ASCB | EMBO
2017 meeting
Dec. 2-6, 2017 | Philadelphia, PA

CONTENTS

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.

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-B820	Tissue Development and Morphogenesis 1
B822-B841	Prokaryotic Cell Biology
B842-B855	Protists and Parasites
B857-B884	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 1

B1/P1001 **Biomedical postdocs: Salaries and population in the US.** A. Bankston[1], C. Pickett[2], G.S. McDowell[1,3]; [1]Future of Research, Abington, MA, [2]Rescuing Biomedical Research, Princeton, NJ, [3]Manylabs, San Francisco, CA

B2/P1002 **Outcomes From a Novel Online Course, Planning Your Scientific Journey.** A.M. Schnoes[1,2], S. Behrman[1,2], N. Griffin[1,2], D. McQuillen[1], E. Kirschner[1], E. Cohon[1], N. Green[1,3], S. Goodwin[1], R.D. Vale[1,2,4]; [1]iBiology, San Francisco, CA, [2]Cellular and Molecular Pharmacology, University of California San Francisco, San Francisco, CA, [3]Green Scientific and Educational Consulting, Oakland, CA, [4]Howard Hughes Medical Institute, Ashburn, VA

B3/P1003 **Providing resources and strategies to enhance career training for junior scientists.** A. Bankston[1], G.S. McDowell[1,2]; [1]Future of Research, Boston, MA, [2]Manylabs, 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. Borinskaya[1], H. Menon[2], S.M. Quartuccio[3]; [1]Pathology, Rutgers University, Piscataway, NJ, [2]Cell Biology and Neuroscience, Rutgers University, Piscataway, NJ, [3]Department 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. Wick[1], A.J. Prunuske[2], M.J. Wolyniak[3], M. Peifer[4]; [1]Biology Teaching Learning, University of Minnesota--Twin Cities, Minneapolis, MN, [2]Medical College of Wisconsin, Wausau, WI, [3]Biology, Hampden-Sydney College, Hampden-Sydney, VA, [4]Biology, 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. Murphy[1], E.M. Konieczko[2]; [1]University of Rochester, Rochester, NY, [2]Gannon 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. Wolyniak[1], A.J. Prunuske[2], K.K. Resendes[3]; [1]Biology, Hampden-Sydney College, Hampden-Sydney, VA, [2]Basic Sciences, Medical College of Wisconsin, Wausau, WI, [3]Biology, Westminster College, New Wilmington, PA

B8/P1008 **It's a small world: a cell biology outreach program for young learners.** E. Garcia[1], A. Osimani[1], M. Lunde[1], N. Baudoin[1], M. Rosenzweig[1], D. Cimini[1]; [1]Biological Sciences, Virginia Tech, Blacksburg, VA

B9/P1009 **Share your expertise and enthusiasm with teachers: Organize a workshop to build cheap, homemade microscopes.** B. Goldstein[1], K. Yoshino[2]; [1]Biology Department, UNC Chapel Hill, Chapel Hill, NC, [2]-, Hamilton, NY

B10/P1010 **Citizen scientists detect pathogens associated with tick-borne illnesses in Ixodes scapularis.** J.S. Alegria-Berrocal[1], M. Alhalal[1], C.N. Fisher[2], R. Ragland[3], J. van Westrienen[3], A.J. Prunuske[4]; [1]Biology, University of Wisconsin-Stevens Point, Stevens Point, WI, [2]University of Minnesota- Duluth, Duluth, MN, [3]Biomeme, Philadelphia, PA, [4]Microbiology 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. Hall[1]; [1]Biology, Bucknell University, Lewisburg, PA

B12/P1012 **The yeast orphan gene project: Undergraduates finding a place for ORFans to GO.** M.J. Wolyniak[1], J.B. Keeney[2], E.D. Strome[3]; [1]Biology, Hampden-Sydney College, Hampden-Sydney, VA, [2]Biology, Juniata College, Huntingdon, PA, [3]Biological 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. Drace[1], V.K. Gibbs[1], M.L. Styers[1], P.K. Hanson[1]; [1]Biology, Birmingham-Southern College, Birmingham, AL

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

B15/P1015 **CUREs for Everyone: Introductory Biology Lab Course Converted to Research Experience.** D.M. Thurtle-Schmidt[1], M. Prudencio[1], T.T. Eckdahl[2], A.M. Campbell[1]; [1]Biology, Davidson College, Davidson, NC, [2]Biology, 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. Dasgupta[1], K.A. Marrs[1], J. Marrs[1]; [1]office 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-Tolliver[1]; [1]Biological Sciences, Hampton University, Hampton, VA

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

B19/P1019 **A Peer-Led Team Learning Strategy for Course-based Undergraduate Research in General Biology.** M. Van Stry[1], U. Ugwu[1], K. Samuels[1], A. Gayle[1], T. Gladney[1], J. Smith-Levi[1], I. Tasie[1], D. Sklensky[1]; [1]Biology, Lane College, Jackson, TN

B20/P1020 **Assessment of *Mapping the Brain*, a research and neurotechnology based approach for the modern neuroscience classroom.** S.D. Robertson[1], Z.A. Johnson[1], N.R. Sciolino[2], N.W. Plummer[2], P. Jensen[2]; [1]Biotechnology Program, Department of Molecular Biomedical Sciences, North Carolina State University, Raleigh, NC, [2]Neurobiology 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. Goudsouzian[1], P. Riola[2], K. Ruggles[2], P. Gupta[2], M.A. Mondoux[3]; [1]Natural Science, DeSales University, Center Valley, PA, [2]Mathematics and Computer Science, DeSales University, Center Valley, PA, [3]Biology, College of the Holy Cross, Worcester, MA

B22/P1022 **Fine-tuning summer research programs to increase underrepresented students' scientific identity.** M. Ghee[1], M. Keels[2], C.N. Spence[3], E. Baker[4], E.B. Evans[1], C. Poston[1]; [1]The Leadership Alliance, Brown University, Providence, RI, [2]Department of Comparative Human Development, University of Chicago, Chicago, IL, [3]Department of Sociology, Spelman College, Atlanta, GA, [4]Meyerhoff 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. Dahlberg[1], S.R. Lee[1], B. Wiggins[2], H. Jordt[2], L. Lily[2], D.S. Leaf[1]; [1]Biology, Western Washington University, Bellingham, WA, [2]Biology, University of Washington, Seattle, WA

B24/P1024 **Design-based and Interdisciplinary Strategies for Learning in Laboratory Sciences.** J. Fornsaglio[1], Z. Sheffler[1], D. Hull[2], A. Bobak[1]; [1]Biology, Seton Hill University, Greensburg, PA, [2]Greensburg Central Catholic High School, Greensburg, PA

B25/P1025 **Inquiry-based cell culture course improves student conceptual and practical understanding of biomedical research.** A. Krufka[1], M. Dittmar[1], G.J. Eaton[1], C. Iftode[2]; [1]Department of Biological Sciences, Rowan University, Glassboro, NJ, [2]Department of Molecular and Cellular Biosciences, Rowan University, Glassboro, NJ

B26/P1026 **Implementation and assessment of an intensive 7 week summer CURE designed for incoming freshmen.** G. Stein[1], H. Thieringer[2]; [1]McGraw Center for Teaching and Learning, Princeton University, Princeton, NJ, [2]Molecular Biology, Princeton University, Princeton, NJ

B27/P1027 **An Inquiry-Driven Optical Tweezer Experiment for Upper Division Physics Lab.** J.Y. Sheung[1], D.L. Nall[2], P.R. Selvin[2]; [1]Physics and Astronomy, Vassar College, Poughkeepsie, NY, [2]Physics, University of Illinois, Urbana, IL

B28/P1028 **A bioinformatics curriculum that teaches gene structure is associated with learning gains for beginning college students.** L.V. Paliulis[1], M.M. Laakso[2], M.S. Santisteban[3], S. Silver Key[4], R.C. Burgess[5], J.S. Sanford[6], A. Rosenwald[7], C.W. Bazinet[8], W. Leung[9], S.C. Elgin[9]; [1]Biology Department, Bucknell University, Lewisburg, PA, [2]Department of Biology, Eastern University, St. Davids, PA, [3]Biology Department, University of North Carolina at Pembroke, Pembroke, NC, [4]Biology Department, North Carolina Central University, Durham, NC, [5]Department of Biological Sciences, Stevenson University, Fine School of the Sciences, Stevenson, MD, [6]Department of Biological Allied Health Sciences, Ohio Northern University, Ada, OH, [7]Biology Department, Georgetown University, Washington, DC, [8]Department of Biological Sciences, St. John's University, Queens, NY, [9]Department of Biology, Washington University, St. Louis, MO

B29/P1029 **Bioinformatics Core Competencies for Undergraduate Life Scientists.** M. Wilson Sayres[1], E. Dinsdale[2], C. Hauser[3], W.R. Morgan[4], A. Rosenwald[5], M. Sierk[6], W. Tapprich[7], E. Triplett[8], M. Pauley[9]; [1]Life Sciences, Arizona State University, Tempe, AZ, [2]Biology, San Diego State University, San Diego, CA, [3]Biological Sciences, St. Edwards University, Austin, TX, [4]Biology, College of Wooster, Wooster, OH, [5]Biology, Georgetown University, Washington, DC, [6]Bioinformatics Program, St. Vincent College, Latrobe, PA, [7]Biology, University of Nebraska-Omaha, Omaha, NE, [8]Microbiology and Cell Science, University of Florida, Gainesville, FL, [9]School of Interdisciplinary Informatics, University of Nebraska-Omaha, Omaha, NE

B30/P1030 **Application of DNA Sequence Analysis Software in Undergraduate Biology Curriculum.** L. Kee[1], J. Pieczynski[2]; [1]Biology, Stetson University, Deland, FL, [2]Biology, Rollins College, Winter Park, FL

B31/P1031 **Incubators: A community based model for improving the usability of bioinformatics learning resources.** W.R. Morgan[1], S. Donovan[2], H.C. Orndorf[2], E.F. Ryder[3], M. Sierk[4], R.L. Wright[5], A. Rosenwald[6], E. Dinsdale[7], E. Triplett[8], M. Pauley[9], W. Tapprich[10]; [1]Biology, College of Wooster, Wooster, OH, [2]Biological Sciences, University of Pittsburgh, Pittsburgh, PA, [3]Biology Biotechnology, Worcester Polytechnic Institute, Worcester, MA, [4]Bioinformatics Program, Saint Vincent College, Latrobe, PA, [5]Biology Teaching and Learning, University of Minnesota, St. Paul, MN, [6]Biology, Georgetown University, Washington, DC, [7]Biology, San Diego State University, San Diego, CA, [8]Microbiology and Cell Science, University of Florida, Gainesville, FL, [9]Interdisciplinary Informatics, University of Nebraska, Omaha, NE, [10]Biology, University of Nebraska, Omaha, NE

B32/P1032 **New NIGMS Funding Opportunities: Collaborative Program Grants for Multidisciplinary Teams (RM1); Maximizing Investigators' Research Award (MIRA) (R35); Technology Development (R21, R01).** P.J. Sammak[1], K. Willis[1], S. Gregurick[1]; [1]National Institute of General Medical Sciences, National Institutes of Health, Bethesda, MD

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. Lohrer[1], D.M. Hanna[1], Y. Liu[2], G. Liu[2]; [1]Electrical and Computer Engineering, Oakland University, Rochester, MI, [2]Chemistry, University of California, Davis, Davis, CA

B35/P1034 **The comparison of 3D imaging methods of electron microscopy for phages.** T. Haruta[1], M. Suga[1], H. Matsushima[2], K. Hasumi[1], H. Nishioka[1]; [1]Application management department, JEOL Ltd., Akishima, Japan, [2]IB Application group, JEOL Ltd., Akishima, Japan

B36/P1035 **Unlocking the distribution of fluorescent-labeled albumin in zebrafish through correlative microscopy.** D. Cheng[1], M. Morsch[2], G. Shami[1], R. Chung[2], F. Braet[1,3]; [1]School of Medical Sciences, The University of Sydney, Sydney, Australia, [2]Faculty of Medicine and Health Sciences, Macquarie University, Sydney, Australia, [3]Sydney 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. Usukura[1], A. Narita[1], T. Matsumoto[1], E. Usukura[1], T. Sunaoshi[2], Y. Tamba[2], J. Azuma[2], Y. Nagakubo[2], T. MIzuo[2], M. Osumi[3], K. Nimura[2], R. Tamochi[2], Y. Ose[2]; [1]Graduate School of Science, Nagoya University, Nagoya, Japan, [2]Hitachi High-Technologies Corporation, Tokyo, Japan, [3]Japan Women's University, Tokyo, Japan

B38/P1037 **Graphene-oxide as a substrate for high-resolution single-particle cryo-EM.** E. Palovcak[1], F. Wang[1], D. Bulkley[1], S. Zheng[1,2], D.A. Agard[1,2], Y. Cheng[1,2]; [1]Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA, [2]Howard 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. Legant[1], E. Betzig[1]; [1]Howard Hughes Medical Institute, Ashburn, VA

B40/P1039 **A high resolution, tomography-compatible electron microscopic method for assessing subcellular distribution of membrane proteins.** R. Sengupta[1], S. Mattoo[1]; [1]Biology, Purdue University, West Lafayette, IN

B41/P1040 **Imaging Live Uterine Smooth Muscle Modulation.** B. Obayomi[1], S.M. Peck[1], D.P. Baluch[1]; [1]School of Life Sciences, Arizona State University, Tempe, AZ

B42/P1041 **LITE imaging: a high numerical aperture, low photobleaching fluorescence imaging technology.** T.C. Fadero[1], T.M. Gerbich[1], K. Rana[2], A. Suzuki[1], M. DiSalvo[3,4], K. Schaefer[1], J. Heppert[1], T.C. Boothby[2], B. Goldstein[1], M. Peifer[1], N.L. Allbritton[3,4], A.S. Gladfelter[1], A.S. Maddox[1], P.S. Maddox[1]; [1]Biology, UNC-Chapel Hill, Chapel Hill, NC, [2]Chemistry, UNC-Chapel Hill, Chapel Hill, NC, [3]Biomedical Engineering, North Carolina State University, Raleigh, NC, [4]Biomedical 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. Entenberg[1,2,3], Y. Wang[1,2,3], J. Pastoriza[4], M.H. Oktay[1,2,3,4], J.S. Condeelis[1,2,3]; [1]Department of Anatomy and Structural Biology, Einstein College of Medicine/ Montefiore Medical Center, Bronx, NY, [2]Gruss-Lipper Biophotonics Center, Einstein College of Medicine/ Montefiore Medical Center, Bronx, NY, [3]Integrated Imaging Program, Einstein College of Medicine/ Montefiore Medical Center, Bronx, NY, [4]Department 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 technique.** J. Woo[1,2], E. Lee[3], Y. Cho[1,2]; [1]The Spine and Spinal cord Institute, Department of Neurosurgery, Gangnam Severance Hospital, Yonsei University of Medicine, Seoul, South Korea, [2] Brain Korea 21 PLUS Project for Medical Science, Yonsei University, Seoul, South Korea, [3]College of Physicians and Surgeons, Columbia University, New York, NY

B45/P1044 **Detection of PI(3,4,5)P_3 on cellular endomembranes using fluorescence correlation spectroscopy.** M. Ebner[1,2], I. Yudushkin[1,2]; [1]Dept. of Medical Biochemistry, Medical University of Vienna, Vienna, Austria, [2]Dept. of Structural and Computational Biology, Max F. Perutz Laboratories, Vienna, Austria

SUNDAY

B46/P1045 **Methodology to uncover a 100-year-old mystery, how does ploidy affect cell volume?** R. Suman[1], A. Glen[1], R. Kasprowicz[1], P. O'Toole[2]; [1]Phasefocus Ltd, Sheffield, United Kingdom, [2]Technology Facility, The University of York, York, United Kingdom

B47/P1046 **Dual-Color Metal-Induced and Förster Resonance Energy Transfer for Cell Nanoscopy.** A.M. Chizhik[1], C. Wollnik[1], D. Ruhlandt[1], N. Karedla[1], A.I. Chizhik[1], D. Hähnel[1], I. . Gregor[1], J. Enderlein[1], F. Rehfeldt[1]; [1]3rd Institute of Physics - Biophysics, University of Göttingen, Göttingen, Germany

B48/P1047 **Hybrid phasor unmixing for hyperspectral fluorescence imaging.** H.R. Chiang[1,2], E.S. Koo[1,2], L.A. Trinh[1,3], J. Unruh[4], S.E. Fraser[1,2,3], F. Cutrale[1,2]; [1]Translational Imaging Center, University of Southern California, Los Angeles, CA, [2]Biomedical Engineering, University of Southern California, Los Angeles, CA, [3]Molecular and Computational Biology, University of Southern California, Los Angeles, CA, [4]Stowers Institute for Medical Research, Kansas City, MO

B49/P1048 **Enhancing visualization of hyperspectral data with Phasor-Maps.** W. Shi[1,2], E.S. Koo[1,2], L.A. Trinh[1,3], S.E. Fraser[1,2,3], F. Cutrale[1,3]; [1]University of Southern California, Translational Imaging Center, Los Angeles, CA, [2]University of Southern California, Department of Biomedical Engineering, Los Angeles, CA, [3]University 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. Thomas[1,2], H.R. Chiang[1,3], F. Cutrale[1,2], S.E. Fraser[1,2,3], L.A. Trinh[1,2]; [1]Translational Imaging Center, University of Southern California, Los Angeles, CA, [2]Molecular and Computational Biology Department, University of Southern California, Los Angeles, CA, [3]Biomedical Engineering, University of Southern California, Los Angeles, CA

B51/P1050 **Unraveling combinatorial labels in vivo with Voronoi Hyper-Spectral Phasor.** F. Cutrale[1,2], B. Steventon[3], M. Kitano[1,2], W. Shi[1,4], E.S. Koo[1,4], Y. . Chai[5], L.A. Trinh[1,2], S.E. Fraser[1,2,4]; [1]Translational Imaging Center, University of Southern California, Los Angeles, CA, [2]Molecular and Computational Biology, University of Southern California, Los Angeles, CA, [3]Department of Genetics, University of Cambridge, Cambridge, United Kingdom, [4]Biomedical Engineering Department, University of Southern California, Los Angeles, CA, [5]Center 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. Desai[1], C. Handelmann[1], K. Harikrishnan [1], B. Decker[1], A. Sangwan[1], P. Miao[2], M.K. Stachowiak[1], J. Jornet[2], L. Feng[2], Y. Bae[1]; [1]Pathology and Anatomical Sciences, State University of New York at Buffalo, Buffalo, NY, [2]Electrical Engineering, State University of New York at Buffalo, Buffalo, NY

B53/P1052 **Liquid Tunable Microscopy to study Chromatin-DNA.** A. Diaspro[1,2]; [1]Nanophysics, Istituto Italiano di Tecnologia, Genoa, Italy, [2]Physics, University of Genoa, Genoa, Italy

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

B54/P1053 **CRISPR/Cas 9 generated knockout cell lines for antibody screening and validation.** X. Hu[1], W. Zhang[2], H. Wei[1], J. Li[1], M. Liu[1], L.J. Fang[2]; [1]OriGene Technologies, Inc., Rockville, MD, [2]EdiGene Inc., Beijing, China

B55/P1054 **Pooled screening in an insect cell-line.** R. Viswanatha[1], Z. Li[1], Y. Hu[1], N. Perrimon[1]; [1]Genetics, Harvard Medical School, Boston, MA

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

B57/P1056 **Systematic gene tagging to illuminate stem cell organization.** R. Gunawardane[1]; [1]Allen Institute for Cell Science, Seattle, WA

B58/P1057 **Eyes in the cell: Visualizing active kinases using genetically encodable fluorescent biosensors.** A. Mukherjee[1,2], R. Singh[1], S. DilipKumar[1], P. Pothula[1], S. Udayan[1], R. Das[3], B. Rao[4], A. Gulyani[1]; [1]technology for the advancement of science, institute for stem cell biology and regenerative medicine, Bangalore, India, [2]school of chemical and biotechnology, SASTRA University, Thanjavur, India, [3]National Centre for Biological Sciences, Bangalore, India, [4]Department of Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC

B59/P1058 **Sensitive biosensor imaging based on membrane-permeant, environment-sensing dyes.** T. Watanabe[1], C.J. MacNevin[1], M. Weitzmann[1], A. Gulyani[1], S. Fuehrer[1], F. Liu[1], J. Jin[2], K.M. Hahn[1]; [1]Pharmacology and Lineberger Cancer Center, University of North Carolina at Chapel Hill, School of Medicine, Chapel Hill, NC, [2]Center 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. Yaginuma[1], Y. Okada[1]; [1]QBiC, RIKEN, Osaka, Japan

B61/P1060 **Tool-box of Fluorescent Biosensors for Visualizing Protein Kinase Activation Dynamics in Live Cells.** R. Singh[1], A. Mukherjee[1], P. Pothula[1], S.O. Raja[1], R. Das[2], B. Rao[3], A. Gulyani[1]; [1]Technologies for the Advancement of Science, Institute for Stem Cell Biology and Regenerative Medicine, BANGALURU, India, [2]Biochemistry, Biophysics and Bioinformatics, National Centre for Biological Sciences, BANGALURU, India, [3]Department 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'Shaughnessy[1], T.M. Jacobs[2], X. Ma[3], D. Tsygankov[4], B. Kuhlman[2], G. Danuser[3], K.M. Hahn[1]; [1]Department of Pharmacology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Department of Biochemistry and Biophysics, University of North Carolina at Chapel Hill, Chapel Hill, NC, [3]Department of Cell Biology, UT Southwestern Medical Center at Dallas, Dallas, TX, [4]Department 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. Lazar[1], D. Leippe[1], J. Vidugiriene[1]; [1]Promega Corporation, Madison, WI

B64/P1063 **Deep Cell: Deep Learning in Biological Image Analysis and Phenotypic Profiling.** J.J. Nirschl[1,2], A.S. Moore[1,2], E.L. Holzbaur[1]; [1]Department of Physiology, University of Pennsylvania, Perelman School of Medicine, Philadelphia, PA, [2]Neuroscience 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. Jones[1], C. Huang[1], H. Sasaki[1], T. Cheng[1], T. Sugawara[2], Y. Shi[2], J. Ichida[2], J.S. Lee[1]; [1]DRVision Technologies LLC, Bellevue, WA, [2]Eli 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. Jones[1], H. Sasaki[1], C. Huang[1], J.S. Lee[1]; [1]DRVision Technologies LLC, Bellevue, WA

B67/P1066 **Identification of genes involved in CAR-T therapy using CRISPR screening.** P. YUAN[1], F. WANG[1], M. JIN[1]; [1]Business Development Department, EdiGene Biotechnology Inc, Beijing, China

B68/P1067 **Potent transcriptional activation using CRISPRa and synthetic crRNA:tracrRNA.** E.T. Chou[1], Ž. Strezoska[1], E. Maksimova[1], M.M. Gross[1], M.L. Kelley[1], A. van Brabant Smith[1]; [1]Research and Development, Dharmacon, a Horizon Discovery Group company, Lafayette, CO

B69/P1068 **Establishing Ubiquitylation Patterns in Cells: Efficient Monitoring of Cancer Biomarkers and Drug Activity.** X. Lu[1], P.K. Foote[1], R. Singh[1], C. Song[1]; [1]LifeSensors, Malvern, PA

B70/P1069 **Genetic screens with improved design CRISPR/Cas9 sgRNA libraries.** A.A. Chenchik[1], M. Makhanov[1], S. Baron[1], P. Diehl[1], D. Sukhov[1], C. Frangou[1], D. Tedesco[1]; [1]Cellecta, Inc., Mountain View, CA

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[1], D. Asad[1,2], E.O. Amu[1], J.A. Yoder[1], K. Cheng[1,2]; [1]Molecular Biomedical Sciences, NC State University, Raleigh, NC, [2]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[1], A. Dahal[1], A. McFarland[1], B.M. Flowers[1,2], C.A. Stephens[1], A. Gugssa[3], W.A. Anderson[3], S.D. Hinton[1]; [1]Biology, College of William and Mary, Williamsburg, VA, [2]National Cancer Institute, National Institutes of Health, Bethesda, MD, [3]Biology, Howard University, Washington, DC

B74/P1072 **Evolutionarily Conserved Mechanisms Drive Sarcomere Assembly in Cardiomyocytes.** A.M. Fenix[1], N. Taneja[1], M.R. Visetsouk[2], B.R. Nixon[3], A. Manalo[1], J.R. Becker[3], S.W. Crawley[4], D. Bader[1,3], M.J. Tyska[1], J.H. Gutzman[2], D.T. Burnette[1]; [1]Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN, [2]Department of Biological Sciences, Cell and Molecular Biology, University of Wisconsin, Milwaukee, WI, [3]Department of Medicine, Vanderbilt University Medical Center, Nashville, TN, [4]Department of Biological Sciences, The University of Toledo, Toledo, OH

B75/P1073 **EhRho1 regulates cell motility and phagocytosis in *Entamoeba histolytica*.** R. Bharadwaj[1], R. Arya[2], A. Bhattacharya[3], S. Bhattacharya[4], S. Mohanty[1]; [1]Stem cell facility, AIIMS, New Delhi, India, [2]School of Biotechnology, Jawaharlal Nehru University, New Delhi, India, [3]School of Life Sciences, Jawaharlal Nehru University, New Delhi, India, [4]School of Environmental 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[1], A. Magee[1], A. Samuelson[1], L.A. Lowery[1]; [1]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[1], M. Preciado-Lopez[1], R.S. Fischer[1], M.A. Baird[1], J. Logue[2], C.M. Waterman[1]; [1]Cell Biology and Physiology Center, National Institute of Health, Bethesda, MD, [2]Regenerative and Cancer Cell Biology (RCCB), Albany Medical Center, Albany, NY

B78/P1076 **Uncovering the developmental functions of nuclear actin.** D.J. Kelpsch[1], D.M. Wineland[1], C.M. Jamie[1], T.L. Tootle[1]; [1]Anatomy and Cell Biology, University of Iowa, Iowa City, IA

B79/P1077 **Nuclear actin interactome links actin to novel functions inside the nucleus.** T. Viita[1], M. Varjosalo[1], M.K. Vartiainen[1]; [1]University of Helsinki, Institute of Biotechnology, Helsinki, Finland

B80/P1078 **Nanoscale dynamism of F-actin enables secretory function in cytolytic cells.** A.F. Carisey[1,2], E.M. Mace[2], M.B. Saeed[1], D.M. Davis[1], J.S. Orange[2]; [1]MCCIR, University of Manchester, Manchester, United Kingdom, [2]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[1], J.J. Lim[1], S. Grinstein[1,2,3]; [1]Cell Biology, The Hospital for Sick Children, Toronto, ON, [2]Biochemistry, University of Toronto, Toronto, ON, [3]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[1], E.S. Schiffhauer[1], D. Thomas[1], Q. Zhu[2], K. DiNapoli[1,3], M. Herbig[4], O. Otto[5], P. Iglesias[1,3], J. Guck[4], R. Anders[2], D.N. Robinson[1]; [1]Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD, [2]Pathology, Johns Hopkins University School of Medicine, Baltimore, MD, [3]Electrical and Computer Engineering, Johns Hopkins University, Baltimore, MD, [4]Biotechnology Center of the TU, Dresden, Germany, [5]University of Greifswald, Greifswald, Germany

B83/P1081 **Structure-based virtual screening to identify first-generation inhibitor of profilin1:actin interaction with anti-angiogenic property.** D. Gau[1], T. Lewis[2], L. Mcdermott[3], P. Wipf[2], D. Koes[3], P. Roy[1]; [1]Bioengineering, University of Pittsburgh, Pittsburgh, PA, [2]Chemistry, University of Pittsburgh, Pittsburgh, PA, [3]Computational and Systems Biology, University of Pittsburgh, Pittsburgh, PA

B84/P1082 **ARAP2 suppresses Akt signaling through APPL1.** R. Luo[1], P. Chen[2], C.M. Waterman[3], X. Jian[1], J.C. Kuo[4], P.A. Randazzo[1]; [1]LCMB, NCI|NIH, Bethesda, MD, [2]Biology Department, Williams College, Williamstown, MA, [3]LCTM, NHLBI, Bethesda, MD, [4]The Institute of Biochemistry and Molecular Biology, National Yang ming University, Yamin, Taiwan

B85/P1083 **Nuclear actin and actin regulated transcription factors in heat shock responses.** B. Prajapati[1], M. Sokolova[1], M.K. Vartiainen[1]; [1]Institute of Biotechnology, University of Helsinki, Helsinki, Finland

B86/P1084 **Optogenetic stimulation of Ras-RalGEF-Ral axis promotes cell migration through recruitment of Exocyst-Wave complexes at the plasma membrane.** G. Zago[1], M.C. Parrini[1], J. Camonis[1], M. Coppey[1]; [1]Research, Institut Curie, Paris, France

B87/P1085 **Matricellular Protein Cysteine-Rich Angiogenic Inducer 61 (CCN1/CYR61) – A Potential Therapeutic Target to Lower Intraocular Pressure.** P.P. Pattabiraman[1]; [1]Department of Ophthalmology, Case Western Reserve University, Cleveland, OH

B88/P1086 **Anillin regulates epithelial cell mechanics by structuring the medial-apical actin network.** T.R. Arnold[1], R.E. Stephenson[1], K.M. Dinshaw[1], T. Higashi[1], A.L. Miller[1]; [1]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[1], M. Chuang[1], S. Lin[1]; [1]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[1], A. Ketschek[1], G. Gallo[1]; [1]Temple University School of Medicine, SHPRC, Philadelphia, PA

B91/P1089 **FRAP Simulations and Computational Modeling show that F-Actin Meditated Focusing of Vesicles at the Cell Tip Is Essential for Polarized Growth.** J.P. Bibeau[1], J.L. Kingsley[2], S.I. Mousavi[2], F. Furt[1], C. Unsal[2], Z. Chen[3], X. Huang[3], L. Vidali[1], E. Tuzel[2]; [1]Department of Biology and Biotechnology, Worcester Polytechnic Institute, Worcester, MA, [2]Department of Physics, Worcester Polytechnic Institute, Worcester, MA, [3]Department of Electrical and Computer Engineering, Worcester Polytechnic Institute, Worcester, MA

SUNDAY

Higher-Order Actin-Based Structures

B92/P1090 **Function of Dynamin-2 in Postsynaptic Neuromuscular Junction.** S. Lin[1], Y. Liu[1]; [1]Institute of Molecular Medicine, National Taiwan University, Taipei, Taiwan

B93/P1091 **Investigating cytoskeleton-mediated mechanotransduction using a stem cell model of oogenesis.** J.A. MacDonald[1], D.C. Woods[1], J.L. Tilly[1]; [1]Biology Department, Northeastern University, Boston, MA

B94/P1092 **Src-mediated cortactin tyrosine phosphorylation regulates filopodia formation in neuronal growth cones.** Y. Ren[1], Y. He[1], D.M. Suter[1]; [1]Biological Sciences, Purdue University, West Lafayette, IN

B95/P1093 **Actin crosslinking ACD toxin is a universal inhibitor of tandem-organized actin-regulatory proteins in living cells.** E. Kudryashova[1], D.B. Heisler[1], B. Williams[1], K. Shafer[1], A. Harker[2], D.R. Kovar[2], M. Quinlan[3], D.S. Kudryashov[1]; [1]Chemistry and Biochemistry, The Ohio State University, Columbus, OH, [2]Biochemistry and Molecular Biology, University of Chicago, Chicago, IL, [3]Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles, CA

B96/P1094 **Cryo electron tomography of the actomyosin cortex in isolated blebs.** D.A. Cassani[1], B. Martins[2], M. Smith[1], E.K. Paluch[1], O. Medalia[2]; [1]MRC - LMCB, University College London, London, United Kingdom, [2]Department of Biochemistry, University of Zurich, Zurich, Switzerland

B97/P1095 **Mechanisms regulating actin cortex architecture in embryonic stem cells.** S. Xia[1], Y. Lim[2], Y. Wang[3,4], Z. Zhang[1], C. Lim[1,2], E. Yim[1,5], P. Kanchanawong[1,2]; [1]Mechanobiology Institute, National University of Singapore, Singapore, Singapore, [2]Department of Biomedical Engineering, National University of Singapore, Singapore, Singapore, [3]Department of Biology, Southern University of Science and Technology, Guangzhou, China, [4]Materials Characterization and Preparation Center, Southern University of Science and Technology, Guangzhou, China, [5]Department of Chemical Engineering, University of Waterloo, Waterloo, Canada

B98/P1096 **IRTKS elongates brush border microvilli using EPS8-dependent and -independent mechanisms.** M.M. Postema[1], N.E. Grega Larson[1], A.C. Neininger[1], M.J. Tyska[1]; [1]Dept. of Cell and Development Biology, Vanderbilt University, Nashville, TN

B99/P1097 **Impact of tip-enriched adhesion on the morphology and dynamics of actin-based protrusions.** M.L. Weck[1], S.W. Crawley[2], M.J. Tyska[1]; [1]Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN, [2]Department of Biological Sciences, The University of Toledo, Toledo, OH

B100/P1098 **A node organization generates tension and promotes stability in the fission yeast contractile ring.** S. Thiyagarajan[1], S. Wang[1], B. O'Shaughnessy[2]; [1]Physics, Columbia University, New York, NY, [2]Chemical Engineering, Columbia University, New York, NY

B101/P1099 **Two isoforms of myosin-II cooperate to organize the fission yeast cytokinetic ring for maximal tension production.** S. Wang[1], H.F. Chin[2], S. Thiyagarajan[1], E. Karatekin[3], T.D. Pollard[4], B. O'Shaughnessy[2]; [1]Department of Physics, Columbia University, New York, NY, [2]Department of Chemical Engineering, Columbia University, New York, NY, [3]Department of Cellular and Molecular Physiology, Yale University, New Haven, CT, [4]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[1], K. Dasbiswas[1], S. Banerjee[1,2], T.A. Witten[1,3], S. Vaikuntanathan[1,4], M.L. Gardel[1,3,5]; [1]James Franck Institute, University of Chicago, Chicago, IL, [2]Department of Physics and Astronomy, University College London, London, United Kingdom, [3]Department of Physics, University of Chicago, Chicago, IL, [4]Department of Chemistry, University of Chicago, Chicago, IL, [5]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[1], M. Welchons[1], Y. Fan[1], J.M. Sanger[1], J.W. Sanger[1]; [1]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[1], N. Hensel[1], L. Walter[1,2], I. Wefel[1], G. Brandes[1], P. Claus[1,2]; [1]Institute of Neuroanatomy and Cell Biology, Hannover Medical School, Hannover, Germany, [2]Center for Systems Neuroscience (ZSN), Hannover, Germany

B105/P1103 **Dynamic interplay between filopodia, focal adhesions and stress fibers.** L.E. Young[1], H.N. Higgs[1]; [1]Biochemistry and Cell Biology, Dartmouth College, Geisel School of Medicine, Hanover, NH

B106/P1104 **Filamentation in *Schizosaccharomyces japonicus* in response to natural stimuli.** C. Kinnaer[1], S.G. Martin[1]; [1]Department of Fundamental Microbiology, University of Lausanne, Lausanne, Switzerland

B107/P1105 **Intranuclear and cytoplasmic actin rod assembly in *Dictyostelium discoideum*.** H.C. Ishikawa-Ankerhold[1], A. Müller-Taubenberger[2]; [1]Cardiology, Walter Brendel Centre of Experimental Medicine, LMU Munich, Munich, Germany, [2]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[1], L. Fritz-Laylin[1]; [1]Department of Biology, University of Massachusetts Amherst, Amherst, MA

B109/P1107 **Anti-Inflammatory effects of annonacin in vascular endothelium in response to TNF-α-induced cell stress.** G.D. VanNorden[1], E. Chambers[1], E. Charamut[1], C. Kovaleski[1], F. Mayville[1], J.B. Slee[1]; [1]Department of Natural Science, DeSales University, Center Valley, PA

B110/P1108 **Anti-Inflammatory effects of resveratrol in vascular endothelium in response to TNF-α-induced cell stress.** B. Evert[1], T. Judge[1], C. McGlocklin[1], F. Mayville[1], J.B. Slee[1]; [1]Department of Natural Science, DeSales University, Center Valley, PA

B111/P1109 **Evolution and interplay of axonal actin assemblies.** P. Dubey[1], K. Ladt[2], J. Loi[1], S. Roy[3]; [1]Department of Pathology, University of Wisconsin-Madison, Madison, WI, [2]Department of Neurosciences, University of California, San Diego, WI, [3]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[1], M. Sugawa[1], J. Yajima[1]; [1]Dept. of Life Sciences, Univ. of Tokyo, Tokyo, Japan

B113/P1111 **Shootin1-Mediated Dendritic Spine Formation in Hippocampal Neurons.** R.F. Kastian[1], H. Katsuno[1], N. Inagaki[1]; [1]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[1,2,3], S.I. Salomaa[1,3,4], G. Jacquemet[1,3,5], U. Butt[1,2,3], M. Miihkinen[1,3,4], T. Deguchi[3,6], E. Kremneva[7], P. Lappalainen[7], M.J. Humphries[5], J. Pouwels[1,3]; [1]Turku Centre for Biotechnology, Turku, Finland, [2]Turku Graduate School for Molecular Medicine, University of Turku, Turku, Finland, [3]Cell Biology and Anatomy, University of Turku, Turku, Finland, [4]Drug Research Doctoral Programme, University of Turku, Turku, Finland, [5]Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom, [6]Laboratory of Biophysics, University of Turku, Turku, Finland, [7]Institure for Biotechnology, University of Helsinki, Helsinki, Finland

B115/P1113 **Three-dimensional simulation of remodeling lamellipodial actin filament network.** D. Holz[1], A. Hall[2], D. Vavylonis[1]; [1]Physics, Lehigh University, 18015, PA, [2]Physics, University of Wisconsin-Milwaukee, 53211, WI

Myosins 1

B117/P1114 **Mutations in Non-muscle Myosin 2A Disrupt Actomyosin-Microtubule Dynamics Resulting in Male Infertility.** D.C. Sung[1], C.B. Lerma Cervantes[1], Y. Zhang[1], X. Ma[1], R.S. Adelstein[1]; [1]Genetics and Developmental Biology Center, National Heart, Lung, and Blood Institute, Bethesda, MD

B118/P1115 **Nonmuscle Myosin 2 Is Important for Atrioventricular Endocardial Cushion Remodeling.** X. Ma[1], D.C. Sung[1], R.S. Adelstein[1]; [1]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. Zhovmer[1], E. Tabdanov[2], H. Miao[3], H. Wen[3], P. Provenzano[2,4,5,6,7], X. Ma[1], R.S. Adelstein[1]; [1] Laboratory of Molecular Cardiology, National Heart, Lung and Blood Institute, Bethesda, MD, [2]Laboratory for Engineering in Oncology, University of Minnesota, Minneapolis, MN, [3]Imaging Physics Laboratory, National Heart, Lung and Blood Institute, Bethesda, MD, [4]Dept. of Biomedical Engineering, University of Minnesota, Minneapolis, MN, [5]Masonic Cancer Center, University of Minnesota, Minneapolis, MN, [6]Stem Cell Institute, University of Minnesota, Minneapolis, MN, [7]Institute for Engineering in Medicine, University of Minnesota, Minneapolis, MN

B120/P1117 **Nonmuscle Myosin 2 isoforms are uniquely expressed in mouse renal epithelial cells and play a critical role in renal tubular function in adult mice.** K.L. Otterpohl[1], R.G. Hart[1], C. Evans[1], C.L. Phillips[2], X. Ma[3], R.S. Adelstein[3], K. Surendran[1], B.A. Molitoris[4], I. Chandrasekar[1]; [1]Sanford Children's Health Research Center, Sanford Research, Sioux Falls, SD, [2]Department of Pathology Laboratory Medicine, Indiana University, Indianapolis, IN, [3]Laboratory of Molecular Cardiology, NIH-NHLBI, Bethesda, MD, [4]Department of Medicine, Indiana University, Indianapolis, IN

B121/P1118 **The role of nonmuscle myosin 2A in early embryonic development.** T. Wei[1], X. Ma[1], R.S. Adelstein[1]; [1]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. Remmert[1], J.A. Hammer III[1]; [1]NHLBI, CBPC, NIH, Bethesda, MD

B123/P1120 **Identification and characterization of a putative myosin-mediated contractile activity in sponges.** E. Chang[1], C. Cotter[1], M.S. Hill[1], O.A. Quintero[1]; [1]Department of Biology, University of Richmond, Richmond, VA

B124/P1121 **Myosin IIA controls red blood cell membrane morphology and mechanical properties.** A.S. Smith[1], R.B. Nowak[1], S. Zhou[2], J. Wan[2], I.C. Ghiran[3], V.M. Fowler[1]; [1]Molecular Medicine, The Scripps Research Institute, La Jolla, CA, [2]Microsystems Engineering, Rochester Institute of Technology, Rochester, NY, [3]Medicine, Beth Israel Deaconess Medical Center, Boston, MA

B125/P1122 **A Novel Role for Nonmuscle Myosin II Monomers in Regulation of Focal Adhesion Dynamics.** M. Shutova[1], T.M. Svitkina[1]; [1]Biology, University of Pennsylvania, Philadelphia, PA

B126/P1123 **Myosin IIB mechanoresponsive accumulation is determined by relative assembly into bipolar filaments.** E.S. Schiffhauer[1], D.N. Robinson[1,2]; [1]Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD, [2]Pharmacology 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-Smith[1], J.G. Quinlan[1], N.E. Fischer[1], E.A. Del Rio[1], M.L. Quinlan[1], M.T. Messalti[1]; [1]Department of Biology, Saint Joseph's University, Philadelphia, PA

B128/P1125 **Differential actomyosin contractility in tumorigenecity.** S.K. Dey[1], R.K. Singh[1], S.S. Jana[1]; [1]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. Bocanegra[1], J.L. Hawthorne[1], B.M. Fujita[1], A. Li[1], O.A. Quintero[1]; [1]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. Carroll[1], E. Oakes[1], M.L. James[1], V. Sirotkin[1]; [1]Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY

Dynein

B131/P1128 **The dynein activator Hook1 is required for long-distance trafficking of BDNF-signaling endosomes in neurons.** M. Olenick[1], E.L. Holzbaur[2]; [1]Biochemistry and Molecular Biophysics Graduate Group, University of Pennsylvania, Philadelphia, PA, [2]Physiology, University of Pennsylvania, Philadelphia, PA

B132/P1129 **Distribution of Cortical Dynein Attachment Molecule Regulates Dynein-Mediated Spindle Pulling Mechanism in Budding Yeast.** S. Omer[1], W. Lee[2]; [1]Biology department, University of Massachusetts, Amherst, Amherst, MA, [2]Department of Biological Sciences, Dartmouth College, Hanover, NH

B133/P1130 **Investigating the mechanism by which the dynein cortical receptor Num1 activates dynein motility.** L.G. Lammers[1], D. Garno[1], S.M. Markus[1]; [1]Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO

B134/P1131 **Cell cycle regulation of dynein activity prevents DNA damage.** C.E. Estrem[1], J.K. Moore[1]; [1]Cell 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. Loftus[1], H. Cui[1], E. Coutavas[2], D.S. King[3], A. Ceravolo[1], D. Pereiras[1], S.R. Solmaz[1]; [1]Department of Chemistry, State University of New York at Binghamton, Binghamton, NY, [2]Laboratory of Cell Biology, The Rockefeller University, New York, NY, [3]Mass 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. Kikumoto[1], R. Nakamori[2], H. Kojima[2], H. Sakakibara[2]; [1]Structural Biology Research Center, Nagoya University, Nagoya, Japan, [2]Advanced 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. Urnavicius[1], C.K. Lau[1], M.M. Elshenawy[2], E. Morales[1], A. Yildiz[2], A.P. Carter[1]; [1]MRC LMB, Cambridge, United Kingdom, [2]UC Berkeley, Berkeley, CA

B138/P1135 **A Conserved Interaction of the Light Intermediate Chain with Dynein-Dynactin Effectors.** I. Lee[1], M.A. Olenick[1], M. Boczkowska[1], C. Franzini-Armstrong[2], E.L. Holzbaur[1], R. Dominguez[1]; [1]Physiology, University of Pennsylvania, Philadelphia, PA, [2]Cell Developmental Biology, University of Pennsylvania, Philadelphia, PA

B139/P1136 **Dynein Light Intermediate Chains participate differently in fundamental aspects of neocortex development.** J.C. Gonçalves[1,2,3], R.B. Vallee[1]; [1]Department of Pathology and Cell Biology, Columbia University Medical Center, New York City, NY, [2]Life and Health Sciences Research Institute (ICVS), School of Medicine, University of Minho, Braga, Portugal, [3]ICVS/3B's - PT Government Associate Laboratory, Braga/Guimarães, Portugal

SUNDAY

B140/P1137 **Model for RILP mediated Autophagosome Assembly and Transport.** N.V. Khobrekar[1,2], T.J. Dantas[2], R.B. Vallee[2]; [1]Department of Biological Sciences, Columbia University, New York, NY, [2]Department of Pathology and Cell biology, Columbia University Medical Center, New York, NY

B141/P1138 **Membrane-associated septins promote dynein-driven transport by scaffolding dynein light and intermediate chain interactions.** I. Kesisova[1], E.T. Spiliotis[1]; [1]Biology, Drexel University, Philadelphia, PA

B142/P1139 **Dynein force production and its regulation.** D.E. Chapman[1], B. Narayanareddy[1], M.J. Bovyn[1], H. Han[1], B. Huy[1], W. Wang[1], S.P. Gross[1]; [1]Developmental and Cell Biology, University of California Irvine, Irvine, CA

B143/P1140 **Molecular basis for dynein dysfunction in a spectrum of motor neuron diseases.** M.G. Marzo[1], S.M. Markus[1]; [1]Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO

B144/P1141 **The Drosophila MAST Kinase Drop out controls Dynein-mediated transport and is required for phosphorylation of cytoplasmic Dynein.** H.C. Sonnenberg[1], A. Langlands[1], D. Hain[1], A.J. Müller[1,2]; [1]School of Life Sciences, University of Dundee, Dundee, United Kingdom, [2]Developmental Genetics, University of Kassel, Kassel, Germany

B145/P1142 **The actin capping protein is involved in dynein function but non-essential for Arp1 filament assembly*text*.** J. Zhang[1], R. Qiu[1], X. Xiang[1]; [1]Biochemistry and Molecular Biology, Uniformed Services University - F. Edward Hébert School of Medicine, Bethesda, MD

B146/P1143 **NEEP21 Family Member Calcyon Regulates Biogenesis and Axonal Transport of Late Endosome/ Lysosome Related Organelles.** L. Shi[1], T.J. Hines[2], D. Smith[2], C. Bergson[1]; [1]1Department of Pharmacology and Toxicology, Medical College of Georgia at Augusta University, Augusta, GA, [2]2Department of Biological Sciences, University of South Carolina, Columbia, SC

B147/P1144 **She1 affects dynein by interactions with the microtubule and the dynein microtubule-binding domain.** K. Ecklund[1], T. Morisaki[1], L.G. Lammers[1], M.G. Marzo[1], T.J. Stasevich[1], S.M. Markus[1]; [1]Biochemistry & Molecular Biology, Colorado State University, Fort Collins, CO

Microtubules Nucleation and Organization 1

B149/P1145 **Upregulation of the beta-tubulin isoform tubb6 (beta 6, class V) in regenerating skeletal muscles of the *mdx* mouse model of Duchenne muscular dystrophy: too much of a good thing?** D. Randazzo[1], U. Khalique[1], D.M. Talsness [2], J.L. Mccourt[2], J.J. Belanto[2], K.J. Zaal[1], M.D. Tran[1], A. Kenea[1], D.L. Sackett[3], J.M. Ervasti[2], E. Ralston[1]; [1]Light Imaging Section, Office of Science and Technology, National Institute of Arthritis and Musculoskeletal and Skin Diseases, National Institutes of Health, Bethesda, MD, [2]Department of Biochemistry, Molecular Biology, and Biophysics, and Program in Molecular, Cellular, Developmental Biology, and Genetics, University of Minnesota-Twin Cities, Minneapolis, MN, [3]Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD

B150/P1146 **Effect of TPX2 extreme C-terminal domain on microtubule dynamics.** D. Fahy[1], A. Kostyukova[2], A. Smertenko[1]; [1]Institute of Biological Chemistry, Washington State University, Pullman, WA, [2]The Gene and Linda Voiland School of Chemical Engineering and Bioengineering, Washington State University, Pullman, WA

B151/P1147 **Investigating the role of lateral interactions in microtubule dynamics.** G.A. Li[1], J.K. Moore[1]; [1]Department of Cell and Developmental Biology, University of Colorado Anschutz Medical Campus, Aurora, CO

B152/P1148 **Phosphatases participate in the control of microtubule organization through CDK regulation.** J. Magescas[1], J.L. Feldman[1]; [1]Department of Biology, Stanford, Stanford, CA

B153/P1149 **Microtubule glycylation regulates cortical microtubule assembly and ciliary array organization.** A.D. Junker[1], J. Gaertig[2], C.G. Pearson[1]; [1]Cell, stem cell, and developmental biology, University of Colorado Denver, Aurora, CO, [2], Department of Cell Biology, University of Georgia, Athens, GA

B154/P1150 **Fodrin as a regulator of microtubule nucleation.** J.S. Sreeja[1], R.K. Nellika[1], S. Sengupta[1]; [1]Cancer Research Program - 3, Rajiv Gandhi Center for Biotechnology, Trivandrum, India

B155/P1151 **Cytoplasmic Ran regulates acentrosomal microtubule nucleation in neurons.** C. Hsu[1], H. Chiu[1], W. Chen[2], Y. Chen[1], Y. Huang[3], B. Hsieh[1], E. Hwang[1,2,3]; [1]Institute of Molecular Medicine and Bioengineering, National Chiao Tung University, Hsinchu, Taiwan, [2]Institute of Bioinformatics and Systems Biology, National Chiao Tung University, Hsinchu, Taiwan, [3]Department of Biological Science and Technology, National Chiao Tung University, Hsinchu, Taiwan

B156/P1152 **Regulation of mitotic spindle assembly factor, NuMA, by Importin-β.** C. CHANG[1]; [1] Institute of Molecular Biology, Academia Sinica, Taipei, Taiwan

B157/P1153 **XMAP215 functions synergistically with gamma-TuRC to promote microtubule nucleation.** R.S. Kadzik[1], A. Thawani[2], S. Petry[1]; [1]Molecular Biology, Princeton University, Princeton, NJ, [2]Chemical and Biological Engineering, Princeton University, Princeton, NJ

B158/P1154 **The role of TPX2 in branching microtubule nucleation.** R. Alfaro-Aco[1], A. Thawani[2], S. Petry[1]; [1]Department of Molecular Biology, Princeton University, Princeton, NJ, [2]Department of Chemical and Biological Engineering, Princeton University, Princeton, NJ

B159/P1155 **The alpha-tubulin acetyltransferase αTAT1 enriches the cellular population of stable microtubules by selectively destabilizing dynamic microtubules.** C. Coombes[1], T. Reid[1], H. Saunders[2], d. Johnson-Schlitz[2], J.Z. Parrish[3], J. Wildonger[2], M.K. Gardner[1]; [1]Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN, [2]BIochemistry, University of Wisconsin, Madison, WI, [3]Biology, University of Washington, Seattle, WA

B160/P1156 **Rules of self-organization: extensile bundles versus contractile asters assembled of mitotic motors and dynamic microtubules.** J. Roostalu[1], J. Rickman[1], C. Thomas[1], F. Nedelec[2], T. Surrey[1]; [1]The Francis Crick Institute, London, United Kingdom, [2]European Molecular Biology Laboratory, Heidelberg, Germany

Microtubule Cytoskeleton: Techniques

B161/P1157 **Using smFRET to Understand the Structural Changes that Underlie Tau's Behavior on the Microtubule Surface.** J.L. Stern[1,2], R. Ali[1], A. Cario[1,2], C. Berger[1,2,3]; [1]Molecular Physiology and Biophysics, University of Vermont, Burlington, VT, [2]Cellular, Molecular and Biomedical Sciences Program, University of Vermont, Burlington, VT, [3]Neuroscience 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. Mohan[1], I. V.Vilanova[2], J. Borbely[2], A. Sandoval[2], M. Lakadamyali[1]; [1]Physiology Department, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, [2]ICFO The Institute of Photonic Sciences, Barcelona, Spain

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

B164/P1160 **An optogenetic approach to control microtubule acetylation in living cells.** N. Kaul[1], H. Wang[1], O. Dagliyan[2], K.M. Hahn[1]; [1]Pharmacology, University of North Carolina, Chapel Hill, NC, [2]Neuorobiology, Harvard Medical School, Boston, MA

B165/P1161 **Illuminating the role of Microtubule-Actin Crosslinking via Optogenetics.** R.C. Adikes[1], R.A. Hallett[2], B.F. Saway[1], B. Kuhlman[2], K.C. Slep[1]; [1]Department of Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Department of Biochemistry Biophysics, University of North Carolina at Chapel Hill, Chapel Hill, NC

B166/P1162 **Controlling cytoskeletal organization and cellular dynamics by localized optical modulation of microtubule dynamics.** J. van Haren[1], A. Ettinger[2], R. Charafeddine[1], H. Wang[3], K.M. Hahn[3], T. Wittmann[1]; [1]Department of Cell and Tissue Biology, UCSF, San Francisco, CA, [2]Institute of Epigenetics and Stem Cells, Helmholtz Center Munich, Munich, Germany, [3]Department of Pharmacology, UNC Chapel Hill, Chapel Hill, NC

B167/P1163 **A two-step mechanism for inactivation of MTOC function at the centrosome.** J. Magescas[1], J.C. Zonka[1], J.L. Feldman[1]; [1]Department of Biology, Stanford, Stanford, CA

B168/P1164 **Stimulation of microtubule-based transport by nucleation of microtubules on membrane organelles.** I.V. Semenova[1], D. Gupta[1], T. Usui[2], I. Hayakawa[3], A.E. Cowan[1], V. Rodionov[1]; [1]R.D.Berlin Center for Cell Analysis and Modeling, and Department of Cell Biology, UConn Health, Farmington, CT, [2]Faculty of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan, [3]Division of Applied Chemistry, Graduate School of Natural Science and Technology, Okayama University, Okayama, Japan

B169/P1165 **Measuring and modeling polymer gradients argues that spindle microtubules regulate their own nucleation.** S. Fürthauer[1], B. Kaye[2], P. Foster[2], M. Shelley[1,3], D.J. Needleman[2]; [1]CCB, Flatiron Institute, New York, NY, [2]J. A. Paulson School of Engineering, Harvard University, Cambridge, MA, [3]Courant Institute, NYU, New York, NY

B170/P1166 **Regulation of centrosomal proteins by Zika virus-encoded proteins.** C.M. Cabrera[1], E.R. Weiland[1], R.A. Buchwalter[1], T.L. Megraw[1]; [1]Biomedical Sciences, Florida State University, Tallahassee, FL

B171/P1167 **Rescuing Microtubules with Human CLASP2.** E.J. Lawrence[1], I. Kaverina[1], M. Zanic[1]; [1]Cell Developmental Biology, Vanderbilt University, Nashville, TN

B172/P1168 **Developing a non-invasive intravital imaging strategy for analysis of pre-synaptic microtubule dynamics at the *Drosophila* neuromuscular junction.** V.T. Chou[1], H. Lai[2], J.B. Long[1], M. Arnes[1], K. Obbad[1], L.A. Lucas[2], S.V. Alworth[3], J.S. Lee[2], D. Van Vactor[1]; [1]Department of Cell Biology and Program in Neuroscience, Harvard Medical School, Boston, MA, [2]DRVision Technologies LLC, Bellevue, WA, [3]AcuraStem Inc., Los Angeles, CA

B173/P1169 **Microtubule assembly and disassembly dynamics (MADDY) model: exploring dynamic remodeling of microtubule tip by using tubulin polymerization-depolymerization in silico.** V.A. Barsegov[1]; [1]Chermistry, University of Massachusetts, Lowell, MA

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. Hunter[1], J. Hwang[1], G. Fu[2], L.M. Alford[3], A. Gokhale[1], R. Yamamoto[4], R. Kamiya[5], H. Lin[6], F. Yang[7], D. Nicastro[2], K.F. Lechtreck[8], M. Wirschell[7], S.K. Dutcher[6], W.S. Sale[1]; [1]Department of Cell Biology, Emory University, Atlanta, GA, [2]Department of Cell Biology and Biophysics, UT Southwestern Medical Center, Dallas, TX, [3]Department of Biology, Oglethorpe University, Atlanta, GA, [4]Department of Biological Sciences, Osaka University, Osaka, Japan, [5]Department of Biological Sciences, Chuo University, Tokyo, Japan, [6]Department of Genetics, Washington University School of Medicine, St. Louis, MO, [7]Department of Biochemistry, University of Mississippi Medical Center, Jackson, MS, [8]Department 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. Kanie[1,2], P.K. Jackson[1,2]; [1]Baxter Laboratory, Stanford University, Stanford, CA, [2]Microbiology and Immunology, Stanford University, Stanford, CA

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

B178/P1173 **Axonemal Lumen Dominates Cytosolic Protein Diffusion inside the Primary Cilium.** W. Luo[1], A. Ruba[1], D. Takao[2], L.P. Zweifel[3], R.Y. Lim[3], K.J. Verhey[2], W. Yang[1]; [1]Biology, Temple University, Philadelphia, PA, [2]Department of Cell and Developmental Biology, University of Michigan Medical School, Ann Arbor, MI, [3]Biozentrum and the Swiss Nanoscience Institute, University of Basel, Basel, Switzerland

B179/P1174 **Ran-mediated ciliary entry of the heterotrimeric kinesin-2 motor complex.** S. Huang[1], P. Avasthi[1,2]; [1]Ophthalmology, University of Kansas Medical Center, Kansas city, KS, [2]Anatomy 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 multiciliate, Giardia lamblia.** S.G. McInally[1], S.C. Dawson[1]; [1]Microbiology 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 adipogenesis.** W. Wang[1,2], B.A. Allard[1,2], L.M. Silva[1,2], D.T. Jacobs[1,2], P.V. Tran[1,2]; [1]Kidney Institute, University of Kansas Medical Center, Kansas City, KS, [2]Department 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. Bertiaux[1], B. Morga[1], T. Blisnick[1], S. Perrot[1], B. Rotureau[1], P. Bastin[1]; [1]Parasites and Insect Vectors, Institut Pasteur, Paris, France

B183/P1178 **The role of IFT concentration at the base of the flagellum.** J. Jung[1], J. Santi-Rocca[1], C. Fort[1], S. Perrot[1], P. Bastin[1]; [1]Trypanosome 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. Yasunaga[1], O. Kretz[1], M. Helmstädter[1], Ö. Cicek[2], T. Huber[1], S. Lienkamp[1], G. Walz[1]; [1]Renal Division, University Freiburg Medical Center, Freiburg, Germany, [2]Computer Science, University Freiburg, Freiburg, Germany

B185/P1180 **Actin redundancy in Chlamydomonas reinhardtii is necessary for flagellar protein trafficking.** B. Jack[1], D.M. Mueller[1], A.L. Tetlow[1], P. Avasthi[1,2]; [1]Anatomy and Cell Biology, University of Kansas Medical Center, Kansas City, KS, [2]Ophthalmology, University of Kansas Medical Center, Kansas City, KS

B186/P1181 **Formation of Microvilli and Cilia in the Zebrafish Pronephros Requires an Actin-binding Bioactive Peptide Amidating Enzyme.** D. Kumar[1], R.T. Thomason[2,3], M. Yankova[1,4], J.D. Gitlin[2], R.E. Mains[5], B.A. Eipper[1,5], S.M. King[1,4]; [1]Department of Molecular Biology and Biophysics, University of Connecticut Health Center, Farmington, CT, [2]Eugene Bell Center for Regenerative Biology and Tissue Engineering, Marine Biological Laboratory, Woods Hole, MA, [3]University of Virginia, Charlottesville, VA, [4]Electron Microscopy Facility, University of Connecticut Health Center, Farmington, CT, [5]Department of Neuroscience, University of Connecticut Health Center, Farmington, CT

B187/P1182 **The role of FBF1 in *Drosophila* Ciliogenesis.** Q. Wei[1], Y. Hou[1], Z. Wu[1]; [1]Key Laboratory of Insect Developmental and Evolutionary Biology, Shanghai Institute of Plant Physiology and Ecology, Shanghai, China

B188/P1183 **Protein dynamics of intraflagellar transport complex recruitment to basal bodies in multiciliated cells.** J.V. Hibbard[1], J.B. Wallingford[1]; [1]Department of Molecular Biosciences, The University of Texas at Austin, AUSTIN, TX

B189/P1184 **IFT140 is required for anterograde IFT of several subgroups of flagellar membrane proteins in *Chlamydomonas*.** T. Picariello[1], J. Brown[2], G. Swank[1], D. Cochran[1], O. King[3], G.J. Pazour[4], G.B. Witman[1]; [1]Radiology, University of Massachusetts Medical School, Worcester, MA, [2]Biology, Salem State University, Salem, MA, [3]Neurology, University of Massachusetts Medical School, Worcester, MA, [4]Program in Molecular Medicine, University of Massachusetts Medical School, Worcester, MA

B190/P1185 **Cryo-EM structure of anterograde intraflagellar transport trains.** M. Jordan[1], D. Diener[1], L. Stepanek[1], G. Pigino[1]; [1]Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany

Centrosome Assembly and Functions 1

B192/P1186 **The molecular architecture of the yeast spindle pole body core determined by Bayesian integrative modeling.** S. Viswanath[1], M. Bonomi[1,2], S.J. Kim[1], V.A. Klenchin[3], K.C. Taylor[3], K. Yabut[4], N.T. Umbreit [4], H. Van Epps[4], J. Meehl[5], M.H. Jones[5], D. Russel[1], J.A. Velazquez-Muriel[1], M. Winey[5], I. Rayment[3], T.N. Davis[4], A. Sali[1,6,7], E. Muller[4]; [1]Department of Bioengineering and Therapeutic Sciences, The University of California, San Francisco, San Francisco, CA, [2]Department of Chemistry, University of Cambridge, Cambridge, United Kingdom, [3]Department of Biochemistry, University of Wisconsin, Madison, WI, [4]Department of Biochemistry, University of Washington, Seattle, WA, [5]Department of Molecular, Cellular and Developmental Biology, University of Colorado, Boulder, CO, [6]California Institute for Quantitative Biosciences, The University of California, San Francisco, San Francisco, CA, [7]Department 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. Kachaner[1], D. Garrido[1], K. Normandin[1], H. Lavoie[1], V. Archambault[1]; [1]University of Montréal - IRIC, Montréal, QC

B194/P1188 **Upstream open reading frames control Plk4 translation and centriole biogenesis.** P. Phan[1], S. Hutcherson[1], V. Daggubati[1], A.J. Holland[1]; [1]Molecular Biology and Genetics, Johns Hopkins University School of Medicine, Baltimore, MD

B195/P1189 **Albatross/FBF1 integrates centrosome dynamics.** A. Inoko[1], T. Kiyono[2], M. Inagaki[1], Y. Hayashi[1]; [1]Department of Cell Biology, Aichi Cancer Center Research Institute, Nagoya, Japan, [2]Division of Carcinogenesis and Cancer Prevention, National Cancer Center Research Institute, Tokyo, Japan

B196/P1190 ***t3421*, a mutation in a novel protein required for centrosome matrix assembly in the one-cell stage C. elegans embryo.** A.C. Erpf[1], N. Memar[1], R. Schnabel[2], T. Mikeladze-Dvali[1]; [1]Biocenter, Ludwig-Maximilians-University Munich, Munich, Germany, [2]Institute of Genetics, Technical University Braunschweig, Braunschweig, Germany

B197/P1191 **CEP135 Isoforms Regulate Centrosome Number in Breast Cancer Cells.** D. Ganapathi Sankaran[1], C.G. Pearson[1]; [1]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 zyg-1 in Regulating Centrosome Assembly.** J.C. Medley[1], L.E. DeMeyer[1], M. Song[1]; [1]Biological Sciences, Oakland University, Rochester, MI

B199/P1193 **Centrosome number homeostatic mechanisms.** R. Sala[1], T. Stearns[1,2]; [1]Biology, Stanford University, Stanford, CA, [2]Genetics, Stanford University, Stanford, CA

B200/P1194 **Correlative STORM/EM analysis of the centriole distal appendage architecture.** M. Bowler[1], D. Kong[1], J. Loncarek[1]; [1]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. Ryder[1], D.A. Lerit[1]; [1]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-Hedges[1], L. Kao[1], C. Zheng[1], T.L. Megraw[1]; [1]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. Stratton[1], T. Stearns[1,2]; [1]Biology, Stanford University, Stanford, CA, [2]Genetics, Stanford University School of Medicine, Stanford, CA

Kinetochore Assembly and Functions 1

B204/P1198 **Investigating the contribution of phospho-Histone marks to Aurora B kinase activity at kinetochores.** A.J. Broad[1], J.G. DeLuca[1,2]; [1]Biochemistry and Molecular Biology, Colorado State University, Fort, CO, [2]Institute 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. Ferras[1], M. Cruz[1], M. Alba Abad[2], N. Galjart[3], J. Arulanandam[2], H.J. Maiato[1]; [1]Chromosome Instability Dynamics Lab, IBMC/I3S, Porto, Portugal, [2]Cell Biology, Wellcome Trust Centre for Cell Biology, Institute of Cell Biology, Edinburgh, United Kingdom, [3]Genetics, Erasmus MC, Rotterdam, Netherlands

B206/P1200 **Dual Roles of the Chromosomal Passenger Complex at Centromeres.** J. Haase[1], M. Bonner[1], H. Halas[1], A.E. Kelly[1]; [1]National Cancer Institute, National Institutes of Health, Bethesda, MD

B207/P1201 **Optogenetic manipulation of individual kinetochores shows that Aurora B kinase promotes microtubule depolymerization rather than detachment.** H. Zhang[1], A. Gokden[1], C. Aonbangkhen[2], M. Liu[1], M.A. Lampson[1], D.M. Chenoweth[2]; [1]Biology, University of Pennsylvania, Philadelphia, PA, [2]Chemistry, University of Pennsylvania, Philadelphia, PA

B208/P1202 **Measuring NDC80 binding reveals the molecular basis of tension-dependent kinetochore attachments.** T. Yoo[1], C. Yu[1], D.J. Needleman[1]; [1]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. Ji[1], Y. Luo[1], E. Ahmad[1], S. Liu[1]; [1]Biological Sciences, University of Toledo, Toledo, OH

B210/P1204 **Plk1 anchors the inner kinetochore against tension.** R.F. Lera[1], A. Dennee[1], M.E. Burkard[1]; [1]Dept. 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. Wang[1], A. Das[2], K. McKim[1]; [1]Rutgers University, Waksman Institute, Piscataway, NJ, [2]Department of Biology, University of Pennsylvania, Philadelphia, PA

B212/P1206 **Fin1-PP1 promotes the translocation of the Chromosomal Passenger Complex in early anaphase.** M.H. Bokros[1], Y. Wang[1]; [1]Biomedical 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. Trivedi[1], T. Stukenberg[2]; [1]Department of Cell Biology, University of Virginia, Charlottesville, VA, [2]Department of Biochemistry and Molecular Genetics, University of Virginia, Charlottesville, VA

B214/P1208 **Ska3 Phosphorylated by CDK1 Binds Ndc80 and Recruits Ska to Kinetochores to Promote Mitotic Progression.** Q. Zhang[1], Y. Chen[1], H. Liu[1]; [1]Biochemistry and Molecular Biology, Tulane University, New Orleans, LA

B215/P1209 **MPS1 N-terminal domains interact to regulate kinetochores levels and normal mitotic progression.** S.T. Pachis[1], Y. Hiruma[2], M. Ubbink[3], A. Perrakis[2], G.J. Kops[1]; [1]Hubrecht Institute, Utrecht, Netherlands, [2]Division of Biochemistry, Netherlands Cancer Institute, Amsterdam, Netherlands, [3]Leiden Institute of Chemistry, Leiden University, Leiden, Netherlands

B216/P1210 **Spatiotemporal regulation of spindle assembly checkpoint kinase MPS1.** T.E. Kuijt[1], D.H. Staijen[1], A.T. Saurin[2], G.J. Kops[1]; [1]Hubrecht Institute, Utrecht, Netherlands, [2]Division of Cancer Research, Jacqui Wood Cancer Centre, Dundee, United Kingdom

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

B218/P1212 **Glycogen Synthase Kinase 3 maintains mitotic arrest by regulating mitotic checkpoint complex levels.** M. Rashid[1], W.R. Taylor[1]; [1]Biological 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. Roy[1], J. Sim[1], V. Verma[1,2], A. Fontan[1], A.P. Joglekar[1]; [1]CDB, University of Michigan, Ann Arbor, MI, [2]Biology Department, University of Massachusetts Amherst, Amherst, MA

B220/P1214 **Identification and characterisation of spindle checkpoint silencing components in*Schizosaccharomyces pombe*.** S. Soper Ni Chafraidh[1], I. Leontiou[1], K. May[1], P. Amin[1], I. Yuan[1], K. Hardwick[1]; [1]Biology, University of Edinburgh, Edinburgh, United Kingdom

B221/P1215 **Factors Required for Centromere Formation.** K. Kitagawa[1], R. Kitagawa[1], Y. Niikura[1]; [1]Department of Molecular Medicine, Greehey Children's Cancer Research Institute, UT Health San Antonio, San Antonio, TX

Spindle Assembly 1

B222/P1216 **CG10126, a calcium-binding microtubule-associated protein, is a target of EGFR signaling and promotes mitosis during Drosophila development.** S. Spencer[1], Q. Nie[1], B. Setu[1]; [1]Biology, Saint Louis University, Saint Louis, MO

B223/P1217 **Microtubule-associated tumor suppressor ATIP3 controls Kif2A and aurora kinases to maintain mitotic spindle length.** A. Nehlig[1], C. Seiler[1], C. Nahmias[1]; [1]INSERM U981, Gustave Roussy Institute, Villejuif, France

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

B225/P1219 **UBAP2L/PQN-59 is a novel Plk1 regulator, required for chromosome segregation in human cells and *C. elegans* embryo.** L. Cirillo[1], S. Abbatemarco[1], F. Schwager[1], M. Gotta[1]; [1]Department of Cellular Physiology and Metabolism, University of Geneva, Geneva, Switzerland

B226/P1220 **Investigating the functional role of the GAPVD1-CK1δ/ε interaction.** R.X. Guillen[1], J. Chen[1], J.R. Beckley[1], K.L. Gould[1]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B227/P1221 **Controlling candidate physical inputs to the spindle assembly checkpoint.** J.A. Kuhn[1,2], E.G. Ter Steege[1,3], S. Dumont[1,2,4]; [1]Cell and Tissue Biology, University of California, San Francisco, San Francisco, CA, [2]Tetrad Graduate Program, University of California, San Francisco, San Francisco, CA, [3]Cancer, Stem Cells, and Developmental Biology, University of Utrecht, Utrecht, Netherlands, [4]Cell and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA

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

B229/P1223 **Measuring force responses in the mitotic spindle.** M. Anjur-Dietrich[1], D.J. Needleman[1,2]; [1]Applied Physics, Harvard University, Cambridge, MA, [2]Molecular 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. Bisht[1,2], P.J. LeValley[2,3,4], B.E. Noren[2,3], M. Tomschik[1], A.M. Kloxin[4], J.S. Oakey[2,3], J.C. Gatlin[1,2]; [1]Department of Molecular Biology, University of Wyoming, Laramie, WY, [2]Cell Division Group, Marine Biological Laboratory, Woods Hole, MA, [3]Department of Chemical Engineering, University of Wyoming, Laramie, WY, [4]Department of Chemical and Biomolecular Engineering, University of Delaware, Newark, DE

B231/P1225 **The middle region of BUBR1 binds to MAD2 and p31comet.** J. LaBelle[1], W. Ji[1], K. Wang[1]; [1]Biology Department, University of Toledo, Toledo, OH

B232/P1226 **Aurora A activation in mitosis promoted by BuGZ.** Y. Huang[1], T. Li[1,2], S.C. Ems-McClung[3], C.E. Walczak[3], C. Prigent[4], X. Zhu[5], X. Zhang[2], Y. Zheng[1]; [1]embryology, Carnegie Institution, Baltimore, MD, [2]Cell Biology, National Center of Biomedical Analysis, Beijing, China, [3]School of Medicine, Indiana University, BLOOMINGTON, IN, [4]Equipe labélisée Ligue Nationale Contre la Cancer, 4Institut de Génétique et Développement de Rennes, Rennes, France, [5]Institute 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. Park[1], H. Lee[1]; [1]Biological Sciences, Seoul National University, Seoul, Korea, South

B234/P1228 **Induction of outer radial glia by the random spindle orientation causes severe microcephaly in the Aspm mutant mice.** I. Fujita[1], T. Suetsugu[1], C. Kishida[1], Y. Tsunekawa[1], D. Konno[1], A. Fujimori[2], F. Matsuzaki[1]; [1]Center for Developmental Biology, RIKEN, Kobe, Hyogo, Japan, [2]Department of Basic Medical Sciences for Radiation Damages, NIRS, Chiba, Japan

B235/P1229 **Characterization of a novel myosin light chain in mitosis.** I. Ramirez[1], J.Z. Torres[1]; [1]Chemistry 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. Weidemann[1,2], E. Esposito[1,2], H. Yang[1,2], J. Rogers[1,2,3], H. Haynie[1,2], T. Boluarte[1,2], S. Hauf[1,2,4]; [1]Department of Biological Sciences, Virginia Tech, Blacksburg, VA, [2]Biocomplexity Institute, Virginia Tech, Blacksburg, VA, [3]Liberty University, Lynchburg, VA, [4]Center 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. Wolff[1], S.M. Wignall[1]; [1]Molecular Biosciences, Northwestern University, Evanston, IL

Chromosome Organization

B238/P1232 **Topoisomerase II inhibitor mediated upregulated Topo IIα SUMOylation and Aurora B kinase regulation.** N. Pandey[1], M. Yoshida[1], D. Keifenheim[2], D.J. Clarke[2], Y. Azuma[1]; [1]Department of Molecular Biosciences, University of Kansas, Lawrence, KS, [2]Department of Biological Sciences, University of Minnesota, Minneapolis, MN

B239/P1233 **Human centromeres produce non-coding alpha satellite RNAs that are chromosome-specific and required for centromere protein loading.** S.M. McNulty[1], L.L. Sullivan[1], B.A. Sullivan[1,2]; [1]Department of Molecular Genetics and Microbiology, Duke University, Durham, NC, [2]Division of Human Genetics, Duke University, Durham, NC

B240/P1234 **Negative regulatory network between the three aurora kinases protects mouse gamete euploidy.** A.L. Nguyen[1], A. Gentilello[1], K. Schindler[1]; [1]Genetics, Rutgers University, Piscataway, NJ

B241/P1235 **Premature mitotic entry induces replicative helicase unloading, fork collapse, and genome instability.** L. Deng[1,2], J. Walter[3,4], D. Pellman[1,2,4,5]; [1]Pediatric Oncology, Dana-Farber Cancer Institute, Boston, MA, [2]Cell Biology, Harvard Medical School, Boston, MA, [3]Biological Chemistry and Molecular Pharmacology, Harvard Medical School, Boston, MA, [4]Howard Hughes Medical Institute, Boston, MA, [5]Broad Institute of MIT and Harvard, Cambridge, MA

B242/P1236 **Chromosome dynamics simulations reveal the role of condensin and cohesin in building the bottle-brush chromosome architecture.** J.G. Lawrimore[1,2], A.B. Doshi[2], B.S. Friedman[2], A. Fulp[2], E.Y. Yeh[2], K.S. Bloom[2]; [1]Curriculum in Genetics and Molecular Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Biology Department, University of North Carolina at Chapel Hill, Chapel Hill, NC

B243/P1237 **Characterization of a novel, fungal-specific separase interacting protein, Eip1p, in the fungal pathogen *Candida albicans*.** S.T. Sparapani[1], C. Bachewich[1]; [1]Biology, Concordia University, Montreal, QC

B244/P1238 **Condensin complexes promote chromosome movement during mitosis.** K.R. Salmon[1,2], D.A. Compton[1,2]; [1]Biochemistry and Cell Biology, Geisel School of Medicine at Dartmouth, Hanover, NH, [2]Norris Cotton Cancer Center, Lebanon, NH

B245/P1239 **Eg5 activity regulates cell division property of tetraploid-induced tumor cells.** S. Shu[1,2], M. Iimori[3], H. Saeki[1], E. Oki[1], Y. Maehara[1]; [1]Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan, [2]Product Research, Chugai Pharmaceutical Co., Ltd., Kamakura, Japan, [3]Graduate School of Pharmaceutical Sciences, Kyushu University, Fukuoka, Japan

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

B247/P1241 **The determinants and consequences of cohesion fatigue.** H.R. Sapkota[1,2], J.R. Daum[1], E. Wasiak[1], G. Gorbsky[1,2]; [1]Cell Cycle and Cancer Biology, Oklahoma Medical Research Foundation, Oklahoma City, OK, [2]Cell 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-Roca[1], N.S. Divekar[1], S.M. Wignall[1], R. Ng[1]; [1]Molecular Biosciences, Northwestern University, Evanston, IL

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

B250/P1244 ***Vive la difference*! Evolutionary divergence in meiotic chromosome dynamics among nematodes.** R. Rillo-Bohn[1,2,3,4], B. Avsaroglu[1,2,3,4], J.J. Bayes[1,2,3,4], S. Köhler[1,2,3,4], A.F. Dernburg[1,2,3,4]; [1]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, [2]Howard Hughes Medical Institute, Chevy Chase, MD, [3]California Institute for Quantitative Biosciences (QB3), Berkeley, CA, [4]Biological Sciences and Engineering Division, Lawrence Berkeley National Laboratory, Berkeley, CA

B251/P1245 **Sisters keep arms locked through metaphase.** J.R. Daum[1], H. Sapkota[1,2], G.J. Gorbsky[1,2]; [1]Cell Cycle and Cancer Biology, Oklahoma Medical Research Foundation, Oklahoma City, OK, [2]Department of Cell Biology, University of Oklahoma Health Sciences Center, Oklahoma City, OK

B252/P1246 **Actin protects mammalian eggs against chromosome segregation errors.** B. Mogessie[1], M. Schuh[1]; [1]Meiosis, 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. Subramanian[1], P.A. San-Segundo[2], N.M. Hollingsworth[3], A. Hochwagen[1]; [1]Biology, New York University, New York, NY, [2]Consejo Superior de Investigaciones Científicas, Instituto de Biología Funcional y Genómica and University of Salamanca, Salamanca, Spain, [3]Department of Biochemistry and Cell Biology, Stony Brook University, Stony Brook, NY

B254/P1248 **Intrinsic and extrinsic factors contributing to the stability of CENP-A nucleosomes at centromeres.** P.K. Allu[1], A. Das[1,2], L.Y. Guo[1], M.A. Lampson[2], B.E. Black[1]; [1]Department of Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA, [2]Department of Biology, University of Pennsylvania, Philadelphia, PA

B255/P1249 **Investigating the Role of CDK-2 in Crossover Recombination in *C. elegans*.** J. Haversat[1], V. Roberts[1], Y. Kim[1]; [1]Biology, Johns Hopkins University, Baltimore, MD

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

B257/P1251 **The cytoplasmic DNA sensor cGAS promotes mitotic cell death.** C. Zierhut[1], H. Funabiki[1]; [1]Laboratory 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-Class[1], C.E. Rolle, PhD[1]; [1]Science 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. Hill[1], X. Wang[1], E.R. Roberts[1], E.M. Marin[1], J.K. Teer[2], Y. Kim[2], J. Messina[3], J. Wu[4], M. Kim[1]; [1]Molecular Oncology, Moffitt Cancer Center, Tampa, FL, [2]Biostatistics and Bioinformatics, Moffitt Cancer Center, Tampa, FL, [3]Anatomic Pathology, Moffitt Cancer Center, Tampa, FL, [4] Pathology, University of Oklahoma Health Sciences Center, Oklahoma City, OK

B261/P1254 **On the role of kindlin-3 phosphorylation in cancer cells.** K. Bialkowska[1], K. Sossey-Alaoui[1], E.F. PLow[1]; [1]Molecular 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. Shields[1], J.G. Tooley[2], C.E. Schaner Tooley[2]; [1]Biochemistry and Molecular Genetics, University of Louisville, Louisville, KY, [2]Biochemistry, 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. Oliveira[1], P. Soares-da-Silva[1,2]; [1]Phyzat Biopharmaceuticals, Porto, Portugal, [2]Center for Drug Discovery and Innovative Medicines, MedInUP, Porto, Portugal

B264/P1257 **Transforming growth factor beta (TGFβ) regulates glutamine metabolism in lung Fibrosis.** M. Choudhury[1], X. Yin[1], J. Kang[1], M. Jung[1], M. Andrianifahanana[1], E.B. Leof[1]; [1]Pulmonary and Critical Care Medicine, Mayo Clinic, Rochester, MN

B265/P1258 **How does MYC make purines?** M. Lafita Navarro[1], J. Kilgore[2], N. Williams[2], L. Zacharias[3], R. DeBerardinis[3], M. Conacci-Sorrell[1]; [1]Cell biology, UT Southwestern Medical Center, Dallas, TX, [2]Biochemistry, UT Southwestern, Dallas, TX, [3]Children's Research Institute, UT Southwestern Medical Center, Dallas, TX

B266/P1259 **Alpha1-antitrypsin-derived C-terminal peptide is a potent oxidative stress inhibitor.** A.A. Maslakova[1], M.A. Rubtsov[2], V.S. Efimova[1], O.S. Sokolova[1], O.V. Smirnova[1], I.V. Orlovsky[3]; [1]Faculty of Biology, Lomonosov Moscow State University, Moscow, Russia, [2]Department of Biochemistry/Strategic Management Department, I.M. Sechenov First Moscow State Medical University, Moscow, Russia, [3]A.N. Belozersky Research Institute of Physical and Chemical Biology, Lomonosov Moscow State University, Moscow, Russia

B267/P1260 **Targeting the Notch1 Transcriptional Activation Domain in T-Cell Acute Lymphoblastic Leukemia.** K.A. Sottoriva[1], L. Shao[1], K. Pajcini[1]; [1]Pharmacology, University of Illinois at Chicago, Chicago, IL

B268/P1261 **Investigating the Role of PA28γ in DNA Base Excision Repair.** B.E. Bundrant[1], C. Calhoun[1], L.F. Barton[1]; [1]Biology, Austin College, Sherman, TX

B269/P1262 **The NF45-NF90 complex is required for execution of the mitotic programme and chromosome stability.** S. Nourreddine[1], G. Lavoie[1], J. Paradis[1], K. Ben El Kadhi[1], P. gendron[1], S. Carreno[1], M. Bouvier[1], P.P. Roux[1]; [1]Department of Pathology and Cell Biology, IRIC, University of Montreal, Montreal, QC

B270/P1263 **The potential prognostic marker BaxΔ2 is generated without mutation at a genetic or transcriptional level.** A.S. Davis[1], A. Mañas[1], J. Li[1], J. Xiang[1]; [1]Biology, Illinois Institute of Technology, Chicago, IL

B271/P1264 **Ribosomal frameshift-mediated expression of BaxΔ2 in human tissues and its correlation with cancer stage.** A. Mañas[1], A.S. Davis[1], H. Zhang[1], J. Xiang[1]; [1]Biology, Illinois Institute of Technology, Chicago, IL

B272/P1265 ***Nedd9* influences lung cancer tumorigenesis through regulation of autophagy.** A.Y. Deneka[1,2], M.C. Kopp[3], A.S. Nikonova[1], L. Haber[1], A. Gaponova[1], A. Nagele[1], H. Hensley[1], E.A. Golemis[1]; [1]Molecular Therapeutics, Fox Chase Cancer Center, Philadelphia, PA, [2]Biochemistry, Kazan Federal University, Kazan, Russia, [3]Pulmonary, Allergy and Critical Care, University of Pennsylvania, Philadelphia, PA

B273/P1266 **Survivin governs mitochondrial architecture by regulating phosphatidylethanolamine (PE) availability.** S.P. Wheatley[1], A.R. Townley[1], L. Dunajova[1], D. McLean[1]; [1]School 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. Tang[1], C. Han[1]; [1]Physiology, National Cheng Kung University, Tainan, Taiwan

B275/P1268 **The role of INhibitor of Growth (ING) 2 in Breast Cancer Treatment.** K.T. Riabowol[1], D.I. Udenwobele[1,2], E. Kornaga[3], X. . Feng[3,4], K. Tae-sun[1]; [1]Biochemistry and molecular Biology, University of Calgary, Calgary, Canada, [2]Biochemistry, University of Nigeria, Nsukka, Nigeria, [3]Translational Research Laboratory, Tom Baker Cancer Centre, Calgary, Canada, [4]Oncology, BC Cancer Agency-Vancouver Island Center, Victoria, Canada

B276/P1269 **To Understand the Structural Role of Pyruvate Kinase M2 in Epigenetic Mechanism.** K. Verma[1], A. Patel[2]; [1]Kusuma School of Biological Sciences, Indian Institute of Technology, Delhi, Delhi, India, [2]Kusuma 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. Sahni[1], S.S. Gayle[1], B.M. Webb[1], K.L. Weber-Bonk[1], S. Singh[2], S.T. Sizemore[3], G. Bebek[4], V. Varadan[2], M.K. Summers[3], R.A. Keri[1,5,6]; [1]Department of Pharmacology, Case Western Reserve University, Cleveland, OH, [2]Case Comprehensive Cancer Center, Case Western Reserve University, Cleveland, OH, [3]Department of Radiation Oncology, The Ohio State University, Columbus, OH, [4]Center for Proteomics and Bioinformatics, Case Western Reserve University, Cleveland, OH, [5]Department of Genetics and Genome Sciences, Case Western Reserve University, Cleveland, OH, [6]Department 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 IIα.** M.F. Vargas[1], G.D. Ugarte[1], D.A. Verdugo[1], M.E. Lemus[1], B.I. Bustos[1], G.V. De Ferrari[1]; [1]Center for Biomedical Research, Universidad Andres Bello, Santiago, Chile

B279/P1272 **Characterization of the Interferon Regulatory Factor 4 Pathway in Melanoma Cells.** U. Sobhiafshar[1], N. Yildiz[1], A.B. Tufan[1], E. Yilmaz[1], M.C. Ayhan[1], C. Yerinde[1], E.E. Erkan[1], N. Emre[1]; [1]Laboratory 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. Kahue[1], R.J. Jerrell[1], A. Parekh[1,2,3,4]; [1]Department of Otolaryngology, Vanderbilt University Medical Center, Nashville, TN, [2]Vanderbilt-Ingram Cancer Center, Vanderbilt University Medical Center, Nashville, TN, [3]Department of Biomedical Engineering, Vanderbilt University Medical Center, Nashville, TN, [4]Department of Cancer Biology, Vanderbilt University Medical Center, Nashville, TN

B281/P1274 **Dual role of mitochondria in tumor initiation and progression.** S. JOSHI[1], W. Lu[2], S.V. Ladda[1], J.S. Hsieh[3], E. Singer[1], C. Chan[1], M.V. Vunavilli[4], J. Marszalek[5], G. Draetta[6], J.D. Rabinowitz[2], E. White[1]; [1]Rutgers Cancer Institute of New Jersey, Rutgers Cancer Institute of New Jersey, New Brunswick, NJ, [2]Department of Chemistry Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ, [3]Human Oncology and Pathogenesis Program, Memorial Sloan Kettering Cancer Center, New York, NY, [4]Department of Pathology and Cell biology, Columbia University, New York, NY, [5]Centre for Co-Clinical Trials Research, MD Anderson Cancer center, Houston, TX, [6]Therapeutics 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. Staneva[1], F. El Marjou[1], A.G. Clark[1], D. Matic Vignjevic[1]; [1]Institut Curie, Paris, France

B283/P1276 **A novel window for high resolution imaging of the lung reveals mechanisms of metastatic breast cancer progression.** L. Borriello[1,2], S. Voiculescu[3], Y. Wang[1,2,4], M.H. Oktay[1,4,5], J.S. Condeelis[1,2,4], D. Entenberg[1,2,4]; [1]Department of Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, [2]Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, [3]Department of Surgery, Albert Einstein College of Medicine, Bronx, NY, [4]Integrated Imaging Program, Albert Einstein College of Medicine, Bronx, NY, [5]Department of Pathology, Albert Einstein College of Medicine, Bronx, NY

SUNDAY

B284/P1277 **Cancer cell extracellular vesicle release during cancer extravasation: A novel anti-metastasis target.** Y. Kim[1,2], A. Poon[3], F. Lucien[2,3], K. Williams[3], J. Gomes[1], R.P. Singh[1,2], K. Deng[3], H.S. Leong[1,2,3]; [1]Pathology and Laboratory Medicine, Western University, London, ON, [2]Urology, Mayo Clinic, Rochester, MN, [3]Surgery, Western University, London, ON

B285/P1278 **Distinct ECM proteins of breast cancer metastatic niches in multiple organs.** J.D. Hebert[1], S.A. Myers[2], A. Naba[1], K.R. Clauser[2], S.A. Carr[2], R.O. Hynes[1]; [1]Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology, Cambridge, MA, [2]Proteomics 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. Barbazan[1,2], L. Alonso-Alconada[2], N. Elkhatib[1], S. Geraldo[1], B. Gurchenkov[1], A. Glentis[1], G. van Niel[1], R. Palmulli[1], B. Fernandez[3], P. Viaño[4], T. Garcia-Caballero[5], R. Lopez-Lopez[2], M. Abal[2], D. Matic Vignjevic[1]; [1]UMR144, Institut Curie, Paris, France, [2]Translational Medical Oncology, Health Research Institute of Santiago (IDIS), Santiago de Compostela, Spain, [3]Department of Pathology, Complexo Hospitalario Universitario de Santiago de Compostela/SERGAS, Santiago de Compostela, Spain, [4]CHUS, Health Research Institute of Santiago (IDIS), Santiago de Compostela, Spain, [5]Department 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 Velez[1], S.I. Fraley[1,2]; [1]Bioengineering, University of California San Diego, La Jolla, CA, [2]Moore's Cancer Center, University of California San Diego, La Jolla, CA

B288/P1281 **Role of Laminin Matrikines in Phenotypic Switching of Motile Cancer Cells.** L. Perrin[1], B. Gligorijevic[1]; [1]Bioengineering, Temple University, Philadelphia, PA

B289/P1282 **Collective epithelial intravasation in breast cancer metastasis.** V.L. Silvestri[1], A. Wong[2,3], P. Searson[2,3,4], A.J. Ewald[1,5,6]; [1]Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD, [2]Department of Materials Science and Engineering, Johns Hopkins University, Baltimore, MD, [3]Institute for Nanobiotechnology (INBT), Johns Hopkins University, Baltimore, MD, [4]Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins University, Baltimore, MD, [5]Oncology, Johns Hopkins University School of Medicine, Baltimore, MD, [6]Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, MD

B290/P1283 **Cell-density dependent migration in pancreatic ductal adenocarcinoma.** M. Karl[1], H. Jayatilaka[1], D. Wirtz[1,2,3]; [1]Department of Chemical and Biomolecular Engineering, The Johns Hopkins University, Baltimore, MD, [2]Johns Hopkins Physical Sciences - Oncology Center, The Johns Hopkins University, Baltimore, MD, [3]Departments 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. Jensen[1,2], G.A. Pedersen[1], J.J. Morgen [1,2], M. Parsons[3], S.F. Pedersen[4], L.N. Nejsum[1]; [1]Department of Clinical Medicine, Aarhus University, Aarhus, Denmark, [2]Department of Molecular Biology and Genetics, Aarhus University, Aarhus, Denmark, [3]Randall Division of Cell and Molecular Biophysics, King's College London, London, United Kingdom, [4]Department of Biology, University of Copenhagen, Copenhagen, Denmark

B292/P1285 **Loss of MTSS1 results in increased metastatic potential in pancreatic cancer.** A.E. Zeleniak[1,2], W. Huang[2,3], M.K. Brinkman[2,3], R. Hill[2,3]; [1]Integrated Biomedical Sciences, University of Notre Dame, South Bend, IN, [2]Harper Cancer Research Institute, South Bend, IN, [3]Biological 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. Liu[1], X. Yuan[1], M. Mullen[2], H. Green[2], X. Ding[1], X. Yao[1,2]; [1]Cellular Dynamics, Anhui Key Laboratory for Cellular Dynamics Chemical Biology, Hefei, China, [2]Keck Center for Molecular Imaging, Morehouse School of Medicine, Atlanta, GA

B295/P1288 **Cellular localization of ER chaperones may predict cancer patient prognosis.** K. Tiemann[1], C. Garri[1], S. Lee[1], P.D. Malihi[1], M. Park[1], R. Alvarez[1], L. Yap[2], P.S. Conti[2], P. Mallick[3], J.E. Katz[1], D. Agus[1], M.E. Gross[1], K. Kani[1]; [1]Lawrence J. Ellison Institute for Transformative Medicine, University of Southern California, Los Angeles, CA, [2]Radiology, Keck School of Medicine, University of Southern California, Los Angeles, CA, [3]Radiology, Stanford University, Stanford, CA

B296/P1289 **Myoepithelial cells are a dynamic barrier to epithelial dissemination.** K. Sirka[1], E.R. Shamir[1], A.J. Ewald[1]; [1]Cell Biology, Johns Hopkins University, Baltimore, MD

B297/P1290 **Emerin regulation of nuclear structure in cancer cell invasion.** P.G. White[1], K. Nee[1], J. Ellis[1], J.M. Holaska[1]; [1]Pharmaceutical 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. Summerbell[1,2], J. Bell[3,4], J. Konen[1,2], J. Kowalski[5], P.M. Vertino[4], A.I. Marcus[2]; [1]Graduate Program in Cancer Biology, Emory University, Atlanta, GA, [2]Department of Hematology and Medical Oncology, Emory University, Atlanta, GA, [3]Graduate Program in Genetics and Molecular Biology, Emory University, Atlanta, GA, [4]Department of Radiation Oncology, Emory University, Atlanta, GA, [5]Department of Biostatistics and Bioinformatics, Emory University, Atlanta, GA

B299/P1292 **Repair factor loss and genome variation in cancer cell invasion.** J. Irianto[1], Y. Xia[1], C.R. Pfeifer[1], J. Ji[1], C.M. Alvey[1], L. Smith[1], A. Athirasala[1], M. Tewari[1], R.R. Bennett[1], S.M. Harding[1], A.J. Liu[2], R.A. Greenberg[3], D.E. Discher[1]; [1]Molecular and Cell Biophysics Lab, University of Pennsylvania, Philadelphia, PA, [2]Graduate Group, Department of Physics and Astronomy, University of Pennsylvania, Philadelphia, PA, [3]Cancer 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. Padmanaban[1], A.J. Ewald[1]; [1]Departments 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. Lehmann[1], R.L. Eccles[1], J. Kleemann[1], D. Mossmann[1,2], C. Meisinger[1], V. Mahadevan[3], S. Brabletz[1], M. Stemmler[1], T. Brabletz[1]; [1]Experimental Medicine I, Friedrich Alexander University, Erlangen-Nuremberg, Germany, [2]Biozentrum, University of Basel, Basel, Switzerland, [3]Institute of Bioinformatics and Applied Biotechnology (IBAB), Bangalore, India

B302/P1295 **Constricted migration suppresses cell cycle progression.** C.R. Pfeifer[1,2,3], V.M. Morales Garcia[4], L.M. Santiago Millan[5], B. Niese[6], J. Irianto[1,2], D.E. Discher[1,2,3]; [1]Physical Sciences Oncology Center at Penn, University of Pennsylvania, Philadelphia, PA, [2]Molecular Cell Biophysics Lab, University of Pennsylvania, Philadelphia, PA, [3]Graduate Group, Department of Physics Astronomy, University of Pennsylvania, Philadelphia, PA, [4]Industrial Biotechnology, University of Puerto Rico at Mayagüez, Mayagüez, PR, [5]Biology, University of Puerto Rico at Humacao, Humacao, PR, [6]Engineering 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 synergistic modulation of crucial apoptosis regulators.** F. Fabi[1], P. Adam[1], K. Vincent[1], F. Demontigny[1], S. Parent[1], E. Asselin[1]; [1]Medical 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. Wu[1], C. Tseng[1], J.S. Lee[2], D. Wirtz[1]; [1]Department of Chemical and Biomolecular Engineering, The Johns Hopkins University, Baltimore, MD, [2]Center 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. Tang[1,2], C. Grommes[1,3,4], A. Pastore[5], N. Palaskas[1,6], C. Campos[1], D. Schartz[1], T. Graeber[7], N. Schultz[1,8,9], L.M. DeAngelis[3,4], I.K. Mellinghoff[1,3,4,10]; [1]Human Oncology and Pathogenesis Program, Memorial Sloan Kettering Cancer Center, New York, NY, [2]Gerstner Sloan Kettering Graduate School of Biomedical Sciences, Memorial Sloan Kettering Cancer Center, New York, NY, [3]Department of Neurology, Memorial Sloan Kettering Cancer Center, New York, NY, [4]Department of Neurology, Weill Cornell Medical College, New York, NY, [5]Computational Biology Program, Memorial Sloan Kettering Cancer Center, New York, NY, [6]Division of Hematology/Oncology, University of California Los Angeles, Los Angeles, CA, [7]Department of Molecular and Medical Pharmacology, Crump Institute for Molecular Imaging, University of California Los Angeles, Los Angeles, CA, [8]Marie-Josée and Henry R. Kravis Center for Molecular Oncology, Memorial Sloan Kettering Cancer Center, New York, NY, [9]Radiology, Memorial Sloan Kettering Cancer Center, New York, NY, [10]Department of Pharmacology, Weill Cornell Medical College, New York, NY

B306/P1299 **Development of a Cocktail Therapy against Human Malignant Melanoma by Combining Autophagy Inhibitors and Vemurafenib.** G. Wang[1], H. Qian[1], Y. Yang[1]; [1]Biological Sciences, Emporia State University, Emporia, KS

B307/P1300 **The prognostic value of RAS pathway biomarkers in late-stage breast cancer.** L.L. Siewertsz van Reesema[1], V. Zheleva[2], J.S. Winston[3], R.J. Jansen[4], C.F. O'Connor[1], A.J. Isbell[1], M. Bian[1], R. Qin[5], P.T. Bassett[3], V.J. Hinson[3], K.A. Dorsch[6], B.W. Kirby[6], R.E. Van Sciver[1], A.M. Tang-Tan[1], E.A. Harden[7,8], D.Z. Chang[8], C.A. Allen[6], R.R. Perry[2], R.A. Hoefer[6,7,9], A.H. Tang[1]; [1]Microbiology and Molecular Cell Biology, Eastern Virginia Medical School, Norfolk, VA, [2]Surgery, Eastern Virginia Medical School, Norfolk, VA, [3]Pathology, Sentara Pathology and Pathology Sciences Medical Group, Norfolk, VA, [4]Public Health, North Dakota State University, Fargo, ND, [5]Health Sciences Research, Mayo Clinic Cancer Center, Rochester, MN, [6]Sentara Cancer Network, Newport News, VA, [7]Dorothy G. Hoefer Comprehensive Breast Center, Newport News, VA, [8]Virginia Oncology Associates, Newport News, VA, [9]Sentara CarePlex Hospital, Newport News, VA

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

B309/P1302 **Mapping mechanisms of drug sensitivity and resistance: genetics and environment.** P. Patel[1], Z. Kianfard[1], S.A. Sabatinos[1]; [1]Chemistry and Biology, Ryerson University, Toronto, ON

B310/P1303 **Single cell profiling of phospho-protein levels in chronic lymphocytic leukemia.** I.K. Myhrvold[1,2], A. Cremaschi[1,3], J.U. Hermansen[1,2], G.E. Tjonnfjord[4,5], L.A. Munthe[5,6], K. Tasken[1,2,7], S.S. Skånland[1,2]; [1]Centre for Molecular Medicine Norway, University of Oslo, Oslo, Norway, [2]K. G. Jebsen Centre for Inflammation Research and K. G. Jebsen Centre for Cancer Immunotherapy, University of Oslo, Oslo, Norway, [3]Oslo Centre for Biostatistics and Epidemiology (OCBE), University of Oslo, Oslo, Norway, [4]Department of Haematology, Oslo University Hospital, Oslo, Norway, [5]Institute of Clinical Medicine, University of Oslo, Oslo, Norway, [6]Centre for Immune Regulation, Department of Immunology, University of Oslo, Oslo, Norway, [7]Department of Infectious Diseases, Oslo University Hospital, Oslo, Norway

B311/P1304 **Pyrrolidine dithiocarbamate reverses Bcl-xL-mediated apoptotic resistance to doxorubicin by inducing paraptosis.** S. Park[1,2], D. Lee[2,3], E. Ju[1], E. Ko[1], S. Jeong[1], K. Choi[2,3], E. Choi[4]; [1]Asan Institute for Life Sciences, Center for Advancing Cancer Therapeutics, Asan Medical Center, Seoul, South Korea, [2]Department of Biochemistry, Department of Biomedical Sciences, Ajou University School of Medicine, Suwon, South Korea, [3]Genomic Instability Center, Ajou University School of Medicine, Suwon, South Korea, [4]Center 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 rom Chemotherapeutic Agents.** R.T. Sapio[1], A.N. Nezdyur[2], M. Krevetski[3], L. Anikin[1], V.J. Manna[4], N. Minkovsky[3], D. Pestov[1]; [1]Cell Biology and Neuroscience, Graduate School of Biomedical Sciences, Rowan University, Stratford, NJ, [2]Chemistry and Biochemistry, Rowan University, Glassboro, NJ, [3]Biological Sciences, Rowan University, Glassboro, NJ, [4]Molecular 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. Coku[1], M.C. Pedrotty[1], J.C. Ye[1], D.M. Booth[2], A. Vu[1], K. Liu[1], C.P. Reynolds[3], G. Hajnoczky[2], M.D. Hogarty[1]; [1]Department of Pediatric Oncology, University of Pennsylvania, Philadelphia, PA, [2]Department of Pathology, Anatomy and Cell Biology, Thomas Jefferson University, Philadelphia, PA, [3]Department 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. Ghazale[1], I. Fakhoury[1], S. Rizk[1], T. Abou Antoun[2], A. Kanaan[3], M. El-Sibai[1]; [1]Natural Sciences, Lebanese American University, Beirut, Lebanon, [2]School of Pharmacy, Lebanese American University, Byblos, Lebanon, [3]Biomedical Sciences, University of Balamand, Kurah, Lebanon

B315/P1308 **Highly malignant gallbladder G-415 cancer cells express a p53 point mutation and are sensitive to D-propranolol-induced EGFR internalization.** J. Barra-Carrasco[1], C. Oyanadel[2], C. Metz[2], V.P. Montecinos[3], J.C. Roa[4], A. González[1,5]; [1]Centro de Envejecimiento y Regeneración (CARE), Facultad de Ciencias Biológicas, Pontificia Universidad Catolica de Chile, Santiago, Chile, [2]Centro de Biologia Celular y Biomedicina, Facultad de Ciencia, Universidad San Sebastian, Santiago, Chile, [3]Departamento de Hematologia y Oncologia, Facultad de Medicina, Pontificia Universidad Catolica de Chile, Santiago, Chile, [4]Departamento de Patologia, Facultad de Medicina, Pontificia Universidad Catolica de Chile, Santiago, Chile, [5]Centro de Biologia 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. Bekbayev[1], M. Suleimenov[1], A. Kakpenova[1,2,3], S. Kauanova[1,2,3], I.A. Vorobjev[1,3,4]; [1]School of Science and Technology, Nazarbayev University, Astana, Kazakhstan, [2]School of Engineering, Nazarbayev University, Astana, Kazakhstan, [3]National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan, [4]A.N. Belozersky Institute of Physico-Chemical Biology, M.V. Lomonosov Moscow State University, Moscow, Russia

B317/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. Clement[1,2], S.Y. Cheng[3], M. Dzieciatkowska [4], W. Aguilar[3], E. Champeil[3]; [1]Pathology, Albert Einstein College of Medicine Inc, Bronx, NY, [2]Chemistry, Lehman College CUNY, Bronx, NY, [3]Department of Sciences, John Jay College of Criminal Justice CUNY, New York, NY, [4]Biological Mass Spectrometry Core Facility, University of Colorado Denver, Aurora, CO

B318/P1311 **Acute changes in leukocyte populations following focal irradiation of the intestine.** B.I. Bell[1], S. Koduri[1], I.I. Verginadis[1], C. Koumenis[1]; [1]Department of Radiation Oncology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

B319/P1312 **Repurposing Verteporfin for chemotherapeutic treatment of endometrial cancer.** R.P. Gogoi[1], L. Bang[2], J.E. Miller[2], D. Kim[2,3], V. Dasari[1]; [1]Molecular and Functional Genomics, Weis Center for Research, Geisinger Clinic, Danville, PA, [2]Biomedical and Translational Informatics Institute, Danville, PA, [3]Huck Institute of the Life Sciences, Pennsylvania State University, University Park, PA

B320/P1313 **Genomic correlates of imaging response in men receiving intense neoadjuvant androgen deprivation therapy.** S. Wilkinson[1], H. Ye[2], R. Atway[1], S.Y. Trostel[1], S.T. Hennigan[1], R. Lake[1], S. Harmon[1], B. Turkbey[1], P.A. Pinto[1], P.L. Choyke[1], F. Karzai[1], W.L. Dahut[1], K. Kelly[1], D.J. VanderWeele[1], A.G. Sowalsky[1]; [1]LGCP, National Cancer Institute, Bethesda, MD, [2]Pathology, Beth Israel Deaconess Medical Center, Boston, MA

B321/P1314 **Models of Ovarian Cancer Cell Resistance to Doxorubicin and Cisplatin.** P. Caffrey[1], L. Gasper[1]; [1]Biological and Environ Sci, California University of PA, California, PA

Cancer Therapy: Natural Products

B322/P1315 **Epigalocatechin-3-gallate has antitumor effects due to induction of differentiation and apoptosis in a model of acute promyelocytic leukemia mice.** F.I. Della Via[1], C.O. Torello[1], F.M. Roversi[1,2], R.N. Shiraishi[1], M.C. Alvarez De Prax[1], E.M. Rego[3], S.T. Saad[1]; [1]Hematology and Transfusion Medicine Center, University of Campinas (Hemocentro/Unicamp), Campinas, São Paulo, Brazil, [2]Universidade São Francisco (USF), Bragança Paulista, Brazil, [3]Department of Internal Medicine, University of São Paulo (USP), Ribeirão Preto, Brazil

B323/P1316 ***Ganoderma lucidum* derivative fraction effects in triple-negative breast cancer.** G. Ortiz-Soto[1], C.L. Santiago Negron[2], I. Suarrez Arroyo[1], T. Ling[3], F. Rivas[3], M.M. Martinez-Montemayor[1]; [1]Department of Biochemistry, Universidad Central del Caribe School of Medicine, Bayamon, PR, [2]Biology Department, University of Puerto Rico Bayamon, Bayamon, PR, [3]Chemical 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 Calzada[1], I. Suarrez Arroyo[1], C.L. Santiago Negron[2], T. Ling[3], F. Rivas[3], M.M. Martinez-Montemayor[1]; [1]Department of Biochemistry, Universidad Central del Caribe School of Medicine, Bayamon, PR, [2]Biology Department, University of Puerto Rico Bayamon, Bayamon, PR, [3]Chemical Biology Therapeutics, St. Jude Children's Research Hospital, Memphis, TN

B325/P1318 **The Flavonoids Acacetin and Pinostrobin Inhibit Migration and Adhesion in MDA-MB-231 Breast Epithelial Cells.** A.A. Jones[1], S.R. Gehler[1]; [1]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. Fultang[1], K. Askey[2], J. Brar[1], I. Mercier[2], Z. Klase[1], B. Peethambaran[1]; [1]Biological Sciences, University of Sciences, Philadelphia, PA, [2]Pharmaceutical 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. Suarrez Arroyo[1], M.M. Martinez-Montemayor[1]; [1]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. Zambrano[1,2], P. Jara[1], J. Spies[1], C. Cárcamo[1], G. Vargas[1], C.L. Otth[2,3], M. Salas[1]; [1]Instituto de Bioquímica y Microbiologia, Universidad Austral de Chile, Valdivia, Chile, [2]3Center for Interdisciplinary Studies on the Nervous System (CISNe), Universidad Austral de Chile, Valdivia, Chile, [3]Instituto de Microbiologia Clinica, Universidad Austral de Chile, Valdivia, Chile

B329/P1322 **Purification and characterization of natural chemopreventative compounds for the treatment of prostate adenocarcinoma.** O.H. Richmond III[1], Z. Wang[1]; [1]Biological Sciences, Clark Atlanta University, Atlanta, GA

B330/P1323 **Rosehip (Rosa canina) Extracts Decrease Human Breast Cancer Cell Migration and Invasion.** P.M. Martin[1], P.D. Cagle[1]; [1]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. Torello[1], R.N. Shiraishi[1], F.I. Della Via[1], T.C. L. Castro[1], F. Martins[1], M.C. Alvarez De Prax[1], M.L. Queiroz[1], E.M. Rego[2], S.T. Saad[1]; [1]Hematology and Transfusion Medicine Center, University of Campinas, Campinas, Brazil, [2]Department 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. Kinder[1], S.R. Gehler[1]; [1]Biology, Augustana College, Rock Island, IL

B333/P1326 **Suppression of breast cancer cell proliferation by combinations of the phytochemicals fisetin, luteolin and hesperetin.** T. Beaumont[1], M. Castanon[1], H. Sabol[1], K.M. Baker[1]; [1]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. Rios[1], P. Lopez[2], V. Rivera-Amill[2], Y. Yamamura[2], M.M. Martinez-Montemayor[1]; [1]Department of Biochemistry, Universidad Central del Caribe School of Medicine, Bayamon, PR, [2]Basic 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. Wu[1,2], S. Hsu[3], Y. Lu[2], Y. Ma[2]; [1]Graduate Institute of Biomedical Sciences, Chang Gung University, Taoyuan City, Taiwan, [2]Department of Physiology Pharmacology, Chang Gung University, Taoyuan City, Taiwan, [3]Department of Biomedical Sciences, Chang Gung University, Taoyuan City, Taiwan

B336/P1329 **The place of Phytobiological Compounds in Colorectal Cancer: An in vitro study.** M. Francis[1,2], A. Geagea Jurjus[1,3], S. Al Kattar[1], K. Cehovin[1], M. Diab Assaf[2], S. Harakeh[4], A. Eid[1], A.R. Jurjus[1]; [1]Anatomy, Cell Biology and Physiology, American University of Beirut, Beirut, Lebanon, [2]Doctrol School of Science and Technology, Lebanese University, Beirut, Lebanon, [3]University of Palermo, Palermo, Italy, [4]King Fahd Center for Medical Research, Jeddah, Saudi Arabia

B337/P1330 **Cytotoxic activity of a new lectin from Rhizoctonia solani in vitro.** R. Muhammadiev[1], T. Salikhova[1], R. Muhammadiev[1], T. Bagaeva[1]; [1]Institute of Fundamental medicine and biology, Kazan (Volga Region) Federal University, Kazan, Russia

B338/P1331 **Title: Epigallocatechin-3-gallate regulates BRCA1 expression in triple negative breast cancer.** F.J. Garzon Maldonado[1], L. Delgado-Cruzata[1], L.A. Duran [1]; [1]Science, John Jay College, NY, NY

B339/P1332 **THE FLAVONOID QUERCETIN MODULATES NRF2 EXPRESSION AND INDUCES APOPTOSIS IN XENOGRAFT MODELS AND LEUKEMIA CELLS LINES.** M.C. Alvarez De Prax[1], C.O. Torello[1], S.T. Saad[1]; [1]HEMATOLOGY AND HEMOTHERAPY CENTER, UNICAMP, CAMPINAS, Brazil

B340/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. An[1], S. Yu[1], H. Kim[1], S. Ahn[1]; [1]Department 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. Jearawuttanakul[1,2], K. Suksen[3], P. Tuchinda[2,4], B. Munyoo[2,4], P. Kanjanasirirat[2], S. Borwornpinyo[2,5], A. Chairoungdua[1,2,3]; [1]Toxicology Graduate Program, Faculty of Science, Mahidol University, Bangkok, Thailand, [2]Excellent Center for Drug Discovery (ECDD), Faculty of Science, Mahidol University, Bangkok, Thailand, [3]Physiology, Faculty of Science, Mahidol University, Bangkok, Thailand, [4]Chemistry, Faculty of Science, Mahidol University, Bangkok, Thailand, [5]Biotechnology, Faculty of Science, Mahidol University, Bangkok, Thailand

B342/P1335 **Gene Expression Study of L19 on Human Colorectal Cancer Cells (DLD-1).** S. Mohammadhosseinpour[1], B.A. Clack[1]; [1]Biology, Stephen F. Austin State University, Nacogdoches, TX

B343/P1336 **Anticancer activity of cleistanthin A against CRC cells through inhibition of Wnt/beta-catenin signaling pathway.** P. Khumkhrong[1,2], S. Reabroi[3], K. Suksen[3], P. Tuchinda[2,4], B. Munyoo[2,4], A. Chairoungdua[1,2,3]; [1]Toxicology Graduate Program, Faculty of Science, Mahidol University, Bangkok, Thailand, [2]Excellent Center for Drug Discovery (ECDD), Faculty of Science, Mahidol University, Bangkok, Thailand, [3]Physiology, Faculty of Science, Mahidol University, Bangkok, Thailand, [4]Chemistry, Faculty of Science, Mahidol University, Bangkok, Thailand

B344/P1337 **Characterization of monoclonal antibodies from mice immunized with phycocyanin as a medicinal substance.** K. Yoshimura[1,2], N. Tominaga[3], Y. Ishihara[3], Y. Ogawa[2], A. Shiroto[2], M. Kato[2], K. Suzuki[2], Y. Miyawaki[2], N. Nishida[2], C. Tokunaga[2], K. Ishii[4], O. Hayashi[4], S. Watanabe[1], M. Nishina[3]; [1]Physiology, Saitama Medical University, Moroyama, Japan, [2]Health Science, NIhon Institute of Medical Science, Moroyama, Japan, [3]Biomedical Research Center, Saitama Medical University, Moroyama, Japan, [4]Health and Nutrition, Kagawa Nutrition University, Sakado, Japan

B345/P1338 **Mechanisms of Anticancer Activity of Novel Pyridoxine-based Bioisosteric Analogs of Dehydrozingerone.** O. Bondar[1], R. Pavelyev[1], T. Nguyen[1], M. Pugachev[1], G. Alekbaeva[1], A. Aimaletdinov[1], O. Vasileva[1], A. Lyubina[1], K. Balakin[1,2], Y. Shtyrlin[1]; [1]Scientific and Educational Center of Pharmaceutics, Kazan (Volga Region) Federal University, Kazan, Russia, [2]b I.M. Sechenov First Moscow State Medical University, Moscow, Russia

Cancer Stem Cells

B346/P1339 **The WAVE3-YB1 interaction regulates cancer stem cells activity in breast cancer.** K. Sossey-Alaoui[1], K. Bledzka[1], W.P. Schiemann[1], B. Schiemann[2], E.F. PLow[1]; [1]Molecular Cardiology, Cleveland Clinic Lerner Research Institute, Cleveland, OH, [2]Case Comprehensive Cancer Center, Cleveland, OH

B347/P1340 **SOX2/OCT4 biosensor intravital imaging reveals the invasive breast cancer stem cell phenotype and its association with TMEM *in vivo*.** V.P. Sharma[1,2], Y. Wang[1,2,3], G.S. Karagiannis[1,3], B. Tang[4], E. Xue[1], D. Entenberg[1,2,3], L. Wakefield[4], M.H. Oktay[1,2,3,5], J.S. Condeelis[1,2,3]; [1]Department of Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, [2]Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, [3]Integrated Imaging Program, Albert Einstein College of Medicine, Bronx, NY, [4]Laboratory of Cancer Biology and Genetics, National Cancer Institute, Bethesda, MD, [5]Department of Pathology, Albert Einstein College of Medicine, Bronx, NY

B348/P1341 **Suppression of the growth of cancer stem cells developed from iPSCs by soluble form of human Cripto-1.** M.J. ALAM[1], A. Mizutani[1], H. Murakami[1], A.K. Oo[1], D.S. Salomon[2], M. Seno[1]; [1]Department of Medical Bioengineering, Okayama University, Okayama, Japan, [2]Mouse 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 Cortez[1,2], L. Carvalho Price[2], M. Dias[3], N.J. Ganem[1], O. Okamoto[2]; [1]Department of Pharmacology Experimental Therapeutics, Boston University School of Medicine, Boston, MA, [2]Department of Genetics and Evolutionary Biology, Institute of Biosciences, University of Sao Paulo, Sao Paulo, Brazil, [3]Laboratório Especial de Toxinologia Aplicada, Instituto Butantan, Sao Paulo, Brazil

B350/P1343 **The Snail/let-7 axis induces stemness in ovarian, breast, and pancreatic cancer cells.** H. Wang[1], M. Lombere[1], E. Chirshev[1], N. Hojo[1], A. Hill[1], J.J. Unternaehrer-Hamm[1]; [1]Basic Sciences, Loma Linda University, Loma Linda, CA

B351/P1344 **O-GlcNAc transferase regulates breast cancer tumor-initiating cells.** N. Akella[1], D. Mukhopadhyay[1], A. Mukherjee[1], Z. Bacigalupa[1], M.J. Reginato[1]; [1]Biochemistry, Drexel University, Philadelphia, PA

B352/P1345 **Expression of ALDH Isoforms in Colon Tumorigenesis.** R. Kowash[1], G. Masters[2], B.M. Boman[3], L.M. Opdenaker[3,4], S.R. Modarai[3]; [1]Biology, Dickinson College, Carlisle, PA, [2]Biology, Hamilton College, Clinton, NY, [3]CTCR, Christiana Care Health Services Inc., Newark, DE, [4]Biological 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. Xue[1], V.P. Sharma[1,2], D. Entenberg[1,2,3], Y. Wang[1,2,3], B. Tang[4], L. Wakefield[4], M.H. Oktay[1,2,3,5], J.S. Condeelis[1,2,3]; [1]Department of Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, [2]Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, [3]Integrated Imaging Program, Albert Einstein College of Medicine, Bronx, NY, [4]Laboratory of Cancer Biology and Genetics, National Cancer Institute, Bethesda, MD, [5]Department of Pathology, Albert Einstein College of Medicine, Bronx, NY

B354/P1347 **CD82 expression affects acute myeloid leukemia chemosensitivity.** M. Floren[1], K.M. Alvarez[1], C.M. Termini[1], K.D. Marjon[1], J.M. Gillette[1]; [1]Pathology, University of New Mexico, Albuquerque, NM

B355/P1348 **Histone demethylase inhibitor JIB-04 blocks the self-renewal of human colon cancer stem cells.** H. Cho[1,2], M. Kim[1,2], Y. Jang[1,2]; [1]Department of Systems Biology, College of Life Science and Biotechnology, Yonsei University, Seoul, South Korea, [2]Initiative for Biological Function Systems, Yonsei University, Seoul, South Korea

Gene Regulation and Genome Structure

B357/P1349 **Gene Annotation of Contig17 Within Dot Chromosome of *Drosophila eugracilis*.** A.M. Herken[1], T. Sadikot[1]; [1]Biology, Washburn University, Topeka, KS

B358/P1350 **Annotation of contig40 of the *Drosophila eugracilis* dot chromosome.** R.P. Powell[1], T. Sadikot[1]; [1]Biology, 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. Radford[1], T. Sadikot[1]; [1]Biology, Washburn University, Topeka, KS

B360/P1352 **Annotation and cross-species comparison of *Drosophila* genes.** J. Hobson[1], M. Van Stry[1], W. Leung[2], S.C. Elgin[2]; [1]Biology, Lane College, Jackson, TN, [2]Biology, Washington University in St. Louis, St. Louis, MO

SUNDAY

B361/P1353 **Influence by ecdysone and transcription on developmentally regulated DNA re-replication in Sciara DNA puffs.** J.M. Urban[1], L. Kadota[1], J. Leung[1], A. Lee[1], Y. Yamamoto[1], E. Gustafson[1], M.S. Foulk[1], J. Bliss[1], S.A. Gerbi[1]; [1]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. Yamamoto[1], O. Miura[1], S. Umekita[1], T. Ohyama[1]; [1]Biology, Waseda University, Tokyo, Japan

B363/P1355 **The histone methyltransferases Set1 and Set5 promote subtelomeric gene silencing and telomere maintenance in *Saccharomyces cerevisiae*.** M. Jezek[1], A. Gast[1], G. Choi[2], R. Kulkarni[1], J. Quijote[2], A. Graham-Yooll[1], D. Park[2], E.M. Green[1]; [1]Biological Sciences, University of Maryland, Baltimore County, Baltimore, MD, [2]Mathematics 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. Slate[1], K. Tatasciore[1], E. Godfrey[1], G. Greco[1], L. Goudsouzian[1]; [1]Natural Science, DeSales University, Center Valley, PA

B365/P1357 **Impact of ethanol on markers of heterochromatin maintenance and trinucleotide repeat expansion in *Saccharomyces cerevisiae*.** S. Ngan[1], M. Reinert[1], K. Churylo[1], L. Goudsouzian[1]; [1]Natural Science, DeSales University, Center Valley, PA

B366/P1358 **A single cell view of MYC's gene regulatory and oncogenic mechanism.** S. Patange[1,2], M. Girvan[2], D. Levens[3], D.R. Larson[1]; [1]Laboratory of Receptor Biology and Gene Expression, National Cancer Institute, NIH, Bethesda, MD, [2]Institute for Physical Science and Technology, University of Maryland - College Park, College Park, MD, [3]Laboratory 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 Rivera[1,2], E. Lozada Delgado[2,3,4], P.E. Vivas Mejia[2,4]; [1]Interdisciplinary Studies Program, University of Puerto Rico Rio Piedras Campus, San Juan, PR, [2]University of Puerto Rico Comprehensive Cancer Center, San Juan, PR, [3]Biology, University of Puerto Rico Rio Piedras Campus, San Juan, PR, [4]Biochemistry, University of Puerto Rico Science Medical Campus, San Juan, PR

B368/P1360 **Regulation of proinflammatory chemokine CXCL5 by microRNA hsa-miR-605.** A. Parikh[1], S. Ramanathan[1], B. Shenoda[1], S. Ajit[1]; [1]Pharmacology 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. Byun[1], Y. Jeong[1], Y. Choi[1], J. Yoon[1], K. Baek[1]; [1]Graduate School of Biotechnology, Kyung Hee University, Yongin-si, South Korea

B370/P1362 **Nascent companions of Hobbit.** Z. Afzal[1,2], B. De Kumar[1], C. Nolte[1], J.J. Lange[1], B. Slaughter[1], J. Unruh[1], R.E. Krumlauf[1,2]; [1]Stowers Institute for Medical Research, Kansas City, MO, [2]Anatomy 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. Youngman[1], E. Mortezavi[1], W. Gu[2], C. Mello[3]; [1]Biology, Villanova University, Villanova, PA, [2]Cell Biology and Neuroscience, University of California at Riverside, Riverside, CA, [3]Program in Molecular Medicine and HHMI, UMass Medical School, Worcester, MA

B372/P1364 **The Role of Protein Arginine Methylation in the Repression of tRNA Biogenesis under Stress.** R. Davis[1], E. Milliman[1], N. Likhite[1], C. Jackson[1], M.C. Yu[1]; [1]Biological Sciences, State University of New York at Buffalo, Buffalo, NY

B373/P1365 **MyoD Enhancer RNA in Gene Regulation.** P. Tsai[1], S. Dell'Orso[1], K. Vivanco[1], J. Rodriguez[2], D.R. Larson[2], V. Sartorelli[1]; [1]NIAMS, NIH, Bethesda, MD, [2]NCI, NIH, Bethesda, MD

B374/P1366 **Repeat E anchors Xist RNA to the inactive X chromosome compartment through CDKN1A-interacting protein (CIZ1).** H. Sunwoo[1,2,3], D. Colognori[1,2,3], J. Froberg[1,2,3], Y. Jeon[1,2,3], J.T. Lee[1,2,3]; [1]Genetics, Harvard Medical School, Boston, MA, [2]Howard Hughes Medical Institute, Boston, MA, [3]Molecular Biology, Massachusetts General Hospital, Boston, MA

B375/P1367 **The *R1* retrotransposon in *Drosophila rDNA* is transcribed by RNA Pol I upon heat shock.** H.S. Raje[1], P.J. DiMario[1]; [1]Biological Sciences, Louisiana State University, Baton Rouge, LA

B376/P1368 **Optical trapping studies of *glmS* ribozyme riboswitch folding and catalysis.** A. Savinov[1], S.M. Block[2]; [1]Biophysics Program, Stanford University, Stanford, CA, [2]Departments of Applied Physics and Biology, Stanford University, Stanford, CA

Post-Transcription Gene Regulation

B377/P1369 **Multiple mechanisms coordinately drive RNA-binding protein localization to RNA granules.** X. Wang[1], N. Day[1], E. Voronina[1]; [1]DBS, University of Montana, Missoula, MT

B378/P1370 **Single-Molecule Imaging Reveals Dynamic Biphasic Partition of the RNA-Binding proteins G3BP1 and IMP1 in Stress Granules of Living Neuronal Cells.** B. Niewidok[1], M. Igaev[1], A. Pereira da Graca[1], A. Strassner[1], C. Lenzen[1], R. Kurre[2], J. Piehler[2], R. Brandt[1]; [1]Neurobiology, University of Osnabrueck, Osnabrueck, Germany, [2]Biophysics, University of Osnabrueck, Osnabrueck, Germany

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

B380/P1372 **Uncovering the cellular functions of mRNA methylation.** S. Nachtergaele[1], C. He[1]; [1]Institute 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. Mageeney[1], V.C. Ware[1]; [1]Biological Sciences, Lehigh University, Bethlehem, PA

B382/P1374 **Understanding the endogenous regulation of Ataxin-1 in SCA-1.** R. Manek[1], E. Rodriguez-Lebron[1]; [1]Pharmacology & Therapeutics, University of Florida, Gainesville, FL

B383/P1375 **Alterations in S-adenosylmethionine synthesis regulate stress granule assembly and composition.** K. Begovich[1], J.E. Wilhelm[1]; [1]Biological 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. Salaam[1,2], O.O. Omidiji[2], I.A. Taiwo[2], K.O. Adekoya[2]; [1]Biotechnology, Federal Institute of Industrial Research, Oshodi, Lagos, Nigeria, [2]Cell Biology and Genetics, University of Lagos, Lagos, Nigeria

B385/P1377 **Translational regulation of DEAD-box helicase Ded1/DDX3 medulloblastoma mutations.** N.P. Brown[1], T.A. Bolger[1]; [1]Molecular and Cellular Biology, University of Arizona, Tucson, AZ

Nuclear Lamina and Laminopathies

B387/P1378 **Mutant lamins alter genome integrity, proteostasis, and redox homeostasis in muscle disease.** G.S. Coombs[1], D.E. Cryderman[2], A.C. Goll[2], M.T. O'Connor[2], M. Valdes[1], L.L. Wallrath[2]; [1]Biology, Waldorf University, Forest City, IA, [2]Biochemistry, University of Iowa, Iowa City, IA

B388/P1379 **Myofibril contraction and cross-linking drive nuclear movement to the periphery of skeletal muscle.** W. Roman[1,2], J.P. Martins[1], F.A. Carvalho[1], R. Voituriez[3,4], J.V. Abella[5], N.C. Santos[1], B. Cadot[2], M. Way[5], E.R. Gomes[1]; [1]Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, Lisbon, Portugal, [2]Sorbonne Universités, UPMC Univ Paris 06, INSERM UMRS974, CNRS FRE3617, Center for Research in Myology, Paris, France, [3]Laboratoire de Physique Théorique de la Matière Condensée, CNRS UMR 7600; Université Pierre et Marie Curie, Paris, France, [4]Laboratoire Jean Perrin; CNRS FRE 3231, Université Pierre et Marie Curie, Paris, France, [5]Cellular Signalling and Cytoskeletal Function, The Francis Crick Institute, London, United Kingdom

B389/P1380 **Mechano-protection by lamin-A against DNA damage as the developing heart stiffens and strengthens.** S. Cho[1], S. Majkut[2], A. Abbas[1], K. Vogel[1], M. Vashisth[1], J. Irianto[1], M. Tewari[1], B.L. Prosser[3], D.E. Discher[1]; [1]Molecular Cell Biophysics Lab, University of Pennsylvania, Philadelphia, PA, [2]Department of Physics Astronomy, University of Pennsylvania, Philadelphia, PA, [3]Department 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. Liddane[1], J.M. Holaska[1]; [1]Pharmaceutical 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. Iyer[1], J.M. Holaska[1]; [1]Pharmaceutical Sciences, University of the Sciences, Philadelphia, PA

B392/P1383 **Nanoscale Nuclear Envelope Dynamics and Spatial Organization of the Muscular Dystrophy Protein Emerin.** A. Fernandez[1], M. Bautista[2], T. Chung[1], F. Pinaud[1,2,3]; [1]Biological Sciences, University of Southern California, Los Angeles, CA, [2]Chemistry, University of Southern California, Los Angeles, CA, [3]Physics 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. Collins[1], J.M. Camuglia[1], M. Gutierrez[1], T. Shu[1], E.S. Folker[1]; [1]Department of Biology, Boston College, Chestnut Hill, MA

B394/P1385 ***Bocksbeutel* regulates nuclear positioning by a *klarsicht*-dependent mechanism.** T.R. Mandigo[1], A.J. Anderson[1], B.D. Turcich[1], E.S. Folker[1]; [1]Biology, Boston College, Boston, MA

B395/P1386 **Lamin A regulates the activity and dynamics of nucleoli.** A.L. Buchwalter[1], M.W. Hetzer[1]; [1]Molecular 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 lamins.** A.D. Stephens[1], P.Z. Liu[1], E.J. Banigan[1,2], L.M. Almassalha[3], V. Backman[3], S.A. Adam[4], R.D. Goldman[4], J.F. Marko[1,2]; [1]Department of Molecular Biosciences, Northwestern University, Evanston, IL, [2]Department of Physics and Astronomy, Northwestern University, Evanston, IL, [3]Department of Biomedical Engineering, Northwestern University, Evanston, IL, [4]Department of Cell and Molecular Biology, Northwestern University Feinberg School of Medicine, Chicago, IL

B397/P1388 **Chromatin state contributes to nuclear mechanics.** J.F. Johnston[1], S. Mochrie[2,3], M.C. King[1]; [1]Department of Cell Biology, Yale School of Medicine, New Haven, CT, [2]Department of Physics, Yale University, New Haven, CT, [3]Department 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. Stewart[1], E.C. Rodriguez[1], M.C. King[1]; [1]Cell 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. Irianto[1], A. Buxboim[1], D.E. Discher[1]; [1]Molecular & Cell Biophysics Lab, University of Pennsylvania, Philadelphia, PA

B401/P1392 **Dynein pulling forces on ruptured nuclei counteract lamin-mediated repair mechanisms in vivo.** L. Penfield[1], B. Wysolmerski[1], R. Farhadifar[2], M.S. Mauro[1], C.J. Broberg[1], M.A. Martinez[1], R.J. Biggs[3], H. Wu[2], D.J. Needleman[2], S. Bahmanyar[1]; [1]Dept. of Molecular Cellular and Developmental Biology, Yale University, New Haven, CT, [2]School of Engineering and Applied Science, Harvard University, Cambridge, MA, [3]Ludwig Institute for Cancer Research, UC San Diego, La Jolla, CA

B402/P1393 **Dual roles for nuclear envelope constituents in the cytoplasm.** B. KC[1], C. Halfmann[1], M.H. Ali[1], K.J. Roux[1,2]; [1]Enabling Technologies Group, Sanford Research, Sioux Falls, SD, [2]Department 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. Sun[1], L. Chang[1]; [1]BIOPIC, Peking University, Beijing, China

B404/P1395 **The role of the BAF/VRK1 signaling axis on the DNA damage response in NGPS.** M.F. El-Sabban[1], A.M. Mon[1], P. Traktman[1]; [1]Biochemistry 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 Encarnación[1], B. Cisneros Vega[1]; [1]Genética 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. Kirby[1,2], A. Earle[1,2], G.R. Fedorchak[1,2], P. Isermann[1,2], C. Brightwell[3], C. Fry[3], J. Lammerding[1,2]; [1]Weill Institute for Cell and Molecular Biology, Cornell University, Ithaca, NY, [2]Meinig School of Biomedical Engineering, Cornell University, Ithaca, NY, [3]Department of Nutrition and Metabolism, University of Texas Medical Branch, Galveston, TX

B407/P1398 **Visualization of Lamina Association Reveals Functional Organization of Chromosomes.** T.R. Luperchio[1], M.E. Sauria[2], X. Wong[1], M. Gaillard[1], P. Tsang[3], K. Pekrun[3], R. Ach[3], N. Yamada[3], J. Taylor[2], K. Reddy[1]; [1]Biological Chemistry, Johns Hopkins University School of Medicine, Baltimore, MD, [2]Biology, Johns Hopkins University, Baltimore, MD, [3]Agilent 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 Ngo[1], M. Bhalla[1], D. Chen[1], K. Ireton[1]; [1]Microbiology and Immunology, University of Otago, Dunedin, New Zealand

B410/P1400 **Automated detection, classification, and verification of distinct modes of exocytosis.** F.L. Urbina[1], S.L. Gupton[1]; [1]Cell 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. Manandhar[1], S.P. Valencia[1], C. Alvarado[1], I. Mansoora[1], E. Gharakhanian[1]; [1]Biology, CSULB, Long Beach, CA

SUNDAY

B412/P1402 **Exosomes transfer into osteoclasts through bone tissue.** N. Takahashi[1]; [1]Graduate School of Environmental Engineering, The University of Kitakyushu, Kitakyushu, Japan

B413/P1403 **Plasma membrane PI(4,5)P_2 is critical for secretory granule exocytosis.** M. Omar Hmeadi[1], N.R. Gandasi[1], S. Barg[1]; [1]Medical 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. Balagopalan[1], J. Yi[1], T. Nguyen[1], A.S. Harned[2], K. Narayan[2], L.E. Samelson[1]; [1]Laboratory of Cellular and Molecular Biology, National Institutes of Health, Bethesda, MD, [2]Center for Molecular Microscopy, National Institutes of Health, Frederick, MD

B415/P1405 **EXO70 REGULATES B-CELL MIGRATION.** N.I. Goles[1], M. Yuseff[1]; [1]Celullar and Molecular Biology, Pontificia Universidad Católica de Chile, Santiago, Chile

B416/P1406 **Otoferlin is a multivalent calcium-sensitive scaffold linking SNAREs and calcium channels.** C.P. Johnson[1], N. Hams[1], W. Qiu[1]; [1]Biochemistry, 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. Johnson[1], S. Codding[1]; [1]Biochemistry, Oregon State University, Corvallis, OR

B418/P1408 **Structure of the HOPS complex and its interactions with SNARE proteins.** S.A. Port[1], P.D. Jeffrey[1], F.M. Hughson[1]; [1]Molecular Biology, Princeton University, Princeton, NJ

B419/P1409 **Coarse-grained simulations of the synaptic neurotransmitter release machinery.** A. Polley[1], J. Wang[2], J.E. Rothman[2], B. O'Shaughnessy[1]; [1]Chemical Engineering, Columbia University, New York, NY, [2]Cell Biology, Yale University, New Haven, CT

B420/P1410 **Elucidating Individual Subunit Positions within the Exocyst Tethering Complex.** D. Lepore[1], L. Kenner[2], A. Frost[2], M. Munson[1]; [1]Biochemistry and Pharmacology, University of Massachusetts Medical School, Worcester, MA, [2]Biochemistry 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. Wang[1], H. Sun[1], X. Liang[1], S.T. Crooke[1]; [1]Core 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-Fukuda[1], I.G. Macara[1], S.M. Ahmed[1]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B423/P1413 **Synaptotagmin 5 regulates Ca^{2+}-dependent Weibel-Palade body exocytosis in human endothelial cells.** C. Lenzi[1], J. Stevens[2], M. Hannah[3], R. Bierings[4], T. Carter[1]; [1]Molecular Clinical Research Centre, St George's University London, London, United Kingdom, [2]Medical School, King's College London, London, United Kingdom, [3]Virus Reference Department, Public health England, London, United Kingdom, [4]Department 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. Sharma[1]; [1]BIOLOGICAL SCIENCES, MISSISSIPPI STATE UNIVERSITY, Starkville, MS

B425/P1415 **Cryo-EM Structure of the Exocyst Complex.** K. Mei[1], Y. Li[2], S. Wang[1], G. Shao[3], J. Wang[2], Y. Ding[3], G. Luo[1], P. Yue[1], J. Liu[2], X. Wang[2], M. Dong[3], H. Wang[2], W. Guo[1]; [1]Department of Biology, University of Pennsylvania, Philadelphia, PA, [2]School of Life Sciences, Tsinghua University, Beijing, China, [3]National Institute of Biological Sciences, Beijing, Beijing, China

B426/P1416 **Oxidative stress impedes trafficking and increases vesicular accumulation of amyloid precursor protein in HTB-11 neuroblastoma cells.** A.R. Haber[1], G. Gomez[1]; [1]Biology, University of Scranton, Scranton, PA

B427/P1417 **Cholangiocyte intercellular communication via polarized exosome release.** L.C. Doskey[1], B.A. Davies[1], L.O. Morton[2], J.R. Jefferson[2,3], C.N. Rozeveld[1], C. Tseng[1], N.F. LaRusso[1,2], D.J. Katzmann[1]; [1]Department of Biochemistry and Molecular Biology, Mayo Clinic College of Medicine, Rochester, MN, [2]Division of Gastroenterology, Mayo Clinic College of Medicine, Rochester, MN, [3]Chemistry Department, Luther College, Decorah, IA

B428/P1418 **Unconventional release of fusogenic nonenveloped reoviruses.** N.M. McMullen[1], C. Pan[1], R. de Antueno[1], G.J. Gaspard[1], D.P. MacKenzie[1], K.M. Proudfoot[1], R. Duncan[1]; [1]Microbiology and Immunology, Dalhousie University, Halifax, NS

B429/P1419 **CSF-1R SIGNALING ON INTERNAL VESICLES INVOLVES LYN TYROSINE KINASE.** L. Monga[1]; [1]Biology and microbiology, South Dakota State University, Brookings, SD

ER and Golgi Transport

B430/P1420 **Regulation of COPI vesicle transport via Scyl1 methylation under ER-stress.** S. Matsuzaki[1,2], G. Amano[2], Y. Mori[3], D. Kobayashi[1], H. Takamura[2], K. Miyoshi[2], T. Yoshimura[2], F. Saika[1], N. Kiguchi[1], T. Katayama[2], S. Kishioka[1]; [1]Department of Pharmacology, Wakayama Medical University, Wakayama, Japan, [2]Molecular Brain Science, Osaka University, United Graduate School of Child Development, Suita, Japan, [3]Anatomy, International University of HEALTH and WELFARE School of Medicine, Narita, Japan

B431/P1421 **Regulation of the COPII outer coat by O-GlcNAc.** B.M. Condon[1], N.J. Cox[1,2], T.R. Meister[1], B.J. Bisnett[1], E. Soderblom[3], M. Boyce[1]; [1]Biochemistry, Duke University, Durham, NC, [2]Pharmacology, Duke University, Durham, NC, [3]Proteomics 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. Meissner[1], J.M. Bhatt[1], E. Lee[1], M.L. Styers[2], A.A. Ivanova[3], R.A. Kahn[3], E.S. Sztul[1]; [1]Department of Cell, Developmental and Integrative Biology, University of Alabama at Birmingham, Birmingham, AL, [2]Department of Biology, Birmingham-Southern College, Birmingham, AL, [3]Department 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. Sager[1], E.G. Viktorova[2], J.M. Meissner[1], E.J. Lee[1], C.A. Pocognoni[1], G.A. Belov[2], E.S. Sztul[1]; [1]Cell, Developmental, and Integrative Biology, University of Alabama at Birmingham, Birmingham, AL, [2]Department of Veterinary Medicine, Virginia-Maryland Regional College of Veterinary Medicine, University of Maryland, College Park, College Park, MD

B434/P1424 **Isoform Specialization Among the Sec23 Gene Family Has Significant Consequences for Polarized Growth.** M. Chang[1], J. O'Sullivan[1], M. Bezanilla[2]; [1]Biology Department, University of Massachusetts, Amherst, Amherst, MA, [2]Biology 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. Mihelc[1], S.A. Tinney[1], S.C. Baker[2], J.K. Lanman[1]; [1]Biological Sciences, Purdue University, West Lafayette, IN, [2]Microbiology 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. Grits[1], Y. Bikard[1], A. Stamatia[1], J. Viviano[1], M. Orr[1], R. Rubenstein[1,2]; [1]Pulmonary Medicine, Children's Hospital of Philadelphia, Philadelphia, PA, [2]Pulmonary Medicine, University of Pennsylvania, Philadelphia, PA

B437/P1427 **Autophagosome formation is involved in unconventional secretion of CFTR.** S. Noh[1], M. Lee[1]; [1]Department 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. Mukherjee[1], D.L. Levy[1]; [1]Molecular Biology, University of Wyoming, Laramie, WY

B439/P1429 **Unstacking the stacking problem of Golgi.** B.K. Jain[1], D. Bhattacharyya[1]; [1]Bhattacharyya Lab, ACTREC, Tata Memorial Centre, Kharghar, Navi Mumbai, India

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

B441/P1431 **aPKC Influences Golgi Integrity.** E.J. Tisdale[1], C.R. Artalejo[1]; [1]Pharmacology, 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. Cao[1], L. Renna[1], G. Stefano[1], F. Brandizzi[1]; [1]Plant Research Laboratory, Michigan State University-US Department of Energy, East Lansing, MI

B443/P1433 **The Microtubule-associated End Binding proteins regulate the ER exporting and trafficking of TRPM4 channels.** C. Blanco[1], I. Aldunate[1], J. Canales[1], J. Rivas[1], D. Riquelme[2], D. Morales[3], I. Silva[1], A. Álvarez[1], A. Vergara[4,5], H. Poblete[4,5], A. Romero[1], E. Leiva[2], W. González[4,5], D. Varela[3,5], M. Cáceres[1,5], O. Cerda[1,5]; [1]Molecular and Cellular Biology Program, Faculty of Medicine, Universidad de Chile, Santiago, Chile, [2]Department of Biology, Faculty of Chemistry and Biology, Universidad de Santiago de Chile, Santiago, Chile, [3]Pathophysiology Program, Faculty of Medicine, Universidad de Chile, Santiago, Chile, [4]Center for Bioinformatics and Molecular Simulation, Núcleo Científico Multidisciplinario, Universidad de Talca, Talca, Chile, [5]Millennium Nucleus of Ion Channels-Associated Diseases (MiNICAD), Santiago, Chile

B444/P1434 **VLDL Receptor is required for non-genomic progesterone-dependent signaling to release oocyte meiotic arrest.** N. Nader[1], M. Dib[1], R. Courjaret[1], R. Hodeify[2], R. Machaca[1], J. Graumann[3], K. Machaca[1]; [1]Research, Weill Cornell Medicine - Qatar, Doha, Qatar, [2]American University of Ras Al Khaimah, Ras al Khaimah, United Arab Emirates, [3]Max Planck Institute for Heart and Lung Research, Bad Nauheim, Germany

B445/P1435 **Arf4 is Regulated by ArfGAP1 and Facilitates Sorting of ERGIC53 on pre-Golgi Membranes.** S. Yilmaz Dejgaard[1,2], R. Luo[3], P.A. Randazzo[3], J.F. Presley[1]; [1]Anatomy and Cell Biology, McGill University, Montreal, QC, [2]Medical Biology, Near East University, Nicosia, Cyprus, [3]National Cancer Institute, National Institutes of Health, Bethesda, MD

B446/P1436 **OS9 and FBXO6 contribute to CD147 levels.** I. Tobey[1], S. Cornett[1], I. Masteika[1], A. Mercado[1], D. Mena[1], J. Castorino[1]; [1]Natural Science, Hampshire College, Amherst, MA

B447/P1437 **Golgi-to-Endoplasmic reticulum retrograde transport involves Rab11-Binding-Protein.** B. Vasquez[1,2,3,4], B. Medel[1,3,5], J. Cancino[1,3], C. Retamal[1,3,4], M. Ren[6], D.D. Sabatini[6], A. Gonzalez, MD, PhD[1,2,3,4]; [1]Centro de Biología Celular y Biomedicina - Facultad de Medicina, Universidad San Sebastián, Santiago, Chile, [2]Facultad de Ciencias Biológicas, Pontificia Universidad Católica de Chile, Santiago, Chile, [3]Centro de Biología Celular y Biomedicina - Facultad de Ciencia, Universidad San Sebastián, Santiago, Chile, [4]Centro de Envejecimiento y Regeneración (CARE), Pontificia Universidad Católica de Chile, Santiago, Chile, [5]Facultad de Ciencias Biológicas, Universidad Andrés Bello, Santiago, Chile, [6]Department of Cell Biology, New York University School of Medicine, New York, NY

B448/P1438 **Temporal distribution of the Hantavirus Nucleocapsid Protein in human pulmonary cells (A549) infected with Rio Mamore hantaviruses.** J.V. de Carvalho[1], D.M. de Melo[2], G. Sabino-Santos Jr[2], L.T. Figueiredo [3], L.L. da Silva[1]; [1]Department of Cell and Molecular Biology, University of Sao Paulo, Ribeirão Preto, Brazil, [2]Department of Biochemistry and Immunology, University of Sao Paulo, Ribeirão Preto, Brazil, [3]Department 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 melanosome biogenesis and function.** L.T. Le[1,2,3], M.K. Dennis[1,2,3], S.L. Bowersox[1,2,3], R.A. Spritz[4], M.S. Marks[1,2,3]; [1]Department of Pathology and Laboratory Medicine, Children's Hospital of Philadelphia Research Institute, Philadelphia, PA, [2]Department of Pathology and Laboratory Medicine, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, [3]Department of Physiology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, [4]Human 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. Wong[1], L. Gal[2], N. Harpaz[2], M. Schuldiner[2], L.S. Weisman[1,3]; [1]Cellular and Molecular Biology, University of Michigan, Ann Arbor, MI, [2]Department of Molecular Genetics, Weizmann Institute of Science, Revohot, Israel, [3]Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI

B451/P1441 **Non-endocytic clathrin adaptors control post-endocytic sorting to the vacuole.** M.C. Duncan[1], D. Buelto[1,2], C.W. Hung[1,3]; [1]Cell and Developmental Biology, University of Michigan, Ann Arbor, MI, [2]Genetics and Molecular Biology, UNC Chapel Hill, Chapel Hill, NC, [3]Biology, UNC Chapel Hill, Chapel Hill, NC

B452/P1442 **SNX-BAR mediated retrograde trafficking of yeast synaptobrevin/Snc1 is conferred by its transmembrane domain.** M. Ma[1], L. Purushothaman[2], M. Babst[3], C. Ungermann[2], C.G. Burd[1]; [1]Department of Cell Biology, Yale University, New Haven, CT, [2]Department of Biology/Chemistry, University of Osnabrueck, Osnabrück, Germany, [3]Department 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. Klose[1], S. Linder[1]; [1]Institute 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. Paul[1], H.S. Kim[1], M.C. Kerr[1], W.M. Huston[2], R.D. Teasdale[1], B.M. Collins[1]; [1]Institute for Molecular Bioscience, The University of Queensland, Brisbane, Australia, [2]School 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. Sindhwani[1], S.B. Arya[2], H. Kaur[1,2], D. Jagga[1,2], A. Tuli[2], M. Sharma[1]; [1]Department of Biological Sciences, Indian Institute of Science Education and Research Mohali, Mohali, India, [2]Cell 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. Tan[1,2], G. Kaur[1,3], K.A. Toops[1], N. La Cunza[1,2], G. Rathnasamy[1], A. Lakkaraju[1,2,3]; [1]Department of Ophthalmology and Visual Sciences, University of Wisconsin-Madison, Madison, WI, [2]Department of Pharmaceutical Sciences, University of Wisconsin-Madison, Madison, WI, [3]Graduate Program in Cellular and Molecular Biology, University of Wisconsin-Madison, Madison, WI

B457/P1447 **TFEB regulates lysosomal positioning by modulating TMEM55B expression and JIP4 recruitment to lysosomes.** R.A. Willett[1], J.A. Martina[1], G. Hammond[2], J.P. Zewe[2], R. Puertollano[1]; [1]NHLBI, National Institute of Health, Bethesda, MD, [2]Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

B458/P1448 **VMAT2 and SLC35D3 sort from endolysosomes to dense granules during megakaryocyte differentiation to proplatelets.** H.A. Hanby[1,2,3,4], J. Bi-Karchin[1], A. Jaume[1,2,3], R. Meng[2,3], M. Kowalska[5], S.M. Di Pietro[6], M. Poncz[5], M.S. Marks[1,2,3]; [1]Pathology and Laboratory Medicine, Children's Hospital of Philadelphia, Philadelphia, PA, [2]Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, PA, [3]Physiology, University of Pennsylvania, Philadelphia, PA, [4]Cell and Molecular Biology Graduate Group, University of Pennsylvania, Philadelphia, PA, [5]Pediatrics, Children's Hospital of Philadelphia, Philadelphia, PA, [6]Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO

B459/P1449 **Regulated recruitment of C9orf72 to lysosomes supports diverse signaling and degradative functions.** J. Amick[1], A. Tharkeshwar[1], C. Amaya[1], S.M. Ferguson[1]; [1]Cell Biology, Yale University, New Haven, CT

B460/P1450 **pHLARE: a ratiometric pH-biosensor for measuring lysosomal pH.** B.A. Webb[1,2], D.L. Barber[1]; [1]Cell and Tissue Biology, University of California, San Francisco, San Francisco, CA, [2]Biochemistry, 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 Dynein Function.** X. Wu[1], A.K. Rout[1], M. Strub[1], J.A. Hammer[1], N. Tjandra[1]; [1]NHLBI, National Institutes of Health, Bethesda, MD

B462/P1452 **Inhibition of HDACs 1, 2, And 3 Is Necessary for Clearance of Cholesterol Accumulation in NPC1 in Fibroblasts.** D.L. Cruz[1], N.H. Pipalia[1], S. Mao[1], D. Gadi[1], G. Liu[2], M. Grigalunas[2], M. O'Neill[2], A. Kipper[2], A. Ekebergh[2], A. Dimmling[2], C. Gartner[2], B. Melancon[2], E. Holson[3], P. Ng[4], B. Han[4], C. Liu[4], X. Zheng[4], P. Helquist[2], O. Wiest[2], F.R. Maxfield[1]; [1]Biochemistry Cell Biology, Weill Cornell Medicine, New York, NY, [2]Chemistry & Biochemistry, University of Notre Dame, South Bend, IN, [3]KDAc Therapeutics, Cambridge, MA, [4]FORMA Therapeutics, Branford, CT

B463/P1453 **A novel approach to analyze lysosomal dysfunctions through subcellular proteomics and lipidomics: the case of NPC1 deficiency.** A. Tharkeshwar Raghunath[1,2,3,4,5], W. Vermeire[1,2], J. Pauwels[4,5], R. Sannerud[1,2], D. Priestman[6], D. te Vruchte[6], K. Vints[1,2], P. Baatsen[1,2], J. Decuypere[1,2], H. Lu[1,2], S. Martin[7], P. Vangheluwe[7], J. Swinnen[8], L. Lagae[3], F. Impens[4,5], F. Platt[6], K. Gevaert[4,5], W.G. Annaert[1,2]; [1]Neurosciences, KU Leuven, Leuven, Belgium, [2]Center for Brain and Disease, VIB, Leuven, Belgium, [3]Life Science Technology, IMEC, Leuven, Belgium, [4]Biochemistry, UGent, Gent, Belgium, [5]Medical Biotechnology Center, VIB, Gent, Belgium, [6]Pharmacology, University of Oxford, Oxford, United Kingdom, [7]Cellular Molecular Medicine, KU Leuven, Leuven, Belgium, [8]Oncology, 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. Swanson[1], L. Breckenridge[1], L. McMahon[2], S. Som[3], I. McConnell[1], G.S. Bloom[1,2,4]; [1]Department of Biology, University of Virginia, Charlottesville, VA, [2]Department of Cell Biology, University of Virginia, Charlottesville, VA, [3]Department of Biomedical Engineering, University of Virginia, Charlottesville, VA, [4]Department of Neuroscience, University of Virginia, Charlottesville, VA

B466/P1455 **A Novel Lysosome-to-Mitochondria Signaling Pathway and its Role in Disease.** A. Norambuena[1], H. Wallrabe[1], Z. Svindrych[1], D. Bigler Wang[1], J. Burks[2], R. Cao[2], S. Hu[2], G.S. Bloom[1,3,4]; [1]Department of Biology, University of Virginia, Charlottesville, VA, [2]Department of Biomedical Engineering, University of Virginia, Charlottesville, VA, [3]Department of Cell Biology, University of Virginia, Charlottesville, VA, [4]Department of Neuroscience, University of Virginia, Charlottesville, VA

B467/P1456 **¬¬JIP3 suppresses the development of amyloid plaque pathology by promoting the axonal transport of lysosomes.** S. Gowrishankar[1,2], Y. Wu[1,2], S.M. Ferguson[2]; [1]Neuroscience, Yale School of Medicine, New Haven, CT, [2]Cell Biology, Yale School of Medicine, New Haven, CT

B468/P1457 **Cofilin-actin rods as mediators of α-synuclein-induced synaptic dysfunction in Parkinson´s disease.** M.I. Oliveira da Silva[1,2], T.F. Outeiro[3], J.R. Bamburg[4], M.A. Liz[1,2]; [1]IBMC – Instituto de Biologia Molecular e Celular, Universidade do Porto, Porto, Portugal, [2]Instituto de Investigação e Inovação em Saúde, Universidade do Porto, Porto, Portugal, [3] University Medical Center Göttingen, Göttingen, Germany, [4]Colorado State University, Fort Collins, CO

B469/P1458 **ALS and PD Models Reveal Distinct Changes in Histone Modification Patterns.** S.A. Bennett[1,2], K. Chen[1], N. Rana[1], H. Yousuf[1], M. Said[1], S. Tasseen[1], N. Mendo[1], M.P. Torrente[1,2]; [1]Chemistry, Brooklyn College, Brooklyn, NY, [2]Biochemistry, 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. Nezich[1], A.C. Campbell[1], R.M. Hosur[1], W.D. Hirst[1]; [1]Research and Early Development, Biogen, Cambridge, MA

B471/P1460 **Prion-like transmission of mutant huntingtin aggregates in *Drosophila* brains.** K.M. Donnelly[1], M. Pearce[1]; [1]Biological Sciences, University of the Sciences in Philadelphia, Philadelphia, PA

B472/P1461 **Investigating Natural Remedies to Alleviate Parkinsons Manifested Symptoms.** C. Leonce[1], D. Sanzhikov[2], A. Patel[2], A. Suryanarayanan[2], B. Peethambaran[2]; [1]Chemistry and Biochemistry, University of the Sciences, Philadelphia, PA, [2]Biology, University of the Sciences, Philadelphia, PA

B473/P1462 **ASM regulates the autophagic process by controlling lysosomal biogenesis in Alzheimer's disease.** H. Jin[1], J. Lee[2], M. Jeong[1], S. Han[2], J. Bae[2]; [1]College of Veterinary Medicine, Kyungpook National University, Daegu, Korea, [2]Department of Physiology, School of Medicine, Kyungpook National University, Daegu, Korea

B474/P1463 **Mechanism of glycan binding by α-Synuclein.** H. Fung[1], K. Acosta[2], M. Birol[1], E. Rhoades[1]; [1]Department of Chemistry, University of Pennsylvania, Philadelphia, PA, [2]Department of Biochemistry and Biophysics, Perelman School of Medicine, Philadelphia, PA

B475/P1464 **Effects of mild running on substantia nigra during early neurodegeneration.** M.F. Almeida[1], C.M. Silva[1], R.S. Chaves[1], N.C. Lima[1], R.S. Almeida[2], K.P. Melo[1], M. Demasi[3], T. Fernandes[4], E.M. Oliveira[4], L.E. Netto[1], S.M. Cardoso[5], M.F. Ferrari[1]; [1]Instituto de Biociencias, Universidade de Sao Paulo, Sao Paulo, Brazil, [2]University of Taubate, Taubate, Brazil, [3]Butantan Institute, Sao Paulo, Brazil, [4]School of Physical Education and Sports, Universidade de Sao Paulo, Sao Paulo, Brazil, [5]Faculty of Medicine, University of Coimbra, Coimbra, Portugal

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.S. Medina[1], F. Chaves[1], R.E. Jacobs[2,3], E.L. Bearer[1,4]; [1]Pathology, University of New Mexico Health Sciences Center, Albuquerque, NM, [2]Zhilka Institute, University of Southern California, Los Angeles, CA, [3]Beckman Institute, California Institute of Technology, Los Angeles, NM, [4]Marine Biological Laboratory, Woods Hole, MA

B477/P1466 **Transcription derepression of Fuz triggers apoptosis and contributes to polyglutamine neurodegeneration.** Z. Chen[1], H. Chan[1]; [1]School of Life Sciences, The Chinese University of Hong Kong, Hong Kong, Hong Kong

B478/P1467 **GPRC6A signaling impacts mTORC1 activation and tau clearance.** C. Ma[1,2], J. Calahatian[1], W. Fraser [1], H. Osborne [3], D. Pedersen [3], K. Nash[2], D. Morgan[2], P. Bickford [2], D. Lee[1]; [1]Department of Pharmaceutical Sciences, University of South Florida, Tampa, FL, [2]Department of Molecular Pharmacology and Physiology, University of South Florida, Tampa, FL, [3]University of Copenhagen, University of Copenhagen, Copenhagen, Denmark

B479/P1468 **Aβ Oligomers Mediate its Synaptotoxic Effects through AMPK-dependent Increase in Mitochondrial Fission in Pyramidal Neurons.** A. Lee[1], C. Kondapalli[1], T. Lewis[1], G. Mairet-Coello[2], F. Polleux[1]; [1]Neuroscience, Columbia University, New York, NY, [2]UCB Biopharma, Brussels, Belgium

B480/P1469 **Aβ oligomers affects Blood-brain-barrier integrity in Alzheimer's disease.** L.D. Estrada[1], P. Ahumada[1], M. Cisterna[1], R. Morales-Loyola[2], N. Carrasco[1]; [1]CIBQA, Universidad Bernardo O Higgins, Santiago, Chile, [2]Neurology, University Texas Health science center, Houston, TX

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[1]; [1]Pharmacology and Toxicology, Kyung Hee University School of Dentistry, Seoul, South Korea

Neuronal Organelles, Membrane Biology, Membrane Trafficking

B482/P1471 **Mitochondrial Ubiquitin Ligase Mul1 Mediates an Early Stress Protection of Neuronal Mitochondria From Degradation by Parkin-Mediated Mitophagy.** R. Puri[1], J. Yun[2], M. Guo[3], Z. Sheng[1]; [1]Synaptic Functions Section, National Institute of Neurological Disorder and Stroke, National Institutes of Health, Bethesda, MD, [2]The Buck Institute for Research on Aging, Novato, CA, [3]Department of Neurology, UCLA David Geffen School of Medicine, University of California, Los Angeles, CA

B483/P1472 **Releasing Syntaphilin Removes Stressed Mitochondria from Axons Independent of Mitophagy under Pathophysiological Conditions.** M. Lin[1], X. Cheng[1], P. Tammineni[2], Y. Xie[1], B. Zhou[1], Q. Cai[2], Z. Sheng[1]; [1]Synaptic Function Section, National Institute of Neurological Disorders and Stroke, NIH, Bethesda, MD, [2]Department of Cell Biology and Neuroscience, Rutgers, The State University of New Jersey, Piscataway, NJ

B484/P1473 **The effects of Shroom2 knockdown on the axonal transport of mitochondria.** B. Pratt[1], G. Cammarata[1], C. Devitt[2], C. Lee[2], J.B. Wallingford[2], L.A. Lowery[1]; [1]Biology, Boston College, Chestnut Hill, MA, [2]Molecular Biosciences, University of Texas at Austin, Austin, TX

B485/P1474 **α-Synuclein is a glycan binding protein, conferred by its N-terminal acetylation.** M. Birol[1]; [1]Chemistry, University of Pennsylvania, Philadelphia, PA

B486/P1475 **Molecular interaction between 440kDa ankyrin-B and L1CAM: a proposed mechanism for high-functioning autism.** K.K. Walder[1], D. Lorenzo[2], R. Yang[3], D. Wu[3], V. Bennett[3]; [1]Cell Biology, Duke University, Durham, NC, [2]Cell Biology and Physiology, University of North Carolina Chapel Hill, Chapel Hill, NC, [3]Biochemistry, HHMI/ Duke University, Durham, NC

B487/P1476 **Synaptic vesicle clusters in nerve terminals: an example of liquid-liquid phase separation.** D. Milovanovic[1], P. De Camilli[1]; [1]Departments of Neuroscience and Cell Biology, Yale University School of Medicine, New Haven, CT

B488/P1477 **Bulk degradation of short-lived dendritic membrane proteins requires Rab7 and transport to somatic lysosomes.** C. Yap[1], L. Digilio[1], L. McMahon[1], B. Winckler[1]; [1]Cell Biology, University of Virginia, Charlottesville, VA

B489/P1478 **Axonal endoplasmic reticulum is very narrow.** M. Terasaki[1]; [1]Cell Biology, University of Connecticut Health Center, Farmington, CT

B490/P1479 **Elucidating the Pathophysiology of Membrin/*GOSR2*-mediated Progressive Myoclonus Epilepsy from Molecule to Neuron.** R. Praschberger[1], S.A. Lowe[2], N.T. Malintan[1], C.N. Giachello[3], N. Patel[1], H. Houlden[4], D.M. Kullmann[1], R.A. Baines[3], M.M. Usowicz[2], S.S. Krishnakumar[1,5], J.J. Hodge[2], J.E. Rothman[1,5], J.E. Jepson[1]; [1]Department of Clinical and Experimental Epilepsy, UCL Institute of Neurology, London, United Kingdom, [2]School of Physiology, Pharmacology and Neuroscience, University of Bristol, Bristol, United Kingdom, [3]Faculty of Biology, Medicine and Health; Division of Neuroscience Experimental Psychology, University of Manchester, Manchester, United Kingdom, [4]Department of Molecular Neuroscience, UCL Institute of Neurology, London, United Kingdom, [5]Department of Cell Biology, Yale School of Medicine, New Haven, CT

B491/P1480 **A microtubule-associated septin maintains neuronal polarity by directing motor-cargo traffic in dendrites.** E.P. Karasmanis[1], C. Phan[1], D. Angelis[1], I. Kesisova[1], C.C. Hoogenraad[2], R.J. McKenney[3], E.T. Spiliotis[1]; [1]Biology, Drexel University, Philadelphia, PA, [2]Cell Biology, Utrecht University, Utrecht, Netherlands, [3]Molecular and Cellular Biology, University of California Davis, Davis, CA

B492/P1481 **Determining the localization and function of schizophrenia-linked protein tSNARE1b in the endolysosomal system of developing neurons.** M. Plooster[1], G. Rossi[2], M.S. Farrell[3], P.F. Sullivan[3,4], S.L. Gupton[2,5,6], P. Brennwald[2]; [1]Cell Biology and Physiology Curriculum, University of North Carolina, Chapel Hill, NC, [2]Department of Cell Biology and Physiology, University of North Carolina, Chapel Hill, NC, [3]Department of Genetics, University of North Carolina, Chapel Hill, NC, [4]Department of Psychiatry, University of North Carolina, Chapel Hill, NC, [5]Neuroscience Center, University of North Carolina, Chapel Hill, NC, [6]Lineberger Comprehensive Cancer Center, University of North Carolina, Chapel Hill, NC

B493/P1482 **Dynamic Spatiotemporal Organization of Exocytosis During Neuronal Morphogenesis.** F.L. Urbina[1], S.L. Gupton[1], S. Gomez[2]; [1]Cell Biology and Physiology, University of North Carolina: Chapel Hill, Chapel Hill, NC, [2]Biomedical Engineering, University of North Carolina: Chapel Hill, Chapel Hill, NC

B494/P1483 **The Retromer Complex Regulates Presynaptic and Exosomal APP Trafficking at the Drosophila NMJ.** R.B. Walsh[1], M.J. Zunitch[1], A.N. Becalska[1], K. Narayanan[1], A.A. Rodal[1]; [1]Biology, Brandeis University, Waltham, MA

B495/P1484 **Disruption of the epileptic encephalopathy gene DENND5A causes Golgi fragmentation and apoptotic cell death via altered TrkB signaling.** C. Han[1], M. Fotouhi[1], P.S. McPherson[1]; [1]Department of Neurology and Neurosurgery, Montreal Neurological Institute, McGill University, Montreal, QC

B496/P1485 **Chondroitin Sulfate Proteoglycans Negatively Regulate the Positioning of Mitochondria and Endoplasmic Reticulum to Distal Axons.** R. Sainath[1], L. Armijo Weingart[1], A. Ketschek[1], Z. Xu[1], S. Li[1], G. Gallo[1]; [1]Shriners Hospitals Pediatric Research Center, Temple University, Philadelphia, PA

B497/P1486 **KIF2A Regulates the Development of Dentate Granule Cells and Postnatal Hippocampal Wiring.** N. Homma[1,2], R. Zhou[2], M.I. Naseer[3], A.G. Chaudhary[3], M.H. Al-Qahtani[3], N. Hirokawa[2]; [1]Life Science, National College of Nursing, Tokyo, Japan, [2]Cell Biology and Anatomy, Graduate School of Medicine, Tokyo, Japan, [3]Center of Excellence in Genomic Medicine Research, King Abdulaziz University, Jeddah, Saudi Arabia

SUNDAY

B498/P1487 **ER-shaping proteins form functionally distinct microdomains in the ER membrane of neurons.** J. Nixon-Abell[1,2], C.J. Obara[1], J. Lippincott-Schwartz[1], C. Blackstone[2]; [1]Janelia Research Campus, Ashburn, VA, [2]NINDS, National Institutes of Health, Bethesda, MD

B499/P1488 **Roles for VPS13 Family Members in the *Drosophila* Nervous System.** D. Lozano[1], R. Insolera[1], C.A. Collins[1]; [1] Molecular, Cellular & Developmental Biology, University of Michigan, Ann Arbor, MI

B500/P1489 **Investigating mechanisms of STRIPAK complex regulation in neuronal transport.** A.L. Neisch[1], T.S. Hays[1]; [1]Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN

Neuronal Cytoskeleton

B501/P1490 **Ubiquitin-dependent regulation of filopodia during axon guidance and branching.** N. Boyer[1], C. Monkiewicz[2], S. Menon[2], S.L. Gupton[2,3]; [1]Neurobiology Curriculum, University of North Carolina at Chapel Hill, School of Medicine, Chapel Hill, NC, [2]Cell Biology and Physiology, University of North Carolina at Chapel Hill, School of Medicine, Chapel Hill, NC, [3]Neuroscience 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. Vidaki[1], F.B. Gertler[1]; [1]Koch 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. Myers[1], J.Q. Zheng[1]; [1]Cell 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. Wang[1], I. Pavlyk[1], P. Vedula[1], S. Sterling[1], N.A. Leu[1], D.W. Dong[1], A.S. Kashina[1]; [1]Biomedical 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. Weiner[1], D.Y. Seebold[1], N.L. Michael[1], M.A. Guignet[1], B. Follick[1], C. Feng[1], C. Kozlowksi[1], D.J. Barbera[1], E. Jones[1], C.T. Folker[1], B.A. Yusko[1], N. Wasilko[1], M. Patel[1], P.G. Torres[1], M.M. Rolls[1]; [1]BMB, The Pennsylvania State University, University Park, PA

B507/P1496 **Patterns of microtubule organization and dynamics determine neuronal cargo distribution.** S. Yogev[1], C. Maeder[2,3], R. Cooper[4], K. Shen[2,3]; [1]Neuroscience, Yale University, New Haven, CT, [2]Biology, Stanford University, Stanford, CA, [3]HHMI, Stanford, United States, [4]Electrical Engineering, Stanford university, Stanford, CA

B508/P1497 **Molecular Pathogenesis of Tubulin Disorders During Neural Development.** J.E. Aiken[1,2], J.K. Moore[2], E.A. Bates[1]; [1]Department of Pediatrics, University of Colorado Anschutz Medical Campus, Aurora, CO, [2]Department 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. Qiang[1], X. Sun[1], T.O. Austin[1], H. Muralidharan[1], W. Yu[1], D.C. Jean[1], P.W. Baas[1]; [1]Neurobiology and Anatomy, Drexel University College of Medicine, Philadelphia, PA

B510/P1499 **Novel concepts of microtubule regulation during neuronal growth, maintenance and degeneration.** I. Hahn[1], Y. Qu[1], A. Voelzmann[1], J. Parkin[1], M. Lees[1], A. Prokop[1]; [1]Faculty 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. Freixo[1], P. Martinez Delgado[2], Y. Manso[3], C. Sánchez-Huertas[1], C. Lacasa[1], E. Soriano[3], J. Roig[2], J. Luders[1]; [1]Cell and Developmental Biology, Institute for Research in Biomedicine (IRB Barcelona), Barcelona, Spain, [2]Molecular Biology Institute of Barcelona (IBMB-CSIC), Barcelona, Spain, [3]Department 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. Puri[1], P. Thyagarajan[1], K. Biswas[1], A. Ghosh Roy[1]; [1]National Brain Research Centre, Gurgaon, India

B513/P1502 **Role of Formin-2 in actin-microtubule coordination during axonal pathfinding.** T. Kundu[1], A. Sahasrabudhe[1], A. Jacob[1], A. Ghose[1]; [1]Biology, IISER Pune, Pune, India

B514/P1503 **Nicotine Exposure Alters Neuronal Cytoskeleton by the Gβγ/pGSK3β Mediated Pathway.** C.M. Palacios[1], K. Castaneda[1], M.N. Ramirez[1], J.A. Pipkin[2], B. Cruz[2], M. Miranda-Arango[1], L.E. O'Dell[2], S. Roychowdhury[1]; [1]Biology, University of Texas at El Paso, El Paso, TX, [2]Psychology, 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-Dias[1], J.J. Nirschl[1], N. Abreu[1], M. Tokito[1], E.L. Holzbaur[1]; [1]Department of Physiology, University of Pennsylvania, Philadelphia, PA

B516/P1505 **Regulation of axon initial segment cytoskeletal architecture and function by βIV-spectrin.** S.L. Jones[1], T.M. Svitkina[1]; [1]Biology, 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. Stone[1], J.M. Eason[1,2], G.O. Kothe[2], M.M. Rolls[1], T.J. Jegla[2]; [1]Biochemistry and Molecular Biology, The Pennsylvania State University, University Park, PA, [2]Biology, 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. Laeremans[1], C. Anderson[1], E. Park[1], X. Ma[1]; [1]RD, Advanced Cell Diagnostics, Newark, CA

B519/P1508 **Proteomic Insights into Cytoskeletal Mechanisms of Neurodegeneration.** C. Carreon[1], M. Aguilera-Flores[1], I. Almeida[1], S. Roychowdhury[1]; [1]Department 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. Berchtold[1], N. Battich[1], L. Pelkmans[1]; [1]Institute of Molecular Life Sciences, University of Zurich, Zurich, Switzerland

B522/P1510 **A relationship between protein mobility and organelle morphology in the endoplasmic reticulum.** L. Cirillo[1,2], T.C. Fadero[1,3], D. Krishnamurthy[1,4], N. Wadhwa[1,5], J. Nixon-Abell[1,6,7], C.J. Obara[1,6,8], J. Lippincott-Schwartz[1,6,8]; [1]Physiology Course, Marine Biological Laboratory, Woods Hole, MA, [2]Department of Cellular Physiology and Metabolism, University of Geneva, Geneva, Switzerland, [3]Department of Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [4]Department of Mechanical Engineering, Stanford University, Palo Alto, CA, [5]Department of Molecular and Cellular Biology, Harvard University, Cambridge, MA, [6]Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA, [7]Cell Biology Section, National Institute of Neurological Disorder and Stroke, Bethesda, MD, [8]Cell 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. Olarte[1,2,3], R.V. Farese, Jr.[2,3,4], T.C. Walther[2,3,4,5]; [1]Department of Cell Biology, Yale School of Medicine, New Haven, CT, [2]Department of Genetics and Complex Diseases, Harvard T.H. Chan School of Public Health, Boston, MA, [3]Department of Cell Biology, Harvard Medical School, Boston, MA, [4]Broad Institute of Harvard and MIT, Cambridge, MA, [5]Howard 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. Tachikawa[1], N. Morone[2], S. Suetsugu[3]; [1]Theoretical Biology Laboratory, RIKEN, Wako, Japan, [2]MRC Toxicology Unit, University of Leicester, Leicester, United Kingdom, [3]Graduate School of Biological Sciences, Nara Institute of Science and Technology, Ikoma, Japan

B525/P1513 **DYRK3 kinase regulates dissolution and condensation of membrane-less organelles during mitosis.** A.K. Rai[1], J. Chen[2], M. Selbach[2], L. Pelkmans[1]; [1]IMLS, University of Zurich, Zurich, Switzerland, [2]MDC, Max Delbruck Center, Berlin, Germany

B526/P1514 **Light-dissociable membrane-less organelles maintain spatial patterns over long periods of time.** E.A. Dine[1], A.A. Gil[1], G.A. Uribe[1], E.M. Zhao[2], J.E. Toettcher[1,2]; [1]Molecular Biology, Princeton University, Princeton, NJ, [2]Chemical and Biological Engineering, Princeton University, Princeton, NJ

B527/P1515 **Members of the UDP-GalNAc:polypeptide N-acetylgalactosaminyltransferase family of enzymes use different Golgi targeting signals.** J.L. Becker[1], D.T. Tran[1], L.A. Tabak[1]; [1]Section 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. Loh[1], Y. Liu[1]; [1]Institute of Molecular Medicine, National Taiwan University, Taipei, Taiwan

B529/P1517 **Cell size determines nuclear shape in *Saccharomyces cerevisiae*.** K. Amoateng[1], A.D. Walters[1], R. Wang[2], J. Chen[3,4], G. McDermott[3,4], C.A. Larabell[3,4], O. Gadal[2], O. Cohen-Fix[1]; [1]Laboratory of Molecular and Cellular Biology, National Institutes of Health, Bethesda, MD, [2]Laboratoire de Biologie Moléculaire Eucaryote (CBI), Université de Toulouse, Toulouse, France, [3]Department of Anatomy, University of California San Francisco, San Francisco, CA, [4]Molecular Biophysics and Integrated Bioimaging, Lawrence Berkeley National Laboratory, Berkeley, CA

B530/P1518 **Deciphering the cisternal localization of GalNAc-Ts using super-resolution imaging.** G.G. Herbomel[1], D.T. Tran[1], G.H. Patterson[2], L.A. Tabak[1]; [1]NIDCR / Biological Chemistry Section, National Institutes of Health, Bethesda, MD, [2]NIBIB / Section on Biophotonics, National Institutes of Health, Bethesda, MD

B531/P1519 **Novel roles for Dynamin2 (Dnm2) during ER scission and autophagy.** A. Martorell Riera[1], M. Iriondo Martinez[1], S. Itskanov[1], A.M. Van Der Bliek[1,2,3]; [1]Department of Biological Chemistry, University of California Los Angeles, Los Angeles, CA, [2]Molecular Biology Institute, University of California Los Angeles, Los Angeles, CA, [3]Johnson 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 proneuronal cells in the early Drosophila embryo.** B. Riggs[1], A.S. Eritano[1], A. Altamirano[1], S.A. Beyeler[1], N.L. Gaytan[1], M. Velasquez[1]; [1]Biology, San Francisco State University, San Francisco, CA

B533/P1521 **A new pathway for membrane protein insertion at the ER.** A. Guna[1], N. Volkmar[2], J.C. Christianson[2], R.S. Hegde[1]; [1]MRC Laboratory of Molecular Biology, Cambridge, United Kingdom, [2]Ludwig 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. Zewe[1], S.J. Sangappa[1], R.C. Wills[1], B. Goulden[1], G.R. Hammond[1]; [1]Department of Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

B535/P1523 **An image-based subcellular map of the human proteome.** P.J. Thul[1], L. Åkesson[1], D. Mahdessian[1], A. Bäckström[1], F. Danielsson[1], C. Gnann[1], M. Hjelmare[1], R. Schutten[1], C. Stadler[1], D.P. Sullivan[1], C.F. Winsnes[1], M. Uhlén[1], E. Lundberg[1]; [1]Science fir Life Laboratory, Royal Institute of technology (KTH), Stockholm, Sweden

B536/P1524 **An orthogonal optogenetic toolkit to study intracellular transport and organelle positioning.** M. Adrian[1,2], W. Nijenhuis[1], R.I. Hoogstraaten[1], J. Willems[1], P. van Bergeijk[1], C.C. Hoogenraad[1], L.C. Kapitein[1]; [1]Cell Biology, Utrecht University, Utrecht, Netherlands, [2]Neuroscience, Genentech Inc, South San Francisco, CA

B537/P1525 **A role of an inositol 5-phosphatase in ER architecture.** R. Dong[1,2,3], T. Zhu[4], L. Benedetti[1,2,3], S. Gowrishankar[1,2,3], H. Deng[4], X. Wang[4], K. Shen[5,6], P. De Camilli[1,2,3,7]; [1]Department of Neuroscience, Yale University School of Medicine, New Haven, CT, [2]Department of Cell Biology, Yale University School of Medicine, New Haven, CT, [3]Howard Hughes Medical Institute, Yale University School of Medicine, New Haven, CT, [4]Institute of Biophysics, Chinese Academy of Sciences, Beijing, China, [5]Department of Department of Biology and Department of Pathology, Stanford University School of Medicine, Stanford, CA, [6]Howard Hughes Medical Institute, Stanford University School of Medicine, Stanford, CA, [7]Kavli Institute for Neurosciences, Yale University School of Medicine, New Haven, CT

B538/P1526 **Targeting of tail-anchored proteins by GET3B in Arabidopsis chloroplasts.** S.A. Anderson[1], D.E. Fernandez[1]; [1]Botany, University of Wisconsin - Madison, Madison, WI

B539/P1527 **The AFF-1 exoplasmic fusogen is required for endocytic scission and seamless tube elongation.** F. Soulavie[1], D. Hall[2], M. Sundaram[1]; [1]Department of Genetics, University of Pennsylvania, Philadelphia, PA, [2]Department of Neuroscience, Albert Einstein College of Medicine, New-York, NY

B540/P1528 **Investigating the phospho-regulation of ER shaping protein RTN1A (Reticulon-1A) by the Calcineurin phosphatase.** S. Ei Cho[1], J. Roy[1], Y. Ivarsson[2], M.S. Cyert[1]; [1]Biology, Stanford University, Stanford, CA, [2]Chemistry - BMC, Uppsala University, Uppsala, Sweden

Inter-Organelles Contact Sites and Membrane Microdomains

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. Sohn[1], M. Korzeniowski[1], G. Hammond[2], E. Boura[3], T. Balla[1]; [1]National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD, [2]Department of Cell Biology, University of Pittsburg, Pittsburg, PA, [3]Institute of Organic Chemistry and Biochemistry, Czech Academy of Sciences, Prague, Czech Republic

B542/P1530 **Aerobic Respiration Enhanced by Mitochondrial Fusion Remodels Vacuolar Liquid-ordered Membrane Domain to Induce Micro-lipophagy for Cell Survival during Glucose Restriction.** A.Y. Seo[1], F. Sarkleti[2], C.A. Larabell[3], J. Lippincott-Schwartz[1]; [1]Janelia Research Campus, HHMI, Ashburn, VA, [2]Institute of Molecular Biosciences, University of Graz, Graz, Australia, [3]Department 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. Shinjo[1,2], S. Jiang[3], M. Nameta[4], S. Minamisawa[1], N. Goda[2]; [1]Department of Cell Physiology, The Jikei University School of Medicine, Tokyo, Japan, [2]Department of Life Science and Medical Bioscience, Waseda University, School of Advanced Science and

SUNDAY

Engineering, Tokyo, Japan, [3]Niigata College of Medical Technology, Niigata, Japan, [4]Department of Electron Microscope Core Facility, Niigata University, Niigata, Japan

B544/P1532 **STED super-resolution microscopy reveals CLIMP63-dependent domain segregation of lumenal and membrane proteins in ER tubules.** G. Gao[1], C. Zhu[1], I.R. Nabi[1]; [1]Cellular and Physiological Sciences, The University of British Columbia, Vancouver, BC

B545/P1533 **Membrane binding of PACSIN2 dependent on the characteristics of the membrane.** A.G. Amir[1], S. Suetsugu[1]; [1]Biological science, Nara Institute of Science and Technology, Nara, Japan

B546/P1534 **Single molecule and ensemble dynamics of the endoplasmic reticulum.** C.J. Obara[1,2], J. Nixon-Abell[2,3], C. Blackstone[2,3], J. Lippincott-Schwartz[1,2]; [1]Cell Biology and Metabolism Program, National Institute of Child Health and Human Development, Bethesda, MD, [2]Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA, [3]Cell Biology Section, National Institute of Neurological Disorder and Stroke, Bethesda, MD

B547/P1535 **Snx14 is a novel lipid metabolism protein at the Endoplasmic Reticulum.** S. Datta[1], Y. Liu[1], H. Hariri[1], M. Henne[1]; [1]Cell 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. Tian[1], A. Ohta[2], H. Horiuchi[1], R. Fukuda[1]; [1]Department of Biotechnology, The University of Tokyo, Tokyo, Japan, [2]Department 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. Krahmer[1], B. Najafi[2], F. Quagliariini[3], N.H. Uhlenhaut[3], A. Zeigerer[2], G.H. Borner[1], M. Mann[1,4]; [1]Proteomics and Signal Transduction, Max-Planck Institute of Biochemistry, Martinsried, Germany, [2]Institute for Diabetes and Cancer, Helmholtz Zentrum München, München, Germany, [3]Helmholtz Diabetes Center (HDC) and German Center for Diabetes Research, Helmholtz Zentrum München, München, Germany, [4]NNF Center for Protein Research, Faculty of Health Sciences, University of Copenhagen, Copenhagen, Denmark

B550/P1538 **EHD proteins cooperate to generate caveolar clusters and to maintain caveolae during repeated mechanical stress.** I. Yeow[1], G. Howard[1], J. Chadwick[1], C. Mendoza-Topaz[1], C.G. Hansen[1,2], B.J. Nichols[1], E. Shvets[1,3]; [1]MRC Laboratory of Molecular Biology, Cambridge, United Kingdom, [2]MRC Centre for Inflammation Research, Edinburgh, United Kingdom, [3]Sphere Fluidics Limited, Cambridge, United Kingdom

B551/P1539 **Cholesterol remodeling may protect cells from pore-forming toxins by enhancing membrane repair.** R. Thapa[1], M. Romero[1], P.A. Keyel[1]; [1]Biological 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. Levental[1], J.H. Lorent[1], Y. Zhou[1], J.F. Hancock[1], I. Levental[1]; [1]Integrative 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. Pacheco[1], G.R. Hammond[1]; [1]Department 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. Maeda[1], J. Van Haaren[1], N.W. Andrews[1], W. Song[1]; [1]Cell Biology and Molecular Genetics, University of Maryland, College Park, MD

B555/P1543 **Crosstalk between membrane lipid unsaturation and inter-organelle lipid transport.** M. Renne[1], M. Hokken[1], D. Bierhuizen[1], X. Ma[1], X. Bao[1], T. de Kroon[1]; [1]Membrane Biochemistry Biophysics, Utrecht University, Utrecht, Netherlands

B556/P1544 **Spatial organization of ER–PM junctions revealed by super- and high-resolution imaging.** T. Hsieh[1], Y. Chen[1], C. Chang[1], W. Lee[1], J. Liou[1]; [1]Department 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. Priyadarshana[1], N. Ishikawa[2], A. Tajima[2], A. Asano[2]; [1]Graduate School of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan, [2]Faculty of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan

B558/P1546 **Plasmodesmata defects observed in UDP-glucose:sterol glucosyltransferase B1 mutants.** V.G. Pook[1], M. Nair[1], S. DeBolt[1]; [1]Horticulture, University of Kentucky, Lexington, KY

B559/P1547 **Conformation-dependent partitioning of yeast membrane transporters into starvation-protective membrane domains.** C. Gournas[1], S. Gkionis[1], M. Carquin[1], L. Twyffels[2], D. Tyteca[3], B. Andre[1]; [1]Molecular Physiology of the Cell, Free University of Brussels (ULB), Gosselies, Belgium, [2]CMMI unit, Free University of Brussels (ULB), Gosselies, Belgium, [3]CELL and PICT unit, Université Catholique de Louvain (UCL), Brussels, Belgium

Kinases and Phosphatases 1

B561/P1548 **Direct Observation of Ligand-induced Domain Communication in an Allosteric Protein Complex.** Y. Hao[1], J.P. England[1], S.S. Taylor[2], E. Paci[3], R.A. Maillard[1]; [1]Department of Chemistry, Georgetown University, Washington, DC, [2]Department of Pharmacology, University of California, San Diego, La Jolla, CA, [3]The Astbury Centre for Structural Molecular Biology, University of Leeds, Leeds, United Kingdom

B562/P1549 **Impact of Phosphorylation by Met on FAK Activation.** H. Gessessew[1], L. O'Connor[1], J.E. Hall[1]; [1]Biology, Bucknell University, Lewisburg, PA

B563/P1550 **Encoding optical control in LCK kinase to study its function and effect of coreceptor binding in live cells.** A. Liaunardy-Jopeace[1], B.L. Murton[1], M. Mahesh[2], J.W. Chin[2], J.R. James[1]; [1]Department of Medicine, University of Cambridge, Cambridge, United Kingdom, [2]Medical Research Council Laboratory of Molecular Biology, Cambridge, United Kingdom

B564/P1551 **Engineered Allosteric Regulation of Protein Kinases by Light.** M. Shaaya[1], V. Huyot[1], V. Natarajan[1], A.V. Karginov[1]; [1]Cellular and Molecular Pharmacology, University of Illinois at Chicago, Chicago, IL

B565/P1552 **Polymerization of the mitochondrial phosphatase PGAM5 underlies its biological activity.** K. Ruiz[1], T.M. Thaker[1], L. Miller-Vedam[2], C. Agnew[1], A. Frost[2], N. Jura[1,3]; [1]Cardiovascular Research Institute, University of California San Francisco, San Francisco, CA, [2]Department of Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA, [3]Department 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. Roy[1], C.P. Wigington[1], N.P. Damle[1], I. Ulengin-Talkish[1], S. Ei Cho[1], N.E. Davey[2], Y. Ivarsson[3], C.J. Wong[4], A. Gingras[4], M.S. Cyert[1]; [1]Biology, Stanford University, Stanford, CA, [2]Conway Institute of Biomolecular and Biomedical Research, University College Dublin, Dublin, North Ireland, [3]Chemistry - BMC, Uppsala University, Uppsala, Sweden, [4]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 *NF1*-Deficient cells.** Y. Arima[1], R. Harigai[1], H. Saya[1]; [1]Division of Gene Regulation, Institute for Advanced Medical Research, Keio University School of Medicine, Tokyo, Japan

B568/P1555 **Active-site dependent and independent roles of the lipid phosphatase Fig4 in the activation of its opposing kinase, Fab1.** B.S. Strunk[1,2], N. Kumar[3], N. Jin[1,2], N. Steinfeld[1], K.M. Reinisch[3], L.S. Weisman[1,2]; [1]Life Sciences Institute, University of Michigan, Ann Arbor, MI, [2]Depertment of Cell and Developmental Biology, University of Michigan, Ann Arbor, MI, [3]Department of Cell Biology, Yale School of Medicine, New Haven, CT

B569/P1556 **Non-Canonical Activation of p38 During Endoplasmic Reticulum Stress.** J.L. Brewster[1], D. Reynolds[1], J.G. Tolar[1]; [1]Natural Science Division, Pepperdine University, Malibu, CA

B570/P1557 **The Role of SIK1 in Regulating Apical NHERF1 and Ion Transporters.** M.L. Taub[1], J. Mulkin[1]; [1]Biochemistry, University at Buffalo, Buffalo, NY

B571/P1558 **The A-kinase anchoring protein beta-synemin binds PKC epsilon.** B.C. Prudner[1], M.J. Kuneli[2], Y. Chen[3], D.S. Damron[4], M.A. Russell[3]; [1]Internal Medicine - Medical Oncology, Washington University in St. Louis, St. Louis, MO, [2]College of Nursing, Kent State University at Trumbull, Warren, OH, [3]Department of Biological Sciences, Kent State University at Trumbull, Warren, OH, [4]Department of Biological Sciences, Kent State University, Kent, OH

B572/P1559 **Distinct mechanism of spleen tyrosine kinase activation by pITAM and Integrin cytoplasmic domain.** L. Antenucci[1], J. Ylänne[1]; [1]Department of Biological and Environmental Science and Nanoscience Center, University of Jyväskylä, Jyväskylä, Finland

B573/P1560 **Untangling kinase-based signalling interactions in endothelial cell migration and angiogenesis.** Y. Hsiao[1,2], C. Tsai[3,4], H. Lin[5], L. Yu[1,2], F. Tsai[1,2]; [1]Dept. of Pharmacology, National Taiwan University College of Medicine, Taipei City, Taiwan, [2]Dept. of Internal Medicine, National Taiwan University Hospital, Taipei City, Taiwan, [3]Ph.D. Program in Human Biology, School of Integrative and Global Majors, University of Tsukuba, Tsukuba, Japan, [4]International Institute for Integrative Sleep Medicine (WPI-IIIS), University of Tsukuba, Tsukuba, Japan, [5]Dept. of Immunology, National Taiwan University College of Medicine, Taipei City, Taiwan

Signaling Scaffolds and Microdomains

B574/P1561 **Eisosome-associated protein Slm1 regulates two downstream pathways for heat stress adaptation.** K. Hashii[1], K. Yae[1], R. Tsuda[1], N. Tanaka[1], M. Tabuchi[1]; [1]Graduate School of Agriculture, Kagawa University, Kagawa, Japan

B575/P1562 **Multi-protein Skb1 nodes control fission yeast mitotic entry.** J.O. Magliozzi[1]; [1]Biochemistry and Cell Biology, Dartmouth College, Hanover, NH

B576/P1563 **Single Molecule Study of Wnt Signaling Pathway Activation.** W. Ma[1], M. Chen[2], X. He[2], S. Angers[3], M.W. Kirschner[1]; [1]Systems Biology, Harvard Medical School, Boston, MA, [2]Neurology Research, Children's Hospital, Boston, MA, [3]Pharmacy Department of Biochemistry, University of Toronto, Toronto, ON

B577/P1564 **APC regulates Wnt signaling by inhibiting a constitutive clathrin-mediated activation pathway.** K. Saito-Diaz[1], H. Benchabane[2], A. Tiwari[1], B. Li[3], A. Tian[2], L.M. Sawyer[1], A.S. Hyde[1], A.K. Kenworthy[1], D. Robbins[3], Y. Ahmed[2], E. Lee[1]; [1]Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN, [2]Department of Molecular and Systems Biology, Dartmouth College, Hanover, NH, [3]Department of Surgery, University of Miami, Miami, FL

B578/P1565 **Molecular delineation of MST4-elicited ACAP4 phosphorylation during histamine-stimulated gastric acid secretion.** M. Mullen[1], X. Yao[1], Y. Liu[1], P. Gui[1], X. Wang[1]; [1]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 Paris[1], M.S. Kapiloff[2], K.L. Dodge-Kafka[1]; [1]Calhoun Cardiology Center, UConn Health, Farmington, CT, [2]Medicine and Pediatrics, University of Miami, Miami, FL

B580/P1567 **Macropinosomes Coordinate the Activation of PI3Kβ by Gβγ and Rac.** Z. Erami[1], B.D. Khalil[1], G.K. Salloum[1], Y. Yao[1], A. Shymanets[2], B. Nuernberg[2], A.R. Bresnick[3], J.M. Backer[1]; [1]Molecular Pharmacology, Albert Einstein College of Medicine, Bronx, NY, [2]Institute for Pharmacology and Toxicology, Eberhard-Karls-Universität Tübingen, Tubingen, Germany, [3]Biochemistry, Albert Einstein College of Medicine, Bronx, NY

B581/P1568 **A novel YAP-binding protein Furry controls localization and activity of YAP.** K. Irie[1], T. Nagai[1], K. Mizuno[1]; [1]Biomolecular Sciences, Graduate school of Life Sciences, Tohoku university, Sendai, Japan

B582/P1569 **A novel splice variant of Sab (SH3BP5) alters mitochondrial physiology.** M. Rodriguez-Silva[1], J.W. Chambers[1,2]; [1] Department of Neuroscience, Herbert Wertheim College of Medicine, Florida International University, Miami, FL, [2]Department of Environment and Occupational Health, Robert Stempel College of Public Health, Florida International University, Miami, FL

B583/P1570 **Alterations in outer mitochondrial signaling promote organelle and neuronal dysfunction.** K.T. Ashourian[1], J.W. Chambers[2]; [1]Department of Neuroscience, Florida International University, Miami, FL, [2]Environmental 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. Kalappurakkal[1], A.A. Anilkumar[1,2], T.S. van Zanten[1], M.P. Sheetz[3], S. Mayor[1,4]; [1]National Centre for Biological Sciences, Tata Institute of Fundamental Research, Bangalore, India, [2]St. Johns Research Institute, Bangalore, India, [3]Mechanobiology Institute, National University of Singapore, Singapore, Singapore, [4]Institute 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. Shelby[1], S.L. Veatch[1]; [1]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. Stone[1], S.A. Shelby[1], S.L. Veatch[1]; [1]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. Foltz[1], J. Palacios-Moreno[1], M. Mayfield[1], S. Kinch[1], J. Syrenne[1], M.L. Grimes[1]; [1]Division of Biological Sciences, University of Montana, Missoula, MT

B588/P1575 **Exclusion of Notch from Mechanically Active Cellular Junctions.** K.M. Southard[1,2], D. Seo[2], Z.J. Gartner[1], Y. Jun[2]; [1]Pharmaceutical Chemistry, University of California, San Francisco, San Francisco, CA, [2]Department of Otolaryngology, University of California, San Francisco, San Francisco, CA

B589/P1576 **TNF-α priming regulates CD82 expression of Bone Marrow Homing of Hematopoietic Stem and Progenitor cells.** E.M. Pascetti[1], C.M. Termini[1], M. Floren[1], C.A. Saito Reis[1], J.M. Gillette[1]; [1]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. Kuenzel[1], Y. Meng[1], A.G. Grieve[1], S.A. Cowley[1], M. Freeman[1]; [1]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. Yerramilli[1], S. Scarlata[1], A. Gericke[1]; [1]Chemistry and Biochemistry, Worcester Polytechnic Institute, Worcester, MA

SUNDAY

B592/P1579 **The Tetraspanin CD82 Regulates Hematopoietic Stem Cell Activation within the Bone Marrow Microenvironment.** C.A. Saito Reis[1], K.D. Marjon[1], E.M. Pascetti[1], K.L. Karlen[1], R.J. Dodd[1], C.M. Termini[1], J.M. Gillette[1]; [1]Pathology, University of New Mexico Health Science Center, Albuquerque, NM

B593/P1580 **Poly(L -Lactic Acid)/ Gelatin Fibrous Scaffold Loaded with Simvastatin/Beta-Cyclodextrin- Modified Hydroxyapatite Inclusion Complex for Bone Tissue Regeneration.** S.C. Hong[1], D. Lee[2]; [1]Dentistry / Oral and maxillofacial Surgery, Catholic Kwandong University International St. Mary's Hospital, Incheon, Korea, South, [2]Oral and Maxillofacial Surgery, Kyung Hee University School of Dentistry, Seoul, Korea, South

Cytoskeleton-Membrane Interactions

B595/P1581 **Tetraspanin 33 regulates migration, adhesion and invasion properties of human B cells.** I.C. Navarro-Hernandez[1,2], O. López-Ortega[3], E. Acevedo-Ochoa[2], C.A. Pérez-Martínez[3], A. Galván-Hernández[4], I. Ortega-Blake[4], A. Antillón[4], B. Chávez-Mungía[5], R. Fragoso-Soriano[6], J.M. Hernández-Hernández[1], L. Santos-Argumedo[3], J.L. Maravillas-Montero[2]; [1]Cell Biology, Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV-IPN), MEXICO CITY, Mexico, [2]Research Support Network, Universidad Nacional Autónoma de México, MEXICO CITY, Mexico, [3]Biomedicine, Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV-IPN), MEXICO CITY, Mexico, [4]Biophysic, Instituto de Ciencias Físicas, Cuernavaca, Mexico, [5]Infectomic and Molecular Pathogenesis, Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV-IPN), MEXICO CITY, Mexico, [6]Physic, Centro de Investigación y de Estudios Avanzados del IPN (CINVESTAV-IPN), MEXICO CITY, Mexico

B596/P1582 **Coordination of acto-myosin contractility and mitochondrial positioning during neutrophil migration in live animals.** N. Melis[1], B. Subramanian[1], D. Chen[1], C. Parent[1], R. Weigert[1]; [1]Laboratory of Cellular and Molecular Biology, National Cancer Institute - NCI, Bethesda, MD

B597/P1583 **Nanofiber Curvature Enables Quantitating Single Protrusions.** A. Mukherjee[1], B. Koons[1], P. Sharma[2], Z. Ye[1], B. Behkam[1], A.S. Nain[1]; [1]Mechanical Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA, [2]Department 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. Stewart[1], M.C. King[1], V.J. Horsley[2,3]; [1]Cell Biology, Yale School of Medicine, New Haven, CT, [2]Department of Molecular, Cell and Developmental Biology, Yale University, New Haven, CT, [3]Department of Dermatology, Yale School of Medicine, New Haven, CT

B599/P1585 **Mechanical Interaction between Macrophages and Soft Targets in Phagocytosis.** D. Vorselen[1], J.A. Theriot[1]; [1]Biochemistry, Stanford University, Stanford, CA

B600/P1586 **Endothelial RhoGAP DLC1 is essential to allow leukocytes to change phenotype from rolling to spreading prior to diapedesis.** L. Schimmel[1], M.M. van der Stoel[2], A. van Stalborch[1], A.M. de Ligt[1], M. Hoogenboezem[3], S. Tol[3], V. de Waard[2], S. Huveneers[2], J.D. Van Buul[1]; [1]Plasma Proteins, Sanquin Research and Landsteiner Laboratory, Amsterdam, Netherlands, [2]Medical Biochemistry, Academic Medical Center, Amsterdam, Netherlands, [3]Central Facility, Sanquin Research and Landsteiner Laboratory, Amsterdam, Netherlands

B601/P1587 **Model of Epithelial Tissues Based on Single Cell Mechanics.** S. Liu[1], S.X. Sun[1]; [1]Mechanical 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. Schaumann[1], M. Staddon[2,3], G.R. Ramirez-SanJuan[4,5], S. Banerjee[3], M.L. Gardel[4,6,7]; [1]Department of Chemistry, University of Chicago, Chicago, IL, [2]Institute for the Physics of Living Systems, University College London, London, United Kingdom, [3]Department of Physics and Astronomy, University College London, London, United Kingdom, [4]Institute for Biophysical Dynamics, University of Chicago, Chicago, IL, [5]Graduate Program in Biophysics, University of Chicago, Chicago, IL, [6]Department of Physics, University of Chicago, Chicago, IL, [7]James Franck Institute, University of Chicago, Chicago, IL

B603/P1589 **Going with the Flow: Water Flux and Cell Shape During Cytokinesis.** Y. Li[1], L. He[1], J. Graham[1], C. Wolgemuth[2], D. Wirtz[1], S.X. Sun[1]; [1]Johns Hopkins University, Baltimore, MD, [2]University of Arizona, Tucson, AZ

B604/P1590 **Variable rescue of microtubule defects in *mdx* skeletal muscle expressing miniaturized dystrophins.** D.M. Nelson[1], D. Duan[2], L.M. Judge[3], J.S. Chamberlain[3], J.M. Ervasti[1]; [1]Biochemistry, Molecular Biology, and Biophysics, University of Minnesota, Minneapolis, MN, [2]Molecular Microbiology and Immunology, University of Missouri, Columbia, MO, [3]Neurology, University of Washington, Seattle, WA

B605/P1591 **Basal body associated striated fibers control their length to organize ciliary arrays.** W. Soh[1], J. van Dam[2], A. Stemm-Wolf[1], C.G. Pearson[1]; [1]Cell biology, stem cells and development, University of Colorado Anschutz Medical Campus, Aurora, CO, [2]Biodynamics and biocomplexity, Universiteit Utrecht, Utrecht, Netherlands

B606/P1592 **Using high-resolution live imaging to study a novel mechanism for axon growth.** H.Y. Fang[1], A. Clarke[1,2], R. Kannan[3], P.G. McQueen[4], K. O'Neill[1], V. Wang[5], S. Wincovitch[6], I. Kuzina[1], E. Giniger[1]; [1]National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD, [2]Institute for Biomedical Sciences, The George Washington University, Washington, DC, [3]Psychiatry, National Institute of Mental Health and Neurosciences, Bangalore, India, [4]Center for Information Technology, National Institutes of Health, Bethesda, MD, [5]School of Medicine, The University of Connecticut, Farmington, CT, [6]National 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. Labitigan[1], J.A. Theriot[1]; [1]Department 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. Isogai[1,2], K.M. Dean[1,2], E.S. Welf[1,2], P. Roudot[1,2], M.K. Driscoll[1,2], J. Park[1,2], J. Cillay[1,2], R. Fiolka[1], G. Danuser[1,2]; [1]Department of Cell Biology, University of Texas Southwestern Medical Center, Dallas, TX, [2]Lyda 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. Driscoll[1,2], E.S. Welf[1,2], K.M. Dean[1,2], R. Fiolka[2], G. Danuser[1,2]; [1]Bioinformatics, UT Southwestern Medical Center, Dallas, TX, [2]Cell 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. Li[1], K. Bera[1], A. Afthinos[1], R. Zhao[1], K. Konstantopoulos[1], S.X. Sun[1]; [1]Johns Hopkins University, Baltimore, MD

B611/P1597 **YAP-independent mechanotransduction drives breast cancer invasion.** J.Y. Lee[1], J. Chang[2], S. Nam[1], H. Lee[1], A. Dominguez[3,4,5], S. Varma[6], L.S. Qi[3,4,5], R. West[6], O. Chaudhuri[1]; [1]Mechanical Engineering, Stanford University, Stanford, CA, [2]Genetics, Stanford University, Stanford, CA, [3]Bioengineering, Stanford University, Stanford, CA, [4]ChEM-H, Stanford University, Stanford, CA, [5]Chemical and Systems Biology, Stanford University, Stanford, CA, [6]Pathology, Stanford University, Stanford, CA

B612/P1598 **Nuclear stress dependent DNA damage and DNA repair factor mis-localization after lamin-A depletion on rigid plstic and in constricted migration.** Y. Xia[1], J. Irianto[2], K. Zhu[2], L. Smith[2], C.R. Pfeifer[2], D.E. Discher[2]; [1]Chemical and Biomolecular Engineering, University of Pennsylvania, Philadelphia, PA, [2]University of Pennsylvania, Philadelphia, PA

B613/P1599 **DNA damage in constricted migration impairs differentiation of myoblasts.** L.R. Smith[1], J. Irianto[1], Y. Xia[1], C.R. Pfeifer[1], D.E. Discher[1]; [1]Chemical and Biochemical Engineering, University of Pennsylvania, Philadelphia, PA

B614/P1600 **Forces and cytoskeletal dynamics during collective invasion of tumor spheroids.** B. Fabry[1], C. Mark[1]; [1]Physics, University of Erlangen-Nuremberg, Erlangen, Germany

B615/P1601 **WASP and WAVE activate the Arp2/3 complex for actin-based force production during basement membrane invasion.** R. Cáceres[1], N. Bojanala[1], L.C. Kelley[2], J. Dreier[3], J. Manzi[1], F. Di Federico[1], Q. Chi[2], T. Risler[1], I. Testa[3], D.R. Sherwood[2], J. Plastino[1]; [1]Physico Chimie Curie, Institut Curie, Paris, France, [2]Department of Biology, Duke University, Durham, NC, [3]Department of Applied Physics, KTH Royal Institute of Technology, Stockholm, Sweden

B616/P1602 **Transient Mechanical Strain Promotes the Maturation of Invadopodia through PAK1 Signaling.** A.N. Gasparski[1], J. Wilson[1], K.A. Beningo[1]; [1]Department of Biological Sciences, Wayne State University, Detroit, MI

B617/P1603 **S100A4 Regulates Macrophage Invasion by Distinct Myosin-Dependent and Independent Mechanisms.** N.G. Dulyaninova[1], P.D. Ruiz[2], M.J. Gamble[2], A.R. Bresnick[1], J.M. Backer[1,2]; [1]Biochemistry, Albert Einstein College of Medicine, Bronx, NY, [2]Molecular Pharmacology, Albert Einstein College of Medicine, Bronx, NY

B618/P1604 **Chemotaxis and directionally persistent migration of cancer cells is promoted by exosome secretion.** B. Sung[1], A.M. Weaver[1,2]; [1]Cell and Developmental Biology, School of Medicine, Vanderbilt University, Nashville, TN, [2]Pathology, Microbiology, and Immunology, Vanderbilt University Medical Center, Nashville, TN

B619/P1605 **Fluctuations in directional persistence and cell speed define cell migration strategies.** C.W. Mark[1], C. Metzner[1], J. Steinwachs[1], B. Fabry[1]; [1]Physics, University of Erlangen-Nuremberg, Erlangen, Germany

B620/P1606 **Mechanisms of Persistent Cell Migration in Aligned Collagen Matrices.** J. Szulczewski[1,2], S.M. Ponik[1,2], A.S. Nain[3], K.M. Hahn[4], P.J. Keely[1,2]; [1]Cellular and Regenerative Biology, University of Wisconsin-Madison, Madison, WI, [2] Molecular and Cellular Pharmacology Graduate Program, University of Wisconsin-Madison, Madison, WI, [3]Mechanical Engineering, Virginia Tech, Blacksburg, VA, [4]Pharmacology, University of North Carolina-Chapel Hill, Chapel Hill, NC

B621/P1607 **Myosin II governs intracellular pressure and traction force by distinct mechanisms.** K. Sao[1], T.M. Jones[1], A.D. Doyle[2], G. Schevzov[3], P.W. Gunning[3], R.J. Petrie[1]; [1]Biology, Drexel University, Philadelphia, PA, [2]NIDCR, National Institutes of Health, Bethesda, MD, [3]Medical Sciences, University of New South Wales, Sydney, Australia

B622/P1608 **Cellular mechanics of 3D migration: Uniaxial contraction induces matrix prestress to enhance efficiency of 3D mesenchymal cell migration.** A.D. Doyle[1], D.J. Sykora[1], G. Pacheco[1], K.M. Yamada[1]; [1]Cell Biology Section, National Institute of Dental Craniofacial Research, NIH, Bethesda, MD

B623/P1609 **Hierarchical influence of cell-mediated fiber movement on protrusion alignment, cell polarization, and directed migration.** M.Z. Pamonag[1], N. Jafari[1], D. Sales[1], V. Shuklis[1], K. Kubow[1]; [1]Biology, James Madison University, Harrisonburg, VA

B624/P1610 **Investigating the Effect of Matrix Porosity on the Mechanics of Neutrophil Migration in Three-Dimensional Extra-Cellular Matrices.** J.J. François[1], J.C. Del Alamo[2], R.A. Firtel[3], J. Lasheras[2]; [1]Bioengineering, University of California, San Diego, La Jolla, CA, [2]Mechanical Aerospace Engineering, University of California, San Diego, La Jolla, CA, [3]Division of Cell and Developmental Biology, University of California, San Diego, La Jolla, CA

B625/P1611 **Achieving a unified understanding of amoeboid cell migration by analyzing the coordination of cell shapes and cytoskeletal components on a global scale.** C.K. Chan[1], J.A. Theriot[1]; [1]Biochemistry, Stanford University School of Medicine, Stanford, CA

Dynamics of Focal Adhesions and Invadosomes

B626/P1612 **RhoG regulates migration through focal adhesion dynamics and contractility.** A.E. Zinn[1], D. Maity[2], Y. Chen[2], R. Garcia-Mata[1]; [1]Department of Biological Sciences, The University of Toledo, Toledo, OH, [2]Department of Mechanical Engineering, Johns Hopkins University, Baltimore, MD

B627/P1613 **WITHDRAWN**

B628/P1614 **Complement mediated phagocytosis involves mechanical coupling of β2 integrins to the actin cytoskeleton by a myosin-independent molecular clutch.** V. Jaumouillé[1], T. Liu[2], E. Betzig[2], C.M. Waterman[1]; [1]National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD, [2]Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA

B629/P1615 **IDENTIFICATION OF A RHO-GEF THAT DIRECTS SITE-SPECIFIC ASSEMBLY OF INTEGRIN ADHESION COMPLEXES IN STRIATED MUSCLE.** J.C. Moody[1], H. Qadota[1], N. Shanmugam[1], A.R. Reedy[1], G.M. Benian[1]; [1]Pathology, Emory University, Atlanta, GA

B630/P1616 **Distinct focal adhesion morphologies emerge from interplay between retrograde actin flux and stress fiber.** Z. Wu[1], J. Liu[1]; [1]National Institutes of Health, Bethesda, MD

B631/P1617 **PI 3-Kinase-β regulates invadopodial maturation and β1-integrin signaling.** Z. Erami[1], A.R. Bresnick[2], J.M. Backer[1,2]; [1]Department of Molecular Pharmacology, Albert Einstein College of Medicine, New York, NY, [2]Department of Biochemistry, Albert Einstein College of Medicine, New York, NY

B632/P1618 **Talin autoinhibition regulates cell behavior and migration in vivo.** A.M. Haage[1], K. Goodwin[1], A.B. Bogutz[2], L. Lefebvre[2], S.V. Plotnikov[3], B.T. Goult[4]; [1]Cell Physiological Sciences, University of British Columbia, Vancouver, BC, [2]Medical Genetics, University of British Columbia, Vancouver, BC, [3]Department of Cell and Systems Biology, University of Toronto, Toronto, ON, [4]School of Biosciences, University of Kent, Canterbury, United Kingdom

B633/P1619 **WITHDRAWN**

B634/P1620 **$Ca2^{+}$- dependent activation of Arf5 at ER/plasma membrane contact sites by an IQSec1/ORP3 complex controls focal adhesion turnover and cell migration.** R.S. D'Souza[1], J. Lim[1], A. Turgut[1], J.F. Durel[1], J. Zhang[2], K. Orth[2], J.E. Casanova[1]; [1]Cell Biology, University of Virginia, Charlottesville, VA, [2]Molecular Biology, University of Texas, Southwestern, Dallas, TX

Structure and Function of the Extracellular Matrix

B636/P1621 **Extracellular matrix and postnatal development of GLAST+ cells.** I.N. Dominova[1], O. Tuchina[1], L. Klimaviciusa[1], N.A. Filiakova[1], A.A. Vasilev[1], M.V. Patrushev[1], V.A. Kasymov[1]; [1]Neurobiology and medical physics, Immanuel Kant Baltic Federal University, Kaliningrad, Russia

SUNDAY

B637/P1622 **Epithelioid Osteoblasts Deposit Dense Hydroxyapatite in Type I Collagen in a pH Dependent Manner That Is Supported by Aquaporin 1.** H.C. Blair[1,2], Q.C. Larrouture[3], D.B. Stolz[4], D.J. Nelson[5], P.H. Schlesinger[6]; [1]Pathology, Veteran's Affairs Medical Center, Pittsburgh, PA, [2]Pathology, University of Pittsburgh, Pittsburgh, PA, [3]Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, University of Oxford, Oxford, United Kingdom, [4]Cell Biology, University of Pittsburgh, Pittsburgh, PA, [5]Dept of Neurobiology, Pharmacology Physiology, University of Chicago, Chicago, IL, [6]Cell Biology, Washington University, Saint Louis, MO

B638/P1623 **Effects of aragonite particles derived from skeleton of Montipora digitata applied as a scaffold on cell proliferation and collagen fiber productivity of cultured human normal dermal fibroblasts.** T. Okamura[1], K. Tominaga[1], T. Nishikawa[1,2], A. Tanaka[3]; [1]Department of Oral Pathology, Osaka Dental University, Hirakatashi, Japan, [2]Innovations in Dental Education, Osaka Dental University, Hirakatashi, Japan, [3]Department of Pathology, Osaka Dental University, Hirakatashi, Japan

B639/P1624 **Quantifying the dynamics of tissue-induced alignment of collagen fibers.** B.A. Nerger[1], A.S. Piotrowski-Daspit[1], A.E. Wolf[1], S. Sundaresan[1], C.M. Nelson[1,2]; [1]Chemical and Biological Engineering, Princeton University, Princeton, NJ, [2]Molecular Biology, Princeton University, Princeton, NJ

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

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

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

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

B644/P1629 ***Triops cancriformis*; a potential non-mammalian animal model for studies on mechanisms of kidney ultrafiltration.** K.H. Oliver[1,2,3], A. Mittal[1], J. Cartailler[1,2], E. Pokidysheva[1,2,3], J.R. Fitzgerald[1], J. Hudson[1], B.G. Hudson[1,2,3]; [1]Aspirnaut Research Program, Nashville, TN, [2]Center for Matrix Biology, Nashville, TN, [3]Nephrology, Vanderbilt University Medical Center, Nashville, TN

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

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

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

Cell-Cell Junctions 1

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

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

B650/P1635 **Tight junctions remodeling modifies polarized epithelial apical surface tension, fluidity, and intercellular adhesive forces.** A.X. Cartagena-Rivera[1], C.M. Van Itallie[2], J.M. Anderson[2], R.S. Chadwick[1]; [1]NIDCD, National Institutes of Health, Bethesda, MD, [2]NHLBI, 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[1], T. Higashi[1,2], I. Erofeev[3], B. Coy[1], T.R. Arnold[1], A. Goryachev[3], A.L. Miller[1]; [1]Molecular, Cellular, and Developmental Biology, University of Michigan, Ann Arbor, MI, [2]Fukushima Medical University, Fukushima, Japan, [3]Centre 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[1,2], D.A. Dean[2], A. Friedman[3], M. Barravecchia[2]; [1]Department of Pathology Laboratory Medicine, University of Rochester Medical Center, Rochester, NY, [2]Department of Pediatrics, University of Rochester Medical Center, Rochester, NY, [3]Department of Chemistry, SUNY buffalo, Buffalo, NY

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

B654/P1639 **Effect of influenza infection on epithelial monolayer integrity.** N. Reilly[1], L. Martinez[2], L. Rodriguez Garcia[2], P.W. Oakes[1,3]; [1]Department of Physics and Astronomy, University of Rochester, Rochester, NY, [2]Department of Microbiology and Immunology, University of Rochester Medical Center, Rochester, NY, [3]Department 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. Login[1], H.H. Jensen[1,2], J.J. Morgen[1,2], G.A. Pedersen[1,3], J.S. Koffman[4], J. Palmfeldt[1], P. Bross[1], M. Parsons[3], L.N. Nejsum[1,4]; [1]Department of Clinical Medicine,, Aarhus University, Aarhus, Denmark, [2]Department of Molecular Biology and Genetics, Aarhus University, Aarhus, Denmark, [3]King's College, London, United Kingdom, [4]Interdisciplinary Nanoscience Center,, Aarhus University, Aarhus, Denmark

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

B657/P1642 **The RhoGEF Trio induces junctional F-actin bundles by locally activating Rap1 to stabilize VE-cadherin-based cell-cell junctions.** J.D. Van Buul[1], I. Timmerman[1], M. Hoogenboezem[1], Y. Wu[2], J.v. Rijssel[1]; [1]Molecular Cell Biology, Sanquin Research and Landsteiner Laboratory, Amsterdam, Netherlands, [2]Center for Cell Analysis and Modeling, UConn Health, Farmington, CT

B658/P1643 **Rapamycin reduces TNFα-induced VCAM-1 expression in endothelial cells by promoting VCAM-1 degradation via autophagy.** L. Chu[1], H. Cheng[1], K.K. Wu[1,2]; [1]Metabolomic Medicine Research Center, China Medical University Hospital, Taichung, Taiwan, [2]Institute of Cellular and System Medicine, National Health Research Institutes, Miaoli, Taiwan

B659/P1644 **In Vitro Evaluation of Damage by Heavy Metals in Tight and Gap Junctions of Sertoli Cells.** J. Ramos Treviño[1], S. Bassol Mayagoitia[1], J. Hernández Ibarra[1], P. Ruiz Flores[2], P. Espino Silva[2], O. Saucedo Cardenas[3,4], M. Nava Hernandez[1]; [1]Biologia de la Reproduccion, Universidad Autonoma de Coahuila, Torreón, Mexico, [2]Genética y Medicina Molecular, Universidad Autonoma de Coahuila, Torreón, Mexico, [3]Histología, Universidad Autónoma de Nuevo León, Monterrey, Mexico, [4]Genética Molecular, Centro de Investigación Biomedica del Noreste, Monterrey, Mexico

B660/P1645 **Use of a Time-Resolved Fluorescence Resonance Energy Transfer-based screening assay to identify a claudin-4 binder that attenuates tight junction barrier function.** A. Watari[1], M. Kondoh[1], K. Yagi[1]; [1]Graduate School of Pharmaceutical Sciences, Osaka University, Suita, Japan

B661/P1646 **Concatemerization of connexins - a tool to analyze the oligomerization behavior of heteromeric connexins.** P. Schadzek[1], D. Hermes[1], Y. Stahl[1], A. Ngezahayo[1,2]; [1]Institut für Biophysik, Leibniz Universität Hannover, Hannover, Germany, [2]Centre for System Neurosciences (ZSN), Hannover, Germany

B662/P1647 **The interactions between β_1 subunits of the Na^+,K^+-ATPase promote cell-cell adhesion in CHO fibroblasts and ouabain intensified it.** C.A. Vilchis Nestor[1], M.L. Roldan Gutierrez[1], T. Padilla-Benavides[2], L. Shoshani[1]; [1]physiology, CINVESTAV-IPN Mexico, Mexico city, Mexico, [2]Department of Biochemistry and Molecular Pharmacology, UMASS, Worcester, MA

B663/P1648 **Role of Connexin 32 on gap junctions in breast cancer cells with varying metastatic potential.** D. UGUR[1], E. Ozcivici[2], G. Mese[1]; [1]Molecular Biology and Genetics, Izmir Institute of Technology, Izmir, Turkey, [2]Bioengineering, Izmir Institute of Technology, Izmir, Turkey

B664/P1649 **Relocalization of the adhesion molecule nectin-1 from cell junctions is induced by herpes simplex virus glycoprotein D.** G.J. Haila[1], P.W. Rothlauf[2], A.A. Hakim[2], A.K. Bhargava[3], C. Krummenacher[2,4]; [1]Chemistry and Biochemistry, Rowan University, Glassboro, NJ, [2]Biological Sciences, Rowan University, Glassboro, NJ, [3]Biochemistry, University of Pennsylvania, School of Dental Medicine, Philadelphia, PA, [4]Molecular and Cellular Biosciences, Rowan University, Glassboro, NJ

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. Simon[1], A.D. Linstedt[1]; [1]Biological Sciences, Carnegie Mellon University, Pittsburgh, PA

B666/P1651 **MMP28 is overexpressed in bronchial and alveolar epithelial cells in Idiopathic Pulmonary Fibrosis.** M. Maldonado[1], A. Salgado-Aguayo[2], I. Herrera[2], B. Ortiz[2], C. Staab-Weijnitz[3], M. Selman[2], A. Pardo[1]; [1]Facultad de Ciencias, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico, [2]Instituto Nacional de Enfermedades Respiratorias, Mexico City, Mexico, [3]Comprehensive Pneumology Center, Helmholtz Zentrum München, Munich, Germany

B667/P1652 **Matricellular Tinagl1 affects cilia function in early zebrafish embryos.** H. Neiswender[1], S. Navarre[2], J.S. Mumm[3], D.J. Kozlowski[2], E.K. LeMosy[1]; [1]Department of Cellular Biology and Anatomy, Augusta University, Augusta, GA, [2]Department of Neuroscience and Regenerative Medicine, Augusta University, Augusta, GA, [3]Wilmer Eye Institute, Johns Hopkins University School of Medicine, Baltimore, MD

B668/P1653 **Equilibrium structure and mechanics of the cellular glycocalyx.** J.G. Gandhi[1], D.L. Koch[1], M.J. Paszek[1]; [1]Chemical and Biomolecular Engineering, Cornell University, Ithaca, NY

B669/P1654 **Cellular reprogramming of primary human adipocytes into brown adipose tissue (BAT)-like cells.** K.M. Cartwright[1], C.E. Long[1], P.A. Harding[1,2], S.R. Taylor[1]; [1]Biology, Miami University, Oxford, OH, [2]Biological Sciences, Miami University Regionals, Hamilton & Middletown, OH

B670/P1655 **HB-EGF and ADAM 12S co-expression of mouse fibroblasts results in increased metabolic activity.** D.C. Pfeil[1], S.R. Taylor[1], P.A. Harding[1,2]; [1]Biology, Miami University, Oxford, OH, [2]Biological Sciences, Miami University Regionals, Hamilton & Middletown, OH

Ubiquitin and Proteasome Function

B672/P1656 **SCF^{Slmb} mediates degradation of Survival Motor Neuron (SMN) protein.** K.M. Gray[1,2], K.A. Kaifer[3], D. Baillat[4], Y. Wen[2], T.R. Bonacci[5], A.D. Ebert[6], A.C. Raimer[1,2], A.M. Spring[2], J.J. Glascock[3], S. ten Have[7], M.J. Emanuele[1,5], A. Lamond[7], E.J. Wagner[4], C.L. Lorson[3], A.G. Matera[1,2]; [1]Curriculum in Genetics and Molecular Biology, University of North Carolina, Chapel Hill, NC, [2]Integrative Program in Biological and Genome Sciences, University of North Carolina, Chapel Hill, NC, [3]Molecular Pathogenesis and Therapeutics Program, University of Missouri, Columbia, MO, [4]Biochemistry and Molecular Biology, University of Texas Medical Branch, Galveston, TX, [5]Pharmacology, University of North Carolina, Chapel Hill, NC, [6]Cell Biology, Neurobiology, and Anatomy, Medical College of Wisconsin, Milwaukee, WI, [7]Centre for Gene Regulation and Expression, University of Dundee, Dundee, United Kingdom

B673/P1657 **Histidine Ammonia-Lyase is a Proteasome Interacting Protein.** F. Bardag-Gorce[1], A.M. Laporte[1], D. Cortez[1], R. Niihara[1], S. Sunada[1], J. Stark[1], A. Gorce[1], R.H. Hoft[1], J. Whitelegge[2], J. Oliva[1], S.W. French[1], Y. Niihara[1]; [1]Medicine, Los Angeles Biomedical Research Institute at Harbor-UCLA Medical Center, Torrance, CA, [2]NPI-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 Nrf2 through K48-linked ubiquitylation.** D. McInstosh[1], T. Walters[1], I. Arinze[2], J.S. Davis[3]; [1]Pharmacology Neuroscience, Meharry Medical College, Nashville, TN, [2]Physiology, Meharry Medical College, Nashville, TN, [3]Biochemistry Cancer Biology, Meharry Medical College, Nashville, TN

B675/P1659 **A Model Substrate whose Degradation Pathway is Determined by Aggregation Propensity.** Z. Sun[1], J.L. Brodsky[1]; [1]Department of Biological Sciences, University of Pittsburgh, Pittsburgh, PA

B676/P1660 **Sterol oxidation mediates stress-responsive Vms1 translocation to mitochondria.** E. Fredrickson[1], J. Rutter[1], C.P. Hill[1], J.R. Nielson[1]; [1]Biochemistry, 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. NIYOGI[1], J.L. Wayt[1], J. Donaldson[1], C.D. Williamson[1], L. Eshun-Wilson[1]; [1]NHLBI, National Institutes of Health, Bethesda, MD

B679/P1663 **Linking ISG15 to Cellular Stress Responses: Lessons from *Listeria* infection.** L. Radoshevich[1,2], M. Foecke[1], F. Impens[3], K. Knobeloch[4], P. Cossart[1]; [1]Bacteria Cell Interactions, Institut Pasteur, Paris, France, [2]Microbiology, University of Iowa, Iowa City, IA, [3]Proteomics Expertise Center, VIB, University of Ghent, Ghent, Belgium, [4]Institute of Neuropathology, University Clinic Freiburg, Freiburg, Germany

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

B681/P1665 **The ubiquitin-proteasome system regulates degradation of an anti-inflammatory receptor SIGIRR.** L. LI[1], J. WEI[1], S. LI[1], J. Zhao[1], Y. Zhao[1]; [1]Department of Medicine and the Acute Lung Injury Center of Excellence, University of Pittsburgh School of Medicine, Pittsburgh, PA

SUNDAY

B682/P1666 **Histone acetyltransferase CBP increases activation of SCF FBXL19 ubiquitin E3 ligase by acetylation and stabilization of FBXL19.** J. WEI[1], S. Dong[2], R. Bowser[1], A. Jacko[1], K. Yao[1], Y. Zhao[1], J. Zhao[1]; [1]Medicine, University of Pittsburgh, Pittsburgh, PA, [2]Anesthesia, 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. Guo[1], A.A. Lanctot[1], Y. Feng[1,2]; [1]Neurology, Northwestern University School of Medicine, Chicago, IL, [2]Biochemistry 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. Townsend[1], S. Witus[2], R. Ulrich[3], M. Leytze[4], L.L. Dahlberg[3]; [1]Molecular and Cellular Biology, Montana State University, Bozeman, MT, [2]Biochemistry, University of Washington, Seattle, WA, [3]Biology, Western Washington University, Bellingham, WA, [4]Behavioral 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. Narahara[1], E. Sakai[1], T. Kadowaki[2], Y. Yamaguchi[1], H. Narahara[1], K. Okamoto[3], Y. Sumita[4], I. Asahina[5], T. Tsukuba[1]; [1]Department of Dental Pharmacology, Nagasaki University, Nagasaki, Japan, [2]Department of Frontier Life Science, Nagasaki University, Nagasaki, Japan, [3]Department of Dental Pharmacology, Okayama University, Okayama, Japan, [4]Basic and Translational Research Center for Hard Tissue Disease, Nagasaki University, Nagasaki, Japan, [5]Department of Regenerative Oral Surgery, Nagasaki University, Nagasaki, Japan

B686/P1670 **Cullin-3 is required for normal skeletal muscle development.** J. Blondelle[1], K. Tallapaka[1], P. Shapiro[1], M. Ghassemian[2], J.D. Singer[3], S. Lange[1]; [1]Department of Cardiology, University of California, San Diego, La Jolla, CA, [2]Biomolecular and Proteomics Mass Spectrometry Facility, University of California, San Diego, La Jolla, CA, [3]Department 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. Benben[1], Y. Wang [1]; [1]Biology, Saint Louis University, St. Louis, MO

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

B689/P1673 **Hyperphosphorylation repurposes the CRL4B E3 ligase to coordinate mitotic progression.** S. Gilberto[1], F. Lampert[1], W. Piwko[1], M. Peter[1]; [1]Department of Biology, ETH Zurich, Zurich, Switzerland

B690/P1674 **Deciphering the Ubiquitin Code with Poly-Ubiquitin Chain Selective Affinity Matrices.** R. Singh[1], C. Sagum[2], J. Chen[2], A. Chaturvedi[1], S. Julius[1], M. Bedford[2]; [1]Research and Development, LifeSensors Inc, Malvern, PA, [2]Department of Epigenetics Molecular Carcinogenesis, M.D. Anderson Cancer Center, University of Texas, Houston, TX

B691/P1675 **OTUB1 regulation of E2 ubiquitin conjugating enzyme levels in vivo.** M.E. Morrow[1], N. Pasupala[1], A. Ma[2], C. Wolberger[1]; [1]Biophysics and Biophysical Chemistry, Johns Hopkins University School of Medicine, Baltimore, MD, [2]Medicine, University of California San Francisco, San Francisco, CA

Autophagy

B692/P1676 **ATG5 deletion results in organelle dysfunction and confers enhanced cytotoxicity following the induction of autophagy.** N.J. Dolman[1], K.M. Chambers[1], S. VanLE[1], S. Leonard[1], B. Samson[1], M.S. Janes[1]; [1]Biosciences, Thermo Fisher Scientific, Pittsburgh, PA

B693/P1677 **Autophagosomal closure is mediated by the ESCRT machinery.** K. Morita[1], I. Koyama-Honda[1], Y. Yamashita[2], T. Ueno[2], E. Morita[3], H. Mano[2], N. Mizushima[1]; [1]Dept. of Mol. Biol, Grad. Sch. of Med, Univ. of Tokyo, Tokyo, Japan, [2]Dept. of Cell. Signal., Grad. Sch. of Med, Univ. of Tokyo, Tokyo, Japan, [3]Dept. 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. Pan[1,2], M.B. O'Connor[1]; [1]Department of Genetics, Cell Biology Development, University of Minnesota, Twin Cities, Minneapolis, MN, [2]Molecular, Cellular, Developmental Biology Genetics Program, University of Minnesota, Twin Cities, Minneapolis, MN

B695/P1679 **The Autophagy Conjugation Machinery Specifies The Loading of RNA-Binding Proteins Into Extracellular Microvesicles.** A.M. Leidal[1], H.H. Huang[2], T. Solvik[1], J. Ye[1], T. Marsh[1], F. Kai[3], J. Goldsmith[1], J.Y. Liu[1], A.P. Wiita[2], J. Debnath[1]; [1]Pathology, University of California, San Francisco, San Francisco, CA, [2]Laboratory Medicine, University of California, San Francisco, San Francisco, CA, [3]Surgery, University of California, San Francisco, San Francisco, CA

B696/P1680 **Stress-Induced Cdk5 Activity Enhances Cytoprotective Basal Autophagy by Phosphorylating Acinus at Serine[437].** H. Kramer[1], N. Nandi[1], L.K. Tyra[1]; [1]Neuroscience, UT Southwestern, Dallas, TX

B697/P1681 **RXR-PPAR-delta agonist therapy achieves neuroprotection by autophagic induction.** M. Arreola-Villanueva[1], A.S. Dickey[1], A.R. La Spada[1]; [1]Pediatrics, 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. Koh[1], L. Wang[2], C. Beaudoin-Chabot[1], G. Thibault[1,2]; [1]School of Biological Sciences, Nanyang Technological University, Singapore, Singapore, [2]Lee 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. Goldsmith[1], S. Asthana[2], T. Marsh[1], D. Suresh[1], A. Olshen[2], J. Debnath[1]; [1]Pathology, University of California, San Francisco, San Francisco, CA, [2]Department of Epidemiology and Biostatistics, University of California, San Francisco, San Francisco, CA

B700/P1684 **Herbal medicine for resolution of cancers.** Y. Liu[1]; [1]Department 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. Britson[1], E.H. Michelle[1], C. Castro[2], I. Aksentijevich[3], A. Schiffenbauer[4], A. Mankodi[5], D. Kastner[3], A. Mammen[2], C.C. Weihl[6], R. Siegel[2], T.E. Lloyd[1]; [1]Johns Hopkins University School of Medicine, Baltimore, MD, [2]National Institute of Arthritis Musculoskeletal Skin Diseases, National Institutes of Health, Bethesda, MD, [3]National Human Genome Research Institute, National Institutes of Health, Bethesda, MD, [4]National Institute of Environmental Health Sciences, National Institutes of Health, Bethesda, MD, [5]Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD, [6]Washington University School of Medicine, St. Louis, MO

B702/P1686 **Compartment-specific regulation of neuronal autophagy during homeostasis and stress.** A. Dong[1], A. Kulkarni[1], V. Kulkarni[1], J. Chen[1], S. Maday[1]; [1]Neuroscience, Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA

B703/P1687 **Compairment of autophagy and mTOR pathways in mouse embryonic stem cell, lung cancer and somatic fibroblast cell lines in molecular analysis base.** F. Oltulu[1], D. Çalik KocatÜrk[1], Y. Adalı[1], B. Ozdil[1,2], E. Açıkgöz[1,3], C. Gürel[1,4], A. Uysal[1], A. Yavasoglu[1], G. Oktem[1], H. Aktug[1]; [1]Faculty of Medicine, Histology and Embryology Department, Ege University, İzmir, Turkey, [2]Faculty of Medicine, Histology and Embryology Department, Süleyman Demirel University, Isparta, Turkey, [3]Faculty of Medicine, Histology and Embryology Department, Yüzüncü Yıl University, Van, Turkey, [4]Faculty 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 Vaites[1], J.A. Paulo[1], E.L. Huttlin[1], J.W. Harper[1]; [1]Department of Cell Biology, Harvard Medical School, Boston, MA

B705/P1689 **Microtubule-Associated Protein 1 Light Chain 3B (LC3B) is Necessary to Maintain Lipid Homeostasis in the Retinal Pigment Epithelium.** A. Dhingra[1], J. Reyes-Reveles[1], D. Alexander[1], R. Sharp[1], A. Swarup[2], K. Boesze-Battaglia[1]; [1]Biochemistry, University of Pennsylvania,, Philadelphia, PA, [2]Department of Pathology, Anatomy and Cell Biology,, Thomas Jefferson University, Philadelphia, PA

B706/P1690 **Dhh1 regulates autophagy protein expression under long time starvation.** Z. Yao[1], X. Liu[1], M. Jin[1], D. Klionsky[1]; [1]Life Science Institute, University of Michigan, Ann Arbor, MI

B707/P1691 **Regulation of autophagy through post-translational modifications.** Y. Feng[1,2], D. Klionsky[1,2]; [1]MCDB, University of Michigan Ann Arbor, Ann Arbor, MI, [2]Life 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-Floyd[1], A. Entezari[1], M. Ying[1], S. Haroon[2], T. Gidalevitz[1]; [1]Biological Sciences, Drexel University, Philadelphia, PA, [2]Department of Pathology and Laboratory Medicine, Children's Hospital of Philadelphia, Philadelphia, PA

Computational Cell Biology

B710/P1693 **Decoupling global biases and local interactions between cell biological variables.** A. Zaritsky[1,2,3], U. Obolski[4], Z. Gan[2,3], C.R. Reis[3], Y. Du[3], S.L. Schmid[3], G. Danuser[2,3]; [1]Molecular Cell Biology, Weizmann Institute of Science, Rehovot, Israel, [2]Bioinformatics, UT Southwestern Medical Center, Dallas, TX, [3]Cell Biology, UT Southwestern Medical Center, Dallas, TX, [4]Department 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. Kimmel[1], A.Y. Chang[1], A.S. Brack[2], W.F. Marshall[1]; [1]Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA, [2]Orthapedic 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. Shaffer[1], B. Emert[1], R. Gupte[1], A. Raj[1]; [1]Bioengineering, 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. Ortega[1], E.F. Koslover[2], J.A. Theriot[1,3,4]; [1]Biochemistry, Stanford School of Medicine, Stanford, CA, [2]Physics, University of California San Diego, San Diego, CA, [3]Microbiology and Immunology, Stanford School of Medicine, Stanford, CA, [4]Howard Hughes Medical Institute, Stanford, CA

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

B716/P1699 **Dealing with SNP's - a Hurdle in Renin and ACE Inhibition.** R. Razi[1], M. Ahmed[1]; [1]Microbiology and Molecular Genetics, University of the Punjab, Lahore, Pakistan

B717/P1700 **Rational design of anti-diabetic agent.** T. Redij[1], R. Chaudhari[2], Z. Li[3], Z. Li[1,2]; [1]Biological Sciences, University of the Sciences in Philadelphia, Philadelphia, PA, [2]Chemistry and Biochemistry, University of the Sciences in Philadelphia, Philadelphia, PA, [3]Pharmaceutical 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. Barreto[1], K. Begum[1], A. Cataldo[1], S.M. Singh[1]; [1]Biology, Brooklyn College, City University of New York, Brooklyn, NY

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

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

B721/P1704 **Mathematical Modeling of Phage-Assisted Continuous Evolution (PACE).** H.S. Sinks[1], A. Tutar[1], A. Estrada[2], D. Mattoon[2], D. Sullivan[2], D. Zweerink[2], A.M. Campbell[3], T.T. Eckdahl[4], J. Poet[2], L.J. Heyer[1]; [1]Mathematics and Computer Science, Davidson College, Davidson, NC, [2]Computer Science, Mathematics and Physics, Missouri Western State University, St. Joseph, MO, [3]Biology, Davidson College, Davidson, NC, [4]Biology, Missouri Western State University, St. Joseph, MO

B722/P1705 **Graph Fingerprints of Mitochondria and Mitochondrial-Like Networks.** G.R. Lewis[1], W.F. Marshall[1]; [1]Biochemistry 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_1 subunit reveals a reliable binding model for epithelial Na^+,K^+-ATPases on adjacent cells.** O. Paez[1], L. Shoshani[1], M. Martínez-Archundia[2], J. Correa-Basurto[2]; [1]Physiology, CINVESTAV-IPN, Mexico city, Mexico, [2]Pharmacology, 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. Kashyap[1], R. Sharma[1], A.K. Saxena[1]; [1]School 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. Haar[1], A. Velamuri[1], S. Shields[1]; [1]Biology, 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. Tsao[1]; [1]Ophthalmology, Mackay Memorial Hospital, Taipei, Taiwan

SUNDAY

B727/P1710 **The physical microenvironment influences plexus self-assembly in a 3D *in vitro* model of vasculogenesis.** J. Shirazi[1], J.T. Morgan[1], E.M. Comber[1], J.P. Gleghorn[1]; [1]Biomedical Engineering, University of Delaware, Newark, DE

B728/P1711 **Development of a Porous Hydrogel for Skeletal Muscle Regeneration.** T.A. McGaughey[1], K.M. Fischer[1]; [1]Biology, Hampden-Sydney College, Hampden-Sydney, VA

B729/P1712 **Acss2 controls mode of acetate utilization.** N. Puthillathu[1,2,3,4], R. Vengilote[1,2,3,4], J.R. Moffett[1,2,3,4], A. Peethambaran[4], G. Sukumaran[2,3], J. Singh[2,3], C.L. Dalgard[1,2,3,4], m. Wilkerson[2,3], j. te[2,3], A.M. Namboodiri[1,2,3,4]; [1]School of Medicine, USUHS, Uniformed Services University school of Medicine, Bethesda, MD, [2]School of Medicine, USUHS, The American Genome Center, Bethesda, MD, [3]School of Medicine, USUHS, Collaborative Health Research Initiative (CHIRP), Bethesda, MD, [4]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. Lan[1], S. Hung[1], X. Su[1], S. Wong[2], Y. Tseng[1]; [1]Chemical Engineering, University of Florida, Gainesville, FL, [2]Department of Statistics, University of Florida, Gainesville, FL

B731/P1714 **Coupled control of mRNA and protein variability in single mammalian cells.** D. Popovic[1], L. Pelkmans[1]; [1]Department of Molecular Life Sciences, University of Zurich, Zurich, Switzerland

B732/P1715 **Chemotropism in yeast.** D. Ghose[1], D.J. Lew[2], T.C. Elston[3]; [1]Computational Biology and Bioinformatics, Duke University, Durham, NC, [2]Pharmacology and Cancer Biology, Duke University, Durham, NC, [3]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. Ghilardi[1,2], J. Eyckmans[1,2,3], A.E. Sgro[1,2]; [1]Biological Design Center, Boston University, Boston, MA, [2]Department of Biomedical Engineering, Boston University, Boston, MA, [3]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. Bilby[1], L.D. Doolan[1], C.C. Mackley[1], C. Watson[1], S.S. Bent[2], I.G. Cuellar[2], F.C. Enriquez[2], M.O. Hunter[2], H.S. Sinks[3], A. Tutar[3], L.J. Heyer[3], A.M. Campbell[2], J. Poet[4], T.T. Eckdahl[1]; [1]Biology, Missouri Western State University, St. Joseph, MO, [2]Biology, Davidson College, Davidson, NC, [3]Mathematics and Computer Science, Davidson College, Davidson, NC, [4]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. Sandlin[1], M.C. Good[1]; [1]Department of Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B736/P1719 **Optogenetic control of protein activity in cell-like compartments.** R.M. Caldwell[1], J.G. Bermudez[2], D.G. Thai[1], M.C. Good[1,2]; [1]Department of Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA, [2]Department of Bioengineering, University of Pennsylvania, Philadelphia, PA

B737/P1720 **Controllable phase separation and modular recruitment to form synthetic membraneless organelles.** B.S. Schuster[1], M. Good[1], D.A. Hammer[1]; [1]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. Quach[1], K. Bodner[1], A. Miguel[1], Y. Tanouchi[1], M.R. Silvis[2], C.A. Gross[2], K.C. Huang[1], M.W. Covert[1], D.A. Van Valen[1,3]; [1]Bioengineering, Stanford University, Stanford, CA, [2]Microbiology and Immunology, University of California, San Francisco, San Francisco, CA, [3]Biology and Bioengineering, California Institute of Technology, Pasadena, CA

B739/P1722 **Characterization of the Gain-of-function Toxicity of Optineurin in Yeast.** M. Islam[1], S. Chen[1], Y. Kim[2], S. Ju[1], Q. Zhong[1]; [1]Biological Sciences, Wright State University, Dayton, OH, [2]Brandeis University, Waltham, MA

B740/P1723 **Causes and consequences of slow-cycling cells within isogenic populations.** M. Min[1], S.L. Spencer[1]; [1]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. Boman[1,2], T. Dinh[2], K. Decker[2], B. Emerick[2], C. Raymond[2], J.Z. Fields[1], G. Schleiniger[2]; [1]Cancer Research, CATX Inc, Princeton, NJ, [2]Center for Applications of Mathematics in Medicine, University of Delaware, Newark, DE

B742/P1725 **Optogenetic platform to probe cytokinesis signaling *in vitro*.** J.G. Bermudez[1], M. Good[1,2]; [1]Bioengineering, University of Pennsylvania, Philadelphia, PA, [2]Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B743/P1726 **Laser-based degradation for engineered vascularized hydrogels within microfluidic housing.** K.A. Keller[1], J.H. Slater[1]; [1]Biomedical Engineering, University of Delaware, Newark, DE

Germ Cells, Gametogenesis, and Fertilization

B745/P1727 **Molecular analysis of pollen grains from morphologically Androdioecious but functionally Dioecious Solanum species.** J.R. Ndem[1], M. Christopher[1], J.E. Hall[1]; [1]BIOLOGY, BUCKNELL UNIVERSITY, LEWISBURG, PA

B746/P1728 **Proteomics of phosphorylation and protein dynamics during fertilization, activation, and meiotic exit in the Xenopus egg.** M. Presler[1], E. Van Itallie[1], A.M. Klein[1], R. Kunz[2], P. Coughlin[1], L. Peshkin[1], S.P. Gygi[2], M.H. Wühr[1,2,3], M.W. Kirschner[1]; [1]Systems Biology, Harvard Medical School, Boston, MA, [2]Department of Cell Biology, Harvard Medical School, Boston, MA, [3]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. Chang[1], R. Fissore[2], S. Yoon[3]; [1]Industry Academic Cooperation Foundation, CHA university, Seongnam-si, Korea, South, [2]Veterinary and Animal Sciences, University of Massachusetts, Amherst, MA, [3]College of Life Science, CHA university, Seoul, Korea, South

B748/P1730 **A proteomics approach identifies novel protein components of the Balbiani body.** A. Jamieson-Lucy[1], M.C. Mullins[1]; [1]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. Simonet[1], S.A. Anthony[2], A.M. O'Reilly[1], J.R. Peterson[1]; [1]Cancer Biology, Fox Chase Cancer Center, Philadelphia, PA, [2]Drexel School of Medicine, Philadelphia, PA

B750/P1732 **Membrane rafts regulate acrosome reaction via glucose signaling pathways in chicken sperm.** A. Ushiyama[1], A. Tajima[2], N. Ishikawa[2], A. Asano[2]; [1]Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan, [2]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. Baena[1], M. Terasaki[1]; [1]Cell Biology, University of Connecticut Health Center, Bristol, CT

B752/P1734 **Guidance of stem cell niche assembly, position, and architecture.** L. Anllo[1], L. Wingert[1], S. DiNardo[1]; [1]Cell 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. Kline[1], T. Curry[1], L. Lewellyn[1]; [1]Biological Sciences, Butler University, Indianapolis, IN

B754/P1736 **Mitochondrial protein ATAD-3 facilitates germ granule formation in *C. elegans* embryo.** X. Fan[1], Y. Wu[1], E.E. Griffin[1]; [1]Biological Sciences, Dartmouth College, Hanover, NH

B755/P1737 **Utilization of the auxin-degradation system to eliminate P granules in *C. elegans*.** E.A. Marnik[1], C. Sharp[1], D. Updike[1]; [1]MDI Biological Laboratory, Bar Harbor, ME

B756/P1738 **Ovaries from diabetic mice exhibit loss of follicles leading to reproductive failure.** E. De Jong[1], C. Hart[1], E. Yong[1], A. Becker[1], J. Fellmeth[1]; [1]Biology, Hamilton College, Clinton, NY

B757/P1739 **Only Sertoli cells cultured at high density mimic *in vivo* conditions.** A. Sriram[1], H. Huynh[1], J. Shadarevian[1], D. Djaksigulova[1]; [1]Cellular & Physiological Sciences, University of British Columbia, Vancouver, BC

B758/P1740 **Positive and Negative Regulation of Cell Fusion in Budding Yeast.** M.D. Rose[1,2], A.E. Hall[2], J.A. Smith[2,3]; [1]Biology, Georgetown University, Washington, DC, [2]Molecular Biology, Princeton University, Princeton, NJ, [3]Biology, UNC, Chapel Hill, NC

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

B760/P1742 **Complexes regulating *C. elegans* eggshell formation and egg activation are scaffolded by a common protein.** D. Gonzalez[1], H. Lamb[1], D. Partida[1], Z. Wilson[1], J. Prieto[1], S.K. Olson[1]; [1]Biology, Pomona College, Claremont, CA

B761/P1743 **Comparison of fertilization in the invasive zebra and quagga mussels.** M.J. Misamore[1], E. Couch[1], H. Quinn[1]; [1]Biology, Texas Christian University, Fort Worth, TX

B762/P1744 **Localization of N-terminally arginylated beta-actin in mouse oocytes.** S. Kurosaka[1], T. MItani[1], Y. Hosoi[1]; [1]Institute of Advanced Technology, Kindai University, Kainan, Japan

B763/P1745 **Sugar Cane Extract (SCE) influence steroidogenesis in the testicular interstitial cell of Japanese quail.** S. Pu[1,2], M. Mizu[3], T. Furuta[3], K. Nagaoka[1,2], G. Watanabe[1,2]; [1]United Graduate School of Veterinarian Sciences, Gifu University, Gifu, Japan, [2]Department of Veterinary Medicine, Tokyo University of Agriculture and Technology, Tokyo, Japan, [3]Research Development Division, Mitsui Sugar Co., Ltd., Tokyo, Japan

B764/P1746 **Patagonian blenny (Eleginops maclovinus) spermatozoa characterization and quality markers evaluation under chilling storage.** P. Ulloa[1], P. Contreras[2], K. Dumorne[1], M. Lee-Estevez[1], E. Figueroa[2], I. Valdebenito[3], J. Risopatron[2], J.G. Farias[1]; [1]Chemistry Engineering, Universidad de La Frontera, Temuco, Chile, [2]Center of Biotechnology in Reproduction (CEBIOR-BIOREN), Universidad de La Frontera, Temuco, Chile, [3]School 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. Elkouby[1], A. Jamieson-Lucy[2], M.C. Mullins[2]; [1]Developmental Biology and Cancer Research, The Hebrew University of Jerusalem, School of Medicine, Jerusalem, Israel, [2]Cell 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. Negrin[1], M. Marcielo De Jesus[1], M.E. Pinto-Fochi[2], R.M. Góes[1,2]; [1]Department of Structural and Functional Biology, University of Campinas (IB/UNICAMP), Campinas, Brazil, [2]Department 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. Mwakikunga[1], G.A. Adefolaju[2], L. Schepartz[1], M. Hosie[1,3]; [1]Anatomical Sciences, University of the Witwatersrand, Johannesburg, South Africa, [2]Pre-Clinical Sciences, University of Limpopo, Pietersburg, South Africa, [3]Anatomy, Newcastle University Medicine, Johor, Malaysia

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

B769/P1751 **The role of Wolf-Hirschhorn Syndrome related genes in *Xenopus* development.** A. Mills[1], R. Cella[1], F. Kim [1], M. Selig[1], L.A. Lowery[1], S. Lee[1]; [1]Biology, 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. Majer[1], B. Allen[1], J.L. Sallee[1]; [1]Biology, North Central College, Naperville, IL

B771/P1753 **The role of spindle orientation in embryonic patterning.** L.I. Rathbun[1], X. Bai[2], J.N. Bembenek[2], J.D. Amack[1], H. Hehnly[1]; [1]Cell and Developmental Biology, State University of New York Upstate Medical University, Syracuse, NY, [2]Biochemistry Cellular and Molecular Biology, University of Tennessee at Knoxville, Knoxville, TN

B772/P1754 **Paternal chromosome loss in inviable *Xenopus* hybrids.** R. Gibeaux[1], M. Kitaoka[1], R. Heald[1]; [1]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA

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

B774/P1756 **Vg1 ortholog Gdf3 is required for Nodal dependent developmental processes in zebrafish.** J.L. Pelliccia[1], G.A. Jindal[2,3], R.D. Burdine[1]; [1]Molecular Biology, Princeton University, Princeton, NJ, [2]Chemical and Biological Engineering, Princeton University, Princeton, NJ, [3]The Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ

B775/P1757 **Drosophila Importin-7 is required for proper muscle attachment site formation.** M.G. Zych[1], E.R. Geisbrecht[1], C. Liu[2], N. Odell[2], T. Sadikot[3]; [1]Department of Biochemistry and Molecular Biophysics, Kansas State University, Manhattan, KS, [2]Department of Cell Biology and Biophysics, University of Missouri-Kansas City, Kansas City, MO, [3]Department 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. Lasser[1], J. Tiber[1], C. Monahan[1], S. Lee[1], A. Ostojic[1], L. Pizzo[2], S. Girirajan[2], L.A. Lowery[1]; [1]Biology, Boston College, Chestnut Hill, MA, [2]Biochemistry 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. Langdon[1], R. Fuentes[2], H.H. Zhang[2], M.C. Mullins[2]; [1]Biology, Millsaps College, Jackson, MS, [2]Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B778/P1760 **NLRP7's Key Role in Primate Trophoblast Differentiation.** A. Garipcan[1], B. Ozcimen[2], T. Onder[2], N. Ozoren[1]; [1]Molecular Biology and Genetics, Bogazici University, Istanbul, Turkey, [2]School of Medicine, Koc University, Istanbul, Turkey

B779/P1761 **microRNA cross regulation of gene regulatory network and signaling pathways.** J.L. Song[1], N.A. Stepicheva[1]; [1]Biological Sciences, University of Delaware, Newark, DE

B780/P1762 **MicroRNA regulation of *Dishevelled* in early embryonic development.** N.F. Sampilo[1], N. Stepicheva[1], S. Zaidi[1], L. Wang[2], W. Wu[2], A. Wikramanayake[2], J.L. Song[1]; [1]Biological Sciences, University of Delaware, Newark, DE, [2]Biological Sciences, University of Miami, Miami, FL

B781/P1763 **Histone Abundance Adjusts the Timing of the Zygotic Genome Activation in Drosophila.** H. Wilky[1], S. Chari[1], A. Amodeo[1]; [1]LSI, Princeton University, Princeton, NJ

B782/P1764 **Identifying functional domains in the histone anchor Jabba.** R.A. Stephenson[1], L. Chen[1], M. Johnson[1], M. Beller[2], M.A. Welte[1]; [1]Department of Biology, University of Rochester, Rochester, NY, [2] 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. Howard[1], T.A. Evans[1]; [1]Biological Sciences, University of Arkansas, Fayetteville, AR

B784/P1766 **The role of MNL1 during neural crest cell developmental defects in mice.** H. Noh[1], H. Kweon[1], s. Seo[1], M. Lee[1], G. Oh[1]; [1]Life science, Ewha Womans University, Seoul, South Korea

B785/P1767 **Role of Peptidylglycine α-Amidating Monooxygenase in the Adaptive Plasticity of Embryonic Hatching in Zebrafish.** R.T. Thomason[1,2], D. Kumar[3,4], J. Sloan[1], J.D. Gitlin[1], R.E. Mains[3,5], B.A. Eipper[3,5]; [1]Eugene Bell Center for Regenerative Biology and Tissue Engineering, Marine Biological Laboratory, Woods Hole, MA, [2]University of Virginia, Charlottesville, VA, [3]Molecular Biology and Biophysics, University of Connecticut Health Center, Farmington, CT, [4]Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA, [5]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. Thottumari[1], L.G. Chukrallah[1], F.S. Raleigh[1], L.H. Twersky[1]; [1]Biology, Saint Peter's University, Jersey City, NJ

B787/P1769 **Physical and molecular mechanisms of cell cycle synchronization in early Drosophila embryos.** V. Deneke[1], M. Vergassola[2], A. Puliafito[3], S. Di Talia[1]; [1]Cell Biology, Duke University, Durham, NC, [2]Physics, University of California, San Diego, San Diego, CA, [3]Oncology, IRCC, Turin, Italy

B788/P1770 **Sperm Aster Growth and Dynamics during Pronuclear Migration.** J.L. Meaders[1], R. Sean[1], D.R. Burgess[1]; [1]Biology, Boston College, Chestnut Hill, MA

B789/P1771 **Functional roles of hnRNPA2/B1 by RNA epigenetic modification in mammalian embryonic development.** J. Kwon[1], Y. Jo[1], S. Namgoong[1]; [1]Animal science, Chungbuk National University, Cheongju, South Korea

B790/P1772 **The role of cadherin-based adhesions during trigeminal ganglia assembly.** C. Wu[1], L.A. Taneyhill[1]; [1]Animal and Avian Sciences, University of Maryland, College Park, MD

B791/P1773 **Sonic hedgehog guides axons through release of a Dock-ELMO complex.** S. Makihara[1,2], S. Morin[1], J. Côté[3,4,5], P.T. Yam[1], F. Charron[1,2,3,4,6]; [1]Molecular Biology of Neural Development, Institut de Recherches Cliniques de Montréal, Montreal, QC, [2]Integrated Program in Neuroscience, McGill University, Montreal, QC, [3]Department of Anatomy and Cell Biology, McGill University, Montreal, QC, [4]Department of Medicine, University of Montreal, Montreal, QC, [5]Department of Biochemistry, University of Montreal, Montreal, QC, [6]Division of Experimental Medicine, McGill University, Montreal, QC

B792/P1774 **Characterizing cell size dependent transcription with *Xenopus* embryos and cytoplasmic extracts.** L.C. Einstein[1], H. Chen[1], M.C. Good[1,2]; [1]Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA, [2]Bioengineering, University of Pennsylvania, Philadelphia, PA

B793/P1775 **Evolution of a morphogenesis pathway: comparative gastrulation studies in dipteran insects.** K.R. Sullivan[1], S. Mathrani[1], F.Z. Gezahegn[1], W.S. Garrett[1], R.E. Hoang[1]; [1]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. Levine[1], M.L. Chien-Hale[1], M. Chenworth[1], R.M. Lewinsohn[1], J.J. Hofmann[1], J.T. Fingerut[2], S.P. McRobert[2], R.E. Hoang[1]; [1]Biology Department, Haverford College, Haverford, PA, [2]Department of Biology, Saint Joseph's University, Philadelphia, PA

B795/P1777 **Spatiotemporal Regulation of Zygotic Genome Activation During Early Embryogenesis.** H. Chen[1], L.C. Einstein[1], M.C. Good[1,2]; [1]Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA, [2]Bioengineering, University of Pennsylvania, Philadelphia, PA

Tissue Development and Morphogenesis 1

B796/P1778 **Characterization of epithelial cell rearrangements during lens placode invagination.** N.S. Houssin[1], T.F. Plageman[1]; [1]optometry, Ohio State University, Columbus, OH

B797/P1779 **Determining how cellular phase transitions partition the myotube cytoplasm.** J.A. Smith[1], S. Dundon[2], A.S. Gladfelter[1]; [1]Biology, The University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Cellular Developmental Biology, Yale University, New Haven, CT

B798/P1780 **Exploring Posterior Growth in *D. rerio* Using a Live Cell Cycle Biosensor.** E. Feiner[1,2], R. Morabito[1], A.Q. Kohrman[1], B.L. Martin[1], D.Q. Matus[1]; [1]Biochemistry and Cell Biology, Stony Brook University, Stony Brook, NY, [2]Horace Mann Mid Upper School, Bronx, NY

B799/P1781 **The role of polycomb group ring finger 5 (Pcgf5) in pressure overload hypertrophy.** J. Jang[1], s. Seo[1], C. Lim[1], G. Oh[1]; [1]Department of Life Sciences, Ewha Womans University, Seoul, Korea, South

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. Kohrman[1], D.Q. Matus[1], W. Zhang[1]; [1]Biochemistry and Cell Biology, Stony Brook University, Stony Brook University, NY

B801/P1783 **Myocardial-specific functions of Jarid2 in the heart.** E. Cho[1], M.R. Mysliwiec[1], C.D. Carlson[2], A.Z. Ansari[3], R.J. Schwartz[4], Y. Lee[1]; [1]Cell and Regenerative Biology, University of Wisconsin-Madison, Madison, WI, [2]Trinity Christian College, Palos Heights, IL, [3]Biochemistry, University of Wisconsin-Madison, Madison, WI, [4]Biology and Biochemistry, University of Houston, Houston, TX

B802/P1784 **The Micropeptide Myomixer Controls Cell Fusion and Skeletal Muscle Formation.** P. Bi[1], A. Ramirez-Martinez[1], H. Li[1], J. Cannavino[1], J. McAnally[1], J. Shelton[1], E. Sanchez-ortiz[1], R. Bassel-Duby[1], E.N. Olson[1]; [1]Molecular Biology, University of Texas Southwestern Medical Center, Dallas, TX

B803/P1785 **Tks5-Mediated Podosome Formation Governs Mammalian Myoblasts Fusion.** M. Chuang[1], Y. Liu[1]; [1]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. You[1], J. Lee[1], J. Jeong[1], S. Keum[1], J. Kim[1], S. Rhee[1]; [1]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. Cote[1,2,3], M.L. Scimone[1,2,3], P.W. Reddien[1,2,3]; [1]Biology, MIT, Cambridge, MA, [2]Howard Hughes Medical Institute, Chevy Chase, MD, [3]Whitehead Institute for Biomedical Research, Cambridge, MA

B806/P1788 **Deciphering Heart Regeneration by Histone Exchange Profiling.** J.A. Goldman[1], G. Kuzu[2], N. Lee[1], J. Karasik[1], M. Gemberling[1], R. Karra[1], A. Dickson[1], M.Y. Tolstorukov[2], K.D. Poss[1]; [1]Cell Biology, Duke University Medical School, Durham, NC, [2]Molecular Biology, Massachusetts General Hospital, Boston, MA

B807/P1789 **Preterm birth compromises cerebellar development: evidence from a pig model.** I. Iskusnykh[1], R. Buddington[2], A. Zakharova[1], L. Mukhametzyanova[1], V. Chizhikov[1]; [1]Department of Anatomy and Neurobiology, University of Tennessee Health Science Center, Memphis, TN, [2]School of Health Studies, University of Memphis, Memphis, TN

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. Shin[1], J. Kang[1], Y. Lee[1], K. Kim[2], H. LEE[2]; [1]General Medical Research Institute, CHA Bundang Medical Center, Bundang, South Korea, [2]Biomedical Research Institute, Seoul National University Hospital, Seoul, South Korea

B809/P1791 **A genetic screen for morphogenesis-defective, temperature-sensitive mutants in *Caenorhabditis elegans*.** M.C. Jud[1], J. Lowry[1], T. Padilla[1], A. Miller[1], H. Shao[2], Z. Bao[2], B. Bowerman[1]; [1]Institutue of Molecular Biology, University of Oregon, Eugene, OR, [2]Developmental Biology, Memorial Sloan Kettering Cancer Center, New York, NY

B811/P1793 **Cardiac transcriptome profiling during regeneration in zebrafish.** D.A. Zuppo[1], M.A. Missinato[1], R.A. DeMoya[1], M. SaydMohammed[1], M. Tsang[1]; [1]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. Alsubait[1], A.K. Corsi[1]; [1]Department of Biology, The Catholic University of America, Washington, DC

B813/P1795 **Breaking Hertwig's Rule in the Drosophila Follicular Epithelium.** T.M. Finegan[1], D. Na[2], A.V. Skeeters[3], N.S. Dawney[4], P.W. Oakes[3], A.G. Fletcher[5], D.T. Bergstralh[4]; [1]Department of Physiology, Development and Neuroscience, University of Cambridge, Cambridge, United Kingdom, [2]Department of Biomedical Genetics, University of Rochester Medical Center, Rochester, NY, [3]Department of Physics Astronomy, University of Rochester, Rochester, NY, [4]Department of Biology, University of Rochester, Rochester, NY, [5]School 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. Goodfellow[1], F.R. Santana[1], L.M. Galli[1], L.W. Burrus[1]; [1]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. DeAngelis[1], R.I. Johnson[1]; [1]Biology, Wesleyan University, Middletown, CT

B816/P1798 **Quantitative analysis of the contribution of apical constriction to neural tube closure.** A.T. Baldwin[1], J.B. Wallingford[1]; [1]Molecular 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. Huebner[1], J.B. Wallingford[1]; [1]Molecular Bioscience, University of Texas at Austin, Austin, TX

B818/P1800 **Hedgehog signaling constrains cell movements during early eye development.** S. Lusk[1], H.B. Gordon[1], E.O. Wirick[1], B. Froelich [1], K.M. Kwan[1]; [1]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 Jesus[1], A.C. Negrin[1], R.M. Góes[1,2]; [1]Department of Functional and Structural Biology, University of Campinas (IB/UNICAMP), Campinas, Brazil, [2]Department 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. Guo[1], Y. Chen[2]; [1]Neuroscience Center, University of North Carolina-Chapel Hill, Chapel Hill, NC, [2]Dept. Biological Sciences, Kent State University-Trumbull, Warren, OH

Prokaryotic Cell Biology

B822/P1803 **A Trimeric Transmembrane Mechanism Underlying *Enterobacter cloacae* Resistance to Triclosan.** J. Marotta[1], K.J. Karnas[1]; [1]Biological Sciences, Cedar Crest College, Allentown, PA

B823/P1804 **An antibacterial mechanism of bac8c via apoptosis- like response on *Escherichia coli*.** H. Lee[1], D. Lee[1]; [1]School of Life Sciences, Kyungpook National University, Daegu, South Korea

B824/P1805 **Understanding Role of VraT in Methicillin-Resistant *Staphylococcus aureus*.** C.E. Wilson[1], V.A. Segarra[1], A. Sarkar[1]; [1]Biology, High Point University, High Point, NC

B825/P1806 **Apple cider vinegar changes Escherichia-coli pathogenic protein expression profiles and curbs infected leucocyte cytokine secretion.** D. Yagnik[1], V. Serafin[1], A. Shah[1]; [1]Natural sciences, Middlesex University, London, United Kingdom

B826/P1807 **The effects of acetic acid on biofilm formation and wound healing using a zebrafish model.** A. Blake[1], M. Belaunzaran[1], B. Schoffstall[1]; [1]Department of Biology, Barry University, Miami, FL

B827/P1808 **FzlA, an essential regulator of FtsZ filament curvature, controls constriction during *Caulobacter* division.** P.J. Lariviere[1], P. Szwedziak[2,3], J. Löwe[2], E.D. Goley[1]; [1]Biological Chemistry, Johns Hopkins University School of Medicine, Baltimore, MD, [2]Structural Studies Division, MRC Laboratory of Molecular Biology, Cambridge, United Kingdom, [3]Institute of Molecular Biology and Biophysics, ETH Zürich, Zürich, Switzerland

B828/P1809 **Spatial-temporal regulation of bacterial cell division machinery by FtsZ treadmilling dynamics.** X. Yang[1], Z. Lyu[1], R.J. McQuillen[1], J. Mccausland[1], J. Xiao[1]; [1]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. Liang[1], X. Yang[2], J. Xiao[2], C.L. Grimes[1]; [1]Chemistry and Biochemistry, University of Delaware, Newark, DE, [2]School of Medicine, Johns Hopkins University, Baltimore, MD

B830/P1811 **Mechanical strain sensing implicated in cell shape recovery in *Escherichia coli*.** F. Wong[1], L.D. Renner[2,3], G. Özbaykal[4], J. Paulose[5], D.B. Weibel[3,6], S. van Teeffelen[4], A. Amir[1]; [1]School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, [2]Max Bergmann Center of Biomaterials, Leibniz Institute of Polymer Research, Dresden, Germany, [3]Department of Biochemistry, University of Wisconsin-Madison, Madison, WI, [4]Department of Microbiology, Institut Pasteur, Paris, France, [5]Departments of Physics and Integrative Biology, University of California, Berkeley, Berkeley, CA, [6]Department of Biomedical Engineering, University of Wisconsin-Madison, Madison, WI

B831/P1812 **Brownian ratchet mechanism for faithful segregation of low-copy-number plasmids.** L. Hu[1], A.G. Vecchiarelli[2], K. Mizuuchi[3], K.C. Neuman[1], J. Liu[1]; [1]National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD, [2]Department of Molecular, Cellular, and Developmental Biology, University of Michigan, Ann Arbor, MI, [3]National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Bethesda, MD

B832/P1813 **16s RNA gene Restriction Fragment Length Polymorphism of Guánica Salterns Halobacteria.** A.G. Méndez Pérez[1], J.M. Planas-Rivera[1]; [1]Natural Science Department, University of Puerto Rico at Aguadilla, Aguadilla, Puerto Rico

B833/P1814 **Isolation and Characterization of Surface Bacteria Associated with the Sea Urchin Lytechinus variegatus.** H.J. Molina[1], J.F. Gaige[1], L. Jayant[1]; [1]Science, Borough of Manhattan Community College, York New, NY

B834/P1815 **Calcium plays a role in the survival of protist co-isolated from the eggs of sea urchin Lytechinus variegatus and Lyechinus willamsi.** J.F. Gaige[1], H.J. Molina[1], L. Jayant[1]; [1]Biology, Borough of Manhattan Community College, New York, NY

B835/P1816 **Analysis of damaging effect of Betadine combined with the enzyme nuclease toward bacteria Serratia marcescens.** E.F. Zainutdinova[1], A. Rizvanov[1], M.N. Filimonova[1]; [1]Institute of Fundamental Medicine and Biology, Kazan Federal University, Kazan, Russia

B836/P1817 **Multidrug Resistance in Disparate Bacterial Species Following Triclosan Exposure.** J. Marotta[1], N.M. Raimondi[1], L.R. Koseki[1], A. Connell[1], L.S. Feldman[1], L.P. Exton[2], K.J. Karnas[1]; [1]Biological Sciences, Cedar Crest College, Allentown, PA, [2]Emmaus High School, Emmaus, PA

B837/P1818 **Comparison of virulence factors in clinical and environmental strains of actinobacterium *Tsukamurella tyrosinosolvens* based on whole-genome sequencing.** V.A. Romanova[1], E.A. Boulygina[1], T.V. Grigoryeva[1], A.V. Laikov[1]; [1]Institute of Fundamental Medicine and Biology, Kazan Federal University, Kazan, Russia

B838/P1819 **Assaying the Relative Effectiveness of Biofilm Disruption by Natural Oils.** L.R. Vega[1], K. Livingston[1], C.J. Hengartner[1]; [1]Biology, Barry University, Miami Shores, FL

B839/P1820 **Essential roles for sterols in bacterial cell biology.** S. Stettner[1], M. Helling[2], F. Basile[2], N. Ward[1]; [1]Molecular Biology, University of Wyoming, Laramie, WY, [2]Chemistry, University of Wyoming, Laramie, WY

B840/P1821 **Strong Antimicrobial Activity Displayed By Newly Synthesized Hydroxamic Acids And Their Derivatives.** S. Dosanjh[1], J. Klinkerth[1], C. Ellameh[1], R. Aslanian[1], M. Bendaoud[1]; [1]Biology, New Jersey City University, Jersey City, NJ

B841/P1822 **Discovery of a Marine Bacteria with a Wide Spectrum Anti-Bacterial Activity.** J. Klinkerth[1], S. Dosanjh[1], C. Ellameh[1], M. Bendaoud[1]; [1]Biology, 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. Moraes[1], A. Budu[1], M.K. Singh[1], L. Borges Pereira[1], J.C. Levano Garcia[1], T. Pozzan[2], C.R. Garcia[1]; [1]Physiology, University of Sao Paulo, Sao Paulo, Brazil, [2]Scienze Biomediche, Università di Padova, Padova, Italy

B843/P1824 **Isolation of Apicomplexan Blood Parasites from Caribbean *Stegastes* Damselfishes.** D.E. Walters[1], K. Liburd[1], N. Blake[1], A.G. Campbell[2], P.C. Sikkel[3], J.B. Robinson[1]; [1]Biology, University of the Virgin Islands, St. Thomas, VI, [2]BioMed, Brown University, Providence, RI, [3]Biology, Arkansas State University, Jonesboro, AR

B844/P1825 **Unconventional trafficking of a DNA replication protein through secretory pathway in apicomplexan *Plasmodium falciparum*.** B. Sharma[1], R. Sharma[1], S.K. Dhar[1]; [1]Special Centre for Molecular Medicine, Jawaharlal Nehru University, New Delhi, India

B845/P1826 **A cdc2 homolog is required for completion of oral development during regeneration and cell division in the giant ciliate *Stentor coeruleus*.** S.B. Reiff[1], W.F. Marshall[1]; [1]Biochemistry & Biophysics, UCSF, San Francisco, CA

B846/P1827 **The localization and functional analysis of a novel centrin (TgCentrin2) in human pathogen *Toxoplasma gondii*.** J. Liu[1], J.M. Leung[1], L.A. Wetzel[2], Y. Zhang[3], J.M. Murray[1], L. Florens [3], K. Hu[1]; [1]Biology, Indiana University Bloomington, Bloomington, IN, [2]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, [3]Stowers 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. Nagayasu[1], Y. Hwang[2], J.M. Leung[3], J. Liu[3], P.G. Pierce[4,5], J.M. Murray[3], K. Hu[3]; [1]Department of Infectious Diseases, University of Miyazaki, Miyazaki, Japan, [2]Nikon Instruments Inc, Melville, NY, [3]Biology, Indiana University, Bloomington, IN, [4]Seattle Structural Genomics Center for Infectious Disease, Seattle, WA, [5]Beryllium Discovery, Seattle, United States

B848/P1829 **Deciphering the role of proteasomal machinery in phagocytosis in Entamoeba histolytica.** R. KUMARI[1], S. TIWARI[1]; [1]SCHOOL 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. Limonta[1], N. Dolce[1], M. Ng[1], G. Mayer[1]; [1]Biology, 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. Noell[1], J.S. Pitula[1]; [1]Department 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. Egbe[1], M.P. Ashe[2]; [1]Biological Sciences, Nigerian Defence Academy, Kaduna, Nigeria, [2]Faculty of Biology, Medicine and Health, The University of Manchester, Manchester, United Kingdom

B852/P1833 **Unraveling calcium programmed hunting biodynamics of the swan-necked predatory ciliate *Lacrymaria*.** S.M. Coyle[1], M. Prakash[1]; [1]Bioengineering, Stanford University, Stanford, CA

B853/P1834 **Role of PLC-IP$_3$ Pathway in Intraerythrocytic Development of *Plasmodium falciparum*.** M. Fila Pecenin[1], L. Borges Pereira[1], K. Mikoshiba[2], A. Thomas[3], C. Garcia[4]; [1]Parasitologia, Instituto de Ciências Biomédicas, Universidade de São Paulo, São Paulo, Brazil, [2]Developmental Neurobiology, RIKEN Brain Science Institute, Saitama, Japan, [3]The State University of New Jersey, New Jersey Medical School Rutgers, New Jersey, NJ, [4]Fisiologia, Instituto de Biociências, Universidade de São Paulo, São Paulo, Brazil

B854/P1835 **Discovery of a lineage-specific mitosomal membrane protein possibly involved in vacuole-mitosome contact in Entamoeba histolytica.** H.J. Santos[1,2], Y. Hanadate[2,3], K. Imai[4], T. Nozaki[1,2,3]; [1]Department of Biomedical Chemistry, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan, [2]Department of Parasitology, National Institute of Infectious Diseases, Tokyo, Japan, [3]Graduate School of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan, [4]Biotechnology 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. Hayakawa[1], H. kato[1], H. Matsuoka[1], M. Mori[2]; [1]Division of Med. Zoology, Dept. of Infection and Immunity, Jichi Medical University, Shimotsuke, Japan, [2]Div. of Therapeutic Phamacology & Cell Biological Pathology, Chiba Institute of Science, Choshi, Japan

Immune System

B857/P1837 **MicroRNA dynamics in oligodendrocytes in the context of autoimmune demyelination.** A. Didonna[1], J.R. Oksenberg[1]; [1]Department 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. ZHAO[1], Y. FANG[1], Z. SHEN[1], J. HWANG[1], Y. XIE[1], M.J. CATERINA[2], W. LIU[1]; [1]School of life science, Tsinghua University, Beijing, China, [2]School 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. Chen[1], B. Yang[1], S. Chen[1], L. He[1], X. Sun[2], W. Yang[1], W. LIU[1]; [1]School of Life Sciences, Tsinghua University, Beijing, China, [2]Department of Rheumatology and Immunology, Peking University People's Hospital, Beijing, China

B860/P1840 **Hepatokine induction mediates anti-inflammatory actions of Colchicine.** J. Weng[1], R. Jiang[1], H. Tu[2], T.J. Mitchison[1]; [1]Department of Systems Biology, Harvard Medical School, Boston, MA, [2]Alnylam Pharmaceuticals, Inc, Cambridge, MA

B861/P1841 **Haploid genetic screens identify novel regulators of cell interaction and degranulation during cytotoxic lymphocyte-mediated cell death.** B.L. Menasche[1], E.M. Davis[1], J. Shen[1]; [1]Molecular, 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. Paul[1], K. Tanner[1]; [1]Laboratory 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. Jamal[1], W.J. Wilburn[2], M.M. Whalen[1]; [1]Chemistry, Tennessee State University, Nashville, TN, [2]Biology, Tennessee State University, Nashville, TN

B864/P1844 **Exposure of human immune cells to triclosan alters the secretion of Interferon gamma.** F.A. Ismail[1], W.J. Wilburn[2], M.M. Whalen[1]; [1]Chemistry, Tennessee State University, Nashville, TN, [2]Biology, 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. Kawakami[1], A. Koike[1], F. Amano[1]; [1]Laboratory of Biodefense and Regulation, Osaka University of Pharmaceutical Sciences, Osaka, Japan

B866/P1846 **Mild electrical stimulation with heat shock ameliorates inflammation in imiquimod-induced psoriasis model.** Y. Tsurekawa[1], Y. Nakano[1], M. Morita[1], M. Moriuchi[1], M. Piruzyan[1], M. Takada[1], M. Suico[1], T. Shuto[1], H. Kai[1]; [1]Molecular medicine, Kumamoto University, Kumamoto, Japan

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

B868/P1848 **HIV-1 gp120$_{IIIB}$/HIV-1 gp120$_{JRFL}$ -mediated human α7-nAChR's up-regulation in macrophages and its implications in the cholinergic anti-inflammatory response (CAR).** S. Cotto-Ríos[1], M. Delgado-Vélez[2], J.O. Colón-Sáez[3], O. Quesada[4], J.A. Lasalde-Dominicci[1,2]; [1]Department of Chemistry, University of Puerto Rico-Rio Piedras Campus, San Juan, PR, [2]Department of Biology, University of Puerto Rico-Rio Piedras Campus, San Juan, PR, [3]Department of Pharmaceutical Sciences, University of Puerto Rico Medical Science Campus, School of Pharmacy, San Juan, PR, [4]Department 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. Rodriguez[1], R. Rinero[1], M.V. Reyna[1], A.H. Vargas[2], C.L. Carabajal-Miotti[2], N.E. Gonzalez-Silva[2], S. Ruiz de Frattari[2], I.T. Novak[1]; [1]Institute of Cell Biology, Faculty of Medical Sciences, National University of Cordoba, Cordoba, Argentina, [2]Institute of Hematology and Hemotherapy, National University of Cordoba, Cordoba, Argentina

B870/P1850 **Fas (CD95) signaling pathway is involved along with BAG-1M in the regulation of Hsp70-mediated chaperoning of aPKC under pro-inflammatory conditions.** A. Mashukova[1,2], R. Forteza[2], P.J. Salas[2]; [1]College of Medical Sciences, Nova Southeastern University, Fort Lauderdale, FL, [2]Dept. 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. Mishra[1], A. Nguyen[2], N. Nawaz[3], B. Hussain[4], E. Lee[5], V. Yau[6], S.J. Bacon[2,6]; [1]Department of Biochemistry, Mount Holyoke College, South Hadley, MA, [2]Department of Biological Sciences, Mount Holyoke College, South Hadley, MA, [3]Department of Sleep Medicine, Brigham and Women's Hospital, Boston, MA, [4]Rollins School of Public Health, Emory University, Atlanta, GA, [5]College of Medicine, University of Arizona, Tucson, AZ, [6]Department 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. Balabekova[1], A.N. Tokusheva[1], Y. Ostapchuk[2], N. Abdolla[2], R. Tukhvatshin[3]; [1]Department of Pathophysiology, Asfendiyarov Kazakh National Medical University, Almaty, Kazakhstan, [2]Laboratory of Molecular Immunology and Immunobiotechnology, M.A.Aitkhozhin's Institute of Molecular Biology and Biochemistry, Almaty, Kazakhstan, [3]Department of Pathophysiology, Kyrgyz State Medical Academy named after I.K. Akhunbaev, Bishkek, Kyrgyzstan

B873/P1853 **NT-07-16 reduces NF-κB signaling in RAW264.7 macrophages.** A. Gonye[1], S.P. Gilmore[1], S. Espinosa de Los Reyes[1], E.C. Li[1], M.M. Brown[1], J.T. Gupton[2], O.A. Quintero[1], K. Fischer-Stenger[1]; [1]Biology, University of Richmond, Richmond, VA, [2]Chemistry, 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. Pham[1], E.C. Gonye[1], L. Ward-Kavanagh[1], J.K. Stewart[2], K. Fischer-Stenger[1]; [1]Biology, University of Richmond, Richmond, VA, [2]Biology, Virginia Commonwealth University, Richmond, VA

B875/P1855 **Asaronic acid ameliorates atherosclerotic inflammation by polarizing M1 macrophages to M2-like macrophages.** H. Oh[1], Y. Kang[1]; [1]Food science and Nutrition, HALLYM UNIVERSITY, Chuncheon, Kangwon-do,

SUNDAY

NOTES