1, D. Rollins1, T. Luong1, N. Shah1, S. Gupta1, R. Thapa1, D. Restifo1, S. Balachandran1, W. Kruger1, W. S. El-Diery1, I. Astsaturov1, E. Cukierman1; Cancer Biology, Fox Chase Cancer Center, Philadelphia, PA, Molecular Therapeutics Program, Fox Chase Cancer Center, Philadelphia, PA, Blood Cell Development and Function, Fox Chase Cancer Center, Philadelphia, PA.

**B330/P3048 Secretory IgM exacerbates tumor progression by inducing accumulations of MDCs in mice.**
C. A. Tang1, S. Chang1, A. Hashimoto1, Y. Chen1, C. Kang1, A. R. Mato1, J. R. Del Valle1, D. I. Gabrilovich1, C. A. Hu1; Translational Tumor Immunology, The Wistar institute, Philadelphia, PA, Chemistry, University of South Florida, Tampa, FL, Center for CLL, University of Pennsylvania, Philadelphia, United States.

**B331/P3049 A Systems Model of Human Metastatic Melanoma from Invasion to Colonization Identifies Tenasin-C as a Driver of Resistance and Emergence.**
A. Bradshaw2, J. Grahovac1, A. Clark1, L. G. Griffith1, A. Wells1-2; Cellular and Molecular Pathology, University of Pittsburgh, Pittsburgh, PA, Veterans Administration, Pittsburgh VA Health System, Pittsburgh, PA, National Cancer Institute, Belgrade, Serbia, Biological Engineering, Massachusetts Institute of Technology, Boston, MA.

**B332/P3050 Collagen Increases Proliferation and Drug Resistance of Papillary Thyroid Cancer Cells Harboring BRAFV600E Mutations.**
J. D. M. Thurtle-Schmidt1, D. Martinez1, M. Taylor1; Biomedical Sciences, Grand Valley State University, Allendale, MI.

**B333/P3051 Evaluating the overexpression of mitotic checkpoint silencing protein TRIP13 in human breast cancer cell lines in 2D and 3D cell culture models.**
M. Moenk1, s. liu1; Biological Sciences, University of Toledo, Toledo, OH.

**B334/P3052 Mechanical control of tumor blebbing and microinule in hepatocellular carcinoma cells.**
K. Mandal1, R. G. Wells1, P. A. Janmey1; Institute for Medicine and Engineering, University of Pennsylvania, Philadelphia, PA, Departments of Medicine, Bioengineering, and Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, PA.

**B335/P3053 Extracellular Matrix Stiffness Alters Crosstalk Between Tumor-Derived Pancreatic Stellate Cells and Pancreatic Tumor Cells.**
S. Liu1, S. Mumenthaler1, J. C. Gardiner1, J. Grahovac3, A. Clark1, L. G. Griffith1, A. Wells1,2; Lawrence J. Ellison Institute for Transformative Medicine, University of Southern California, Los Angeles, CA.

**B336/P3054 Hypoxia measurements in live and fixed cells using fluorescence microscopy and high content imaging.**
B. S. Mandavilli1, A. Chen1, Y. Hu1; Cellular Imaging and Analysis, Thermo Fisher Scientific, Eugene, OR.

**Gene Transcriptional Networks**

**B338/P3055 Binding Dynamics of nFGFR1 in Chromatin Architecture and Promoter Machinery.**
B. Decker1, C. Handelmann1, S. T. Narla1, C. Terranova1, M. K. Stachowiak1; Pathology and Anatomical Sciences, State University of New York at Buffalo, Buffalo, NY.

**B339/P3056 The Influence of Nato3 on LMX1 Gene Expression.**
M. M. Frantzeskakis1, D. Martinez1, M. Taylor1; Biomedical Sciences, Grand Valley State University, Allendale, MI.

**B340/P3057 Evidence based theory for integrated genome regulation of ontogeny – an unprecedented role of Nuclear FGFRI signaling.**
M. K. Stachowiak1, E. K. Stachowiak1; Pathology and Anatomical Sciences, State University of New York at Buffalo, Buffalo, NY.

**B341/P3058 Dissecting the cell-type specific regulatory landscape of a Nuclear Hormone Receptor in C. elegans.**
D. M. Thurtle-Schmidt1,2, M. Asahina2, J. D. Ward1, K. Yamamoto1; Biology, Davidson College, Davidson, NC, Cellular and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA, Molecular Cell Developmental Biology, University of California, Santa Cruz, Santa Cruz, CA.
B342/P3059 Repression of CDON expression by Nuclear Factor One. B. Kutay1, C. Lektemur1, A. Kumbasar1; 1Department of Molecular Biology and Genetics, Istanbul Technical University, Istanbul, Turkey

B343/P3060 Lipoprotein Lipase regulates ATP-Binding Cassette A1 transcription through Peroxisome Proliferator-Activated Receptors. B.A. Christian1, A.J. Kim1, J. Medh1; 1Chemistry and Biochemistry, California State University Northridge, Northridge, CA

B344/P3061 The lower expression of ABCA1 in LPL-expressing THP-1 macrophages may be mediated by fatty acid products of lipolysis. A.J. Kim1, B.A. Christian1, J. Medh1; 1Chemistry and Biochemistry, California State University Northridge, Northridge, CA

B345/P3062 Regulation of anterior lineage genes in C. elegans embryogenesis. J.D. Rumley1, A. Zacharias1, J.I. Murray1; 1Genetics, University of Pennsylvania, Philadelphia, PA

B346/P3063 Age-dependent regulation of the FOXO transcription factor DAF-16 by SMK-1 in the roundworm Caenorhabditis elegans. M.J. Youngman1, K. Carrasco1, J. Morris1; 1Biology, Villanova University, Villanova, PA

B347/P3064 cAMP Reduces Non-Specific DNA-Protein Interactions During Transcription Regulation in Mycobacterium Tuberculosis. F. Garate1, C. Canavan1, M. Lanfranco1, I. Wang1, R.A. Maillard1; 1Chemistry, Georgetown University, Washington, DC

B348/P3065 Glandular cell-specific DNA demethylation in a carnivorous plant Drosophila adaeae. N. Ari1, Y. Hamaji1, T. Ohyama1; 1Biology, Waseda University, Tokyo, Japan

B349/P3066 Yeast Hsf1 drives a dynamic gene restructuring program in response to heat shock. L.S. Rubio1, S. Chowdhary1, A.S. Kainth1, D.S. Gross1; 1Biochemistry and Molecular Biology, Louisiana State University Health Sciences Center, Shreveport, LA

B350/P3067 Chromatin and DNA Repair

B351/P3068 Analysis of irradiation resistance mechanism in S. cerevisiae. K. Kamata1, H. Maeda2, M. Tanaka1, M. Hatashita1, U. Chuda1, M. Oki1; 1University of Fukui, Fukui, Japan; 2Fukui senior high school, Fukui, Japan; 3Wakasa Wan Energy Research Center, Fukui, Japan

B352/P3069 Determining the role of chromatin context on repair of DNA double-breaks formed by a Cas9-linked camptothecin mimic. T. Rodriguez Cintora1, R. James1, R.C. Burgess1; 1Biology, Stevenson University, Owings Mills, MD

B353/P3070 The Optimization of CRISPR Systems for Double Strand Break Induction in S. cerevisiae. R.C. James1, E.C. Wills1, R. Reimer1, P.J. Horn1, T. Rodriguez Cintora1, R.C. Burgess1; 1Department of Biological Sciences, Stevenson University, Owings Mills, MD

B354/P3071 Characterizing the interaction between Rad54 and PCNA. A. Gannon1, R.C. Burgess1, L. Krejci2,3, B. Stefanovic2,3; 1Department of Biological Sciences, Stevenson University, Owings Mills, MD, 2National Centre for Biomolecular Research, Masaryk University, Brno, Czech Republic; 3International Clinical Research Center, St. Anne’s University Hospital, Brno, Czech Republic

B355/P3072 Signaling via DNA breaks and RUVB proteins activates the germline genome. M. Wong1, W.M. Michael1; 1Biological Sciences, University of Southern California, Los Angeles, CA

B356/P3073 The co-repressor complex mSin3A/HDAC1 is involved in the down-regulation of CRT2C2 target genes during B cell differentiation. Y.V. Arancibia1, A.H. Zambrano1, C. Cárcamo1; 1Instituto de Bioquímica y Microbiología, Universidad Austral de Chile, Valdivia, NJ

B357/P3074 Histone dynamics during oocyte meiosis in C. elegans. S. Rosu1, P. Thepкамonk1, O. Cohen-Fix1; 1LCMB, NIH NINDK, Bethesda, MD

B358/P3075 Oligo-conjugated antibodies and massively parallel single-cell sequencing reveal the high-parameter correlation of protein and mRNA expression in individual immune cells. D. Jensen1, C. Chang1, E.Y. Shum1, J.C. Martin1, J. Ghadiali1, J. Hu1, D. Rosenfeld1, H.C. Fan1; 1BD Genomics, Menlo Park, CA; 2BD Biosciences, San Diego, CA

B359/P3076 The role of Mps3 and Htz1 in Telomere Cohesion and Telomere Position Effect. L.M. Antoniacci1, C.M. Breymeier1; 1Science, Marywood University, Scranton, PA

B360/P3077 Muscleblind-like RNA binding proteins form RNA transport granules associated with Kif1b. G.J. Bassell1; 1Department of Crystallography - CNR, Bari, Italy

B361/P3078 Localizing mRNAs in skeletal muscle cells. M.R. Pimentel1, H. Pinheiro1, G. Leal1, E.R. Gomes1; 1Biology, Instituto de Biociências, Faculdade de Medicina da Universidade de Lisboa, Lisboa, Portugal

B362/P3079 Certain types of inverted repeat sequences can organize local chromatin infrastructure in Saccharomyces cerevisiae. O. Mura1; 1Biology, Waseda University, Tokyo, Japan

B363/P3080 Spatial and temporal control of the Neurospora crassa molecular clock. B.M. Bartholomai1, J.C. Dunlap1; 1Department of Molecular and Systems Biology, Geisel School of Medicine at Dartmouth, Hanover, NH, 2Department of Biochemistry and Cell Biology, Geisel School of Medicine at Dartmouth, Hanover, NH, 3Department of Biology, University of North Carolina, Chapel Hill, NC

B364/P3081 Transcription factor-mediated targeting of genes to the nuclear pore complex is the major pathway controlling peripheral localization of genes in budding yeast. D.G. Brickner1, M. Lebrun1, C.R. Hinchliff1, J.H. Brickner1; 1Molecular Biosciences, Northwestern University, Evanston, IL

B365/P3082 Asymmetric Distribution of Hexose Transporter RNA Provides a Growth Advantage. T. Stahl1, S. Hümmer1; 1Biozentrum, University of Basel, Basel, Switzerland

B366/P3083 Functional map of the DEAD-box ATPase Ddb5 at single amino acid resolution. A. Lari1, B.P. Young2, C.J. Loewen2, B. Montpetit1, 1Cell Biology, University of Alberta, Edmonton, AB, 2Cellular and Physiological Sciences, University of British Columbia, Vancouver, BC, 3Viticulture and Enology, University of California, Davis, Davis, CA

B367/P3084 Schawman-Diamond Syndrome: inside the structure of EFL1, SBDS proteins and their complex. D. Siligi1, B. Dida2, D. Altamura1, A. Gijsbers2, A. Méndez-Godoy4, C. Cárcamo1; 1Institute of Crystallography - CNR, Bari, Italy; 2Cellular and Physiological Sciences, University of California, Davis, Davis, CA

RNA Localization and Transport

B360/P3077 Muscleblind-like RNA binding proteins form RNA transport granules associated with Kif1b. G.J. Bassell1; 1Department of Crystallography - CNR, Bari, Italy

B361/P3078 Localizing mRNAs in skeletal muscle cells. M.R. Pimentel1, H. Pinheiro1, G. Leal1, E.R. Gomes1; 1Biology, Instituto de Biociências, Faculdade de Medicina da Universidade de Lisboa, Lisboa, Portugal

The Nuclear Envelope and Nuclear Pore Complexes 2

B369/P3085 The SUMO-Specific Isopeptidase SENP2 is Targeted to Intracellular Membranes via a Predicted N-Terminal Amphipathic α-Helix. H.M. Odeh1, E. Coyaud; 1Biochemistry and Molecular Biology, Johns Hopkins School of Public Health, Baltimore, MD, 2Department of Medical Biophysics, University of Toronto, Toronto, ON
B370/P3086 The VAP family member Sscs2 functions to organize chromatin at the yeast inner nuclear membrane through recruitment of the SUMO E3 ligase Siz2 and telomerases. N.O. Saik1, C. Ptak1, B. Montelli2, J.D. Arbisi2, R. Wozniak1; 1Cell Biology, University of Alberta, Edmonton, AB; 2Viticulture and Enology, University of California, Davis, CA, 3CIDR, Seattle, WA

B371/P3087 Metazoan Nuclear Pores provide a scaffold for poised genes and stabilized induced Enhancer-Promoter contacts. P. Pascual-García1, S.C. Little1, Y. Lan1, M. Capelson1; 1Department of Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B372/P3088 Chromatin-bound nuclear pore proteins recruit chromatin remodeling complexes to induce DNA decondensation in Metazoan cells. T. Kuhn1, S.C. Little1, M. Capelson1; 1Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B373/P3089 Uncovering a role for nucleoporin Megator in a novel nuclear scaffold structure. J. Aleman1, M. Capelson1; 1Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B374/P3090 Mapping Nucleoporins in the D. Melanogaster Genome. A. Gozalo1, Y. Lan2, M. Capelson1; 1Biochemistry and Molecular Biophysics, University of Pennsylvania, Philadelphia, PA; 2Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B375/P3091 Epigenetic modifications and DNA replication in striated muscles rely on LINC-mediated mechanotransduction coupling. T. Volk1, S. Wang1, U. C. P.1, E. Stoops1, B. Markus2, A. Revenyi3; 1Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel; 2-InCPM/Mantoux Institute for bioinformatics, Weizmann Institute of Science, Rehovot, Israel

B376/P3092 Macronuclear positioning in the giant ciliate, Stentor coeruleus. R.M. McGillivray1, P. Sood1, W.F. Marshall1; 1Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

B377/P3093 Characterizing LINC complex assembly in budding yeast meiosis. J. Fan1, H. Jin1, H. Yu1; 1Cellular and Molecular Biology, Florida State University, Tallahassee, FL

B378/P3094 Molecular insights into the mechanisms of SUN1 oligomerization in the nuclear envelope. Z. Jahed1, D. Fadavi1, U.T. Vu1, E. Asgari1, J. Hennen2, J.D. Mueller2, G. Luxton2, M. Mofrad3; 1University of California Berkeley, Berkeley, CA; 2University of Minnesota, Minneapolis, MN

B379/P3095 Regulating interactions between SUN and KASH proteins to mediate nuclear migration and anchorage. N. Cain1, Z. Jahed2, H. Hao1, M. Mofrad2, G. Luxton2, D.A. Starr3; 1Molecular and Cellular Biology, University of California, Davis, Davis, CA; 2Bioengineering and Mechanical Engineering, University of California, Berkeley, Berkeley, CA; 3Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN

B380/P3096 The LINC complex contributes to epithelial cell homeostasis. V. Narayanan1, P.T. Arsenovic1, C. Mayer1, G. Luxton2, D.E. Conway1; 1Biomedical Engineering, Virginia Commonwealth University, Richmond, VA; 2Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN

B381/P3097 Identification and characterization of Medicago truncatula LINC complex components with potential functions in root symbioses. A.H. Newman-Griffis1, I. Meier1,2; 1Molecular Genetics, The Ohio State University, Columbus, OH; 2Center for RNA Biology, The Ohio State University, Columbus, OH

B382/P3098 Nesprin-2G, a key player in regulating nuclear mechanics. H. Shams1, G. Luxton2, M. Mofrad3; 1Bioengineering, University of California Berkeley, Berkeley, CA; 2Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN

B383/P3099 Nesprin-alpha; 2 mediates MTOC and motor protein recruitment to the nuclear envelope during myogenesis to control myonuclear positioning. C. Shah1, V. Koullourou1, A. Haworth1, D. Shah2, S. Shackleton1; 1Department of Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA

B384/P3100 MULTIPLE ISOFORMS OF NESPRIN1 ARE INTEGRAL COMPONENTS OF CILIARY ROOTLETS. C. Potter1, W. Zhu1, D. Razafsky1, P. Ruzyczki1, A.V. Kolesnikov1, V.J. Kefalov1, T. Doggett1, E. Belleia2, M.R. Mahjoub1, D. Hodzic1; 1Ophthalmology, Washington University School of Medicine, St Louis, MO; 2Medicine, Washington University School of Medicine, St Louis, MO

B385/P3101 Dissecting the role of LINC complex in meiotic chromosome pairing and synapsis. C. Liu1, A.F. Dernburg1; 1Molecular and Cell Biology, HHMI/UC Berkeley, Berkeley, CA

B386/P3102 Novel human mutation in KASH3 transmembrane domain causes protein mislocalization and male infertility. S.A. Bentebral1, A. Salter1, K. Fakhro4,5, V. . Allan2, B. Burke1, H. Horn1; 1Life Sciences Division, Hamad Bin Khalifa University, Doha, Qatar; 2Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom; 3Laboratory of Nuclear Dynamics and Architecture, Institute of Medical Biology, Singapore, Singapore; 4Human Genetics Division, Sidra Medical and Research Center, Doha, Qatar; 5Department of Genetic Medicine, Weill Cornell Medical College in Qatar, Doha, Qatar

B387/P3103 SUN2 regulates mitotic duration in response to extracellular matrix rigidity. N. Bélaadi1, L. Pernet2, J. Aureille3, L. NGuyen3, M. Rio1, G. Louarn4, G. Loirand1, C. Guilluy2; 1Inserm, Nantes, France; 2Institute for Advanced Biosciences, Inserm, Grenoble, France; 3IMN, CNRS, Nantes, France

Nuclear Bodies and Dynamics

B388/P3104 DNA Damage Causes Rapid Accumulation of Nuclear Phosphoinositides for ATR Signaling. Y. Wang1, A. Harirhan1, G. Bastianello2,3, G. Shivasvanak1,2,4, M. Foiani2,3, M.P. Sheetz2,4; 1Mechanobiology Institute, National University of Singapore, Singapore, Singapore; 2IFOM, The FIRC Institute of Molecular Oncology, Milan, Italy; 3Dipartimento di Bioscienze, Università degli Studi di Milano, Milan, Italy; 4Department of Biological Sciences, National University of Singapore, Singapore, Singapore; 5Department of Biological Sciences, Columbia University, New York, NY

B389/P3105 Direct visualization and quantitative characterization of interphase hetero- and euchromatin using two-color, 3D super-resolution microscopy. J.J. Ottersen1, A. Castells Garcia2, J. Borbely1,2, M. Ricci1, M. Cosma1, M. Lakadamyali1,2, AFIIB, The Institute of Photonic Sciences (ICFO), Castelldefels (Barcelona), Spain, 2Reprogramming and Regeneration, Center for Genomic Regulation (CRG), Barcelona, Spain; 3Measurement and Standards Laboratory of New Zealand, Lower Hutt, New Zealand; 4Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

B390/P3106 Canonical, Alternative and Multistranded DNA, and Cell Death. C.E. Gagna2,3, W. Lambert2,3, P. Lambert2, M. Rabbani1, A. Pillay1, U. Mughal1; 1Life Sciences, New York Institute of Technology, Old Westbury, NY; 2Pathology Laboratory Medicine, Rutgers - New Jersey Medical School, Newark, NJ; 3Medicine (Dermatology), Rutgers - New Jersey Medical School, Newark, NJ

B391/P3107 Dengue virus NS5 protein targets PML nuclear bodies involved in intrinsic immunity. F. Giovanni1, P. Hemmerich2, C.C. García1; 1Biochemistry, School of Sciences, University of Buenos Aires, Buenos Aires, Argentina; 2Leibniz Institute for Age Research, Fritz Lipmann Institute, Jena, Germany

B392/P3108 Optogenetic control of nuclear body assembly. H. Zhang1, A. Hariharan1, G. Bastianello2,3, M. Foiani2,3, M.P. Sheetz2,4; 1Mechanobiology Institute, National University of Singapore, Singapore, Singapore; 2IFOM, The FIRC Institute of Molecular Oncology, Milan, Italy; 3Dipartimento di Bioscienze, Università degli Studi di Milano, Milan, Italy; 4Department of Biological Sciences, National University of Singapore, Singapore, Singapore; 5Department of Biological Sciences, Columbia University, New York, NY

B393/P3109 ...
B393/P3109 RICC-seq: Variable chromatin structure revealed by in situ spatially correlated DNA cleavage mapping. V.I. Risca1, S.K. Denny2, A.F. Straight3, W.J. Greenleaf1; Genetics, Stanford University School of Medicine, Stanford, CA, 2Biophysics, Stanford University, Stanford, CA, 3Biochemistry, Stanford University School of Medicine, Stanford, CA, 4Chemical and Systems Biology, Stanford University School of Medicine, Stanford, CA

B394/P3110 Phase transitions in the nucleolus: modulating material properties and protein dynamics using optogenetics. L. Zhu1, T. Richardson2, C.P. Brangwynne1; Chemical and Biological Engineering, Princeton University, Princeton, NJ, 2Molecular Biology, Princeton University, Princeton, NJ

B395/P3111 Nuclear speckle biology as revealed by HIV-1 infection. H. Yu1, K. Lee2, X. Wu2, S.H. Hughes2, V.N. KewalRamani3; Basic Research Laboratory, National Cancer Institute, Frederick, MD, 2Laboratory of Molecular Technology, Leidos Biomedical Research Inc., Frederick, MD, 3HIV Dynamics and Replication Program, National Cancer Institute, Frederick, MD

B396/P3112 Loss of capsid protein at the nucleolus is a pre-requisite for translocation of HIV-1 pre-integration complexes into the nucleus. G.B. Melkian1,2, A.C. Francis1; 1Pediatrics, Emory University, Atlanta, GA, 2Children’s Healthcare of Atlanta, Atlanta, GA


B398/P3114 Molecular Dissection of Zc3h8 Localization to Nuclear Bodies. J.A. Schmidt1, T. Doan2, E. Harris1, E.R. Duffner1, K.G. Daniels1, J.E. Kneppe1; 1Biology, Villanova University, Villanova, PA

B399/P3115 Nuclei spin prior to mitosis in epithelial tissues. M.J. Siedlik1, M. Pang1, C.M. Nelson1,2; Chemical and Biological Engineering, Princeton University, Princeton, NJ, 2Molecular Biology, Princeton University, Princeton, NJ

B400/P3116 Genetically Encoded Multimeric nanoparticles (GEMs) to visualize the biophysical properties of the nucleus. S. Pinglay1, G. Brittingham1, M. Delarue1, K.J. Kennedy2, G. Poterewicz1, L.J. Holt1; 1Institute for Systems Genetics, NYU School of Medicine, New York City, NY, 2Plant and Microbial Biology, University of California, Berkeley, Berkeley, CA

B401/P3117 Nuclear envelope rupture under confinement triggers TREX1-dependent DNA damage and cell senescence. G. Nader1, M. Gentili2, M. Maurin1, Y. Liu1, O. Shi1, N. Manei1, M. Piel1; 1Subcellular Structures and Cellular Dynamics, Institut Curie, Paris, France, 2Immunity and Cancer, Institut Curie, Paris, France

B402/P3118 A potential link between DNA damage-induced nuclear actin filaments and the cell cycle. T. Lee1, J. Salat1, R.D. Mullins1; 1Biochemistry, UC San Francisco, San Francisco, CA

Post-Golgi Trafficking

B404/P3119 Golgi Fragmentation in Alzheimer’s Disease. M.E. Bekier1, X. Wang1, D. Rector1, J. Yang1, Y. Wang1; 1MCDB, University of Michigan, Ann Arbor, MI

B405/P3120 The ESCRT-III protein Chmp1a mediates secretion of Sonic Hedgehog on extracellular vesicles. M.E. Coultier1, C. Dorobantu2, G.A. Lodewijk3, F. Delalandere1, S. Cianferani1, E. Lim3,5,6,7,8, V. Ganesh1, H. Lidov9, M. Calicchio9, E. Yang5,6,7,8, T. Schlaeger5, G. Mochida1,2,6,7,11,12, W. Allen Lee1,5, M. Lehtinen1, T. Kirchhausen11, D.M. Haussler11, F.M. Jacobs12, R. Gauldin12, C.A. Walsh11,12,13,14,15; Program in Neuroscience and Harvard/MIT-MPHD Program, Harvard Medical School, Boston, United States, 2Institute of Viral and Liver Disease, INSERM U1110 - University of Strasbourg, Strasbourg, France, 3Swammerdam Institute for Life Sciences, University of Amsterdam, Amsterdam, Netherlands, 4LSMBO, Strasbourg University, Strasbourg, France, 5Manton Center for Orphan Disease Research, Boston Children’s Hospital, Boston, United States, 6Division of Genetics and Genomics, Boston Children’s Hospital, Boston, United States, 7Department of Neurology, Harvard Medical School, Boston, United States, 8Howard Hughes Medical Institute (HHMI), Boston, United States, 9Department of Pathology, Boston Children’s Hospital, Boston, United States, 10Division of Hematology and Oncology, Department of Medicine, Boston Children’s Hospital, Boston, United States, 11Pediatric Neurology Unit, Department of Neurology, Massachusetts General Hospital, Boston, United States, 12Department of Pediatrics, Harvard Medical School, Boston, MA, 13Department of Neurobiology, Harvard Medical School, Boston, United States, 14Program in Cellular and Molecular Medicine, Boston Children’s Hospital, Boston, United States, 15Center for Biomolecular Science and Engineering, University of California, Santa Cruz, United States

B406/P3121 GMAP-210 protein controls traffic of signaling vesicles at the immune synapse and T lymphocyte activation. A.E. Zucchetti1, L. Bataille1, J. Carpier1, S. Dogniaux1, M. Maurin1, M. Jouve1, M.W. Stuck2, G.J. Pazour2, C. Hivroz1; 1INSERM, Unité 932, Immunité et Cancer, Institute Curie, Paris, France, 2University of Massachusetts Medical School, Program in Molecular Medicine, Worcester, MA, United States

B407/P3122 The Arl3 and Arl1 GTPases cooperate with Cog8 to regulate selective autophagy via Atg9 trafficking. F.S. Lee1, I. Wang1, J. Hsu1, Y. Chen1; 1Molecular Medicine, National Taiwan University, Taipei, Taiwan

B408/P3123 Mechanism of action of GTPase-activating protein Gcs1 in modulating GTP hydrolysis of Arl1. W. Chi1, J. Hsu1, Z. Chen1, Y. Liu2, F.S. Lee1; 2Institute of Molecular Medicine, National Taiwan University, Taipei, Taiwan, 3Department of Medical Research, National Taiwan University Hospital, Taipei, Taiwan

B409/P3124 AKAP12-mediated PKA phosphorylation of NDK2 S223 facilitated TGF-α cell surface delivery and EGFR transactivation. Z.J. Cao1, B. Singh1, C. Li1, R.J. Coffey2; 1Epithelial Biology Center, Vanderbilt University, Nashville, TN

B410/P3125 Iterative Sorting of Apical and Basolateral Cargo in Mardin-Darby Canine Kidney Cells. A. Treyer1, M. Pujato1, X. Pechuan2, A. Muesch1; 1Developmental and Molecular Biology, Albert Einstein College of Medicine, Bronx, NY, 2Department of Systems and Computational Biology, Albert Einstein College of Medicine, Bronx, NY, 3Center for Autoimmune Genomics and Etiology, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH

B411/P3126 A kinesin-3 motor transports newly synthesized basement membrane proteins specifically to a basal subregion of the lateral plasma membrane in epithelial cells. A.L. Zajac1, A.J. Isabella1,2, K.E. Sy1, S. Horne-Badovinac1; 1Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL, 2Division of Basic Sciences, Fred Hutchinson Cancer Research Center, Seattle, WA

B412/P3127 Microtubule-interaction with apical transport vesicles is mediated by the large GTPase Mtx1. K. Ringer1, J. Riehl1, M. Müller1, F. Hoff1, R. Jacob1; 1Cell Biology, Philips University Stratburg, Marburg, Germany

B413/P3128 The biogenesis and structure of a unique class of large pleomorphic transport intermediates arising from the Golgi apparatus is intricately tied to its cisternal architecture. R. Sengupta1, E.M. Mihelic1, R.J. Kuhn1, J.K. Lanman1; 1Biology, Purdue University, West Lafayette, IN

B414/P3129 Multiple PLA2 Enzymes Contribute to Membrane-Tubule Mediated Export from the TGN. J. Roscoe1, J.M. Beckinghausen1, W.J. Brown1; 1Molecular Biology and Genetics, Cornell University, Ithaca, NY

B415/P3130 Manganese-induced trafficking and turnover of GPP130 is mediated by sortilin. S. Venkat1, A.D. Linstedt1; 1Biological Sciences, Carnegie Mellon University, Pittsburg, PA
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<th>Board No./Presentation No.</th>
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<tr>
<td>B416/P3131</td>
<td>Characterization of vacuolar membrane trafficking pathways in fission yeast</td>
<td>M. Hissam, J. Whitaker, R. Bryant, M. Kimbell, A. Rossi, S. Walderp, A. Young, A. Rains, S. Nicholls, D. Franko, H. Taunton, M.L. Styers, Biology, Birmingham-Southern College, Birmingham, AL</td>
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<tr>
<td>B417/P3132</td>
<td>AP-1 mediated trafficking of the lysosomal vitamin B12 transporter</td>
<td>ABCD4. E. Sauvageau, A. Castonguay, S. Lefrancois, Centre INRS-Institut Armand-Frappier, Laval, QC, Department of anatomy and cell biology, McGill University, Montreal, QC</td>
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<td>B418/P3133</td>
<td>Analysis of Myosin 5A recruitment to endothelial Weibel Palade bodies</td>
<td>V. Llombreri, S. Le Trounnaire, N. Hellen, R. Bierings, M. Hannah, T. Mellon University, Pittsburgh, PA, 5Dept. Bethesd, MD</td>
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<td>B419/P3134</td>
<td>Select alpha-arrestins control surface abundance of the mammalian Kir2.1 potassium channel in a yeast model</td>
<td>N.A. Hager, C. Kraskowski, P.G. Needham, T. Mackie, D. Bain, M.P. Brucez, C. Szent-Gyorgyi, A.V. Kwiatkowski, A.F. O'Donnell, J.L. Brodsky, Dept. of Biological Sciences, Duquesne University, Pittsburgh, PA, Dept. of Biological Sciences, University of Pittsburgh, Pittsburgh, PA, Dept. of Geology and Environmental Sciences, University of Pittsburgh, Pittsburgh, PA, Molecular Biosensor and Imaging Center, Carnegie Mellon University, Pittsburgh, PA, Dept. of Cell Biology, University of Pittsburgh, Pittsburgh, PA</td>
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<tr>
<td>B420/P3135</td>
<td>The Role of PKC-ε in Focal Exocytosis</td>
<td>A.E. D’Amico, C.M. Hanes, J.L. Brodsky, Dept. of Biological Sciences, Duquesne University, Pittsburgh, PA, 5Dept. of Biological Sciences, University of Pittsburgh, Pittsburgh, PA, 3Dept. of Geology and Environmental Sciences, University of Pittsburgh, Pittsburgh, PA, Molecular Biosensor and Imaging Center, Carnegie Mellon University, Pittsburgh, PA, 4Soft condensed matter, Institute for Bioengineering of Catalonia</td>
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<td>B421/P3136</td>
<td>Identification of a barrier to soluble dendritic secretory cargo in the proximal axon of chemosensory neurons in Caenorhabditis elegans</td>
<td>L. Klabonski, T. Gidalevitz, Dept. of Biology, Drexel University, Philadelphia, PA</td>
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**Endocytic Trafficking 2**

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<tr>
<td>B422/P3137</td>
<td>Imaging the molecular architecture of the protein network that regulates clathrin-mediated endocytosis.</td>
<td>K.A. Sohachik, A.M. Dickey, M. Strub, J.W. Taraska, National Heart Lung and Blood Institute, National Institutes of Health, Bethesda, MD</td>
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<tr>
<td>B423/P3138</td>
<td>Unique cargo-specific response landscapes underpin the complex and nuanced role of galectin-glycan interactions on clathrin-independent endocytosis of MHCI and CD59.</td>
<td>M.P. Mathew, J. Donaldson, ‘Cell Biology and Physiology, National Heart Lung and Blood Institute, Bethesda, MD</td>
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<tr>
<td>B424/P3139</td>
<td>Assessing the function of adaptor-clathrin and adaptor-cargo interaction in endocytic progression</td>
<td>S.M. Di Pietro, T.O. Tolnai, L.M. Cuevas, 3Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO</td>
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<tr>
<td>B425/P3140</td>
<td>A membrane trafficking screen to identify Clathrin-independent endocytosis machinery: A role for ROCK2 and Cofilin in CIE</td>
<td>J.L. Wayt, D. Dutta, J. Donaldson, NHLBI, National Institutes of Health, Bethesda, MD</td>
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<td>B426/P3141</td>
<td>Membrane tension regulates the recruitment of membrane binding protein epsin in clathrin-mediated endocytosis</td>
<td>J.G. Joseph, A.P. Liu, Mechanical Engineering, University of Michigan, Ann Arbor, MI</td>
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<td>B427/P3142</td>
<td>The role of membrane curvature in topography-induced cellular signaling</td>
<td>B. Cui, W. Zhao, H. Lou, F. Santoro, Department of Chemistry, Stanford University, Stanford, CA</td>
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<td>B428/P3143</td>
<td>Dynamin independent endocytosis responds to and regulates membrane tension via a negative feedback loop</td>
<td>J.J. Thottacherry, A. Kosmalska, A. Elsegug, S. Pradhan, S. Sharma, P.P. Singh, M. Guadamillas, N. Chaudhary, R. Vishwakarma, X. Trepat, M.D. Pozo, R.G. Parton, P. Pullarkat, P. Roca-Cusachs, Cellular organization and signalling, National Centre for Biologial Sciences, Bengaluru, India, Cellular and molecular mechanobiology, Institute for Bioengineering of Catalonia (IBEC), Barcelona, Spain, Faculty of medicine, University of Barcelona, Barcelona, Spain, Soft condensed matter, Raman Research Institute, Bengaluru, India, Medicinal chemistry division, Indian Institute of Integrative Medicine, Jammu, India, Cell Biology Physiology Program, Centro Nacional de Investigaciones Cardiovasculares Carlos III (CNIC), Madrid, Spain, Cell Biology and Molecular Medicine Division, Institute for Molecular Bioscience and Centre for Microscopy and Microanalysis, Queensland, Australia, Department of Biochemistry, Weill Cornell Medical College, New York, NY</td>
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<tr>
<td>B429/P3144</td>
<td>CD13 is a critical regulator of beta1 integrin recycling, cell migration and focal adhesion turnover.</td>
<td>M. Ghosh, C. Devarakonda, S. Thangada, R. Lo, L.H. Shapiro, Center for Vascular Biology, UCONN Health Center, Farmington, CT</td>
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<td>B430/P3145</td>
<td>Clathrin-independent endocytosis coordinated with filopodial formation in the growth cone, revealed by superresolution microscopy.</td>
<td>M. Igashiri, M. Nozumi, Dept Neurochem &amp; Molecular Biol, National Institute of Health, Bethesda, MD, J.J. Thottacherry, A. Kosmalska, A. Elsegug, S. Pradhan, S. Sharma, P.P. Singh, M. Guadamillas, N. Chaudhary, R. Vishwakarma, X. Trepat, M.D. Pozo, R.G. Parton, P. Pullarkat, P. Roca-Cusachs, Cellular organization and signalling, National Centre for Biologial Sciences, Bengaluru, India, Cellular and molecular mechanobiology, Institute for Bioengineering of Catalonia (IBEC), Barcelona, Spain, Faculty of medicine, University of Barcelona, Barcelona, Spain, Soft condensed matter, Raman Research Institute, Bengaluru, India, Medicinal chemistry division, Indian Institute of Integrative Medicine, Jammu, India, Cell Biology Physiology Program, Centro Nacional de Investigaciones Cardiovasculares Carlos III (CNIC), Madrid, Spain, Cell Biology and Molecular Medicine Division, Institute for Molecular Bioscience and Centre for Microscopy and Microanalysis, Queensland, Australia, Department of Biochemistry, Weill Cornell Medical College, New York, NY</td>
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<td>B432/P3137</td>
<td>Parkinson Sac Domain Mutation in Synaptotagmin 1 Impairs Clathrin Uncoating at Synapses and Triggers Dystrophic Changes in Dopaminergic Axons.</td>
<td>M. Cao, Y. Wu, A. McCartney, G. Hnatiff, H. Wheeler, E. Bushong, D. Boassa, M. Ellisman, T. Ryan, P. De Camilli, Departments of Neuroscience and Cell Biology, Howard Hughes Medical Institute, Program in Cellular Neuroscience, Neurodegeneration and Repair, Kavli Institute for Neuroscience, Yale University School of Medicine, New Haven, CT, Department of Biochemistry, Weill Cornell Medical College, New York, NY, Center for Research in Biological Systems and the National Center for Microscopy and Imaging Research, University of California, San Diego, La Jolla, CA, Department of Neurosciences, University of California, San Diego, La Jolla, CA</td>
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<td>B433/P3148</td>
<td>Cell replication driven by EpbB2 is regulated by Eps15R-mediated endocytosis.</td>
<td>E. Evergren, H.T. McMahon, Center for Cancer Research and Cell Biology, Queen’s University Belfast, Belfast, United Kingdom, 2Neurobiology Division, MRC Laboratory of Molecular Biology, Cambridge, United Kingdom</td>
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<td>B434/P3149</td>
<td>Tetraspanins TSP-12 and TSP-14 function redundantly to regulate the trafficking of the type II BMP receptor in Caenorhabditis elegans.</td>
<td>L. Liu, H. Shl, J. Liu, Department of Molecular Biology and Genetics, Cornell University, Ithaca, NY</td>
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<td>B435/P3150</td>
<td>The Tail Waves the Dog: Differential Regulation of Expression of the Long and Short BMPRII Isoforms by Translation and Endocytosis.</td>
<td>Y. Ichi, A.R. Amsalem, B. Marom, K.E. Shapira, T. Hirschhorn, L. Preisler, P. Paarmann, P. Knauß, M. Ehrlich, Department of Neurobiology, Tel Aviv University, Tel Aviv, Israel, Department of Cell Research and Immunology, Tel Aviv University, Tel Aviv, Israel, Institute for Institute of Chemistry and Biochemistry, Freie Universitaet Berlin, Berlin, Germany</td>
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<td>B436/P3151</td>
<td>Mutations of the N-terminal TIR domain tyrosine result in loss of TLRL9 function by directing autophagic elimination of the mutant protein.</td>
<td>C. Biswas, S. Rao, D. Dersh, P.W. Zoltick, Y. Argon, M.S. Marks, E.M. Behrens, Pediatric/Rheumatology, Children’s Hospital of Philadelphia, Philadelphia, PA</td>
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<td>B437/P3152</td>
<td>Catalytic activation cycle of β-arestatins by GPCRs.</td>
<td>K. Eichel, D. Jullié, N. Latorraca, M. Masureel, B. Barsi-Rhymi, J. Sibarita, R. Dror, M. von Zastrow, Psychiatry, UCSF, San Francisco, CA, Institute for Computational and Mathematical Engineering, Stanford University, Stanford, CA, Computer Science, Stanford University, Stanford, CA, Molecular and Cellular Physiology, Stanford University, Stanford, CA, Interdisciplinary Institute for Neuroscience, University of Bordeaux, Bordeaux, France</td>
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WITHDRAWN
Endosomes, Lysosomes, and Lysosome-Related Organelles 2

B442/P3157 A molecular mechanism to recruit galecin-3 into multivesicular bodies for polarized exosomal secretion.
S. Bänfer1, D. Schneider1, J. Dewes1, M.T. Strauss2, S. Freibert1, H. Elsässer3, R. Jungmann2, R. Jacob1
1Department of Cell Biology and Cell Pathology, Philipps University Marburg, Marburg, Germany,
2Department of Physics and Center for Nanoscience, Ludwig Maximilian University, Munich, Germany,
3Max Planck Institute of Biochemistry, Martinsried, Germany

B444/P3158 I1st regulates ESCRT-III assembly and function during multivesicular endosome biogenesis.
E. Frankel1, A. Audhya1
1Biomolecular Chemistry, University of Wisconsin-Madison, Madison, WI

B445/P3160 Phagocytic functions of human macrophages is impaired by infection with rhinoviruses.
J. Jubral1, K. Africano Gomez1, F. Hert1, P. Burge1, G. Mayer1, N. Kurian1, F. Niedergang1
1Inserm U1016, CNRS UMR8104, Université Paris Descartes, Institut Cochin (Inserm U1016), Paris, France,
2Department of Pneumology, Cochin Hospital, Paris, France, 3Respiratory, Inflammation Autoimmunity iMed, AstraZeneca, Mölndal, Sweden

B446/P3161 LC38 lipidation is required for macroinosome biogenesis.
O. Shitano1, X. Meng1, A.N. Reyes1, Y. Xiang1, W.T. Jackson1, R.A. Davey2
1Virology and Immunology, Texas Biomedical Research Institute, San Antonio, TX, 2Microbiology, The University of Texas Health Science Center at San Antonio, San Antonio, TX, 3Microbiology and Immunology, University of Maryland School of Medicine, Baltimore, MD

B447/P3162 Elucidation of mechanisms controlling phagolysosome resolution.
C.E. Lancaster1,2, R.M. Dayami3, A. Somervelle1, R.J. Botelho1,4, M.R. Terebiznik1,2
1Biological Sciences, University of Toronto at Scarborough, Toronto, ON, 2Cell Systems Biology, University of Toronto at Scarborough, Toronto, ON, 3Molecular Science Graduate Program, Ryerson University, Toronto, ON, 4Chemistry and Biology, Ryerson University, Toronto, ON

B448/P3163 Dissecting Atg27 Function in Budding Yeast Autophagy and Membrane Traffic.
M.C. Penton1, V.A. Segarra1
1Biology, High Point University, High Point, NC

B449/P3164 GRASP55 senses energy deprivation through O-GlicNAcylation to promote autophagosome-lysosome fusion.
X. Zhang1, Y. Wang1
1Department of Molecular, Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI

B450/P3165 A switch in the specificity of an endosome CORVET tether underlies formation of regulated secretory vesicles in the ciliate Tetrahymena thermophila.
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B452/P3167 Major Facilitator Superfamily Domain-Containing 12 (MFSD12) regulates melanin synthesis from lysosomes.
S.L. Bowersox1,2, S.A. Tishkoff2
1Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, PA, 2Pathology and Laboratory Medicine, Children’s Hospital of Philadelphia, Philadelphia, PA, 3Genetics, University of Pennsylvania, Philadelphia, PA

B453/P3168 Studying human ATG4 homologs using ATG4 quadruple knockout (QKO) cells.
S. Yu1, K. Kaufmann1, J. Jin1, N. Nguyen1, A. Lystad1, T.J. Melia1
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B454/P3169 Delipidation of mammalian LC3 proteins by each of the four Atg4 proteases.
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1Cell Biology, Yale University, New Haven, CT

B455/P3170 Temperature-dependent sorting of fluorescent protein-tagged tyrosinases to the melanosome.
S.M. Joseph1, A.C. Theos1
1Human Science, Georgetown University, Washington, DC

B456/P3171 The role of canonical and non-canonical autophagy in bone resorption by osteoclasts.
A.N. Tran1, S. Segeletz2, E. McDermott1, J.J. Rochford3, M.H. Helfrich1
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B457/P3172 Host cells degrade the H. pylori pore-forming toxin, VacA, to resist cell death.
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1Cell and Developmental Biology, Vanderbilt University, Nashville, TN,
2Pediatrics, Children’s Hospital of Pittsburgh, University of Pittsburgh Medical Center, Pittsburgh, PA, 3Medicine, Vanderbilt University School of Medicine, Nashville, TN, 4Pathology, Microbiology, Immunology, Vanderbilt University School of Medicine, Nashville, TN, 5Veteran Affairs Tennessee Valley Healthcare System, Nashville, TN

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1Biology, San Francisco State University, San Francisco, CA

Polarity in Development

B460/P3174 Rab11/Fip5 regulates formation of the terminal web and is necessary for microvilli stabilization during zebrafish intestinal development.
C.E. Jewett1, B. Appel1, R. Prekeris1
1Department of Cell and Developmental Biology, University of Colorado Anschutz Medical Campus, Aurora, CO

B461/P3175 Vangl1/2 function in neural tube convergence and extension.
M. De Oliveira Melo1, A.E. Sutherland1
1Department of Cell Biology, University of Virginia, Charlottesville, VA
B462/P3176 Perturbations of intracellular flows explain and invert the transport-dependent PAR polarization of C. elegans zygotes. M. Mittasch1,2, P. Gross1, M. Nester1, A.W. Fritch1, A. Voigt1, S.W. Gnägi1, M. Kreysing1,2, Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany, 1Center for Systems Biology Dresden, Dresden, Germany, 2Biotechnology Center, Technische Universität Dresden, Dresden, Germany, 3Department of Mathematics, Technische Universität Dresden, Dresden, Germany

B463/P3177 Counter-rotational cell flows drive morphological and cell fate asymmetries in mammalian hair follicles. M. Cetera1, L. Levybova1, B. Joyce1, D. Deavenport1, 1Molecular Biology, Princeton University, Princeton, NJ

B464/P3178 The ciliary GTPase Arl3 maintains tissue architecture by directing Planar Cell Polarity (PCP) dependent mitotic spindle orientation during epidermal morphogenesis. S. Bhattarai1, S. Begum1, E.J. Ezraty1, 1Pathology and Cell Biology, Columbia University, New York, NY

B465/P3179 TRANSCRIPTIONAL DYNAMICS OF SINGLE-CELL REGENERATION IN THE CILIATE STENTOR COERULEUS. P. Sood1, R.M. Mc Gillivray1, W.F. Marshall1, 1Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

B466/P3180 The DEP domain protein LET-96 regulates spindle positioning downstream of multiple polarity cues in C. elegans. M.J. Liro1,2, K.L. Price1,2, L.S. Rose1,2, 1Molecular and Cellular Biology, University of California, Davis, Davis, CA, 2BMCDB Graduate Program, University of California, Davis, Davis, CA

B467/P3181 Par3 interacts with Prickle3 to maintain planar cell polarity (PCP) in the vertebrate neural plate. I. Chuykin1, O. Ossipova1, S. Sokol1, 1Cell Developmental and Regenerative Biology, Icahn School of Medicine at Mount Sinai, New York, NY

B468/P3182 Protein palmitoylation as a mechanism of asymmetric protein localization during cell division. E. Stypulkowski1, E. Witze1, 1Cancer Biology, University of Pennsylvania, Philadelphia, PA

B469/P3183 Rapid diffusion state switching underlies stable cytoplasmic gradients in the C. elegans zygote. Y. Wu1, B. Han1, E.E. Griffin1, 1Biological Sciences, Dartmouth College, Hanover, NH

B470/P3184 Basal cell shape influences division orientation in the mammalian epidermis. K. Box1, B. Joyce1, D. Deavenport1, 1Molecular Biology, Princeton University, Princeton, NJ

B471/P3185 Oligomerization mediates self-stabilizing cortical asymmetry of the kinase polarity protein PAR-3. C.F. Lang1, A. Anreker2, E.M. Munro2, 1Committee on Genetics, Genomics, and Systems Biology, University of Chicago, Chicago, IL, 2Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL

B472/P3186 Lamination of the outer-retina, but not inner-retina, requires cell non-autonomous activity of the polarity protein Par3 in retinal progenitor cells. M. Housset1, C. Jolicoeur1, 1Neurodevelopment, Institut de recherches cliniques de Montréal, Montréal, QC

Neuronal Degeneration and Regeneration

B474/P3187 Peripheral nervous system changes during senescence in MDX mice. T.M. Augusto1, A.D. Assisi1, N.P. Biscola1, A.L. Oliveira1, G.F. Simões1, 1Morphology and Basic Pathology, Faculty of Medicine of Jundiaí - FMJ, Jundiaí, Brazil, 2Structural and Functional Biology, University of Campinas, Campinas, Brazil

B475/P3188 Protective effects of pregabalin in the spinal cord microenvironment in MDX mice submitted to sciatic nerve axotomy. A.D. Assisi1, F.D. Oliveira1, T.M. Augusto1, A.L. Oliveira1, G.F. Simoes1, 1Structural and Functional Biology, University of Campinas, Campinas, Brazil, 2Morphology and Basic Pathology, Faculty of Medicine of Jundiaí - FMJ, Jundiaí, Brazil

B476/P3189 The effects of PrPC glycosylation and cofactor molecules on species-specific prion strain susceptibility in the bank vole. C.M. Burke1, D.J. Walsh1, M. Di Barri1, U. Agmi1, S. Supattapone1, 1Biochemistry, Dartmouth College, Hanover, NH, 2Department of Veterinary Public Health and Food Safety, Istituto Superiore di Sanità, Rome, Italy, 1Medicine, Dartmouth College, Hanover, NH

B477/P3190 Development of a novel combination of Huperzine A (CogniUpTM), standardized Convolvulus pluricaulis and Celastrus paniculatus seed extracts to boost neurovascular well-being and cognitive health. A. Swaroop1, I.S. Ahmad1, D. Bagchi1, R.D. Cepham, Inc., Piscataway, MD, 2RD, Cepham Life Sciences, Inc., Linthicum Heights, MD, 2Pharmacological Pharmaceutical Sciences, University of Houston College of Pharmacy, Houston, TX

B478/P3191 RARβ agonist induces endodermal differentiation by inhibiting Hoxa1 in differentiating mouse ES cells. A. Shrestha1, E.M. Ceballos1, 1BIOLOGY, Southern University, Baton Rouge, LA

B479/P3192 HSV-1 triggers paracrine fibroblast growth factor 4 secretion from astrocytes: potential role for astrocyte reactivity and repair in herpes simplex encephalitis. V. Raker1,2, N. Hensel1, B. Förth1,2, A. Buch1,2, J. Späntel1, V. Gudi1, M. Stangl1,2, A. Beincke1,2, U. Kalinke1,2, B. Sodeik1,2,3, P. Claus1,2, 1Center for Systems Neuroscience (ZSN), Hannover, Germany, 2Institute of Neuroanatomy and Cell Biology, Hannover Medical School, Hannover, Germany, 3Niedersachsen-Research Network on Neuroinfectiology (N-RENNT), Hannover, Germany, 4Institute of Virology, Hannover Medical School, Hannover, Germany, 5German Center for Infection Research (DZIF), Hannover-Braunschweig, Germany, 6TWNCORE, Institute for Experimental Infection Research, Hannover, Germany, 7Clinical Neuromunology and Neurochemistry, Department of Neurology, Hannover Medical School, Hannover, Germany, 8Department of Pathology, University of Veterinary Medicine Hannover, Hannover, Germany

B480/P3193 Mutation of the Drosophila RNA-binding protein Muscleblind, causes accumulation of rhodopsin, ER stress and retinal degeneration. I. Tekin1,2, J.D. Ni1,2, A. Guravi1,2, D. Acosta-Alvear2, C. Montell1,2, 1Neuroscience Research Institute, University of California, Santa Barbara, Santa Barbara, CA, 2Department of Molecular, Cellular and Developmental Biology, University of California, Santa Barbara, Santa Barbara, CA

B481/P3194 Neurons survive and regenerate after simultaneous injury to axons and dendrites. M. Shorey1, J. Mandel1, M.M. Rolls1, 1BMMB, Penn State, University Park, PA

B482/P3195 Microglia activation in animal model of post-traumatic stress disorder. M. Sidorova1, O. Tuchina1, I. Vakolyuk1, 1School of Life Sciences, Immanuel Kant Baltic Federal University, Kaliningrad, Russia

B483/P3196 Novel Single nucleotide polymorphism in the exon 3 of MYOC gene enhance the risk of Glaucoma. S. Nazir1, M. Muktara1, M. Shahnawaz2, S. Farooqi2, N. Fatima1, R. Mehmo3, N. Sheikh1, 1Division of Genetics, The Rockefeller University, New York, NY, 2Molecular Genetics, The Rockefeller University, New York, NY, 3Pharmacological Pharmaceutical Sciences, University of Houston College of Pharmacy, Houston, TX

B484/P3197 The fusogen EFF-1 drives phagosome sealing during cell process clearance. P. Ghose1, A. Rashid1, P. Insley1, M. Trivedi1, P. Shah1, A. Singh1, Y. Lu1, Z. Bao2, S. Shaahm1, 1Developmental Genetics, The Rockefeller University, New York, NY, 2Developmental Biology, Sloan Kettering Institute, New York, NY

B485/P3198 Cell biology of functional axon regeneration. C. Ding1,2, M. Hammarlund1,2, 1Neuroscience, Yale School of Medicine, New Haven, CT, 2Genetics, Yale School of Medicine, New Haven, CT

B487/P3200 TRPV4 mediated neuronal hyperexcitability and disrupted mitochondrial axonal transport in a Drosophila model of inherited neuropathy. B.M. Woolums1, M. Tabuchi1, H. Sung1, J.M. Sullivan2, B.A. McCray3, M.N. Wu1, C.J. Sumner1, T.E. Lloyd1; 1Neurology, Johns Hopkins University, Baltimore, MD

B488/P3201 Nanoparticle delivery of fidgetin siRNA as a microtubule-based therapy to augment nerve regeneration. T.O. Austin1,2, A.J. Friedman2, A.J. Friedman3, P. Nacharaju4, W. Yu1, D.J. Sharp2, P.W. Baas1; 1Neurobiology and Anatomy, Drexel University College of Medicine, Philadelphia, PA; 2Physiology and Biophysics, Albert Einstein College of Medicine, New York, NY; 3Department of Physiology, People’s Medical University College of Medicine, Philadelphia, PA; 4Department of Physiology, Albert Einstein College of Medicine, New York, NY; 5Nanoparticle delivery of fidgetin siRNA as a microtubule-based therapy to augment nerve regeneration.

B489/P3202 Differential effects of oxidative stress on neurons cultured from different regions of the embryonic chick brain. E. Beyreit1, M. Galardi1, G. Gomez2; 1Biology, University of Scranton, Scranton, PA

B490/P3203 A new microtubule-based approach for augmenting nerve regeneration. A.J. Matamoros1, D. Wu1, L.A. Baker1, D.J. Sharp2, V.J. Tom2, P.W. Baas1; 1Neurobiology and Anatomy, Drexel University College of Medicine, Philadelphia, PA; 2Physiology and Biophysics, Albert Einstein College of Medicine, New York, NY

B491/P3204 HIV-1 Nef induces inflammation, astroglisis, and chromatin remodeling can be reversed by inhibiting TGFβ. N. Martinez-Orengo1, M.L. Cruz1, R.J. Noel1; 1Basic Sciences, Ponce Health Sciences University, Ponce, PR

B492/P3205 Investigating the neuroprotective functions of TLDc proteins. D.M. Svistunova1, M.J. Finelli1, P.L. Oliver2, K.E. Davies1; 1Department of Physiology, Anatomy and Genetics, The University of Oxford, Oxford, United Kingdom

B493/P3206 The NINDS Repository: Publicly available DNA and Cell Lines sampled from individuals diagnosed with neurological disorders. L. Scheinfeld1, S. Heil1, A. Green2, J. Santana3, A. Amberson4, A.M. Resch5, R. Zhang6, Coriell Institute for Medical Research, Camden, NJ; 2National Institute for Neurological Disorders and Stroke-NIH, Bethesda, MD

B494/P3207 Hyperglycemia upregulates calpain expression and promotes sodium channels proteolysis in rat brain. A.V. Vega1,2, L.M. Arratia-Cortés1, M. Calderón-Torres2,3, 1Carrera de Médico Cirujano, FES Iztacala UNAM, Los Reyes Iztacala, Tlaxlepania, Mexico, 2UBIMED, FES Iztacala UNAM, Los Reyes Iztacala, Tlaxlepania, Mexico, 3Posgrado en Ciencias QuimicoBiológicas, ENCB-IPN, Mexico City, Mexico

B495/P3208 Investigating a role of TOR-2 in controlling ER export of AMPA receptors to regulate synaptic excitability in C. elegans. C. Xu1, B. Parker1, K.A. Caldwell4, G.A. Caldwell1; 1Biological Sciences, University of Alabama, Tuscaloosa, AL

B496/P3209 Expression and distribution pattern of Pnn in ischemic cerebral cortex and cultured neural cells exposed to oxygen–glucose deprivation. S. Mukda1, S. Leu2; 1Research Center for Neuroscience, Institute of Molecular Biosciences, Mahidol University, Bangkok, Thailand, 2Institute for Translational Research in Biomedicine, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan

B497/P3210 Human tryptophan hydroxylase-2 expression in S. cerevisiae results in cytoxicity. F.A. Mohamed1, J.E. Aiken1, J.K. Azenha2, G. Buscaglia1, J.E. Aiken1, J.K. Moore2, E.A. Bates1; 1Biotechnology, University of Colorado School of Medicine, Aurora, CO; 2Pediatrics, University of Colorado School of Medicine, Aurora, CO

B498/P3211 Disruption of Tuba1a leads to neurodegeneration that can be rescued by Mg++. G. Casuglia1, J.E. Aiken1, J.K. Moore2, E.A. Bates1; 1Pediatrics, University of Colorado School of Medicine, Aurora, CO; 2Pediatrics, University of Colorado School of Medicine, Aurora, CO

B500/P3213 Nanoscale redistribution of NMDA receptors subunits in anti-NMDA receptor autoimmune encephalitis. L. Ladapché1, J. Planagumá2, S. Thakur3, I. Suárez1, J. Borbely1, A. Sandoval4, L. Lamarr4, C. Alonso-Antón4, M. Lakadamyali1,2; 1Advanced Fluorescence Imaging and Biophysics, ICFO-Institut de Ciencies Fotòniques, Castelldefels, Spain; 2Institut d’Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Barcelona, Spain; 3Department of Physiology, University of Pennsylvania, Philadelphia, PA; 4Department of Neurology, University of Pennsylvania, Philadelphia, PA

B501/P3214 Cytoskeletal Regulation of Neurodevelopment in a Human iPSC-derived Autism Model. T. Rudisill1, B. Kirk1, C. Johnson1, A. Orbita2, P. Pakala3, H. Dar1, S. Davis1, A.R. Horwitz1, M.J. McConnell1, K.A. Liwa1,2; 1Anatomy and Cell Biology, East Carolina University Brody School of Medicine, Greenville, NC; 2Cell Biology, University of Virginia, Charlottesville, VA; 3Biochemistry and Molecular Genetics, University of Virginia, Charlottesville, VA

B502/P3215 Remodeling of the postsynaptic plasma membrane during neural development. K. Tulodziecka1, B.B. Diaz-Rohrer1, N.M. Waxham1, I. Levental1; 1Integrative Biology and Pharmacology, University of Texas Health Science Center at Houston, Houston, TX

B503/P3216 Competition in the postsynaptic density for PSD domains of PSD-95. T. Mastro1, A. Preza1, P. Kind2, M.B. Kennedy2; 1Biology and Biological Engineering, Caltech, Pasadena, CA; 2Centre for Integrative Physiology, The University of Edinburgh, Edinburgh, United Kingdom

B504/P3217 Nuclear Factor One (NF1)-Dependent Developmental Program Directs the Timing of Gene Expression in Maturing Neurons. B. Ding1,2, P. Dobner2, D. Kilpatrick1; 1Dept. of Molecular Biology, University of Texas Southwestern Medical Center, Dallas, TX; 2Dept. of Microbiology and Physiological Systems and Program in Neuroscience, University of Massachusetts Medical School, Worcester, MA

B505/P3218 Determining the molecular basis of ultrafast endocytosis. Y. Imoto1, Q. Gan1, L. Mamer2, S. Markert2, I. Milosević3, F. De Camilli4, C. Rosenmund5, E. Jorgensen6, S. Watanabe1; 1Department of Cell Biology, John Hopkins University School of Medicine, Baltimore, MD; 2Institute of Neurophysiology, Charité Universitätsmedizin Berlin, Berlin, Germany; 3Division of Electron Microscopy, University of Würzburg, Würzburg, Germany; 4European Neuroscience Institute, Goettingen, Germany; 5Departments of Neuroscience and Cell Biology, Program in Cellular Neuroscience, Neurodegeneration and Repair, Kavli Institute for Neuroscience, Howard Hughes Medical Institute, Yale University School of Medicine, New Haven, CT; 6Department of Biology, University of Utah, Salt Lake City, UT

Synaptic Cell Biology

B492/P3212 Multi-color STORM in neurons reveals molecular organization of the LGLI1 synaptic complex. L. Laparra Cuervo1, L. Ladapché1, J. Planagumá2, J.S. Borbely1, A. Sandoval1, J. Dalmau2,4,5, M. Lakadamyali1,2; 1Advanced Fluorescence Imaging and Biophysics, ICFO-Institut de Ciencies Fotòniques, BIST, Castelldefels (Barcelona), Spain, 2Institut d’Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Barcelona, Spain, 3Measurement Standards Laboratory, Lower Hutt, New Zealand, 4Neurology, University of Pennsylvania, Philadelphia, PA; 5Institució Catalana de Recerca e Estudis Avançats (ICREA), Barcelona, Spain, 6Physiology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA
B506/P3219 Long-term adaptation of G-protein signalling in the brain is facilitated by active G-proteins’ feedback control of the amount of RGS proteins.
M.E. Finla1, S.R. Tummalia2, N. Vardi3, A. Kashina1, D.W. Dong1,2,3; 1Biomedical Sciences, University of Pennsylvania, Philadelphia, PA; 2Department of Bioengineering, University of Pennsylvania, Philadelphia, PA; 3Department of Neuroscience, University of Pennsylvania, Philadelphia, PA; 4Institute for Biomedical Informatics, University of Pennsylvania, Philadelphia, PA

B507/P3220 The role of the sub-complex α-syntrophin and α-dystrobrevin on the stability of phaseodynamic AChR dynamics at the NMJ.
I. Martinez-Pena1, P. Chen1, M. Akaaboune1,2; 1Molecular Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI; 2College of Sciences and Engineering, Life Science Division, Hamad Bin Khalifa University, Doha, Qatar

B508/P3221 Spontaneous rhythmic electrical activity of the tentacular apparatus of Mnemiopsis leidyi.
G. Dong1, A.G. Moss1; 1Biological Sciences, Auburn University, Auburn, AL

B509/P3222 Noktochor is a required in glia and neurons for Drosophila night sleep.
L.B. Crowe1, S. Senguypta1, F.R. Godfrey1, A. Munneke1, E. Damler1, J.R. Roeder1; 1Department of Biology, Tufts University, Medford, MA, 2Department of Cell Pharmacology, Nagoya University Graduate School of Medicine, Nagoya, Japan, 3Clinical Pharmacy, Nagoya University Graduate School of Medicine, Nagoya, Japan

B510/P3223 The fine structure of the tentacular apparatus of Mnemiopsis leidyi.
D.G. Mitchell1, G. Dong1, Z. Turturro1, A.G. Moss1; 1Biological Sciences, Auburn University, Auburn, AL

B511/P3224 The role of DNA repair factors in developing and maintaining proper neurotransmission in Caenorhabditis elegans.
B. Maes1, J. Trujillo1, T. Iii, H. Ando1, M. Ii1,2; 1Biological Sciences, New Mexico Highlands University, Las Vegas, NM; 2Biological Sciences, University of Alaska Anchorage, Anchorage, AK

B512/P3225 Investigation of the FSHR-1 Receptor as a Potential Substrate of the Activator Complex at the C. elegans Neuronal Junction.
D. Emch1, K.L. Cherry1, A. Godfrey1, A. Munneke1, E. Damler1, J.R. Kowalski1; 1Biological Sciences, Butler University, Indianapolis, IN

B513/P3226 RhoA activity regulates spine morphology and memory associated behavior.
K. Kuroda1, X. Zhang1, K. Oda1, Y. Nakano1, M. Yoshikawa1, T. Nagai1, K. Kaibuchi1; 1Cell Pharmacology, Nagoya University Graduate School of Medicine, Nagoya, Japan; 2Clinical Pharmacology, Nagoya University Graduate School of Medicine, Nagoya, Japan

B514/P3227 A molecular mechanism underlying retinogeniculate convergence in mouse visual thalamus.
A. Monavarsfeshani1,2, G. Stanton1, J. Su1, K. Su1, J. Van Name1, M.A. Fox1,2; 1Virginia Tech Carilion Research Institute, Virginia Tech, Roanoke, VA; 2Biological Sciences, Virginia Tech, Blacksburg, VA

B515/P3228 VER/VEGF receptor-related proteins regulate GLR-1/GluR1 surface levels and control behavior.
E.S. Luth1, C. Riccio1, J. Hofer1, K. Markoja1, P. Juo1; 1DMCB, Tufts University School of Medicine, Boston, MA

B516/P3229 Calcium and Calcineurin-Dependent Regulation of CaMKII Targeting to Inhibitory Synapses. M. Malikowski1, M. Fauzan1, Z. Minas1, A. Pittar1, R.C. Carroll1,2; 1Biology Department, New Jersey City University, Jersey City, NJ; 2Department of Neuroscience, Albert Einstein College of Medicine, Bronx, NY

B517/P3230 Tenetcin recruits integrin to stabilize boutons and regulate vesicle release at the Drosophila neuromuscular junction.
Q. Wang1, T. Han1, L. Friend1, P. Nguyen1, M. Serpe1; 1NIH/NICHD, Bethesda, MD

B518/P3231 Neto - the obligatory subunit of glutamate receptors, functions in both pre- and post-synaptic compartments to enable synapse development and homeostasis at the Drosophila neuromuscular junction.
L. Guillaud1, E. Abdelmoneim1, D. Dimitrov1, T. Takahashi1; 1Cellular and Molecular Synaptic Function Unit, Okinawa Institute of Science and Technology, Onna-son, Japan

B519/P3232 Vesicular transporters heterogeneity regulates vesicle dynamics, localization and synaptic transmission in mouse central synapses.
L. Guillaud1, E. Abdelmoneim1, D. Dimitrov1, T. Takahashi1; 1Cellular and Molecular Synaptic Function Unit, Okinawa Institute of Science and Technology, Onna-son, Japan

B520/P3233 A role for the calcium-activated protease calpain in the regulation of netrin-1/DCC-mediated cortical axon outgrowth.
P.M. Duquette1, D. Im2, D. Park2, N. Lamarche-Vane1; 1Anatomy and Cell Biology, Research Institute of the MUHC, Montreal, QC; 2Cellular and Molecular Medicine, University of Ottawa, Ottawa, ON

B521/P3234 Calcineurin substrate protein supports reproduction and neurite elongation by acting like the KSP domain of human neurofilament medium subunit (NEFM) in Caeorhabditis elegans.
H. Jung1,2,3, Y. Hahn4, J. Ahnn1,2,3, S. Menon1, B. Major1, S.L. Guptna1; 1Cell Biology and Physiology, University of North Carolina at Chapel Hill, Chapel Hill, NC; 2Institute of Cellular and Organismic Biology, Academia Sinica, Taipei City, Taiwan; 3Department of Agricultural Chemistry, National Taiwan University, Taiwan, China; 4Department of Pharmacology, University of New Mexico School of Medicine, Albuquerque, NM

Neuronal Development, Structure, Mechanisms, and Motility

B522/P3235 Neurofilament transport impairment precedes microtubule-neurofilament segregation in axons treated with 3,3’-iminodipropionitrile (IDPN). J. Fenn1,2; 1Biology Department, Tufts University, Boston, MA; 2Department of Physiology, Development and Neuroscience, University of Cambridge, Cambridge, United Kingdom

B523/P3236 Chemical and mechanical signals interact to direct axon guidance. S.K. Foster1, K. Franze1; 1Department of Physiology, Development and Neuroscience, University of Cambridge, Cambridge, United Kingdom

B524/P3237 ALS-linked mutations increase the viscosity of liquid-like axonal TDP-43 RNP granules in neurons. P.P. Gopal1,2, J.J. Nirschi1, E.L. Hohn2,1; 1Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, PA; 2Physiology, University of Pennsylvania, Philadelphia, PA

B525/P3238 Nox2 is involved in retinotectal connections in developing zebrashelf embryos. A. Terzi1, C.J. Weaver1, H.S. Roeder1, T.M. Gurrol1, Q. Deng1, Y. Leung1, D.M. Suter1; 1Biological Sciences, Purdue University, West Lafayette, IN

B526/P3239 TRIMming neurons: TRIM9 and TRIM67 modulate neuronal morphogenesis. S. Menon1, B. Major1, S.L. Guptna1; 1Cell Biology and Physiology, University of North Carolina at Chapel Hill, Chapel Hill, NC

B527/P3240 Investigation of the Roles of Novel Endogenous Ligand of Aryl Hydrocarbon Receptor in Neural Development. P. Chuang1, Y. Chan1, P. Wu1, P. Chen1, H. Lee1; 1Department of Life Science, National Taiwan University, Taipei City, Taiwan; 2Institute of Cellular and Organismic Biology, Academia Sinica, Taipei City, Taiwan; 3Department of Agricultural Chemistry, National Taiwan University, Taiwan, China

B528/P3241 Responses of cultured mouse cerebral cortical axons to netrin-1 depending on developmental stages: outgrowth and collateral branching starting with filopodial protrusion. H. Matsumoto1, M. Nagashima1; 1Department of Anatomy, Saitama Medical University, Saitama, Japan

B529/P3242 Unraveling the role of microenvironment topography on cortical interneuron migration using microfabricated substrates. C. Leche1,2, C. Villard1, C. Métin1, C. Lefebvre1; 1UMR168 Institut Curie, Institut Pierre-Gilles de Gennes, Paris, France; 2INSERM U839 Institut du Fer à Moulin, Paris, France

B530/P3243 HDAC6 inhibition puts the brake on axon growth and microtubule invasion into peripheral growth cone. N. Rixeinger1, E. Gomey1, D. Kaur1, A. Altman1, E.W. Hogan1; 1Biology, Canisius College, Buffalo, NY
Mitochondrial Dynamics, Movement, and Turnover

B533/P3245 The mitochondrial RhogT-Pase, Miro, is resident at peroxisomes and regulates peroxisomal trafficking. C. Covill-Cooke, G. López-Doménech, J.T. Kitterl; 1Neuroscience, Physiology and Pharmacology, UCL, London, United Kingdom

B534/P3246 Cycling clouds of actin filaments regulate mitochondria size and distribution in mitotic cells. A.S. Moore, J.J. Nirschl, C.L. Simpson, E.L. Holzbaur; 1Department of Physiology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, 2Department of Dermatology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

B535/P3247 Understanding the enhanced mitochondrial fusion capabilities of a Mitofusin 2 mutant allele. N.B. Samanas, S.C. Hoppins; 1Biochemistry, University of Washington, Seattle, WA

B536/P3248 Mitofusin-2 mediated mitophagy and mitochondrial networking dynamics mediate differential human pluripotent stem cells. S. Krantz, L. Wang, P. Toth, G. Marsboom, J. Rehman; 1Pharmacology, University of Illinois at Chicago, Chicago, IL

B537/P3249 Role of Septin 9 in mitochondrial fission. Y. Balachandran, C. Froese, E. Branchard, M. Kim, P.K. Kim, W.S. Trimble; 1Cell Biology, The Hospital for Sick Children, Toronto, ON

B538/P3250 Mutational analysis of Mitofusin1 and Mitofusin2 reveal distinctive functional properties required for mitochondrial outer membrane fusion. E.A. Engelhart, S.C. Hoppins; 1Biochemistry, University of Washington, Seattle, WA

B539/P3251 A close-up view of mitophagy using mt-keima and super-resolution microscopy. D. Malide, N. Sun; T. Finke; 1Light Microscopy Core, NHLBI/NIH, Bethesda, MD, “Center for Molecular Medicine, NHLBI/NIH, Bethesda, MD

B540/P3252 A novel role for RaA during PINK1-Parkin mitophagy. S.R. Pollock, D.F. Kashatus; 1Department of Microbiology, Immunology and Cancer Biology, The University of Virginia School of Medicine, Charlottesville, VA

B541/P3253 Nerve Growth Factor Induces Mitochondrial Fission Which Is Required for Axon Branching. L. Armojo Weinert, A. Ketschek, R. Sainath, A. Pacheco, G. Gallo; 1Shriners Hospitals Pediatric Research Center, Temple University, Philadelphia, PA

B542/P3254 Cells compartmentalize their mitochondrial population to serve different metabolic purposes. P. Chandris, C. Giannouli, H. Shroff, G. Panayotou, J. Loncarek, D. Kong; 1NIBIB, National Institutes of Health, Bethesda, MD, 2NIHDK, National Institutes of Health, Bethesda, MD, 3Molecular Oncology, BSRBC AI. Fleming, Athina, Greece, 4NCI, National Institutes of Health, Frederick, MD

B543/P3255 Mitochondrial-driven assembly of a cortical anchor for mitochondria and dynein. L.M. Kraft, L.L. Lackner; 1Molecular Biosciences, Northwestern University, Evanston, IL

B544/P3256 Investigating the molecular basis and regulation of the Mmr1-mitochondria association. W. Chen, H.A. Ping, L.L. Lackner; 1Molecular Biosciences, Northwestern University, Evanston, IL

B545/P3257 Mitochondria-lysosome contacts regulate mitochondrial fission via Rab7 hydrolysis. Y.C. Wong, D. Krainc; 1Neurology, Northwestern University, Chicago, IL

B546/P3258 Direct Detection of ER-Mitochondrial Contacts with Fully Quantified Fluorescence Microscopy. C.R. King, J. Lippincott-Schwartz; 1Janelia Research Campus, Ashburn, VA

B547/P3259 The polycytsins are modulated by cellular oxygen sensing pathways and regulate mitochondrial function. V. Padovano, I.Y. Kuo, L.K. Stavola, H.R. Aerni, B.J. Flaherty, H.C. Chapin, M. Mal, S. Somolo, A. Boletta, B.E. Ehrlich, J. Rinehart, M.J. Caplan; 1Cellular and Molecular Physiology, Yale University School of Medicine, New Haven, CT, 2Pharmacology, Yale University School of Medicine, New Haven, CT, “Internal Medicine, Yale University School of Medicine, New Haven, CT, Genetics and Cell Biology, San Raffaele Scientific Institute, Milan, Italy

B548/P3260 Control of mitochondrial homeostasis by endocytic regulatory proteins. T.M. Farmer, J.B. Reincke, S. Xie, K. Bahii, N. Naslavsky, S. Capian; 1Biochemistry and Molecular Biology, University of Nebraska Medical Center, Omaha, NE

B549/P3261 Modulating mitochondrial dynamics is a potential therapeutic strategy for MED13L syndrome. K. Chang, J. Jezeck; K. Lee, P.M. van Hasselt, W. Kruger, R. Strich; 1Department of Molecular Biology, RowanSOM, Stratford, NJ, 2Firm Chase Cancer Center, Philadelphia, PA, 3Department of Metabolic and Endocrine Disease, University Medical Center Utrecht, Utrecht, Netherlands

B550/P3262 Carbon black nanoparticles disrupt mitochondrial dynamics in human lung cells. E.C. Stenz, J.D. Duff, C. Jones, S. Alvarado, P.M. Mcclatchey, J.L. Brewster; 1Natural Science Division, Pepperdine University, Malibu, CA, 2Department of Pharmacology, University of Colorado, Denver, CO

B551/P3263 Inhibition of mitochondrial fission and disruption of swimming behavior following Mdivi-1 treatment of Paramecium tetraurelia. W.E. Bell, O.A. Emery, J.D. Hatgass; 1Biology, Virginia Military Institute, Lexington, VA

B552/P3264 Translocation of cyclin C during oxidative stress is regulated by interactions with multiple trafficking proteins. D.G. Smethurst, K.F. Cooper, R. Strich; 1School of Osteopathic Medicine, Rowan University, Stratford, NJ

B553/P3265 The single mitochondrion of C. fasciculata is a dynamic network. J.C. DiMaggio, G. Ruthel, J.J. Cannon, M.F. Malfara, M.L. Povelones; 1Science Division, Penn State University Brandywine, Media, PA, 2Department of Pathobiology, University of Pennsylvania School of Veterinary Medicine, Philadelphia, PA, 3Department of Medical Laboratory Sciences and Biotechnology, Thomas Jefferson University, Philadelphia, PA

B554/P3266 CoQ biosynthetic components form a supramolecular complex localized to ER-mitochondria contact sites. K. Subramanian, S.C. Lewis; 1MCB, University of California, Davis, CA


B556/P3268 A novel pharmacological tool blocks physiological mitochondrial fission through specifically inhibiting the MF-Drp1 protein-protein interaction. O.S. Kornfeld, N. Qvit, M. Monbureau, M. Halpain, M. Shamloo, D. Mochly-Rosen; 1Department of Chemical and Systems Biology, Stanford University School of Medicine, Stanford, CA, 2Department of Neurosurgery, Stanford University School of Medicine, Stanford, CA

B557/P3269 The size of the fission complex based on the FCS calibrated imaging of GFP-Drp1 protein in the HeLa cell line. B. Michalska, J. Szymanski, J. Duszynski; 1Biochemistry, Nencki Institute of Experimental Biology Polish Academy of Sciences, Warsaw, Poland

B558/P3270 An optical method for detecting associations between the endoplasmic reticulum and mitochondria, and their relevance to motor neuron disease. M. Harmon, J. Jackson, P. Skehel; 1Centre for Integrative Physiology, The University of Edinburgh, Edinburgh, United Kingdom
**Receptors, Transporters, and Channels**

**B561/P3273 The Role of Golgi Apparatus in Phagocytosis: Ca2+-Dependent Focal Exocytosis of Golgi-derived Vesicles Helps Uptake in Macrophages.** N. Vashi1, S. Andrabi1, S. Ghanwat1, M. Suar2, M. Kumar3; 1Cellular Immunology Group, International Centre for Genetic Engineering and Biotechnology, New Delhi, India, 2School of Biotechnology, KIIT University, Bhubaneswar, India

**B562/P3274 TRPM7 Ion Channel Regulates Magnesium Reabsorption in the Renal Proximal Tubule.** L. Lou1,2, L.W. Runnels1; 1Graduate School of Biomedical Sciences, Rutgers Biomedical and Health Sciences, Piscataway, NJ, 2Department of Pharmacology, Rutgers-Robert Wood Johnson Medical School, Piscataway, NJ

**B563/P3275 STIM1-Induced Conformational Transition of Orai1 Leads to Channel Activation.** Z. Haydan1, H. Shams1, M. Mofrad1; 1BioEngineering, University of California, Berkeley, CA

**B564/P3276 Lysosomal calcium signaling through channel TRPML1 is impaired by lipofuscin accumulation in RPE cells.** C. Mitchell1, N.M. Gomez1; 1Anatomy and Cell Biology, University of Pennsylvania, Philadelphia, PA

**B565/P3277 High Throughput Functional Characterization of the SLC-Transporters PEP1 and OCT2 in Real Time.** M. Barthmes1, A. Bazzoni1, C.T. Bo2, R. Haedo1, N. Fergi1, M. George1, A. Brüggemann1; 1Nanion Technologies GmbH, Munich, Germany, 2Nanion Technologies Inc., Livingston, NJ

**B566/P3278 Identifying Proteins that Interact with the Yeast Multidrug Transporter Pdr5 Through Genetic Suppression.** H. Rahman1, S.P. Joly1; 1Biochemistry and Cell Biology, Thomas Jefferson University, Philadelphia, PA

**B567/P3279 Heparan Sulfate restricts BMP signaling and BMPR dynamics and interactions, mechanisms possibly altered in Hereditary Multiple Exostoses.** C. Mundy1, P.C. Billings1, H. Takano1, M. Pacifici1; 1Orthopaedics, Children’s Hospital of Philadelphia, Philadelphia, PA, 2Neurology, Children’s Hospital of Philadelphia, Philadelphia, PA

**B568/P3280 Genetic improvement of iron content in Arabidopsis seeds through double Overexpression of IRP1 (IronResponsive Protein 1) and VTL (Vacular Iron Transporter-Like) genes.** Z. Ghalamkar1, T.J. Buckhout2; 1Applied Botany, Biology Institute, Humboldt Universität Berlin, Berlin, Germany

**B569/P3281 POST-STIM1 interactions differentially regulate PMCA4 splice variant function during T cell activation.** C.K. Go1,2, R. Hooper2, T. Cangoz1, M. Madesh1, J. Soboloff1,2; 1Fels Institute for Cancer Research and Molecular Biology, Temple University, Philadelphia, PA, 2Medical Genetics and Molecular Biochemistry, Temple University, Philadelphia, PA

**B570/P3282 Super resolution localization and live-tracking analyzed by pair correlation and a novel power-spectral method reveal short-term cAMP regulation of the water channel aquaporin-3.** E.C. Arnspang1,2,3, P. Sengupta2, H.H. Jensen3, U. Hahn4, E.B. Jensen5, . Mortensen1, J. Lippincott-Schwartz2,4, L.N. Nejsum1; 1Department of Clinical Medicine and Interdisciplinary Nanoscience Center (iNANO), Aarhus University, Aarhus, Denmark, 2The Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, NIH, Bethesda, MD, 3Department of Chemical Engineering and Environmental Technology, University of Southern Denmark, Odense, Denmark, 4Janelia Research Campus, Ashburn, VA, 5Department of Molecular Biology and Genetics and Interdisciplinary Nanoscience Center (iNANO), Aarhus University, Aarhus, Denmark, 6Department of Mathematics, Aarhus University, Aarhus, Denmark, 7Department of Micro- and Nanotechnology, Technical University of Denmark, Lyngby, Denmark

**B571/P3283 Characterization of the membrane progesterone receptor betta (mPRÎ²) using the Xenopus laevis oocyte model. N. Nader1, M. Dib1, R. Hodeily2; K. Machaca1; 1Research, Weill Cornell Medicine-Qatar, Doha, Qatar, 2Research, American University of Ras Al Khaimah, Dubai, United Arab Emirates

**B572/P3284 CYSTEINE-LESS ISOFORMS OF GLUT1 AND GLUT2 ARE FUNCTIONAL AND SUITABLE FOR BIOCHEMICAL AND PHYSICOCHEMICAL STUDIES.** M. Vargas-Uribe1, A. Cuevas1, C. Elgueta1, A. Perez1, L. Ojeda1, A.M. Reyes1; 1Instituto de Biocquímica y Microbiologia, Universidad Austral de Chile, Valdivia, Chile

**B573/P3285 A novel inactivation mechanism of STIM1 involving the interplay of multiple cytosolic domains in a resting state.** S. Lee1, S. Jeong1, K. Kim1, Y. Kweon1, A. Lee1, Y. Lee1, C. Park1; 1Department of Biological Sciences, UNIST, Ulsan, Korea, South

**B574/P3286 K+ Channel Tetramerization Domain 5 (KCTD5) protein is a novel TRPM4-associated protein that regulates channel activity and cell migration. I. Silva1, J. Rivas1, J. Canales2, A. Alvarez2, C. Blanco1, H. Calderon3, N. Diaz3, D. Ibarra1, G. Flores1, D. Maureira1, D. Morales1, D. Riquelme1, E. Leiva1, D. Varela2, M. Caceres1, O. Cerda1,4; 1Molecular and Cellular Biology Program, Faculty of Medicine, Universidad de Chile, Santiago, Chile, 2Pathophysiology Program, Faculty of Medicine, Universidad de Chile, Santiago, Chile, 3Department of Biology, Faculty of Chemistry and Biology, Universidad de Santiago de Chile, Santiago, Chile, 4Millennium Nucleus of Ion Channels-Associated Diseases (MINICAD), Santiago, Chile

**B575/P3287 Tunneling of Ca2+ downstream of SOCE specifically signals to downstream effectors and subcellular domains.** K. Machaca1, R. Courjaret1; 1Physiology and Biophysics, Weill Cornell Medicine Qatar, Doha, Qatar

**B576/P3288 The yeast H+-ATPase Pma1 promotes Rag/Gtr-dependent TORC1 activation in response to H+-coupled nutrient uptake.** E. Saliba1, F. Corillon1, I. Georis1, B. Andre1; 1Molecular Physiology of the Cell, Free University of Brussels (ULB), Gosselies, Belgium

**Kinases and Phosphatases 3**

**B578/P3289 The inhibitory effects of haptoglobin on osteoclast differentiation through TLR4 signaling.** J. Kim1, Z.H. Lee1; 1Pediatric Dentistry, Seoul National University School of Dentistry, Seoul, Korea, South, 2Cell and Developmental Biology, Seoul National University School of Dentistry, Seoul, Korea, South

**B579/P3290 Mitotic phosphorylation of Hsp72 uncouples ATP binding from substrate release and clusters amplified centrosomes in cancer cells.** M. Mukherjee1, J. Sampson1, S. Sabir1, L.O. Regan1, M.W. Richards2, N. Huguenin-Dezot3, M.J. Dyer4, J.W. Chin5, A. Zhuravleva6, A.M. Fry7, R. Bayliss7; 1School of Molecular and Cellular Biology, University of Leeds, Leeds, United Kingdom, 2Department of Molecular and Cell Biology, University of Leicester, Leicester, United Kingdom, 3MRC Laboratory of Molecular Biology, Cambridge, United Kingdom, 4Ernest and Helen Scott Haematological Research Institute, University of Leicester, Leicester, United Kingdom

**B580/P3291 Cell size-dependent regulation of Wee1 localization bursts by Cdr2 cortical nodes.** C.A. Allard1, H.E. Opakol1, K. Liu1, U. Medoh1, J.B. Moseley1; 1Biochemistry and Cell Biology, The Geisel School of Medicine at Dartmouth College, Hanover, NH
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<th>Board No./Presentation No.</th>
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<td>B581/P3292</td>
<td>Ubiquitin-dependent maturation of the PP1 phosphatase that opposes yeast Aurora B during mitosis.</td>
<td>R. Ravindran1, L.C. Robinson1, K. Tatchell1, Biochemistry &amp; Molecular Biology, Louisiana State University Health Sciences Center, Shreveport, LA</td>
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<td>B582/P3293</td>
<td>Cell-type-specific isolation of 14-3-3-associated phosphoprotein from complete brain tissues.</td>
<td>M. Yoshikawa1, K. Kuroda1, T. Naga2, K. Kaibuchi1, Department of Cell Pharmacology, Nagoya University Graduate School of Medicine, Nagoya, Japan, Department of Clinical Pharmacology, Nagoya University Graduate School of Medicine, Nagoya, Japan</td>
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<td>B583/P3294</td>
<td>Low molecular-weight gel fraction of Aloe vera exhibits protective effects by inhibition of matrix metalloproteinase-9 activity.</td>
<td>C. Yoo1, C. Park2, H. Son1, S. Lee1, Food Science and Biotechnology, Kyungpook National University, Daegu, South Korea</td>
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<td>B584/P3295</td>
<td>The with no lysine [K] kinase pathway regulates the localization of inward rectifier potassium channels.</td>
<td>S. Gallou Kankanamalage1, C.A. Taylor1, S. An1, S. Stippec1, S. Earnest1, C. Huang2, M.H. Cobb1, Pharmacology, The University of Texas Southwestern Medical Center, Dallas, TX, Internal Medicine, University of Iowa Carver College of Medicine, Iowa city, IA</td>
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<td>B585/P3296</td>
<td>The Role of Glycotoxic ATP Generation for the Maintenance and Restoration of Vascular Endothelial Barrier Function.</td>
<td>P. Gaiwani1, L. Wang1, P. Chaturvedi1, W. Sinclair2, S. Krantz2, D.E. Leckband1, A.B. Malik1, A.V. Karginov1, J. Rehman1, Department of Molecular and Cellular Pharmacology, University of Illinois at Chicago, Chicago, IL, Department of Chemical Engineering, University of Illinois at Urbana Champaign, Urbana, IL</td>
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<td>B586/P3297</td>
<td>Regulatory roles of weak encounters between proteins.</td>
<td>S. Kala1, M. Strickland2, A. Peterkofsky1, N. Tjandra2, J. Liu1, Theoretical Cellular Physics, National Heart, Lung and Blood Institute, National Institutes of Health, Bethesda, MD, Laboratory of Molecular Biophysics, National Heart, Lung and Blood Institute, National Institutes of Health, Bethesda, MD, Cell Biology and Physiology Center, National Heart, Lung and Blood Institute, National Institutes of Health, Bethesda, MD</td>
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<td>B587/P3298</td>
<td>The glycolytic enzyme phosphofructokinase-1 assembles into filaments.</td>
<td>B.A. Webb1,2, A. Dosey1, T. Wittrmann1, J.M. Kollman1, D.L. Barber1, Biochemistry, West Virginia University School of Medicine, Morgantown, WV, Cell and Tissue Biology, University of California, San Francisco, San Francisco, CA, Biochemistry, University of Washington, Seattle, WA</td>
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<td>B588/P3299</td>
<td>Proliferation of Immortalized Schwann Cells and Cyclic AMP Levels in Response to Forskolin.</td>
<td>A. Williams1, A.L. Asvithnam1, Biology, Misericordia University, Dallas, PA</td>
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<td>B589/P3300</td>
<td>Protein kinase CK2 regulates skeletal muscle differentiation.</td>
<td>V. Salizzato1, S. Zanin2, C. Borgo2, E. Lidron2, R. Rizzuto2, C. Pallafaxina1, A. Donella-Deana1, Department of Biomedical Sciences and CNR Neuroscience Institute, University of Padova, Padova, Italy, Department of Biomedical Sciences, University of Padova, Padova, Italy</td>
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<td>B590/P3301</td>
<td>Protein tyrosine phosphatase alpha positively regulates invadopodia-mediated cancer cell motility.</td>
<td>L.R. Decotet1,2, C.J. Pallen12,3, BC Children’s Hospital Research Institute, Vancouver, BC, Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, Pediatrics, University of British Columbia, Vancouver, BC</td>
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<td>B591/P3302</td>
<td>Regulation of Renal Proximal Tubule Na,K-ATPase by Creb Regulated Transcriptional Coactivators and Salt Inducible Kinase 1.</td>
<td>M.L. Taub1, D. Kim1, S. Krovi1, T. Rajkhowa1, F. Cutilloi1, Biochemistry, University at Buffalo, Buffalo, NY</td>
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<td>B592/P3303</td>
<td>Stat3 Regulates Primary Embryonic Erythroid Cell Maturation and is Activated Independently of Erythropoietin Signaling.</td>
<td>Z.C. Murphy1, P.D. Kingsley2, K.E. McGrath2, A. Koniski2, J. Palis2, Cell Biology of Disease, University of Rochester, Rochester, NY, Center for Pediatric Biomedical Research, University of Rochester, Rochester, NY</td>
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<td>B593/P3304</td>
<td>The Semaphorin receptors, Neuropilins and Plexins, promote Hedgehog signaling through distinct cytoplasmic mechanisms.</td>
<td>J.M. Pinskey2, K. Sweeney1, C. Matullo2, G. Raff2, W. Rose1, Department of Biology, Arcadia University, Glenside, PA, Blood Cell Development and Function, Fox Chase Cancer Center, Philadelphia, PA</td>
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<td>B594/P3305</td>
<td>Novel hypomorphic Smoothered allele causes skeletal and craniofacial defects.</td>
<td>E. Gigante1, A. Bushey Long1, J. Ben-Ami1, T. Caspary1, Human Genetics, Emory University, Atlanta, GA</td>
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<td>B595/P3306</td>
<td>Single-molecule tracking study of β-catenin nucleocytoplasmic translocation and regulation thereof by Custos.</td>
<td>S.J. Schnell1, C. Magura1, W. Luo1, R. Habas1, W. Yang1, Biology, Temple University, Philadelphia, PA</td>
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<td>B596/P3307</td>
<td>Comparison of YAP translocation in primary and immortalized cells.</td>
<td>J.T. Morgan1, C.J. Murphy1, P. Russell1, Bioengineering, University of California, Riverside, Riverside, CA, Department of Ophthalmology, Vision Science, University of California, Davis, School of Medicine, Davis, CA, Surgical and Radiological Sciences, University of California, Davis, School of Veterinary Medicine, Davis, CA</td>
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<td>B597/P3308</td>
<td>Osthole and nitric oxide attenuate advanced glycation end products-induced NF-κB and MAPK activation in renal tubular cells.</td>
<td>J. Huang1, Biomedicine and Healthcare, Chung Hwa University of Medical Technology, Tainan, Taiwan</td>
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<td>B598/P3309</td>
<td>DETECTION OF NUCLEAR AND CYTOPLASMIC PROTEIN-PROTEIN INTERACTIONS OF THE CD44-INTRACYTOSOLIC DOMAIN WITH RUNX2 BY PROXIMITY LIGATION ASSAY.</td>
<td>H. Miller1, K. Miletti-Gonzalez2, Biological Sciences, Delaware State University, Dover, DE</td>
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<td>B599/P3310</td>
<td>Particulate matter and its effect on the aryl hydrocarbon receptor (AhR) CYP1A1 pathway in adherent THP-1 cells.</td>
<td>E. Garcia1, J. Serrano-Lomelin1, A. Osomio-Vargas1, Pediatrics, University of Alberta, Edmonton, AB</td>
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<td>B600/P3311</td>
<td>Diverse patterns of phosphate activation and localization: unique implications for the control of interferon-gamma signaling in CNS neurons.</td>
<td>L. Jolley1, A. Broome1, C. Stotesbury1, K. Sweeney1, C. Matullo2, G. Raff2, W. Rose1, Department of Biology, Arcadia University, Glenside, PA, Blood Cell Development and Function, Fox Chase Cancer Center, Philadelphia, PA</td>
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<td>B601/P3312</td>
<td>Changes in corticotrope gene expression upon increased expression of peptidylglycine alpha-amidating monooxygenase, an evolutionarily conserved secretory pathway enzyme.</td>
<td>R.E. Mains1, C.E. Blaby-Haas2, T.P. La Rese1, B.A. Rheama2, M.L. Taub1, B.A. Eipper1, Neuroscience, University of Connecticut Health Center, Farmington, CT, Biology, Brookhaven National Laboratory, Upton, NY, Molecular Biology, Biophysics, University of Connecticut Health Center, Farmington, CT</td>
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<td>B602/P3313</td>
<td>WNT5A Isoforms A and B are differentially regulated during osteogenesis and early mouse development.</td>
<td>D. Bhandari1, K.S. Katula1, Biology, The University of North Carolina at Greensboro, Greensboro, NC</td>
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<td>B603/P3314</td>
<td>WNT5A isoforms A and B display differential protein function and promoter activity.</td>
<td>A. Elshaarrawi1, K.S. Katula1, Biology, The University of North Carolina at Greensboro, Greensboro, NC</td>
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Post-Translational Modifications in Signaling

B608/P3319 Integration of Post-Translational Modification Spaces in Lung Cancer Signaling Pathways. M.L. Grimes1, B. Hall2, K. Rikova3, E. Smirnova3, N. Clark1, P. Hornbeck2, M.J. Haugh2; 1Department of Biology, Temple University, Philadelphia, PA, 2Cell Signaling Technology, Danvers, MA, 3Department of Mathematical Sciences, University of Montana, Missoula, MT, 4Systems Biology Center, Ichsan School of Medicine at Mount Sinai, New York, NY

B609/P3320 Phosphorylation of the DNA helicase RECQ1 by MAPKAP kinase 2 promotes chemotherapeutic resistance in breast cancer. K. Maslak1, A. Couillard1, T.I. Strohle1; 1Department of Biochemistry and Molecular Biology, Drexel University College of Medicine, Philadelphia, PA

B610/P3321 Understanding Gqa/11 localization and trafficking in uveal melanoma. C.E. Randolph1, P.B. Wedegaertner1; 1Biochemistry and Molecular Biology, Thomas Jefferson University, Philadelphia, PA

B611/P3322 Q-GlcNAC Transferase Regulates Glioblastoma Acetate Metabolism via Regulation of CDK5-dependent ACS52 phosphorylation. Z. Bagicalupi1, M.D. Smith1, C.M. Ferrer1, L. D’Agostino1, S. Trefely1, N. Snyder1, C.D. Katselos1, M.J. Reginato1; 1Biochemistry, Drexel University, Philadelphia, PA, 2Pathology, Drexel University, Philadelphia, PA, 3Cancer Biology, University of Pennsylvania, Philadelphia, PA, 4A.J. Drexel Autism Institute, Drexel University, Philadelphia, PA

B612/P3323 N-terminal protein modifications regulate the activity of Myosin Regulatory Light Chain 9 in colorectal carcinoma cells. C.D. Nevitt1, J.G. Tooley2; 1Biochemistry and Molecular Genetics, University of Louisville, Louisville, KY, 2Biochemistry, University at Buffalo, Buffalo, NY

B613/P3324 BCRAR3, a cell migration-associated protein, is regulated by the E3 ligase Cullin 5-SOCS6. E.M. Steenkiste1,2, C. Pilling1,2; 1Department of Basic Sciences, Fred Hutchinson Cancer Research Center, Seattle, WA, 2Molecular and Cellular Biology Program, University of Washington, Seattle, WA

B614/P3325 Inhibition of deacteylasates attenuate lipid accumulation and caspase 3 activation in pancreatic beta cells under the duress of glucolipotoxicity: Potential roles for CD36 activity. S. Khan1, A. Kowrlur1, 1Cell Biochemistry Laboratory, John D. Dingell VA Medical Center, and Department of Pharmaceutical Sciences, Wayne State University, Detroit, MI

B615/P3326 The function of Metabolic Syndrome Complex 1 (MSC1) in myogenesis by modulating YY1 transcriptional activity. H. Lee1, Y. Hong1, M. Kim1, Q. Tran1, H. Cho1, S. Park1, J. Park1, J. Park2; 1Department of Pharmacology and Medical Science, Research Institute for medical sciences, Chungnam National University, Daejeon, South Korea

B616/P3327 The SMYD methyltransferase Set6 interacts with the GmC/prefoldin complex to regulate cell growth and stress response pathways. D. Jaiswal1, J. Lum1, J. Moresco1, J. Yates3, E.M. Green1; 1Biological Sciences, University Of Maryland Baltimore County, Baltimore, MD, 2Department of Chemical Physiology, The Scripps Research Institute, La Jolla, CA

B617/P3328 Poldip2 is an oxygen-sensitive mitochondrial protein that controls Oxidative/glycolytic metabolism balance and Proteasome activity. F.I. Paredes1, M. Tejos1, H. Williams1, G. Benavides2, V. Darley-Usmar1, A. San Martin1; 1Department of Medicine, Division of Cardiology, Emory University, Atlanta, GA, 2Department of Pathology, University of Alabama at Birmingham, Birmingham, AL

B618/P3329 Prolyl dihydroxylation of extra-ribosomal Rps23/uS12 regulates hypoxic adaptation in fission yeast. S.J. Clasen1, W. Shao1, H. Gu1; 1Department of Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD

B619/P3330 Antiproliferative Activity of Natural Compounds isolated from Artemisia species. V. Godiela1, M.A. Barbieri1, M.L. Viseaga1, S. Soriano1; 1Biological Sciences, Florida International University, Miami, FL

B620/P3331 Trim13 E3 ligase regulates stability of orphan nuclear receptor Nur77 via casein kinase 2. B. Huang1, H. Pei1, S. Baek2; 1Biochemistry & Molecular Biology, Yeungnam University, College of Medicine, Daegu, South Korea

B621/P3332 Phosphorylation of the HPV E6 oncoprotein by DNA damage response kinases links the E6 interaction with 14-3-3 proteins and p53. J.V. THATTE1, P. Massimi1, L. Banks1; 1Tumour Virolgy, International Centre for Genetic Engineering and Biotechnology (ICGEB), TRIESTE, Italy

B622/P3333 Investigating the function and mechanism of Gpa2 phosphorylation. S. Huang1, Y. Wang1, R. Green1; 1Biology, Saint Louis University, SAINT LOUIS, MO

B623/P3334 Investigating Gpa2 Phosphorylation in Saccharomyces cerevisiae. R. Green1, S. Huang1, Y. Wang1; 1Department of Biology, Saint Louis University, Saint Louis, MO

Mechanotransduction 2

B625/P3335 Visualizing Direct Interactions in the Mechanobiome. P. Kothen1, V. Srivastava1, V. Aggarwal1, I. Tchernyshyov1, J. Van Eyk1, T. Ha2, D.N. Robinson1; 1Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD, 2Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA, 3Biomedical Engineering, Johns Hopkins School of Medicine, Baltimore, MD, 4Cedars-Sinai Medical Center, Los Angeles, CA

B626/P3336 Force generation via β-muscle myosin, titin, and α-actinin drives cardiac sarcomere assembly from focal adhesions. A. Chopra1, M.L. Kutty1, K. Zhang2, W.J. Polacheck3, J. Seidman1, C. Seidman3, J.T. Hinson4, C.S. Chen1; 1Biomedical Engineering, Boston University, Boston, MA, 2Harvard University, Wyss Institute for Biologically Inspired Engineering, Boston, MA, 3Harvard Medical School, Department of Genetics, Boston, MA, 4Harvard Hughes Medical Institute, Chevy Chase, TX, 5The Jackson Laboratory for Genomic Medicine, Framington, CT

B627/P3337 Development and implementation of a Förster Resonance Energy Transfer based biosensor for measuring intracellular tension and force. R.G. Hart1, D. Kota1, L. Brunnmaier1, J. Liu1; 1Chandraseker2; 1Sanford Childrens Health Research Center, Sanford Research, Sioux Falls, SD, 2Department of NanoScience and nanoeNGineering, South Dakota School of Mines and Technology, Rapid City, SD

B628/P3338 Improved and tunable molecular tension sensors reveal extension-based control of vinculin loading. A.S. LaCroix1, A.D. Lynch1, M.E. Berginski1, B.D. Hoffman1; 1Biomedical Engineering, Duke University, Durham, NC
B629/P3339 Detecting Vinculin Load-Dependent Protein Recruitment to Focal Adhesions. A.S. LaCroix1, K. Xu1, S.S. Neibat1, B.D. Hoffman1, K.E. Rothenberg1, 2Biomedical Engineering, Duke University, Durham, NC

B630/P3340 Tissue geometry directs patterns of bioelectricity and growth. B.B. Silver1, C.M. Nelson1, 2Molecular Biology, Princeton University, Princeton, NJ, 2Chemical Biological Engineering, Princeton University, Princeton, NJ

B631/P3341 Traction force microscopy using embedded marker arrays with an implied zero-displacement state. O.A. Banda1, J.H. Slater1, 2Biomedical Engineering, University of Delaware, Newark, DE

B632/P3342 Actomyosin bundles detect extracellular matrix curvature to regulate cell polarization during contact guidance. R.S. Fischer1, X. Sun2, W. Losert1, J.T. Buehler2, 1Biomedical Engineering, University of California, Los Angeles, CA, 2Department of Molecular, Cell and Developmental Biology, University of California, Los Angeles, CA

B633/P3343 Mechanotransduction properties of the PECAM-1 cytoplasmic tail. E. McBeath1, J. Snyder2, T. Thomas1, Y. Chiu1, R. ClarkK. Fujiwara1, 1Cardiology, University of Texas MD Anderson Cancer Center, Houston, TX, 2Biomedical Engineering, University of Rochester, Rochester, NY, 3Research and Development, Chris Cam Mirror, Yungkang, Taiwan, 4Mechanical Engineering, University of Rochester, Rochester, NY

B634/P3344 Cyclic Strain-Induced Reduction of Nanoparticle Uptake by Vascular Smooth Muscle Cells. C. Huang1, Y. Lu1, Y. Ma2, L. Pai3, 1Graduate Institute of Biomedical Sciences, College of Medicine, Chang Gung University, Tao-Yuan, Taiwan, 2Department of Physiology & Pharmacology, College of Medicine, Chang Gung University, Tao-Yuan, Taiwan, 3Department of Biochemistry Molecular Biology, College of Medicine, Chang Gung University, Tao-Yuan, Taiwan

B635/P3345 The SMuSh pathway is essential for survival during growth-induced compressive mechanical stress. M. Delarue1,2,3, G. Poterewicz1, J. Kaysier1, O. Hallatschek1, J.L. Holt2, 1Department of Physics and Integrative Biology, University of California Berkeley, Berkeley, CA, 2Institute for Systems Genetics, New York University School of Medicine, New York, NY, 3Mile Team, Laboratoire d’analyse et d’architecture des systèmes, Toulouse, France

B636/P3346 A novel role for the small heat shock protein, HspB1, in the response of cells to mechanical stress. L.M. Hoffman1, C.C. Jensen1, M.C. Beckerle2, 1Huntsman Cancer Institute, University of Utah, Salt Lake City, UT

B637/P3347 Effects of Mechanical Stress on Remodeling of Periodontal Ligament. A. Fujita1, M. Morimitsu1, M. Nishiyama2, S. Takashiba1, K. Naruse1, 1Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Okayama City, Japan, 2Graduate School of Medicine, Kyoto University, Kyoto City, Japan

B638/P3348 Direct observation of cell mechanics under high hydrostatic pressure. M. Morimitsu1, K. Ayab1, A. Fujita1, M. Nishiyama2, K. Naruse1, 1Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences, Okayama University, Okayama, Japan, 2Graduate School of Medicine, Kyoto University, Kyoto, Japan

B639/P3349 Water Pumping performance of human polycystic kidney disease epithelial cells. M. Choudhury1, S.X. Sun2, 1Mechanical Engineering, Johns Hopkins University, Baltimore, MD

B640/P3350 Forces and dynamics in three-dimensional epithelia of controlled size and shape. E. Latorre1,2, L. Casares1, S. Kael1, M. Gomez-Gonzalez1, M. Uroz1, L. Valon1, M. Arroyo1, 1X. Trepat1,2,3, 1Institute for Bioengineering of Catalonia, Barcelona, Spain, Universitat Politecnica de Catalunya-BarcelonaTech, Barcelona, Spain, Universitat de Barcelona, Barcelona, Spain, Institutions Catalana de Recerca e Estudis Avancats (ICREA), Barcelona, Spain, Centro de Investigacion Biomedica en Red en Bioingenieria, Biomat. y Nanomed., Madrid, Spain

B641/P3351 Ca2+ calcium dependent kinase kinase II regulates mechanochemical stress fiber assembly. S. Tojkander1, K. Ciuba2, P. Lappalaainen3, 1Section of Pathology, Department of Veterinary Biosciences, University of Helsinki, Helsinki, Finland, 2Institute of Biotechnology, University of Helsinki, Helsinki, Finland, 3International University of Health and Medical Sciences, Okayama University, Okayama, Japan

B642/P3352 Spatiotemporally varying wall shear stress modulates lymphatic endothelial cell alignment and transcriptional regulation. E. Michalaki1, V.N. Sunya1, G.G. Fuller1, A.R. Dunn1, 1Chemical Engineering, Stanford University, Stanford, CA

B643/P3353 Investigating calcium dynamics in lymphatic endothelial cells subjected to flow-induced wall shear stress. V.N. Sunya1, E. Michalaki1, G.G. Fuller1, A.R. Dunn1, 1Chemical Engineering, Stanford University, Stanford, CA

B644/P3354 Functional analysis of larval chordotonal organ mechanics in Drosophila. C. Guan1, M.C. Goepert1, C.F. Schmidt1, 1Third Institute of Physics–Biophysics, University of Goettingen, Goettingen, Germany, 2Department of Cellular Neurobiology, Schwann-Schleiden-Center for Molecular Cell Biology, University of Goettingen, Goettingen, Germany

B645/P3355 Regulation of RhoA by STAT3 Coordinates Glial Scar Formation. F. Renault-Mihara1, M. Mukaino2, M. Shinozaki1, H. Kumamaru1, S. Kawase1, M. Baudoux1, S. Kawabata2, Y. Nishiyama2, K. Sugai2, K. Yasutake2, S. Okada1, M. Nakamura2, H. Okano1, 1Physiology, Keio University School of Medicine, Tokyo, Japan, 2Orthopedic Surgery, Keio University School of Medicine, Tokyo, Japan, 3Department of Advanced Medical Initiatives, Kyushu University, Fukuoka, Japan

B646/P3356 Novel biosensor reveals the regulation and coordination of GEF-H1 with protrusion machinery. M.L. Azeitei1, J. Noh2, M.J. Sandii, P. Roudtii, R.K. Rottapelii, G. Danuserii, K.M. Hahn1, 1Pharmacology, University of North Carolina at Chapel Hill, Chapel Hill, NC, 2Cell Biology, University of Texas Southwestern, Dallas, TX, 3Immunology, University of Toronto, Toronto, ON

B647/P3357 Ganoederma lucidum extract reduces cell migration and invasion in triple-negative metastatic breast cancer. A. Acevedo-Diaz1,2, G. Ortiz-Soto1, T.J. Rios1, I. Suarez Arroyo1, M.M. Martinez-Montermayor1, 1University Gardens High School, San Juan, PR, 2Biology Department, University of Puerto Rico Bayamon, Bayamón, PR, 3Department of Biochemistry, Universidad Central del Caribe School of Medicine, Bayamón, PR

B648/P3358 Long-range intercellular communication in collective cell migration. A. Zaritsky1,2,3, Y. Tseng4, M. Rabadán1, S. Krishna1, M. Overholtzer1, A. Hall1, G. Danuser1, 1Chemical Engineering, UT Southwestern Medical Center, Dallas, TX, 2Molecular Cell Biology, Weizmann Institute of Science, Rehovot, Israel, 3Bioinformatics, UT Southwestern Medical Center, Dallas, TX, 4Cell Biology, Memorial Sloan-Kettering Cancer Center, New York, NY

B649/P3359 The ArfGAP Drongo regulates Myosin-II mediated contractility during the migration of Drosophila border cells. C. Zeledon1, X. Sun1, C. Plutoni1, G. Emery1, 1IRIC, University of Montreal, Montreal, QC

B650/P3360 Alternative Polyadenylation of RECK Regulates Cell Migration and Invasion. H. Lee1, M. Mitra2, O. Bosompra2, N. Rashed3, H.A. Coller1,2, 1Molecular Biology Interdepartmental Doctoral Program, University of California, Los Angeles, Los Angeles, CA, 2Department of Molecular, Cell and Developmental Biology, University of California, Los Angeles, Los Angeles, CA, 3Department of Biological Chemistry, David Geffen School of Medicine, University of California, Los Angeles, Los Angeles, CA, 4Department of Microbiology, Immunology, Molecular Genetics, University of California, Los Angeles, Los Angeles, CA
B651/P3361 Gial2 protein modulates the migratory capability of prostate cancer cell lines downstream or independently of PI3K and RAC1 activation. S. Caggia1, H. Chunduri1, A.C. Millena1, J.N. Perkins1, S. Venugopalan1, M.C. Ordonio1, B.T. Vo1, C. Li2, S.A. Khan1; 1Center for Cancer Research and Therapeutic Development, Clark Atlanta University, Atlanta, GA, 2Department of Tumor Cell Biology, St. Jude Children’s Research Hospital, Memphis, TN

B660/P3370 A polymorphism of BLT2 leads to an enhanced ligand sensitivity. J. JANG1, J. Kim1; 1Department of Biotechnology, College of Life Sciences and Biotechnology, Korea University, Seoul, Korea, South

B661/P3371 The NDR kinase Tricornered regulates membrane handling and collective cell migration in the Drosophila egg chamber epithelium. A.M. Williams1, S. Horne-Badovinac1, M.V. Yow1; 1Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL, 2Florida International University, Miami, FL

B662/P3372 Effect of PI3 Kinase Inhibition on Human Dermal Fibroblast and Human Epidermal Keratinocyte Wound Healing. K.M. Chambers1, Z. Spivey1, B.S. Mandavalli1; 1Thermo Fisher Scientific, Eugene, OR

B663/P3373 Immunohistochemical Analysis of Singed Protein in Wild-Type and CASK Knockout Fly Lines. S. VanHorn1, A. Farting1, M. Kaschack1, K. Robinson1, D. Mohn1, J.S. Sanford1; 1Biological and Allied Health Sciences, Ohio Northern University, Ada, OH

B664/P3374 Validation of CASK gene expression in Drosophila ovaries. C. Wirth1, M. Guthrie1, H. Dyer1, J.S. Sanford1; 1Biological and Allied Health Sciences, Ohio Northern University, Ada, OH

B665/P3375 Generation of UAS-CASKRA-GFP and UAS-CASKB-GFP Transgenic Constructs. J. Tanner1, K. Robinson1, E. Olah1, J.S. Sanford1; 1Biological and Allied Health Sciences, Ohio Northern University, Ada, OH

B666/P3376 Pl(3,4,5)P2-Directed Negative Feedback Control of Rac Activity in Dictyostelium. M. Edwards1, X. Li1, P.N. Devreotes1; 1Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD

B669/P3379 CCR7 homo-dimerization regulates CCR7 ligand-dependent cell migration and signaling. H. Hayasaka1, D. Kobayashi1, M. Endo1, H. Hojo1, M. Miyasaka1, 2, 3, 4, 5, 6; 1Department of Life Science, Kindai University, Faculty of Science and Engineering, Higashiosaka, Japan, 2Department of Pharmacology, Wakayama Medical University, Wakayama, Japan, 3Institute for Protein Research, Osaka University, Suita, Japan, 4Institute for Academic Initiatives, Osaka University, Suita, Japan, 5WPI Immunology Frontier Research Center, Osaka University, Suita, Japan, 6MediCity Research Laboratory, University of Turku, Turku, Finland

B670/P3380 The involvement of SAMSN1 in mast cell dynamics. A.C. Santana1, M.F. Cândido1, D.A. Souza-Junior1, C. Oliveira1, M.C. Jamur1; 1Department of Cell and Molecular Biology and Pathogenic Bioagents, Ribeirão Preto Medical School, University of São Paulo, Ribeirão Preto, Brazil

B671/P3381 MAL2 overexpression induces cell membrane protrusion formation, and decreases cell migration via its FAP motif in liver-derived cancer cells. A. López-Coral1, P.L. Tuma1; 1Biology, The Catholic University of America, Washington, DC

B672/P3382 Cxcl12a/Cxcr4b and the transcription factor Myc orchestrate cell migration during zebrafish pronephros repair. T. Yakulov1, A. Todkar1, K. Slanchev1, A. Bona1, 2, 3, L. Baur1, J. Hochrein1, M. Boerries1, 2, 3, G. Walz1, 2, 3; 1Renal Division, University Freiburg Medical Center, Faculty of Medicine, University of Freiburg, Freiburg, Germany, 2Spermann Graduate School of Biology and Medicine (SGBM), University of Freiburg, Freiburg, Germany, 3University of Freiburg, Faculty of Biology, Freiburg, Germany, 4Institute of Molecular Medicine and Cell Research, Faculty of Medicine, University of Freiburg, Freiburg, Germany, 5German Cancer Consortium, Freiburg and German Cancer Research Center (DKFZ), Heidelberg, Germany, 6BIOS Center for Biological Signalling Studies, University of Freiburg, Freiburg, Germany

B673/P3383 Collective dynamics over long time scales and large length scales reveals distinct cell migration phenotypes. R.M. Lee1, 2, 3, H. Yue1, C.H. Stuelten1, W. Rappel1, C.A. Parent1, W. Losert2, 3, 5; 1School of Medicine, University of Maryland, Baltimore, MD, 2Institute for Physical Science and Technology, University of Maryland, College Park, MD, 3Department of Physics, University of California, San Diego, CA, 4Laboratory of Cellular and Molecular Biology, Center for Cancer Research, National Cancer Institute, National Institutes of Health, Bethesda, MD, 5Department of Physics, University of Maryland, College Park, MD

Chemotaxis and Directed Cell Migration

B667/P3377 Proper actin network architecture enforces polarization during cell migration. B.R. Graziano1, A. Díez-Muñoz2, O.D. Weiner1; 1Cardiovascular Research Institute, UCSF, San Francisco, CA, 2Cell Biology and Biophysics, EMBL, Heidelberg, Germany

B668/P3378 ARF1 recruits RAC1 with mutually dependent regulatory circuits in neutrophil chemotaxis. Y. Mazaki1, Y. Onodera1, T. Higashi1, T. Horinouchi1, T. Oikawa1, H. Sabe1; 1Department of Cellular Pharmacology, Graduate School of Medicine, Hokkaido University, Sapporo, Japan, 2Department of Molecular Biology, Graduate School of Medicine, Hokkaido University, Sapporo, Japan
B674/P3384 Cytoskeletal dynamics during wound reepithelialization in vivo. A.S. Kennard4, J.A. Theriot1,2,3,4,5,6,7,8; 1Biophysics Program, Stanford University, Stanford, CA, 2Howard Hughes Medical Institute, Stanford University, Stanford, CA, 3Biochemistry, Stanford University, Stanford, CA

B675/P3385 Electric Fields Coalesce Lipid Raft and Caveolae to Direct Cell Migration. B. Lin1, S. Tsao2, A. Chen2, S. Hu2, L. Chao2, P. Chao2; 1Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan, 2Chemical Engineering, National Taiwan University, Taipei, Taiwan

B676/P3386 Directed Schwann cell migration can be guided by extracellular mechanical gradients. E.B. Evans1, S.W. Brady1, A. Tripathi1,2, D. Hoffman-Kim1; 1Department of Molecular Pharmacology, Physiology, Biotechnology, Brown University, Providence, RI, 2Center for Biomedical Engineering, Brown University, Providence, RI

B677/P3387 Plasma membrane PI(4,5)P2 levels regulate chemotactic signaling pathways and actin networks in Dictyostelium. N.S. Bawazir1, M. Beshay1, A. Ring1, C. Janetopoulos1; 1Biological Sciences, University of the Sciences, Philadelphia, PA

B678/P3388 Inter-species repression of light-dependent photoreponses in diatoms. S.A. Cohn1, M. Lynam1; 1Biological Sciences, DePaul University, Chicago, IL

B679/P3389 Stability on the edge: probing the biophysical mechanisms of polarity maintenance in motile cells. R.M. Garner1, E. Koslover2, A.J. Spakowitz1,2,3,4, J.A. Theriot5,6,7,8; 1Biophysics Program, Stanford University, Stanford, CA, 2Howard Hughes Medical Institute, Stanford University, Stanford, CA, 3Department of Physics, University of California San Diego, San Diego, CA, 4Department of Chemical Engineering, Stanford University, Stanford, CA, 5Department of Applied Physics, Stanford University, Stanford, CA, 6Department of Materials Science and Engineering, Stanford University, Stanford, CA, 7Department of Biochemistry, Stanford University, Stanford, CA, 8Howard Hughes Medical Institute, Stanford University, Stanford, CA

B680/P3390 Cellular decision-making in symmetric directional dilemmas. A. Hadjithodorou1,2,3, J. Jorgensen1, F. Elliott1, D. Irinia1, J.A. Theriot4,5,6; 1Howard Hughes Medical Institute, Stanford, CA, 2Bioengineering, Stanford University, School of Medicine, Stanford, CA, 3Biochemistry, Stanford University, School of Medicine, Stanford, CA, 4Surgery, BioMEMS Resource Center, Massachusetts General Hospital, Harvard Medical School, Boston, MA

B681/P3391 Regulation of Haptotaxis via Dynamic Lamellipodia. S.J. King1, S.L. Craig1, S.B. Asokan1, S.P. Zimmerman1, J.D. Rotty1, B.M. Stramer2, M. Parsons2, J.E. Bear1; 1Lineberger Comprehensive Cancer Center, The University of North Carolina at Chapel Hill, Chapel Hill, NC, 2Randall Division of Cell and Molecular Biophysics, King’s College London, London, United Kingdom

B682/P3392 PI(3,4,5)P2, a new player in chemotaxis? X. Li1, P.N. Devreotes1; 1Department of Cell Biology, The Johns Hopkins University School of Medicine, Baltimore, MD

Integrins and Cell-ECM Interactions 2

B684/P3393 The Role of Integrin-dependent Paracrine Signaling from Keratinocytes in Regulating Myofibroblast Differentiation. R. Zheng1, W.M. Longmate1, J. Kenney1, C.M. DiPersio1, L. Van De Water1; 1Regenerative & Cancer Cell Biology, Albany Medical College, Albany, NY

B685/P3394 Interplay between cell-cell and cell-extracellular matrix forces regulate myocardial proliferation in the heart. C. Zhang1, G.L. Radice1, S. Emms1,2; 1Center for Translational Medicine, Thomas Jefferson University, Philadelphia, PA, 2Biology Department, Haverford College, Haverford, PA

B686/P3395 Laminin S21 Enhances the Expansion and Engraftment of Mouse Satellite Cell-Derived Myoblasts. P.R. August1, C. Penton1, M.J. Pincus1; 1Discovery Biology, ICAGEN, Inc, Tucson, AZ

B687/P3396 The role of ovo5 integrin αvβ5 expression in recognition of cerebellar granule cell precursors. A. Abe1,2, K. Hashimoto1,2,3, A. Akiyama2, Y. Miyamoto1,2, Y. Hayashi1; 1Human Life Innovation, Ochanomizu University University, Tokyo, Japan, 2Research Fellow DC-2, JSPS, Tokyo, Japan, 3Life Science, Asahikawa Medical University, Hokkaido, Japan

B688/P3397 The planar cell polarity protein VanGl2 regulates cell-extracellular matrix interactions underlying proper membrane protrusive activity. T.N. Jessen1, A. Love1, J.R. Jessen1; 1Biology, Middle Tennessee State University, Murfreesboro, TN

B689/P3398 Integrin αvβ3 and α6β1 cross-talk of dermal fibroblasts on integrin specific peptide polysaccharide matrix. K. Hozumi1, S. Enomoto1, Y. Taranishi1, F. Katagiri1, Y. Kikkawa1, M. Nomizu1; 1Sch Medicine, Tokyo Univ Pharm Life Sci, Hachioji, Japan

B690/P3399 DDesmoplastic ECM induces aberrant active α5β1 integrin endocytosis to sustain a pro-pancreatic cancer desmoplastic stroma phenotype. J. Franco-Barrera1, T. Luong1, N. Shah1, E. Cuikerman1; 1Cancer Biology, Fox Chase Cancer Center, Philadelphia, PA

B691/P3399 Fine mapping of fibrinogen central domain responsible for the binding to I domain of αXβ2 integrin. S. Nham1, O. Oh1; 1Div. Sci. Edu., Kangwon National University, Chuncheon, Korea, South

B692/P33901 Signaling through Glutamate receptors has a costimulatory effect on T cells. M. Prudente De Aquino1, T. Hodo2, A. Shanker3,4; 1Biochemistry and Cancer Biology, Meharry Medical College, Nashville, TN, 2Vanderbilt-Ingram Comprehensive Cancer Center, Vanderbilt University, Nashville, TN

B693/P33902 Genetic dissection of Cell-ECM adhesion in vivo using CRISPR/Cas9-mediated genome engineering of the Talin locus. D. Camp1, V. solyanova1, A.Q. Xu1, B. Goulit1, G. Tanentzapf1; 1Cephalic Physiological Sciences, University of British Columbia, Vancouver, BC, 2School of Biosciences, University of Kent, Canterbury, United Kingdom

B694/P3403 Mechanical and Signaling Roles for Keratin Intermediate Filaments in the Assembly and Morphogenesis of Mesendoderm Tissue at Gastrulation. P.R. Sonavane1, C. Wang2, B. Dzamba3, G.F. Weber4, A. Periasamy5, D.W. DeSimone1; 1Department of Cell Biology, University of Virginia, Charlottesville, VA, 2Physics Department, Central College, Pella, IA, 3Department of Biological Sciences, Rutgers University-Newark, Newark, NJ, 4Keck Center for Cellular Imaging, Department of Biology, University of Virginia, Charlottesville, VA

B695/P3404 Mechano-sensitive cadherin adhesion and its regulation. R. Koira1, A. Priest1, C. Yen1, S. Sivasankar1; 1Physics and Astronomy, Iowa State University, Ames, IA

B696/P3405 Mutations disrupting planar cell polarity alter Celsr1-mediated cell adhesion and dynamics. S.N. Stahley1, D. Devenport1; 1Molecular Biology, Princeton University, Princeton, NJ

B697/P3406 Organization of E-cadherin on the cell surface of A431 cells. J. Choi1, C. Chen1, I. Indra1, R. Troyanovsky1, S.M. Troyanovsky1; 1Dermatology, Northwestern University, Feinberg School of Medicine, Chicago, IL

B698/P3407 The role of cadherin compensation during adhesions junction assembly and maintenance in MDCK cells. B.G. Auye1, A.J. Rodriguez1; 1Biological Sciences, Rutgers University Newark, Newark, NJ

B699/P3408 Branched actin networks at endothelial adhesions junctions push against each other to maintain cadherin transinteraction. N. Efimova1, T.M. Svitkina1; 1Biology, University of Pennsylvania, Philadelphia, PA

Cadherins and Cell-Cell Interactions

B695/P3404 Mechano-sensitive cadherin adhesion and its regulation. R. Koira1, A. Priest1, C. Yen1, S. Sivasankar1; 1Physics and Astronomy, Iowa State University, Ames, IA

B696/P3405 Mutations disrupting planar cell polarity alter Celsr1-mediated cell adhesion and dynamics. S.N. Stahley1, D. Devenport1; 1Molecular Biology, Princeton University, Princeton, NJ

B697/P3406 Organization of E-cadherin on the cell surface of A431 cells. J. Choi1, C. Chen1, I. Indra1, R. Troyanovsky1, S.M. Troyanovsky1; 1Dermatology, Northwestern University, Feinberg School of Medicine, Chicago, IL
B700/P3409 Essential Role of Obscurin Kinase Domain-1 in Cardiac Cell Adhesion and Communication by Regulating the Phosphorylation of N-Cadherin. L. Wang1, R. Hu2, Y. Yankaskas2, K. Konstantopoulos2, A. Kontogianni-Konstantopoulos1; 1Biochemistry and Molecular Biology, University of Maryland School of Medicine, Baltimore, MD, 2Chemical and Biomolecular Engineering, Johns Hopkins University, Baltimore, MD

B701/P3410 Barrier enhancing function of Src and VE cadherin phosphorylation in endothelial cells revealed by synthetic biology approach. J. Kolmc1, R. Rebialc1, V. Huyotc1, K.B. Collins1, A.B. Malik1, A.V. Karginov1; 1Department of Pharmacology, University of Illinois at Chicago, Chicago, IL

B702/P3411 E-cadherin is recruited by the pathogen Enteropathogenic Escherichia coli and binds the Tir:intimin complex. F.H. Login1, H.H. Jensen1,2, G.A. Pedersen1, M.R. Amiev1, L.N. Nejsum1,4; 1Department of Clinical Medicine, Aarhus University, Aarhus, Denmark, 2Department of Molecular Biology and Genetics, Aarhus University, Aarhus, Denmark, 4Department of Microbiology and Immunology Department of Pediatrics, Stanford University, Stanford, United States, 2Interdisciplinary Nanoscience Center, Aarhus University, Aarhus, Denmark

B703/P3412 Anillin dependent stabilization of Rho signaling at adherens junctions influences cell extrusion and collective cell migration. S. Budnar1, G. Gomez2, M. Naghobisadat1, K. Wee1, S. Gupta1, H. Kambe1, S. Verma1, N. Hamilton1, Z. Neufeld1, A.S. Yap1; 1Cell Biology and Molecular Medicine, Institute of Molecular Bioscience, The University of Queensland, Brisbane, Australia, 2Center for Cancer Biology, The University of South Australia, Adelaide, Australia, 3School of Mathematics and Physics, The University of Queensland, Brisbane, Australia

B704/P3413 A non-canonical Notch signaling complex regulates adherens junctions and endothelial barrier function. M.L. Kulys1,2, W.J. Polacheck1, J. Yang1, J. Eyckmans1,2, Y. Wu3, K.K. Hirsch3, C.S. Chen1,2; 1Biomedical Engineering, Boston University, Boston, MA, 2Wyss Institute for Biologically Inspired Engineering, Harvard University, Boston, MA, 3Cardiovascular Research Center, Yale University, New Haven, CT

B705/P3414 Dissecting the function of classical cadherins in stratified epithelial morphogenesis. C. Patino Descovich1, K.J. Lough2, D. Spitzer2, M. Mac2, S.E. Williams2; 1Cell Biology and Physiology, University of North Carolina at Chapel Hill, Chapel Hill, NC, 2Pathology. Laboratory Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC

B706/P3415 Adherens Junction Components Regulate Mitotic Spindle Orientation in Embryonic Epidermis. K.J. Lough1, K.M. Byrd2, C. Patino-Descovich3, D.C. Spitzer1, A.J. Bergman4, S.E. Williams2; 1Genetics and Molecular Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC, 2Oral Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC, 3Cell Biology and Physiology, University of North Carolina at Chapel Hill, Chapel Hill, NC, 4Pathology and Lab Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC

B707/P3416 Cardiomyocytes Assemble Force-Resilient Adherens Junctions through Vinculin and Afadin. C.D. Merkel1, Y. Li1, Q.S. Raza1, R.M. O'Dowd1, A.V. Kwiatkowski1; 1Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

B708/P3417 Talin is related to cadherin-mediated cell-cell adhesions through its direct-binding domains to catenins. D.M. Patel1, W.M. Morgan1, F. Zhang1; 1Molecular & Cellular Pharmacology, University of Miami, Miami, FL

B709/P3418 E-cadherin mediated homotypic cell–cell interaction confers cytokine independence in human erythroblasts. S. Chakappalli1, M.C. Morris1, Z. Barati1, V. Cheriyath1; 1Biological and Environmental Sciences, Texas AM University–Commerce, Commerce, TX

B710/P3419 Analysis of biological networks with biomimetic microsystem platforms. M.Y. Sun1, K.J. Kruse1, J. Kolm1, F. Huang1, P.N. Kanabar2, M. Maienschein-Cline2; 1Pharmacology, University of Illinois at Chicago College of Medicine, Chicago, IL, 2Research Resources Center, University of Illinois at Chicago, Chicago, IL

B711/P3420 Differential Recruitment of Afadin and EPLIN to E-cadherin Adhesions. V. Maruthamuthu1, S. Chatterji1, S. Mhatre1,2,3; 1Mechanical & Aerospace Engineering, Old Dominion University, Norfolk, VA

B712/P3421 Septins regulate VE-cadherin – mediated junctional integrity of human endothelial monolayers. J. Kim1, J. Cooper1; 1Biochemistry and Molecular Biophysics, Washington University St. Louis, St. Louis, MO

B713/P3422 The interplay of WAVE-dependent branched actin and Cadherin junction components promotes Cadherin trafficking and junctional maturation. S. Sasidharan1, S. Borinskaya1, M. Soto1; 1Department of Pathology, RWJMS-Rutgers University, Piscataway Township, NJ

B714/P3423 VE-PTP Scaffold Function in Adherens Junction Stabilization. V. Juettner1, Y. Komarova1, D.E. Leckband1, A. Dan2; 1Pharmacology, University of Illinois at Chicago, Chicago, IL, 2Chemistry, University of Illinois at Urbana-Champaign, Urbana, IL

B715/P3424 TRIP6 inhibits the Hippo signaling pathway in response to tension at adherens junctions. S. Dutta1, S. Mana-Capelli1, I. Dasgupta1, D. McCollum1; 1Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School, Worcester, MA

B716/P3425 Alpha-T-catenin N-terminus functions with the M-region to regulate vinculin binding. J.A. Heier1, S. Pokutta2, B. Weis2, A.V. Kwiatkowski1; 1Dept. of Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA, 2Dept. of Structural Biology, Stanford University, Stanford, CA

B717/P3426 Evolutionary Rate Covariance (ERC) analysis identifies regulators of intercellular adhesion in Drosophila. Q.S. Raza1, R. O’Dowd1, Y. Hong1, N.L. Clark2, A.V. Kwiatkowski1; 1Dept. of Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA, 2Dept. of Computational Systems Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

B718/P3427 Identification of cardiomyocyte adhesion complexes by proximity proteomics. Y. Li1, C.D. Merkel1, X. Zeng2, N. Yates1, A.V. Kwiatkowski1; 1Dept. of Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

Bioengineering of Cell-Matrix Interactions

B719/P3428 Three-dimensional modeling of metastatic breast cancer dormancy using tunable PEG-based hydrogels. S. Pradhan1, J.H. Slater1; 1Department of Biomedical Engineering, University of Delaware, Newark, DE

B720/P3429 Matrix malleability regulates cancer cell migration through confining microenvironments. K.M. Wisdom1, K. Adebowale2, R. Desai1, L. Hodgson1, O. Chaudhuri1; 1Mechanical Engineering, Stanford University, Stanford, CA, 2Chemical Engineering, Stanford University, Stanford, CA, 3School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, 4Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY

B721/P3430 Synergistic regulation of skeletal muscle maturation with sphingosine-1-phosphate and biomimetic matrix nanotopography. J.H. Tsui1, K. Janebodin1,2,3, N. Ieronimakis1,2,3, D.M. Yama1, H.S. Yang1,5, R. Chavanachat1, H. Lee6, M. Reyes6,7, D.H. Kim1; 1Bioengineering, University of Washington, Seattle, WA, 2Anatomy, Mahidol University, Bangkok, Thailand, 3Pathology, University of Washington, Seattle, WA, 4Clinical Investigation, Madigan Army Medical Center, Tacoma, WA, 5Nanobiomedical Science, Dankook University, Cheonan, Korea, 6Chemistry, KAIST, Daejeon, Korea, 7Pathology, Albert Einstein College of Medicine, Bronx, NY
B722/P3431 A contractile hoop stress aids in balancing sudden hydrostatic pressure perturbation in a tubular epithelium. D. Maley1, S.X. Sun1,2, Y. Chen1; Chemical and Biomolecular Engineering, Johns Hopkins University, Baltimore, MD; Mechanical Engineering, Johns Hopkins University, Baltimore, MD

B723/P3432 T is for Tension: Micropatterns, Machine Learning, and the Role of the Microenvironment in Mesoderm Induction. N.D. Rochman1, Q. Smith1, A.M. Carmo1, D.K. Vig1, S.X. Sun1, S. Gerecht1; Chemical and Biomolecular Engineering, The Johns Hopkins University, Baltimore, MD

B724/P3433 Plasticity in cell migratory modes on orthotropic fiber architectures. A. Jana1, J. Singh1, L. Singh1, A. Franco2, B. Behkam1; Department of Mechanical Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA; Department of Biomedical Engineering and Mechanics, Virginia Polytechnic Institute and State University, Blacksburg, VA; Department of Physiology and Biophysics, University of Arkansas for Medical Sciences, Little Rock, AR

B725/P3434 Penetrability of Prostate Tumor Cells Grown in 3D Culture by Prostate Targeting Agents. T.C. Anderson1, E.A. Pattie1, N.A. Omar1, N.M. Rasid1, J. Fung1, R.L. Walden1, F. Griessel1, I.M. Evans1; GSOLS, Rochester Institute of Technology, Rochester, NY

B726/P3435 Cell-cell adhesion and myosin activity controls the curvature-dependent cortical actin assembly in mammmary gland epithelium. W. Jung1, K. Elawad1, S.H. Kang1, Y. Chen1; Mechanical Engineering, Johns Hopkins University, Baltimore, MD

B727/P3436 Maskless Quantitative Multi-protein Photopatterning to orchestrate cellular microenvironment. L. Bonnemay1, M. Opitz1, J. Ruauud1, N. Ziane1, P. Strale1; ALVEOLE, Paris, France

B728/P3437 New approach to forming embryoid bodies of ES cells by using Low Adhesive Scaffold Collagen. S. Kunii1, Y. Ohnuki1, K. Morimoto2; Genetic Engineering, Kindai University, Kinokawa, Japan; Biotechnology, University of Yamanashi, Kofu, Japan

B729/P3438 Active wetting of epithelial tissues. C. Pérez-González1,2, R. Alert1, C. Blanch-Mercader1, M. Gomez-González2, T. Kolodziej3, E. Bazellierres2, J. Casademunt1, X. Trepat1,2,2,4; University of Barcelona, Barcelona, Spain; Institute for Bioengineering of Catalonia, Barcelona, Spain; Jagiellonian University, Krakow, Poland; Instituto Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain; Investigación Biomédica en Red en Bioingeniería, Biomateriales y Nanomedicina, Madrid, Spain

B730/P3439 Developing Tunable Bioink for Versatile 3D Bioprinting. K. Elawad1, W. Jung1, S.H. Kang1, Y. Chen1; Materials Science and Engineering, Johns Hopkins University, Baltimore, MD; Mechanical Engineering, Johns Hopkins University, Baltimore, MD

B731/P3440 Extracellular matrix dimensionality reduces cellular cortical tension to stimulate Arf6/Rac/p38 pro-survival signaling in mammmary epithelial cells. F. Kai1, G. Oui1, J. Friedland1, C. Frantz1, R. Tourdot1, W. Guo2, C. Schi1, R. Radhakrishnan1, A. Long1, S. Dumont1, V.M. Weaver1,2,3,9; Department of Surgery, University of California, San Francisco, San Francisco, CA; Bioengineering, University of California, Berkeley, Berkeley, CA; Biology, University of Pennsylvania, Philadelphia, PA; Biomedical Engineering, Boston University, Boston, MA; Bioengineering, University of Pennsylvania, Philadelphia, PA; Chemical and Biomolecular Engineering, University of Pennsylvania, Philadelphia, PA; Department of Cellular and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA; Anatomy and Biome engineering and Therapeutic Sciences, University of California, San Francisco, San Francisco, CA; Helen Diller Comprehensive Cancer Center, University of California, San Francisco, San Francisco, CA; Eli and Edythe Broad Center of Regeneration Medicine and Stem Cell Research, University of California, San Francisco, San Francisco, CA

B732/P3441 PC3 cells deterministic immobilization on biocombinically-patterned slides by micro-contact printing - Effect of the patterns shapes, size and pitch. M. Schneider1, J. Chevrel1, J. Cau1, A. Lagrueule1, E. Trévisiol2, M. Blatche1, C. Vieu1,6, 5INOPSYS Inc., Chicago, IL, 2INOPSYS, Carbone, France, 3LAAS, CNRS, Toulouse, France, 4Université de Toulouse, Toulouse, France, 5INSA, Toulouse, France, 6LAAS, Biosoft-CNRS, Toulouse, France

B733/P3442 Programmable viscoelastic matrices from artificial proteins. L.J. Dooling1; D.A. Tilrell1; Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA

B734/P3443 Chaperones, Protein Folding, and Quality Control 2

B735/P3443 Subcellular localization, uptake and dynamics of inorganic polyphosphate in mammalian cells. L. Xie1, U. Jakob1; Molecular, Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI

B736/P3444 Exploring compartment-specific protein disaggregates to combat neurodegenerative diseases. R.R. Cupo1, J. Shorter1; Pharmacology Graduate Group, University of Pennsylvania, Philadelphia, PA; Department of Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA

B737/P3445 Small HSP αB-Crystallin is a hydrolyzed eggshell membrane-response chaperone and keeps hydration of epidermis keratinocyte through the interaction of lipid membrane regulator-acid sphingomyelinase. Y. Atomi1, M. Shimizu1, E. Fujita1, A. Tomi1, T. Mizutani2, J. Masaki1, Y. Hasebe1; Material Health Science, Tokyo university of agriculture and technology, Tokyo, Japan; Bioscience and biotechnology, University of Technology, Tokyo, Japan; Almado Inc., Tokyo, Japan

B738/P3446 Endoplasmic reticulum morphology serves as predictor for stress severity. L. Wünsche1, A.R. Nair1, K.C. Sadler1; Biology Department, New York University Abu Dhabi, Abu Dhabi, United Arab Emirates

B739/P3447 Suppressing Aβ toxicity with potentiated Hsp104 variants in a yeast model of Alzheimer’s disease. S. Sudesh1, K.L. Mack1, J. Stillman1, E. Griffin2, K.A. Caldwell2, F. Kai1, A. Shorter1; Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA; Biological Sciences, University of Alabama, Tuscaloosa, AL

B740/P3448 Engineering Potentiated Hsp70 Variants to Combat Neurodegeneration. I. Subudhi1, J. Ramirez1, J. Shorter1; Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA

B741/P3449 The Ribosome-Associated Complex Suppresses [PSI+] Prion Formation in Yeast. C. Kelly1, T. Tessitore1, J. Taddeo1, D.M. Cameron1; Department of Biology, Ursinus College, Collegeville, PA

B742/P3450 INMAD: Mechanisms for Protein Quality Control at the Inner Nuclear Membrane. B.A. Koch1, H. Yu1; Biology, Florida State University, Tallahassee, FL

B743/P3451 Induced protein unfolding uncovers a Golgi-specific stress response. Y.V. Serebrenik1, D. Hellerschied1, M. Toure1, F. Lopez2, D. Brookner1, C.M. Crews1; Molecular, Cellular Developmental Biology, Yale University, New Haven, CT; Yale Center for Genome Analysis, Yale University, New Haven, CT

B744/P3452 Unfolding of a Golgi-localized Protein Identifies Important Protein Quality Control Mechanisms in the Early Secretory Pathway. D. Hellerschied1, Y.V. Serebrenik1, C.M. Crews1,2; Department of Molecular, Cellular and Developmental Biology, Yale University, New Haven, CT; Department of Chemistry, Yale University, New Haven, CT; Department of Pharmacology, Yale University, New Haven, CT

B745/P3453 Modulation of calreticulin expression reveals a novel mechanism of Z variant alpha-1 Antitrypsin disposal. N. Khodayari1, Y. Lu1, K. Krotova1, M. Brantly1; Medicine, University of Florida, Gainesville, FL
B746/P3454 Redox modification of the Hsp70 nucleotide exchange factor. E.E. Nicklow, C.S. Sevier; Molecular Medicine, Cornell University, Ithaca, NY

B747/P3455 The ASNA-1/ENPL-1 redox sensitive complex modulates C. elegans insulin secretion. A. Podrazal, B. Natarajan, D. Robakowska, G. Kao, P. Naredi; Sahlgrenska Cancer Center, Gothenburg University, Gothenburg, Sweden

B748/P3456 Amyloids as the natural protein storage reservoirs. K.S. Antonets, S.F. Kliver, A.O. Kosolapova, M.V. Belousov, M.E. Belousova, O.Y. Shtark; Genetics and Biotechnology, St. Petersburg State University, St. Petersburg, Russia, Proteomics of Supra-Organismal Systems, All-Russia Institute for Agricultural Microbiology, St. Petersburg, Russia

B749/P3457 Broader perspectives of secretory pathway quality control revealed through the study of misfolded GPI-anchored proteins. B.S. Park, C. Bi, K. Budharaju, P. Satpute-Krishnan; Thomas Jefferson High School for Science and Technology, Alexandria, VA, Biochemistry and Molecular Biology, Uniformed Services University, Bethesda, MD

B750/P3458 Prions may act as the gain-of-function mutations. A.A. Nizhnikov, K.S. Antonets, S.F. Kliver, D.E. Polev, A.R. Shuvalova, E.A. Andreeva; S.G. Inge-Vechtomov; Proteomics of Supra-Organismal Systems, All-Russia Research Institute for Agricultural Microbiology, St. Petersburg, Russia, Genetics and Biotechnology, St. Petersburg State University, St. Petersburg, Russia

B751/P3459 Rapid heat-shock response depends on intracellular pH. C.G. Triandafillou, A.R. Dinnen, D.A. Drummond; Biophysical Sciences Graduate Program, University of Chicago, Chicago, IL, James Frank Institute, University of Chicago, Chicago, IL, Biochemistry and Molecular Biology, University of Chicago, Chicago, IL

B752/P3460 Translation of heat shock proteins is regulated by poly(A)-binding protein assembly. C.D. Katanski, J.A. Riback, E. Pilipenko, D.A. Drummond; Biochemistry and Molecular Biology, University of Chicago, Chicago, IL

B753/P3461 Differential impact of several PD-associated genes on the toxicity associated with wild-type and familial mutant forms of α-synuclein in a yeast model. P. Jones, E. Ong, A. Balaram; A. Biel, C. Mwale, M. Tembo, S. DebBurman; Neuroscience Program and Biology Department, Lake Forest College, Lake Forest, IL

B754/P3462 The Saccharomyces cerevisiae SUMO-targeted ubiquitin ligase subunit Six5 reduces the toxicity and transcriptional activity of poly-Q expanded huntingtin. J.L. Peek, N. Pasupala, G. Driessnack-Sclar, R. Levy-Myers, K. Ohkuni, M.A. Basrai, O. Kerscher; Biology, The College of William Mary, Williamsburg, VA, Biophysics and Biophysical Chemistry, The Johns Hopkins School of Medicine, Baltimore, MD, Genetics Branch, NCI/CCG, Bethesda, MD

B755/P3463 Functions of TPR Containing Proteins in the Endoplasmic Reticulum. J. Bradley-Graham, J. Sunryd; Biochemistry and Molecular Biology, University of Massachusetts, Amherst, Amherst, MA

**Regulation of Aging**

B756/P3464 Molecular insights into life span through changes in tRNA export and transcription activation. C.L. Lord, S.R. Wentz; Cell and Developmental Biology, Vanderbilt University School of Medicine, Nashville, TN

B757/P3465 IRBIT links nucleotide metabolism to aging in the gut. A. Arnaoutov, K. Plevock Haase, M. Serpe, M. Dasso; Division of Molecular and Cellular Biology, National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD, Section on Cellular Communication, National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD

B758/P3466 Jabeticaba extract prevents inflammation and hormonal imbalance in the prostatic microenvironment of high-fat-feeding mice. C.A. Lamas, L.A. Kido, E. Nogueira-Pangrazii, C. Collares-Buzato, M. Maróstica Jr, V.H. Cagnon; Department of Structural ans Functional Biology, University of Campinas, Campinas, Brazil, Department of Biochemistry and Tissue Biology, University of Campinas, Campinas, Brazil

B759/P3467 Proteopathic proteins have characteristic phase behaviors. J. Wu, R. Halfmann; Stowers Institute for Medical Research, Kansas city, MO, Molecular and Integrative Physiology, University of Kansas Medical Center, Kansas City, KS

B760/P3468 Increasing glucose uptake suppresses age-dependent reductions in ATP levels in brain neurons and behavioral deficits in Drosophila. M. Oka, E. Suzuki, H. Imamura, S. Hisanaga, K.M. Iijima, K. Ando; Department of Biological Sciences, Tokyo Metropolitan University, Tokyo, Japan, Structural Biology Center, National Institute of Genetics, Shizukuoka, Japan, Department of Genetics, The Graduate University for Advanced Studies (SOKENDAI), Mishima, Japan, Department of Functional Biology, Kyoto University, Kyoto, Japan, Department of Alzheimer’s Disease Research, National Center for Geriatrics and Gerontology, Obu, Japan, Department of Experimental Gerontology, Nagoya City University, Nagoya, Japan

B761/P3469 Role of sphingolipid enzymes in the regulation of stress response and aging through detoxification protein pathways. C.I. Meyer, A. Nolan, J. Brown; Biology, Juniata College, Huntingdon, PA

B762/P3470 Sphingolipid metabolism affects maintenance of locomotion and neuromuscular function in aged C. elegans. C.W. Wentz, S. Chuh, J.P. Chan; Biology, Juniata College, Huntingdon, PA

B763/P3471 Poly(ADP-ribose) (PAR) promotes TDP-43 liquid droplet formation but reduces TDP-43 aggregation. E. Gomes, L. McGurk, L. Guo, N.M. Bonini, J. Shorter; Biochemistry and Molecular Biophysics, University of Pennsylvania, Philadelphia, PA, Biology, University of Pennsylvania, Philadelphia, PA

B764/P3472 Young blood serum increased cellular response associated to wound healing in old rats. M. Caceres Lluch, M. Sadlias, C. Fernandez, V. Foili, O. Cerda; Molecular and cellular program, Universidad de Chile, Santiago, Chile

B765/P3473 Alcohol causes a defect in telomere homeostasis. Q. Zhu, J. Park, W. Belden; Department of Animal Sciences, Rutgers, The State University of New Jersey, New Brunswick, NJ

B766/P3474 Functions of CLIC proteins in heat stress in C. elegans. J. Liang, C. Guerrerò, H. Wang; Science, Borough of Manhattan Community College, New York, NY

B767/P3475 Human Dermal Stem Progenitor Cell-derived Conditioned Medium Ameliorates Ultraviolet A-induced Damage of Normal Human Epidermal Keratinocytes. J. Shim; Faculty of cosmetics and biotechnology, Semyung Univ., Jecheon, South Korea

B768/P3476 Crataegus pinnatifida extract increases lifespan of Drosophila melanogaster. D. Jung, J. Shim; Korea Food Research Institute, Jeonju, Korea, South

**Chemical Cell Biology**

B770/P3477 Probing mitochondrial dynamics and heterogeneity during cell state switching using multiplexed, environment-sensitive fluorescent dyes. S.O. Raja, G. Sivaraman, A. Mukherjee, S. Kataria, C. Jamora, A. Gulyani; Technology for Advancement of Science, Institute for Stem Cell Biology Regenerative Medicine, Bengaluru, India
B771/P3478 Discovery and development of novel antifungal compounds from marine endophytic fungal sources. E.J. Blesl1, P.K. Arthur2, 1West African Center for Cell Biology of Infectious Pathogens, Department of Biochemistry, Cell and Molecular Biology, P.O BOX LG 54 Legon, UNIVERSITY OF GHAHA, ACCRA, Ghana, 2West African center for Cell Biology of infectious Pathogens, Department of Biochemistry, Cell and Molecular Biology, P.O Box LG 54 Legon, UNIVERSITY OF GHANA, ACCRA, Ghana

B772/P3479 Remodeling and Visualizing Bacterial Peptidoglycan to Understand Crohn’s Disease. C.L. Grimes1, 2K. DeMeester3, H. Liang4, Z. Jones5, 1Biological Sciences, University of Delaware, Newark, DE, 2Chemistry and Biochemistry, University of Delaware, Newark, DE

B773/P3480 Exploration of a novel cyclic peptide that senses lipid-packing defects. H. Hirose6, H. Suga7, 1Department of Chemistry, Graduate School of Science, The University of Tokyo, Tokyo, Japan

B774/P3481 Study of the purinosome in HeLa cells and Caenorhabditis elegans model systems. O. Souckova8, V. Barsovova9, V. Skopova10, M. Krijt11, M. Krijt11, O. Souckova11, 1Institute of Inherited Metabolic Disorders, First Faculty of Medicine, Charles University, Prague, Czech Republic

B775/P3482 Bioorthogonal fluorescent probe for molecular imaging of cancer aggressiveness. H. Erkan12, D. Telci13, O. Dilek14, 1Biology Technology, Yeditepe University, Istanbul, Turkey, 2Biochemistry, Husson College and Life Sciences, Hachioji, Japan

B776/P3483 Structure-activity relationship study for α-dystroglycan binding peptide AZG80 derived from mouse laminin α2 chain sequence. F. Kalagiri15, Y. Fukasawa15, J. Kumai15, K. Hozumi15, Y. Kikkawa15, M. Nomizu15, 1Department of Clinical Biochemistry, Tokyo University of Pharmacy and Life Sciences, Hachioji, Japan

B777/P3484 Inhibition of osteoclast formation and function by EW33. J. Lee16, G. Lee16, Y. Jo16, S. Hong16, H. Lee16, N. Kim17, M. Kwon18, H. Son19, E. Seo20, W. Jeong21, 1Life science and the Research Center for Cellular Homeostasis, EWHA Womans University, SEOUL, Korea, South, 2College of pharmacy, EWHA Womans University, SEOUL, Korea, South

B778/P3485 EW17 inhibits osteoclastogenesis and attenuates the migration and resorption of osteoclasts. H. Lee16, G. Lee16, Y. Jo16, S. Hong16, J. Lee16, N. Kim17, M. Kwon18, H. Son19, E. Seo20, W. Jeong21, 1Life science and the Research Center for Cellular Homeostasis, EWHA Womans University, seoul, Korea, South, 2College of Pharmacy, EWHA Womans University, Seoul, Korea, South

B779/P3486 Synthesis, Characterization and Toxicity Studies of Gold Nanoparticles. H.N. Khan22, A.N. Sabri22, 1Microbiology and Molecular Genetics, University of the Punjab, Lahore, Pakistan

B780/P3487 Purification of an exceptionally resilient and long-lived orange fluorescent protein from the Gulf anemone Calliactis tricolor. K.M. Hart1, R. Lawson1, D. Boggi1, H. Flurry2, K. Heibert3, A.G. Moss1, 1Biological Sciences, Auburn University, Auburn, AL

B781/P3488 A chemical-genetic toggle switch for phenotypic events applied to PilK signaling. J.M. Johnson4, 2Q. Drane1, 2M.E. Burkard1, 1Department of Medicine, Hematology/Oncology Division, University of Wisconsin-Madison, Madison, WI, 2University of Wisconsin Carbone Cancer Center, University of Wisconsin-Madison, Madison, WI

B782/P3489 Development of protein tools to study receptor clustering on cell membrane. D. Song1, Y. JUNG2, 1Chemistry, KAIST (Korea Advanced Institute of Science and Technology), DAEJEON, South Korea

B783/P3490 Synthesis, Characterization and Superoxide Dismutase-like Activity of Novel Cu(II), Ni(II), Co(II), and Zn(II) Complexes with 11H-Indeno[1,2-b]quinolin-11-one Oxime Ligand. A.I. Khlebikov1, 2A.A. Schepetkin2, 3N.P. Chernova, 4G.A. Ananikova1, 4A.S. Potapov1, 4A. Datchon1, 4Biotechnology of and Organic Chemistry, Tomsk Polytechnic University, Tomsk, Russia, 5Department of Chemistry, Altai State Technical University, Barnaul, Russia, 6Department of Microbiology and Immunology, Montana State University, Bozeman, MT, 7RASA Center in Tomsk, Tomsk Polytechnic University, Tomsk, Russia, 8Cardiovascular Research Center, Massachusetts General Hospital, Charlestown, MA

B784/P3491 Development of a new photo-stable fluorescence probe for detecting biomolecule carbonylation in live mammalian cells. S. Ghosh1, K. Mukherjee2, D.L. Sackett3, S.L. Bane4, 1Chemistry, State University of New York at Binghamton, Binghamton, NY, 2Department of Genetics, Medical School, Boston, MA, 3Laboratory of Integrative and Medical Biophysics, Program in Physical Biology, Eunice Kennedy Shriver National Institute of Child Health and Human Development, Bethesda, MD

B785/P3492 Polymeric Particles for the Control Release of Bioactive Molecules to PC12 Cells. P.M. Gehret1, R. Hoff2, L.P. Kelly3, W.H. Suh2, 1Biomedical Engineering, Temple University, Philadelphia, PA

B786/P3493 Cholic Acid Conjugation as a Tool for Enhancing Intracellular Delivery of Linker-Extended Constructs. R. Bhadoria1, K. Ping1, P. Starkov1, 1Department of Chemistry & Biotechnology, Tallinn University of Technology, 12618, Estonia

B787/P3494 Identification of natural compounds that alter myoblast cell cycle kinetics. J.N. Kidrick1, S.E. Johnson1, 1Animal and Poultry Sciences, Virginia Polytechnic Institute and State University, Blacksburg, VA

B788/P3495 Research in the molecular mechanism of coagulation activity of sulfur-containing monoterpenoids of pinaceae series. Z.R. Azizova1, S.V. Kiselev2, L.E. Nikitina3, V.A. Srartseva2, V.V. Klokchikov1, 1Genetics and Organic Chemistry Department, Kazan State Medical University, Kazan, Russia, 2Institute of Biochemistry and Physiology Department, Kazan State Medical University, Kazan, Russia, 3Institute of Physics, Kazan Federal University, Kazan, Russia

Tissue Development and Morphogenesis 3

B790/P3496 Src oxidation directs cell polarity to promote rapid embryonic wound healing. M.V. Hunter1, 2L. Wosczyk1, 3L. P. Laprise1, 4R. Fernandez-Gonzalez1, 5K. Kelly1, 6T. Jeong1, 7D. Sackett3, 8S. L. Sackett2, 1Department of Biochemistry, University of Toronto, Toronto, ON, 2Ted Rogers Centre for Heart Research, University of Toronto, Toronto, ON, 3Centre de Recherche sur le Cancer, Université Laval, Quebec, QC, 4Oncology, Centre de Recherche du CHU de Québec - Université Laval, Quebec, QC, 5Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, 6Developmental and Stem Cell Biology Program, Hospital for Sick Children, Toronto, ON

B791/P3497 Actomyosin-based basal protrusions drive long range lateral inhibition via dynamic cell-cell contacts during epithelial tissue patterning. G.L. Hunter1, 2L. He1, N. Perrimon1, 1Department of Genetics, Massachusetts General Hospital, Boston, MA, 2Chemical and Physical Biology, Princeton University, Princeton, NJ

B792/P3498 Erk-dependent control of epithelial morphogenesis. H.E. Johnson1, 2S.Y. Shvartsman1, 3J.E. Toettcher1, 1Molecular Biology, Princeton University, Princeton, NJ, 2Chemical and Biological Engineering, Princeton University, Princeton, NJ, 3Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ

B793/P3499 Unraveling multiciliated ciliated epimembrane cell identity: Ubiquitin-proteasome and IKK2 control Foxj1 stability. K.M. Abd1, 1J. Pyun1, C.T. Kuo1, 1Department of Cell Biology, Duke University, Durham, NC

B794/P3500 Nopo, the Dro sophil a ortholog of the microcephalic primordial dwarfism gene TRAIP, encodes a centrosomal E3 ubiquitin ligase specifically required for mushroom body development. R.S. O’Neill1, B.J. Galletta1, C.J. Fagerstrom1, N.M. Rusan1, 1Cell Biology and Physiology Center, National Heart, Lung, and Blood Institute, Bethesda, MD
B795/P3501 Negative feedback loops protect stem cell progenitors’ identity and architecture during embryonic skin development. I. Matsos1, A. Asare1, J. Leworse2, E. Fuchs1; 1The Rockefeller University, New York, NY

B796/P3502 The interaction between calreticulin and Wnt/beta-catenin signaling induces hair follicle neogenesis. A. Tellechea1, S. Levental1, U.M. Panda1, C. Egbuta1, L.I. Gold2; 1Medicine and Pathology, New York University School of Medicine-Langone Medical Center, New York, NY

B797/P3503 Zebrafish models of RASopathies: the impact of PTPN11 mutations on early embryogenesis. V.L. Patterson1, S.Y. Shwartsman2, R.D. Burdine1; 1Molecular Biology, Princeton University, Princeton, NJ, 2Chemical and Biological Engineering, Princeton University, Princeton, NJ; 3Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ

B798/P3504 Interplay of ubiquitination and palmitylation in trafficking of Fat-Hippo signaling pathway components. J.R. Misra1, K.D. Irvine1; 1Waksman Institute, Rutgers University, Piscataway, NJ

B799/P3505 Fish scales dictate the pattern of adult skin innervation. J.P. Rasmussen1, N. Vo1, A. Sagasti2; 1Molecular, Cellular and Developmental Biology, University of California, Los Angeles, Los Angeles, CA

B800/P3506 Building a barrier: survival of the fittest in the developing skin. S. Ellis1, E. Fuchs3; 1Laboratory of Cell Biology and Genetics, The Rockefeller University, New York, NY

B801/P3507 Examining Carmili’s role in Kupfer’s vesicle morphogenesis and function. B.C. Stark1, L. Solnica-Krezel2, J.A. Cooper1; 1Biochemistry & Molecular Biophysics, Washington University School of Medicine, St. Louis, MO, 2Developmental Biology, Washington University School of Medicine, St. Louis, MO

B802/P3508 Distinct Signaling Roles for Type I Receptors Bmpr1 and Acvr1, and the Type II Receptors Bmpr2 and Acvr2 within the BMP Receptor Complex. B. Tajer1, M.C. Mullins1; 1Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B803/P3509 WITHDRAWN

B804/P3510 Caenorhabditis elegans BMP Signaling Determines Body Size Via Transcriptional Regulation of Collagen Genes. U. Madara1, E. Yezirai1, M. Meade1, C. Rushlow1, C. Savage-Dunn1; 1Biology, Queens College and the Graduate Center, Flushing, NY, 2Biology, New York University, New York, NY

B805/P3511 Determination of Novel BMP-Smad1/5 Signaling Interactions in Fibroblast Dysplasia Ossificans Progressiva. R. Allen1, M.C. Mullins1, E. Shore1; 1Developmental Stem cell and Regenerative Biology, University of Pennsylvania, Philadelphia, PA

B806/P3512 Expression pattern and potential role of placental Psg genes in sex-specific immune response during pregnancy. D. Jeong1, J. Lee1, M. Kim1; 1Anatomy Embryology, Yonsei University College of Medicine, Seoul, South Korea

B807/P3513 Role of HAND1 in collagen expression and post-translational modifications in the long bone. Y. Taga1, L.E. Laurie1, H. Kokubo2, Y. Saga3, M. Kusubata1, K. Ogawa-Goto1, S. Hattori1, N. Funato2,3, 4Nippon Research Institute of Biomatrix, Ibaraki, Japan, 5Department of Signal Gene Regulation, Tokyo Medical and Dental University (TMDU), Tokyo, Japan, 6Division of Mammalian Development, National Institute of Genetics, Shizuoka, Japan, 7Department of Cardiovascular Physiology and Medicine, Hiroshima University, Hiroshima, Japan; 8Department of Genetics, Graduate University for Advanced Studies, Shizuoka, Japan, 9Research Core, Tokyo Medical and Dental University (TMDU), Tokyo, Japan

B808/P3514 Tbx1 knockout mice exhibit dysregulated expression of genes associated with cleft palate in humans. N. Funato1,2, D. Srivastava3, H. Yanagisawa4; 1Department of Signal Gene Regulation, Tokyo Medical and Dental University (TMDU), Tokyo, Japan, 2Research Core, Tokyo Medical and Dental University (TMDU), Tokyo, Japan, 3Glade Institute of Cardiovascular Disease, University of California, San Francisco, CA, 4Life Science Center of Tsukuba Advanced Research Alliance, University of Tsukuba, Tsukuba, Japan

B809/P3515 Delineation of neuro-ontogenic mechanisms of schizophrenia using induced Pluripotent Stem Cells (iPScs). L. Bayona Chuye1, A. Dimitri1, S.T. Narla1, C. Benson1, S. Dhiman1, P. Sarder1, E.K. Stachowiak1, M.K. Stachowiak1; 1Pathology and Anatomical Sciences, State University of New York at Buffalo, Buffalo, NY

B810/P3516 The Formin, DIAPH1, Contributes to Epidermal Structure and Differentiation By Enabling Basal Keratinocyte Crowding. R.M. Harmon1, M.L. Gardel1; 1Institute of Biophysical Dynamics, University of Chicago, Chicago, IL

B811/P3517 Role of ROOT UVB SENSITIVE 1 in Vitamin D3 Homeostasis Modulation. N. O’Neill1, H. Tong1, C. Leasure1, S. Reveles Jr.1, Z. He1; 1Department of Biology, San Francisco State University, San Francisco, CA

B812/P3518 On the male disadvantage: generation and characterization of a male specific mouse model of bronchopulmonary dysplasia. G. Turcotel1,2, S. leguizamoni2, K. Millette3, C. Dinkel2, A. Shim2, M. Thornton4, A. Asif2, N. Noe2, H. Lee5, L. Bartolin6, B. Grubbs4, D. Warburton1,2, W. Shi1,2; 1Keck School of Medicine, University of Southern California, Los Angeles, CA, 2Surgery, Children’s Hospital of Los Angeles, Los Angeles, CA, 3Endo-Diabetes Obesity Program, Children’s Hospital of Los Angeles, Los Angeles, CA, 4Department of Obstetrics and Gynecology, Maternal-Fetal Medicine Division, Keck School of Medicine, University of Southern California, Los Angeles, CA, 5Biological Science Department, Biola University, La Mirada, CA, 6Centre de Recherche en Cancérologie de LYON, LYON, France

B813/P3519 Sox2 inhibits lef1 expression in the trailing zone to facilitate FGF-dependent neurormast formation. G.R. Palyard1, K. Yoo2, A.B. Chitnis1; 1Aquatic Models of Human Development, National Institute of Child Health and Human Development, Bethesda, MD, 2Department of Biology, Chungnam National University, Daejeon, Korea, South

B814/P3520 Low-level copper exposure causes neurodevelopmental and cardiac defects in the embryonic zebrafish. A. Shields1, K. Figueroa1, J. Pagnotta1, K. Michalak1, A.L. Dell1; 1Biology, St. Francis College, Brooklyn, NY, 2Neuroscience, Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA

B815/P3521 Endoderm Nitric Oxide Focally Elevated “Hotspots” at the Heart Forming Regions (HFRs) Signals in Early Cardiogenesis in Chicken Embryos. D. Shah1, W.F. Denetclaw1; 1Biology, San Francisco State University, San Francisco, CA

Cell Fate Determination

B816/P3522 Mechanical cues control alveolar epithelial cell differentiation. J. Li1, Z. Wang1, Q. Chu1, K. Jiang1, J. Li1, N. Tang1; 1National Institute of Biological Sciences, Beijing, Beijing, China

B817/P3523 Metalloprotease activity shapes BMP signaling output in the developing zebrafish embryo. F. Tazoun1, M. Mullins1; 1Cell & Developmental Biology, University of Pennsylvania, Philadelphia, PA

B818/P3524 Loss of function of Seven-In-Absentia (SINA) E3 ligase impedes proper RAS signaling and alters peripheral nervous system (PNS) development in Drosophila. R.E. Van Sciver1, Y. Cao1, A.U. Ahmed2, A.J. Tang3; 1Microbiology and Molecular Cell Biology, Eastern Virginia Medical School, Norfolk, VA, 2Department of Surgery, Mayo Clinic, Rochester, MN

B819/P3525 Different role of YAP1 during early and late stages of mesenchymal cells differentiation. B. Jung1, J. Kim1, D. Kim1, J. Sonn1; 1Biology, Kyungpook National University, Daegu, South Korea
B826/P3532 Cell fate under N-acyl dopamines control: to die or to differentiate? M.G. Akimov1, A.M. Ashiba1, N.M. Gretskaya1, V.V. Bezuglov2; Laboratory of Oxylignins, Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, RAS, Moscow, Russia

B827/P3533 The tumor suppressor Lkb1 controls cell fate through pyruvate-dehydrogenase transamination. A.G. RADU1, 2; S. Torch1, 2; F. Fauvelle1, P. Hainaut2, L. Larue3, C. Thibert1, 2; M. Billaud4, 5; 4co-first authors, Grenoble, France; 5Tumor molecular pathology and biomarkers, Institute for Advanced Biosciences, INSERM/UJF U1209, Grenoble, France.  

B828/P3534 High accuracy prediction of cell meiosis by measuring the expression of carbohydrate metabolism enzymes. Y. Liu1, E. Wood1, O. Miranda1, P. Kositangool1, A. Doncic1; 1cell biology, The University of Texas-Southwestern Medical Center, Dallas, TX

B829/P3535 A Collagen Based 3D Model of Pulmonary Fibrosis. B. Hindman1, Q. Ma1; 1Receptor Biology Laboratory, TMBB, HELD, National Institute of Occupational Safety and Health, Centers for Disease Control and Prevention, Morgantown, WV

B830/P3536 Understanding programming logic of motor neurons from differentiated and undifferentiated cells. G. Garipiler1, S.E. Vida1, M. Stadtfeld2, E.O. Mazzoni1; 1Department of Biology, New York University, New York, NY; 2The Helen L. and Martin S. Kimmel Center for Biology and Medicine, Skirball Institute of Biomolecular Medicine, Department of Cell Biology, NYU School of Medicine, New York, NY

Host-Pathogen/Host-Commensal Interactions 2

B832/P3537 Molecular mechanisms of steroid transfer in intracellular coral-algal symbiosis. E.A. Hambleton1, I. Maaele1, N. Becholdt1, A. Guse1; 1Centre for Organismal Studies, Heidelberg University, Heidelberg, Germany

B833/P3538 Type III interferon signaling affects Cryptosporidium parvum infection of human intestinal epithelial cells. A.R. Gibson1, 2; B. Strepien1, 2; A. Sateriale1; 1Centre for Tropical and Emerging Global Diseases, University of Georgia, Athens, GA; 2Cellular Biology, University of Georgia, Athens, GA

B834/P3539 A possible role for unconventional splicing enzymes in nonreplicative recombination of poliovirus. A.A. Shishova1; I. Dyugay1; 1biochemistry, Institute of Polymyelitis and Viral Encephalitis, Moscow, Russia

B835/P3540 Non-silencing miRNAs promotes autophagic virus degradation by inhibiting retroviral Gag assembly. N. Qu1, C.J. Krueger1, 2; A.K. Chen1; 1Department of Biomedical Engineering, College of Engineering, Peking University, Beijing, China; 2Wallace H Coulter Department of Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA

B836/P3541 Fulcin-like immunoreactivity in Biophimala glabrata, an intermediate host for schistosomiasis. M.W. Miller1, A. Hernandez Vazquez2, M.B. Rodriguez1, S. Rolon1, L.O. Vaasjo1, P. Mendez de Jesus1, M. Rosa Casillas1; 1Institute of Neurobiology, University of Puerto Rico Medical Sciences Campus, San Juan, PR

B837/P3542 Identification of inflammatory biomarkers in dengue disease severity in eastern India. A. Patro1, B. Prusty1, S. Gaikwad2, D. Singh1, S. Mohanty2, B. Das3, B. Ravindran1; 1Infectious Disease Biology Group, Institute of Life Sciences, Bhubaneswar, India; 2Medicine, SCB Medical College, Cuttack, India

B838/P3543 The pathogenic yeast, Cryptococcus neoformans, alters the transcriptome of host macrophages. L.M. Siric1, K.D. Cunningham2, R.L. Seipel-Thiennmann1, E.E. McClelland1, D.E. Nelson1; 1Biology, Middle Tennessee State University, Murfreesboro, TN; 2Chemistry, Middle Tennessee State University, Murfreesboro, TN

B839/P3544 Role of Viperin Interaction with Human Cytomegalovirus Tegument Protein pp28 in Virion Assembly. J. Lee1, H. Jeon1, J. Seo1; 1Severance Biomedical Science Institute, Brain Korea 21 PLUS Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea, South

B840/P3545 Computational analyses of the ExoS protein, a component of Sinorhizobium meliloti ExoR-ExoS/Chvl pathway. E. Wiech1, H. Cheng2, S.M. Singh1; 1Biology, Brooklyn College, City University of New York, Brooklyn, NY; 2Biological Sciences, Lehman College, City University of New York, Bronx, NY

B841/P3546 SERINC5 Inhibits HIV-1 Fusion Pore Formation by Promoting Functional Inactivation of Env Glycoproteins. M. Marin1; C. Sood1, A. Chance2, M. Pizzato2, G.B. Melikian1, 2; 1Pediatrics, Emory University, Atlanta, GA; 2Centre for Integrative Biology, University of Trento, Trento, Italy; 3Children's Healthcare of Atlanta, Atlanta, GA

Board No./Presentation No. TUESDAY Poster Session
**B842/P3547 Behavioral Response of Caenorhabditis elegans with Pseudomonas aeruginosa Infection Controlled by Iron Variables.** Q.N. Robinson1, P.E. McFarlane1, J.A. Jordan1, 1Department of Biology, Clayton State University, Morrow, GA

**B843/P3548 Multiple Epstein-Barr viral microRNAs downregulate human NF-kB pathway transcripts.** L. Parsley1, D. Kolakada2, K. Riley1, 1Department of Chemistry, Rollins College, Winter Park, FL, 2InnImmunology Microbiology, University of Colorado Denver, Denver, CO

**B844/P3549 Adhesion of Providencia stuartii onto Cultured Bladder Epithelial Cells.** N. Kurmasheva1, M. Sharipova1, A. Mardanova1, 1Institute of Fundamental Medicine and Biology, Kazan (Volga region) Federal University, Kazan, Russia

**B845/P3550 Viperin exerts antiviral function against Junin mammarenavirus at different subcellular localizations.** M.L. Morell1, J.R. Peña Cárccamo1, C.A. Vázquez2, S. Vatansweer1, A.S. Upadhyay1, A.K. Overby1, S.M. Coro1, C.C. Garcia1, 1Biochemistry Department, Antiviral Strategies Laboratory, School of Sciences-University of Buenos Aires, Buenos Aires, Argentina, 2Graduate School of Science and Engineering, Koc University, Istanbul, Turkey

**B850/P3554 Analysis of fusion-related genes in ethanol-treated C2C12 muscle cells.** M.E. Boyle1, C. Brough1, O.M. Kleibasa1, 1Biological Program, Department of Science and Mathematics, Alvernia University, Reading, PA

**B851/P3555 SNP analysis of a mixed population reveals associations with osteoarthritis.** H. Xia1, T. Hua1, J.L. Myers2, M.Y. Caballero1, J. Park1, S. Valtier2, G.J. Chaudry1, 1Center for Advanced Molecular Detection, 59 Medical Wing, San Antonio, TX, 2Medicine, University of Texas Health Science Center, San Antonio, TX, 3Science and Technology, 59 Medical Wing, San Antonio, TX

**B852/P3556 Cell Size and Nuclear Scaling Relationships in Multinucleated Muscle Fibers.** S.E. Windner1, A. Manhart2, 1Biochemistry and Biophysics, Memorial Sloan Kettering Cancer Center, New York, NY, 2Courant Institute, New York University, New York, NY

**B853/P3557 Genes Differentially Expressed During Reversion of Androgen-Dependent Skeletal Muscle Atrophy.** M.D. Gomes1, F.A. Flavia A. Guarnier2, 1Biochemistry and Immunology, Rollins College, Winter Park, FL, 2Department of Immunology, Ribeirão Preto Medical School, University of São Paulo, Ribeirao Preto, Brazil, 3Laboratory of Pathophysiology and Muscle Adaptation, State University of Londrina, Londrina, Brazil, 4Pharmacology, Escola Paulista de Medicina, Universidade Federal de São Paulo, Sao Paulo, Brazil

**B854/P3558 High throughput screening to identify mechanisms regulating endothelial fatty acid uptake.** A. Ibrahim1, Z.P. Arany1, 1Cardiovascular Institute, University of Pennsylvania, Philadelphia, PA

**B855/P3559 Determining the role of endothelial Notch signaling in vascular regeneration in the mouse hindlimb ischemia model.** J. Hyun1, K. Pacjinski1, A.B. Malik1, 1Pharmacology, University of Illinois at Chicago, Chicago, IL

**B856/P3560 Optogenetic stimulation of pericytes lacking alpha smooth muscle actin produces a decrease in capillary blood flow in the living mouse brain.** D.A. Hartmann1, R.I. Grant1, S.A. Harrill1,2, T. Noonan1,2, A.Y. Shih1, 1Neuroscience Program, Department of Medicine, Chicago, IL, 2Department of Neurology, Ajou University School of Medicine, Suwon, Korea, South

**B857/P3561 The necroptosis machinery in normal gut development, and in the pathogenesis of neonatal necrotizingenterocolitis (NEC).** A.D. Werts1, 1α (HIF-1α). The necroptosis machinery, 2University of Pennsylvania, Philadelphia, PA

**B858/P3562 Levels of CSF amyloid-β 40 and 42 are decreased in amyloid PET (-) normal pressure hydrocephalus patients.** Y. Kim1, H. Kim1, T. Kim1, T. Yim1, J. Chang2, 1Department of Biomedical Sciences, Ajou University School of Medicine, Suwon, Korea, South, 2Department of Neurology, Ajou University School of Medicine, Suwon, Korea, South

**B859/P3563 Control of high-fat-diet induced obesity by the mouse mSeg1 salivary protein.** M. Hu1, Y. Bai1, J. Wang1, Z. Yang2, S. Ye1, J. Chen1, J. Peng1, 1college of animal science, Zhejiang University, HangZhou, China, 2Model Animal Research Center, Nanjing Biomedical Research Institute, Nanjing University, HangZhou, China, 3Life Sciences Institute, Zhejiang University, HangZhou, China

**B860/P3564 Intermittent hypoxia induces inflammation in 3T3-L1 adipocytes by stabilization of hypoxia-inducible factor 1α (HIF-1α).** J.S. Poblete1,2, M. Alghothani1, S. Bao1, U.J. Magalan1,2,3, 1Davis Heart and Lung Research Institute, The Ohio State University Wexner Medical Center, Columbus, OH, 2College of Medicine, University of the Philippines Manila, Manila, Philippines, 3Division of Pulmonary, Allergy, Critical Care and Sleep, Department of Internal Medicine, The Ohio State University Wexner Medical Center, Columbus, OH, 4Department of Neuroscience, The Neurological Institute, The Ohio State University Wexner Medical Center, Columbus, OH

**B861/P3565 Mapping renal molecular signatures identifies unique cellular and matrix targets within the mammalian kidney.** H.H. Ward1,2, J.M. Young1,2, V.J. Yao1,2, M. Caro Vila1,2, J.S. Uzarski1, J.A. Wertheim1,2,3, W. Ara1,2, R. Pasqualini1,2, A. Wandsinger-Ness1,1, 1Comprehensive Cancer Center, University of New Mexico, Albuquerque, NM, 2Internal Medicine, University of New Mexico, Albuquerque, NM, 3Molecular Genetics Microbiology, University of New Mexico, Albuquerque, NM, 4Comprehensive Transplant Center, Northwestern University Feinberg School of Medicine, Chicago, IL, 5Department of Surgery, Jesse Brown VA Medical Center, Chicago, IL, 6Pathology, University of New Mexico, Albuquerque, NM

**B862/P3566 GENERATION OF AN EGFR ISOFORM D SPECIFIC KNOCKOUT MODEL.** N. Maithe1, S. Yee1, T. Ackley2, G. Gronowicz1, C. Dealy1, 1Georgia Cancer Center, Augusta University, Augusta, GA, 2Cell Biology, University of Connecticut Health Center, Farmington, CT, 3Pharmacy, University of Connecticut, Storrs, CT, 4Surgery, University of Connecticut Health Center, Farmington, CT, 5Reconstructive Sciences, University of Connecticut Health Center, Farmington, CT
Therapies: Design and Mechanisms for Normal and Diseased Organs 2

B863/P3567 Effects of rho-associated protein kinase inhibitor Y-27632 on scarring formation after glaucoma filtration surgery. J. Ko1, D.G. Ibrahim1, Y. Kiuchi1; 1Ophthalmology, Hiroshima University, Hiroshima, Japan

B864/P3568 Metformin ameliorates progressive nephritis in a mouse model of Alport syndrome. S. Kaseda1,2, K. Omachi1,2, K. Teramoto1,2, H. Kojima2, M. Suido1, T. Shuto1, S. Otsuki1, H. Kai1,2; 1Leading program HIGO, Kumamoto University, Kumamoto, Japan, 2Molecular Medicine, Kumamoto University, Kumamoto, Japan, 3Pharmaceutical Microbiology, Kumamoto University, Kumamoto, Japan

B865/P3569 Beneficial effect of midazolam against vascular endothelial growth factor-induced vascular leakage in the retinas of diabetic mice. J. Lee1, Y. Lee1, H. Jeon1, Y. Kim1, K. Ha1; 1Molecular and Cellular Biochemistry, Kangwon national university school of medicine, Chuncheon, South Korea

B866/P3570 Protective effects of chrysian on visual cycle impairment in diabetic retina. M. Kang1; 1Food Science and Nutrition, Hallym University, Chuncheon, South Korea

B867/P3571 Protective effect of cysteamine against vascular leakage by inhibiting VEGF-induced transglutaminase activation in diabetic mice. Y. Lee1, J. Lee1, H. Jeon1, K. Ha1, Y. Kim1; molecular and cellular biochemistry, kangwon national universit school of medicine, chucheon, South Korea

B868/P3572 Chrysian inhibits advanced glycation end products-associated glomerulosclerosis in glucose-exposed mesangial cells and db/db mice. L. Eun Jung1, Y. Kang1; 1Food Science and Nutrition, Hallym University, Chuncheon, South Korea

B869/P3573 Uprregulation of glucose uptake by (+) lariicesinol, a lignan isolated from Rubia philippinensis, through the activation of AKT and AMPK/GLUT4 pathway in C2C12 cells. J. Ra1, H. An1, J. Lim1, S. Lee1; 1Food Science and Biotechnology, Kyungpook National University, Daegu, South Korea

B870/P3574 Uprregulation of the GLUT4 expression by Spaltholbus suberectus extracts via the activation of AMPK and AKT signaling and mitigates the type II diabetic symptoms. P. Zhao1, M. Alam1, M. Ju1, K.Y. Gyung1, S. Lee1, H. Kim1, S. Lee1; 1Food Science and Biotechnology, Kyungpook National University, Daegu, South Korea

B871/P3575 WITHDRAWN

B872/P3576 Increased C-reactive protein (CRP) by placenta-derived mesenchymal stem cells is involved in angiogenesis and Wnt signaling pathway in hepatic failure model. J. Jun1, J. Choi2, J.J. Kim1, S. Bae1, S. Hwang1; 1Biomedical Science, CHA University, Seongnam-si, South Korea, 2Dermatology, Northwestern University, Chicago, IL, 3Internal Medicine, Catholic University Medical College, Seoul, South Korea, 4Internal Medicine, CHA University, Seongnam-si, South Korea

B873/P3577 Hypoxic preconditioned human bone marrow-derived mesenchymal stromal cell therapy in a rat model of renal ischemia-reperfusion injury. M. Jung1, D. You1, J. Park2, K. Kim2, N. Suh2, H. Shin1, Y. Kim1, C. Kim1; Life Sciences, Asan Medical Center, Seoul, South Korea, 2Ulology, Asan Medical Center, Seoul, South Korea, 3Pharmaceutical Engineering, Soon Chun Hyang University, Chunghnam, South Korea, 4Reseach, Pharmicell Co.Ltd, Gyeonggi, South Korea

B874/P3578 Efficacy analysis of functional enhancement human mesenchymal stem cells depends on gene delivery systems. J.J. Kim1, J. Choi2, S. Lee2, S. Jin1, J. Jun1, G. Kim1; 1Department of Biomedical Science, CHA University, Seongnam-si, South Korea, 2Department of Dermatology, Northwestern University, Chicago, IL, 3Department of Oral Pathology, Gangneung-Wonju National University, Gangneung-si, South Korea

B875/P3579 Attenuation of UVB-induced skin senescence by Nypa fruticans bud extract: involvement of the suppression of MMP activity through downregulation of NF-κB & AP1 signaling via the activation of MAP kinase. H. Choi1, H. Son1, C. Jeong1, H. Lee1, S. Lee1; 1Food Science and Biotechnology, Kyungpook National University, Daegu, South Korea

B876/P3580 Mushroom anti-tyrosinase activities of Nymphaea nouchali flower extract attenuates melanogenesis in vitro and in vivo: involvement of CAMP/p- CREB, MAPKinase and proteosomal degradation machinery. M. ALAM1; 1Food Science and Biotechnology, Kyungpook National University, Daegu, South Korea

B877/P3581 Attenuation of melanogenesis by jineol through the activation of MAP-Kinase mediated suppression of MITF and its downregulating proteins and the proteosomal degradation of tyrosinase. Y. Cha1, M. ALAM1, P. Zhao1, J. Byeon1, S. Lee1; 1Food Science and Biotechnology, Kyungpook National University, Daegu, South Korea

B878/P3582 Cytoprotective properties of triphenylphosphonium derivatives of oligopeptide. R. Akhmadishina1, R. Garifullin1, M. Kamalov1, T. Abdullin1; 1Institute of Fundamental Medicine and Biology, Kazan Federal University, Kazan, Russia

B879/P3583 Jabuticaba peel extract favors the recovery of fertility and antioxidant activity in the testicle of high-fat-fed aging mice. L. Cuquetto-Leite1, C.A. Lamas1, C. Collares-Buzato2, M. Maróstica Jr1, C.B. Cazarin1, V.H. Gagnon1, M.H. Dolder1; 1Department of Structural and Functional Biology, University of Campinas, Campinas, Brazil, 2Department of Biochemistry and Tissue Biology, University of Campinas, Campinas, Brazil, 3Department of Food and Nutrition, Faculty of Food Engineering, University of Campinas, Campinas, Brazil

B880/P3584 Zebrafish modeling defines complex innate immune mechanisms in sepsis and repetitive intestinal injury. L. Chuang1, N. Hsu1, P. Labrias1, S. Nayar2, J. Facey1, K. Gettier1, N. Villaverde1, G. Boschet1, M.A. Mucci1, E. Chen1, M. Gei1, Y. Sharma1, M. Merad1, J. Chu1; 1Department of Genetics and Genomic Sciences., Icahn School of Medicine at Mount Sinai, NEW YORK, NY, 2Department of Genetics, Yale University, NEW HAVEN, CT, 3Department of Oncological Sciences, Icahn School of Medicine at Mount Sinai, NEW YORK, NY, 4Department of Pediatrics and Mindich Institute for Child Health, Icahn School of Medicine at Mount Sinai, NEW YORK, NY

B881/P3585 Hepatocyte exosomes are anti-fibrotic in the liver. L. Chen1, R. Chen1, S. Kemper1, D.R. Bristock1,2; 1Nationwide Children’s Hospital, Columbus, OH, 2The Ohio State University, Columbus, OH

B882/P3586 Gomisin N inhibits an early stage of adipogenesis in 3T3-L1 preadipocytes. M. Jung1; 1School of Korean Medicine, Pusan National University, Yangsan, South Korea

B883/P3587 Shockwaves decrease PPARgamma and suppress adipocyte differentiation. W. Cho1, M. Jeong1, Y. Park1; 1Molecular Medicine, Ewha Womans University Medical School, Seoul, South Korea
These numbers refer to the presentation numbers (not the board numbers) for each poster. Oral Presentation Authors are listed in the Program.
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Join us at THE international forum for cell and molecular biology

Jodi Nunnari, 2018 ASCB President
Program Co-chairs:
Samara Reck-Peterson and
Thomas Langer

San Diego Convention Center
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New in 2018 for ASCB Members!

ASCB Public Engagement Grants...

up to $35K per grant available

Have a bold idea for science outreach in your community?

ASCB can help you make it happen. In addition to funding, support will include mentoring and evaluation assistance, as well as networking opportunities with other science communicators.

Applications will be open January-March, 2018, at ascb.org/public-engagement-grants

Start planning now.

Funded by Science Sandbox, an initiative of the Simons Foundation