Monday Poster Session
Learning Center, Exhibit Halls C-E

Poster Set Up	Posters Displayed	Author Presentation	Poster Tear Down
Sunday 6:00–6:30 pm	Sunday 6:30–8:00 pm Monday 7:30 am–5:30 pm	Odd Boards 12:00–1:30 pm Even Boards 1:30–3:00 pm	Monday 5:30–6:00 pm

Board Numbers	Session Titles
B1-B26	Science Education 2
B28-B38	New Techniques in Genomics and Proteomics
B39-B56	New Technologies in Cell Biology: Education, Public Engagement, and General
B58-B86	Actin and Actin-Associated Proteins
B87-B101	Regulation of Actin Dynamics 1
B102-B111	Actin-Membrane Interactions
B112-B126	Kinesins 1
B128-B142	Tubulin and Associated Proteins
B143-B155	Microtubules and Cell Division
B157-B172	Assembly and Disassembly of Cilia/ Flagella 2
B173-B192	Sensory and Signaling Functions of Cilia
B194-B216	Cytokinesis 1
B217-B235	Kinetochore Assembly and Functions 2
B236-B252	Spindle Assembly 2
B253-B267	G1, G1-S, and S Phase Regulation
B269-B282	Tumor Suppressors and Regulation of Oncogenes
B283-B306	Tumor Invasion and Metastasis 2
B307-B335	Cancer Therapy: Novel Techniques and Therapeutics
B336-B350	Tumor Microenvironment 1
B352-B361	Chromatin and Chromosome Organization
B362-B373	Epigenetics and Chromatin Remodeling
B375-B390	Nucleocytoplasmic Transport
B391-B413	The Nuclear Envelope and Nuclear Pore Complexes 1
B415-B420	Membrane Fission and Coat Proteins
B421-B435	Rab GTPases
B436-B457	Endocytic Trafficking 1
B459-B475	Establishment and Maintenance of Polarity
B477-B487	Neuronal Degeneration - ALS, HSP, and SCA
B488-B493	Neuronal Signal Transduction, Cell-Cell Interactions
B494-B507	Dynamics of Proteins and Organelles in Neurons
B509-B530	Establishing and Maintaining Organelle Structure 2
B531-B555	Mitochondrial Metabolism and Physiology
B556-B572	Cellular Lipid Metabolism and Membrane Dynamics
B574-B590	Kinases and Phosphatases 2
B591-B608	Signaling Receptors (RTKs and GPCRs)
B609-B628	Rho-Family GTPases
B630-B635	Cytoskeleton-Membrane Interactions: Septins
B636-B656	Mechanotransduction 1
B657-B664	Intermediate Filaments
B666-B683	Cell-Cell Junctions 2
B684-B695	Integrins and Cell-ECM Interactions 1
B697-B716	Chaperones, Protein Folding, and Quality Control 1
B717-B731	Cell Death
B733-B756	Biophysical Approaches to Cell Biology
B758-B782	Tissue Development and Morphogenesis 2
B783-B797	Tissue Mechanics
B798-B818	Stem Cells and Pluripotency
B820-B835	Host-Pathogen/Host-Commensal Interactions 1
B837-B856	Organ/Disease Biology and Therapeutic Targets 1
B857-B867	Hematopoietic System
B868-B881	Therapies: Design and Mechanisms for Normal and Diseased Organs 1

Poster Presentation Guidelines

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

Science Education 2

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

B2/P1866 **How Instructors Can Enhance Biology Students' Motivation, Learning, and Grades Through Brief Relevance Writing and Worked Examples Interventions.** K. Mara[1], A. Kaplan[2], M.A. Balsai[3], J.G. Cromley[4], T. Perez[5], T. Dai[6], Y. Davidson[2]; [1]Biology, University of Southern Indiana, Evansville, IN, [2]Psychological Studies in Education, Temple University, Philadelphia, PA, [3]Biology, Temple University, Philadelphia, PA, [4]Educational Psychology, University of Illinois Urbana-Champaign, Champaign, IL, [5]Educational Foundations Leadership, Old Dominion University, Norfolk, VA, [6]Educational Psychology, University of Illinois at Chicago, Chicago, IL

B3/P1867 **Integration of Student-Led Independent Research Experiences in a Senior-Level Biotechnology Laboratory Course.** J.A. Jordan[1], Q.N. Robinson[1], R.E. McFarlane[1]; [1]Department of Biology, Clayton State University, Morrow, GA

B4/P1868 **Cellular Construction Workshop – Modeling Cells as Biological Machines.** J. Allen[1], V. Srivastava[1,2], R. Smith[1]; [1]Science Health Education Partnership, University of California San Francisco, San Francisco, CA, [2]Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA

B5/P1869 **Broadening Interest in STEM in High School Students through Foldscope-Based Interdisciplinary Activities.** Q.L. Aoh[1], A. Schmitz[2], N. Conklin[3]; [1]Biology, Gannon University, Erie, PA, [2]Biomedical Engineering, Gannon University, Erie, PA, [3]Physics, Gannon University, Erie, PA

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

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

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

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

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

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

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

B13/P1877 **Promoting Leadership Development Within Undergraduate STEM Curricula.** L.F. Barton[1], K.S. McCain[2]; [1]Biology Department, Austin College, Sherman, TX, [2]Institutional Effectiveness, Austin College, Sherman, TX

B14/P1878 **Learning in Large Introductory Biology Courses Is Effectively Facilitated by Trained Undergraduate Learning Assistants.** R.P. Donaldson[1]; [1]Biological Sciences, George Washington University, Washington, DC

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

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

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

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

B19/P1883 **Graduate Students in a Hybrid Histology and Cell Biology Course.** H.M. Tavangar[1], G. Butera[1], L. Friedman[1], A. Ren[1], R.A. Jurjus[1]; [1]Department of Anatomy and Regenerative Biology, George Washington University, Washington, DC

B20/P1884 **Benefits of adaptive on-line learning modules.** C. Priano[1], L. Jayant[1]; [1]Science, Borough of Manhattan Community College, New York, NY

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

B22/P1886 **Engaging community college students in an inquiry-based learning experience using NIH IRACDA postdocs expertise.** C. Inda[1], S.K. Donnelly[2], N. Nunez Rodriguez[1], T. Tomita[2], E. Steidle[2]; [1]Natural Science Dept, Hostos Community College, City University of New York, New York City, NY, [2]Anatomy and Structural Biology, Albert Einstein College of Medicine, New York City, NY

B23/P1887 **Bio-Bridge: A Research and Study Skills Bridge Program for Transfer Students.** J. Hurst-Kennedy[1], C. Achat-Mendes[1], R. Simmons[1]; [1]School of Science and Technology, Georgia Gwinnett College, Lawrenceville, GA

B24/P1888 **The SIE Program: Supporting Inclusive Excellence in Biology, Biochemistry, and Neuroscience.** C.B. Favero[1,2], K.A. Goddard[1], J.E. Round[1,2], R.E. Kohn[1,2]; [1]Biology Department, Ursinus College, Collegeville, PA, [2]Neuroscience Program, Ursinus College, Collegeville, PA

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

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

New Techniques in Genomics and Proteomics

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

B29/P1892 **Genome editing using linear DNA donors enables one-step GFP tagging without cloning or selection.** A. Paix[1], A.W. Folkmann[1], D.H. Goldman[1], D. Rasoloson[1], S. Paidemarry[1], M. Grzelak[1], H. Kulaga[1], R. Green[1], R.R. Reed[1], G. Seydoux[1]; [1]Molecular Biology and Genetics, HHMI, Johns Hopkins University, School of Medicine, Baltimore, MD

B30/P1893 **CASTING: A rapid method to generate pooled clone libraries for functional genomics investigations.** M. Meurer[1], B.C. Buchmuller[1], E. Sass[2], K. Herbst[1], D. Kirrmaier[1,3], E.D. Levy[2], M. Knop[1,3]; [1]Zentrum für Molekulare Biologie der Universität Heidelberg, Heidelberg, Germany, [2] Department of Structural Biology, Weizmann Institute of Science, Rehovot, Israel, [3]Deutsches Krebsforschungszentrum (DKFZ), Heidelberg, Germany

B31/P1894 **Targeted RNA Expression Profiling for Biomarker Discovery in Complex Biological Samples.** A.A. Chenchik[1], P. Diehl[1], A. Komarov[1], M. Makhanov[1], C. Frangou[1]; [1]Cellecta, Inc., Mountain View, CA

B32/P1895 **Access and Discover Biological Pathway Information from Pathway Commons.** E. Demir[1], I. Rodchenkov[2], Ö. Babur[1], A. Luna[3,4], J.V. Wong[2], C. Sander[3,4], G. Bader[2]; [1]Department of Computational Biology, Oregon Health Science University, Portland, OR, [2]Department of Computational Biology, University of Toronto, Toronto, ON, [3]Department of Cell Biology, Harvard Medical School, Boston, MA, [4]Dana-Farber Cancer Institute, Boston, MA

B33/P1896 **Single-cell protein and gene expression profiling of stem memory T cells by BD Ab-seq.** C. Chang[1], E.Y. Shum[1], J. Martin[2], J. Ghadiali[2], M. Corselli[3], D. Jensen[1], J. Hu[1], D. Rosenfeld[1], H.C. Fan[1]; [1]RD, BD Genomics, Menlo Park, CA, [2]RD, BD Biosciences, San Diego, CA, [3]RD, BD Technologies and Innovation, Durham, NC

B34/P1897 **Identification of Protein-Protein Interaction Hotspots in the Hippo Signaling Pathway.** A.N. Still[1], V. Nara[1], A. Dailing[1], R. Magni[1], L. Liotta, MD[1], A. Luchini[1]; [1]Center for Applied Proteomics and Molecular Medicine, George Mason University, Manassas, VA

B35/P1898 **Regulation of the Mouse Alveolar Macrophage Toponome by Surfactant Protein-A.** D.S. Phelps[1], X. Zhang[1], D. Shearer[2], J. Weisz[2], J. Floros[1,2]; [1]Pediatrics, Penn State College of Medicine, Hershey, PA, [2]Obstetrics and Gynecology, Penn State College of Medicine, Hershey, PA

B36/P1899 **Proteomic and interactome analyses of SEPT9 in MCF7 breast cancer cells reveal isoform-specific pro-oncogenic functions.** L. Devlin[1,2], G. Perkins[1], C. Montagna[3], E.T. Spiliotis[2]; [1]Analytical, Sanofi Pasteur, Swiftwater, PA, [2]Biology, Drexel University, Philadelphia, PA, [3]Departments of Genetics and Pathology, Albert Einstein College of Medicine, Bronx, NY

B37/P1900 **Novel Platform for Profiling Ubiquitin Specific Proteome.** C. Song[1], P. Foote[1], X. Lu[1], R. Singh[1]; [1]RD, Lifesensors Inc, Malvern, PA

B38/P1901 **Development of a pharmaco-proteomics platform for monitoring changes in thrombin-mediated signaling and aggregation of human platelets treated with dabigatran.** J. Gonzalez[1], A. Babinska[2], M. Dzieciatkowska [3], E.L. Ewul[4], E. Timpo[2], M.O. Salifu[2], C.C. Clement[4,5]; [1]Department of Natural Sciences, LaGuardia Community College, Queens, NY, [2]Division of Nephrology, Department of Medicine, State University of New York, Downstate Medical Center, Brooklyn, NY, [3]Biological Mass Spectrometry Core Facility, University of Colorado Denver, Aurora, CO, [4]Chemistry, Lehman College CUNY, Bronx, NY, [5]Pathology, Albert Einstein College of Medicine Inc, Bronx, NY

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

B39/P1902 **Quorum: Crowdsourcing image tracing through an engaging painting game.** J.H. Iwasa[1], K. Santiago[1], J. Lin[1]; [1]Biochemistry, University of Utah, Salt Lake City, UT

B40/P1903 **Improving the nutritional quality of the common bean: Producing reagents for bean transformation.** C.M. Morales[1], S. So[1], M.B. Zavala[1]; [1]Biology Department, California State University Northridge, Northridge, CA

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

B42/P1905 **Towards an Open-Access 3D Brain Cell Atlas: The BRAIN Initiative Cell Census Network.** B. Singh[1], Y. Yao[1], M. Freund[1], A. Beckel-Mitchener[1]; [1]National Institute of Mental Health, NIH, Rockville, MD

B43/P1906 **An Image-based data generation pipeline to model stem cell organization and dynamics.** AICS Team[1]; [1]Allen Institute for Cell Science, Seattle, WA

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

B45/P1908 **Label-free ptychographic imaging reveals a role for VGSV-mediated membrane potential depolarisation in enhancing the migratory capability of breast cancer cells.** R. Suman[1,2], M. Yang[1], A. Glen[1], W. Brackenbury[1]; [1]Department of Biology, University of York, York, United Kingdom, [2]Biological Applications, Phasefocus Ltd, Sheffield, United Kingdom

B46/P1909 **Rapid inactivation of RNaseA by high irradiance UV LEDs.** T.L. Thompson[1], J. Pasquantonio[1], G. Eliason[1]; [1]Phoseon Technology, Hilsboro, OR

B47/P1910 **Cold plasma eradication of Escherichia coli and Staphylococcus aureus biofilms.** N. Zhao[1], L. Nguyen[1], C. Toorkey[1], K. Fitzgerald[1], N. Hickok[1], T. Freeman[1]; [1]Orthopaedic Research, Thomas Jefferson University, Philadelphia, PA

B48/P1911 **Phage assisted continuous evolution (PACE) is a powerful tool for *in vivo* directed evolution.** S.S. Bent[1], I.G. Cuellar[1], F.C. Enriquez[1], M.O. Hunter[1], H.S. Sinks[2], A. Tutar[2], S.R. Bilby[3], L.D. Doolan[3], C.C. Mackley[3], C. Watson[3], J. Poet[4], T.T. Eckdahl[3], L.J. Heyer[2], A.M. Campbell[1]; [1]Biology, Davidson College, Davidson, NC, [2]Mathematics and Computer Science, Davidson College, Davidson, NC, [3]Biology, Missouri Western State University, St. Joseph, MO, [4]Computer Science, Mathematics and Physics, Missouri Western State University, St. Joseph, MO

B49/P1912 **Nano-Channel Electroporation System for Protein Delivery into Single Cells.** J. Hwang[1], C. Yun[1], M. Kim[1], C. Park[1], Y. Choi[1]; [1]Biotechnology, CHA University, Seongnam-si, South Korea

B50/P1913 **Synthetic biocompatible hydrogels with user-defined spatiotemporal control to easily create structured cellular microenviroenvironments.** A.M. Dang[1], R.M. Gilbert[2], J.P. Gleghorn[2]; [1]Chemistry & Biochemistry, University of Delaware, Newark, DE, [2]Biomedical Engineering, University of Delaware, Newark, DE

B51/P1914 **Single cell RNA sequencing of zebrafish intestines reveals enhanced inflammatory signatures in chemically-induced intestinal injury.** S. Nayar[1], L. Chuang[1], P. Labrias[1], N. Hsu[1], M. Giri [1], J. Cho [1]; [1]Genetics and Genomics, Icahn School of Medicine at Mount Sinai, New York, NY

B52/P1915 **Comparison of osteogenic differentiation supported by silk fibroin films derived from various silkworms for potential bone defect treatment.** M. Dittmar[1], J.A. Klavens[1], D.J. Gigliotti[1], F. Giginis[2], A. Wellik[2], D. Jao[3], Y. Xue[3], X. Hu[4], C. Iftode[5]; [1]Biological Sciences, Rowan University, Glassboro, NJ, [2]Chemistry and Biochemistry, Rowan University, Glassboro, NJ, [3]Biomedical Engineering, Rowan University, Glassboro, NJ, [4]Physics and Astronomy, Rowan University, Glassboro, NJ, [5]Molecular and Cellular Biosciences, Rowan University, Glassboro, NJ

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

B54/P1917 **Predicting the Mechanical Response of DNA Origami Structures of Different Nick Stiffness.** T.T. Walker[1], O. Samuel-Ojo[1], S. Gaitanaros[1], Y. Chen[1]; [1]Mechanical Engineering, Johns Hopkins University, Baltimore, MD

B55/P1918 **Nanoimprinted surface topology preferentially guides and enhances axon regeneration.** T. Ho[1], Y. Huang[2], Y. Lin[1], C. Lee[2], M. Li[2], E. Hwang[1,2,3]; [1]Institute of Molecular Medicine and Bioengineering, National Chiao Tung University, Hsinchu, Taiwan, [2]Department of Biological Science and Technology, National Chiao Tung University, Hsinchu, Taiwan, [3]Institute of Bioinformatics and Systems Biology, National Chiao Tung University, Hsinchu, Taiwan

B56/P1919 **Pharmaco-genetic toolsets for cell-specific subcellular cGMP and calcium manipulation *in vivo*.** O. Ros[1], K. Loulier[1], S. Ribes[1], S. Couvet[1], Y. Zagar[1], D. Ladarré[2], Z. Lenkei[2], X. Nicol[1]; [1]Vision Institute, Sorbonne Universités, CNRS, Inserm, Paris, France, [2]Brain Plasticity Unit, PSL Research University, ESPCI, CNRS, Paris, France

Actin and Actin-Associated Proteins

B58/P1920 **Matrix remodeling and stress relaxation are impaired in vascular smooth muscle from Acta2-/- mice.** M.P. Massett[1], H. Gibbs[2], S. Padgham[3], H. Sreenivasappa[3], J. Chen[4], A. Yeh[2], D.M. Milewicz[4], A. Trache[2,3]; [1]Department of Health and Kinesiology, Texas AM University, College Station, TX, [2]Department of Biomedical Engineering, Texas AM University, College Station, TX, [3]Department of Medical Physiology, Texas AM University Health Science Center, College Station, TX, [4]Department of Internal Medicine, University of Texas Health Science Center at Houston, Houston, TX

B59/P1921 **"Silent code" regulation: diverse functions of closely related actin isoforms are defined by their nucleotide, rather than their amino acid sequence.** P. Vedula[1], S. Kurosaka[1], N.A. Leu[1], J. Wang[1], A. Kashina[1]; [1]Biomedical Sciences, University of Pennsylvania, Philadelphia, PA

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

B61/P1923 **Characterization of CARMIL-GAP, a Dictyostelium CARMIL isoform harboring a GTPase activating domain for Rac.** G. Jung[1], M. Pan[2], T. Jin[2], J.A. Hammer III[1]; [1]National Heart, Lung and Blood Institute, National Institutes of Health, Bethesda, MD, [2]National Institute of Allergy and Infectious Diseases, National Institutes of Health, Bethesda, MD

B62/P1924 **The Drosophila Cortactin Binding Protein 2 (CTTNBP2/ CTTNBP2NL) homolog, Nausicaa, regulates actin dynamics in a Cortactin-dependent manner.** M.E. OConnell[1,2], D. Sridharan[3], T. Driscoll[4], I. Krishnamurthy[2], W.G. Perry[2], D.A. Applewhite[2]; [1]Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL, [2]Biology, Reed College, Portland, OR, [3]Biology, Boston College, Chestnut Hill, MA, [4]Cardiovascular Medicine, Yale University, New Haven, CT

B63/P1925 **Mutation of *arrd-15*, a gene encoding an alpha-arrestin, suppresses actin disorganization phenotypes in *unc-78* AIP1 mutants in *C. elegans*.** K. Ono[1], S. Iwase[1], Z. Qin[2], D.L. Baillie[2], S. Ono[1]; [1]Pathology, Emory University, Atlanta, GA, [2]Molecular Biology and Biochemistry, Simon Fraser University, Burnaby, BC

B64/P1926 **The tropomyosin isoform composition of cellular actin filaments is not a simple function of relative isoform abundance.** J.C. Meiring[1], N.S. Bryce[1], J.H. Stear[1], E.C. Hardeman[1], P.W. Gunning[1]; [1]School of Medical Sciences, University of New South Wales, Sydney, Australia

B65/P1927 **Regulatory elements within the C-terminus of human cardiac troponin T.** D. Johnson[1], J.M. Chalovich[1]; [1]Biochemistry Molecular Biol., Brody School of Medicine at East Carolina University, Greenville, NC

B66/P1928 **E-cadherin regulates cell-cell adhesion and tissue sorting by spatially regulating contractile actin filament assembly and activity.** J.L. Davis[1], L. Cruz[1], E.M. Bonder[1], A.J. Rodriguez[1]; [1]Biological Sciences, Rutgers University-Newark, Newark, NJ

B67/P1929 **Ena/VASP proteins participate in the maintenance of actin network polarity.** M. Abou-Ghali[1], J. Plastino[1]; [1]Institut Curie, Paris, France

B68/P1930 **Characterizing the processive mechanism of Ena/VASP on diverse F-actin bundles.** A.J. Harker[1], J.D. Winkelman[2], C.A. Anderson[3], D.R. Kovar[1,3]; [1]Biochemistry and Molecular Biology, University of Chicago, Chicago, IL, [2]Institute for Biophysical Dynamics, University of Chicago, Chicago, IL, [3]Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL

B69/P1931 **Single Molecule Analysis of B Cell Receptor Motion during Signaling Activation.** B.A. Wheatley[1], I. Rey Suarez[2,3], P. Koo[4], S. Zhou[5], S. Mochrie[6], W. Song[5], A. Upadhyaya[1,7]; [1]Institute of Physical Sciences and Technology, University of Maryland, College Park, MD, [2]National Institute of Biomedical Imaging and Bioengineering, NIH, Bethesda, MD, [3]Biophysics, University of Maryland, College Park, MD, [4]Molecular and Cellular Biology, Harvard University, Cambridge, MA, [5]Microbiology, University of Maryland, College Park, MD, [6]Applied Physics, Yale University, New Haven, CT, [7]Physics, University of Maryland, College Park, MD

B70/P1932 **Twinfilin promotes Capping Protein association with actin filament barbed ends by attenuating the inhibitory effects of CARMIL.** D. Hilton[1], A. Johnston[1], A. Simone[1], P. McConnell[2], J.A. Cooper[2], B.L. Goode[1]; [1]Molecular Cellular Biology, Brandeis University, Waltham, MA, [2]Biochemistry & Molec Biophysic, Washington University in St. Louis, St. Louis, MO

B71/P1933 **Synergy between anti-tropomyosin and anti-microtubule drugs reveals an interaction between actin and microtubule networks.** Y. Wang[1], A. Swain[1], J.H. Stear[1], N.S. Bryce[1], V.B. Dugina[2], I.B. Alieva[2], T.P. Cripe[3,4], J.R. Stehn[1], E.C. Hardeman[1], P.W. Gunning[1]; [1]School of Medical Sciences, University of New South Wales, Sydney, Australia, [2]Belozersky Institute of Physico-Chemical Biology, Lomonosov Moscow State University, Moscow, Russia, [3]Centre for Childhood Cancer and Blood Diseases, Nationwide Children's Hospital, Columbus, OH, [4]Division of Hematology/Oncology/ Blood and Marrow Transplantation, Nationwide Children's Hospital, Columbus, OH

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

B73/P1934 **Direct observation of actin structural deformation in response to mechanical force.** P.S. Gurel[1], Y. Takagi[2], J.E. Bird[3], J.R. Sellers[2], G.M. Alushin[1]; [1]The Rockefeller University, New York, NY, [2]Cellular Biology and Physiology Center, National Heart, Lung, and Blood Institute, Bethesda, MD, [3]National Institute of Deafness and Other Communication Diseases, Bethesda, MD

B74/P1936 **Vinculin forms a directionally asymmetric catch bond with F-actin.** D.L. Huang[1], N.A. Bax[2], C.D. Buckley[3], W.I. Weis[2], A.R. Dunn[3]; [1]Biophysics, Stanford University, Stanford, CA, [2]Structural Biology, Stanford University, Stanford, CA, [3]Chemical Engineering, Stanford University, Stanford, CA

B75/P1937 **How do the actin- and microtubule-based transport systems communicate?** A. Oberhofer[1], P. Spieler[1], Y. Rosenfeld[1], W.L. Stepp[1], A. Cleetus[1], A.N. Hume[2], F. Mueller-Planitz[3], Z. Ökten[1]; [1]Physik-Department E22, Technische Universität München, Garching, Germany, [2]School of Life Sciences, University of Nottingham, Nottingham, United Kingdom, [3]BioMedizinisches Centrum, Molecular Biology, Ludwig-Maximilians-Universität München, Planegg-Martinsried, Germany

B76/P1938 **Clues to Suppressor of IKK epsilon (SIKE):cytoskeletal interactions: Binding affinities and SIKE's dimer interface.** H.A. Sonnenschein[1], F. Shikwana[1], M.L. Machek[1], J.E. Bell[1], J.K. Bell[1]; [1]Chemistry & Biochemistry, University of San Diego, San Diego, CA

B77/P1939 **Profiling Mechanical Stress-Dependent Cytoskeleton Organization at Varying Curvatures Using Self-Induced Rolling Membrane (SIRM).** J. Kim[1], L. Vannozzi[2], Y. Chen[1,3]; [1]Mechanical Engineering, Johns Hopkins University, Baltimore, MD, [2]The BioRobotics Institute, Sant'Anna School of Advanced Studies, Pisa, Italy, [3]Center for Cell Dynamics, Johns Hopkins University, Baltimore, MD

B78/P1940 **Phosphorylation of Sharpin acts as a molecular switch to control Linear Ubiquitination Assembly Complex (LUBAC) and Arp2/3 function.** U. Butt[1,2], M.H. Khan[1,2], G. Jacquemet[3], H. Sanmark[4], U. Lamminmäki[4], M.J. Humphries[3], J. Pouwels[1]; [1]Turku Centre for Biotechnology, University of Turku, Turku, Finland, [2]Turku Doctoral Programme of Molecular Medicine, University of Turku, Turku, Finland, [3]Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom, [4]Department of Biochemistry, University of Turku, Turku, Finland

B79/P1941 **Molecular mechanism of LIM domain protein recruitment to stressed actin filament networks.** C.A. Anderson[1], J.D. Winkelman[2], M.L. Gardel[2,3,4], D.R. Kovar[1,5]; [1]Molecular Genetics and Cell Biology, The University of Chicago, Chicago, IL, [2]Institute for Biophysical Dynamics, The University of Chicago, Chicago, IL, [3]Physics, The University of Chicago, Chicago, IL, [4]James Franck Institute, The University of Chicago, Chicago, IL, [5]Biochemistry and Molecular Biology, The University of Chicago, Chicago, IL

B80/P1942 **Production and Single-Step Purification of Recombinant Human Beta-Actin from *E. coli*.** E.E. ISLEK[1], M. KASAP[1], G. AKPINAR[1], A. YAZICI KARADENIZLI[2]; [1]DEPARTMENT OF MEDICAL BIOLOGY, KOCAELI UNIVERSITY MEDICAL FACULTY, KOCAELI, Turkey, [2]DEPARTMENT OF MICROBIOLOGY, KOCAELI UNIVERSITY MEDICAL FACULTY, KOCAELI, Turkey

B81/P1943 **Structural and functional studies of a β-III-spectrin spinocerebellar ataxia type 5 mutation reveal a dominant cytoskeletal mechanism that underlies dendritic arborization.** A.W. Avery[1], M.E. Fealey[2], F. Wang[3], A.A. Orlova[3], A.R. Thompson[2], E.H. Egelman[3], D.D. Thomas[2], T.S. Hays[1]; [1]Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN, [2]Biochemistry, Molecular Biology and Biophysics, University of Minnesota, Minneapolis, MN, [3]Biochemistry and Molecular Genetics, University of Virginia, Charlottesville, VA

B82/P1944 **Molecular mechanisms underlying formin-associated inherited deafness.** C.C. Costeas[1], T. Jabeen[1], C.L. Vizcarra[1]; [1]Department of Chemistry, Barnard College, New York, NY

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

B84/P1946 **Investigations into the Structure and Intermolecular Interface of Human Cofilin-2 Assembled on Actin Filaments Using Magic Angle Spinning NMR.** J. Kraus[1], J. Yehl[1], E. Kudryashova[2], E. Reisler[3,4], D.S. Kudryashov[2], T. Polenova[1]; [1]Chemistry and Biochemistry, University of Delaware, Newark, DE, [2]Chemistry and Biochemistry, The Ohio State University, Columbus, OH, [3]Chemistry and Biochemistry, University of California, Los Angeles, CA, [4]Molecular Biology Institute, University of California, Los Angeles, CA

B85/P1947 **Leiomodin-2 regulates thin filament assembly and is necessary for proper contractile force production in the hearts of adult mice.** C.T. Pappas[1], G.P. Farman[1], R.M. Mayfield[1], C.C. Gregorio[1]; [1]Cellular and Molecular Medicine, University of Arizona, Tucson, AZ

B86/P1948 **Structural basis of actin monomer re-charging by cyclase-associated protein.** T. Kotila[1], K. Kogan[1], G. Enkavi[2], S. Guo[3], I. Vattulainen[4], B.L. Goode[3], P. Lappalainen[1]; [1]Institute of Biotechnology, University of Helsinki, Helsinki, Finland, [2]Department of Physics, University of Helsinki, Helsinki, Finland, [3]Brandeis University, Waltham, MA, [4]Laboratory of Physics, Tampere University of Technology, Tampere, Finland

Regulation of Actin Dynamics 1

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

B88/P1950 **Length control of branched actin networks.** A. Icheva[1], A. Manhart[2], C. Guérin[1], T. Klar[1], M. Théry[1,3], L. Blanchoin[1,3], A. Mogilner[2]; [1]CytoMorphoLab, Biosciences Biotechnology Institute of Grenoble, GRENOBLE, France, [2]Courant Institute of Mathematical Sciences and Department of Biology, NEW YORK, NY, [3]CytoMorpho Lab, Hopital Saint Louis, PARIS, France

B89/P1951 **Distinct VASP tetramers synergize in the processive elongation of individual actin filaments from clustered arrays.** S. Brühmann[1], D. Ushakov[1], M. Winterhoff[1], R.B. Dickinson[2], U. Curth[1], J. Faix[1]; [1]Institut of Biophysical Chemistry, Hannover Medical School, Hannover, Germany, [2]Department of Chemical Engineering, University of Florida, Gainesville, FL

B90/P1952 **Spatiotemporal Control of Actin Assembly at the Leading Edge by IQGAP.** G. Hoeprich[1], M.A. Juanes[1], B.L. Goode[1]; [1]Department of Biology, Brandeis University, Waltham, MA

B91/P1953 **Phase separation enhances Arp2/3 complex-dependent actin polymerization by increasing N-WASP membrane dwell time.** L.B. Case[1], X. Zhang[1], J.A. Ditlev[1], M.K. Rosen[1]; [1]Department of Biophysics, UT Southwestern Medical Center, Dallas, TX

B92/P1954 **CYRIPS (Fam49) proteins are local inhibitors of Rac1 and Scar/WAVE induced lamellipodia.** L. Fort[1], J. Batista[1], P. Thomason[1], H. Spence[1], J. Greaves[2], K. Martin[1], K. Anderson[1,3], P. Brown[1], S. Lilla[1], M. Nielson[1], P. Tafelmeyer[4], S. Zanivan[1], S. Ismail[1], N. Tomkinson[5], L.H. Chamberlain[2], R.H. Insall[1], L.M. Machesky[1]; [1]Beatson Institute for Cancer research, Glasgow, United Kingdom, [2]Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, Glasgow, United Kingdom, [3]Crick Institute, London, United Kingdom, [4]Hybrigenics Services, Paris, France, [5]WestCHEM, Department of Pure and Applied Chemistry, University of Strathclyde, Glasgow, United Kingdom

B93/P1955 **The F-BAR protein Hof1 and Bud6: negative and positive regulatory components in a feedback loop controlling formin-mediated actin assembly.** M. Garabedian[1], T. Rands[1], B.L. Goode[1]; [1]Biology, Brandeis University, Waltham, MA

B94/P1956 **Control of yeast actin cable formation by a novel formin regulator, Bil2.** T.J. Rands[1], B.L. Goode[1]; [1]MCB, Brandeis, Waltham, MA

B95/P1957 **Nance Horan Syndrome-Like 1 (NHSL1) protein is a novel Ena/VASP and Scar/WAVE ligand and negatively regulates cell migration.** A. Law[1], A. Jandke[2], G. Pula[3], A. Guni[1], M. Krause[1]; [1]Randall Division of Cell and Molecular Biophysics, King's College London, London, United Kingdom, [2] London Research Institute, Immuno-surveillance Laboratory, Cancer Research UK,, London, United Kingdom, [3] Pharmacy and Pharmacology Department, University of Bath, Bath, United Kingdom

B96/P1958 **Rapid and dynamic arginylation of the leading edge β- actin is required for cell migration.** I. Pavlyk[1], N.A. Leu[1], P. Vedula[1], A. Kashina[1], S. Kurosaka[1]; [1]Department of Biomedical Sciences, University of Pennsylvania, Philadelphia, PA

MONDAY

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

B98/P1960 **Deconvolution of subcellular protrusion heterogeneity reveals the role of VASP in accelerating cell protrusion.** C. Wang[1], H. Choi[1], S. Kim[1], Y. Bae[2], K. Lee[1]; [1]Biomedical Engineering, Worcester Polytechnic Institute, Worcester, MA, [2]Pathology and Anatomical Sciences, University at Buffalo, Buffalo, NY

B99/P1961 **Coordinated formation and disassembly of a contractile actomyosin network mediates content release from large secretory vesicles.** E.D. Schejter[1], D. Segal[1], A. Zaritsky[2,3], D. Meyen[1], T. Rousso[1], B. Shilo[1]; [1]Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel, [2]Lyda Hill Department of Bioinformatics, UT Southwestern Medical Center, Dallas, TX, [3]Molecular Cell Biology, Weizmann Institute of Science, Rehovot, Israel

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

B101/P1963 **CAP2 loss activates MRTF/SRF signaling in cardiomyocytes.** Y. Xiong[1], A. Mu[2], S. Berritt[3], J. Field[1]; [1]Department of Systems Pharmacology and Translational Therapeutics, University of Pennsylvania, Philadelphia, PA, [2]Cardiovascular Institute, University of Pennsylvania, Philadelphia, PA, [3]Department of Chemistry, University of Pennsylvania, Philadelphia, PA

Actin-Membrane Interactions

B102/P1964 **Arp 2/3-dependent spatial organization of the B cell receptor (BCR) impacts immune synapse formation, BCR signaling output, and B cell activation.** M. Bolger-Munro[1], K. Choi[1], R. Chappell[2], J. Scurll[2], L. Abraham[1,2], M. Dang-Lawson [1], D. Sheen[1], D. Coombs[2], M.R. Gold[1]; [1]Microbiology and Immunology, University of British Columbia, Vancouver, BC, [2]Mathematics, University of British Columbia, Vancouver, BC

B103/P1965 **A geodesic septin lattice is required for actomyosin contractility on micron-scale curved membranes in vivo.** S. Ebrahim[1], A. Shitara[1], H. Shroff[2], B. Kachar[3], R. Weigert[1]; [1]NCI, NIH, Bethesda, MD, [2]NIBIB, NIH, Bethesda, MD, [3]NIDCD, NIH, Bethesda, MD

B104/P1966 **Inflammatory-sensitive Myosin-X functionally supports leukocyte extravasation by Cdc42-mediated ICAM-1-rich endothelial filopodia formation.** J. Kroon[1,2], J.v. Rijssel[1], A. Schaefer[1], M. Hoogenboezem[1], F.v. Alphen[1], P.L. Hordijk[3], E.S. Stroes[2], S. Strömblad[4], J.D. Van Buul[1]; [1]Molecular Cell Biology Lab, department of Plasma Proteins, Sanquin Research and Landsteiner Laboratory, Academic Medical Center, Amsterdam, Netherlands, [2]Dept. of Vascular Medicine, Academic Medical Center, University of Amsterdam, Amsterdam, Netherlands, [3]Dept. of Physiology, VU University Medical Center, Amsterdam, Netherlands, [4]Dept. of Biosciences and Nutrition, Karolinska Institutet, Novum, Sweden

B105/P1967 **Type I myosin-mediated coupling of actin assembly to the plasma membrane during clathrin-mediated endocytosis.** R.T. Pedersen[1], D.G. Drubin[1]; [1]Department of Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA

B106/P1968 **Mechanistic principles underlying regulation of the actin cytoskeleton by phosphoinositides.** Y. Senju[1], M. Kalimeri[2], E. Koskela[1], P. Somerharju[3], H. Zhao[1], I. Vattulainen[2,4], P. Lappalainen[1]; [1]Institute of Biotechnology, University of Helsinki, Helsinki, Finland, [2]Department of Physics, Tampere University of Technology, Tampere, Finland, [3]Faculty of Medicine, University of Helsinki, Helsinki, Finland, [4]Department of Physics, University of Helsinki, Helsinki, Finland

B107/P1969 **Ultrastructure of actin-myosin cytoskeleton during mitochondrial fission.** C. Yang[1], H.N. Higgs[2], T.M. Svitkina[1]; [1]Biology, University of Pennsylvania, Philadelphia, PA, [2]Biochemistry, Geisel School of Medicine at Dartmouth, Hanover, NH

B108/P1970 **Opposing functions of F-BAR proteins CIP4 and FBP-17 in neuronal membrane protrusion, tubulovesicle formation and neurite outgrowth are largely encoded in their first linker region.** K.L. Taylor[1], R. Taylor[1], B. Huynh[2], K. Richters[2], J. Carrington[2], M. McDermott[2], E.W. Dent[1,2]; [1]Neuroscience Training Program, University of Wisconsin Madison, Madison, WI, [2]Neuroscience, University of Wisconsin Madison, Madison, WI

B109/P1971 **Formin-mediated actin polymerization triggers constriction of both mitochondrial membranes during mitochondrial division.** R. CHAKRABARTI[1], W. Ji[1], H.N. Higgs[1]; [1]Biochemsitry and cell biology, Geisel School of Medicine, Hanover, NH

B110/P1972 **Generation of mouse models for muscular dystrophic chicken by CRISPR/Cas9-mediated genome editing.** M. Imamura[1], Y.U. Inoue[2], T. Inoue[2], S. Takeda[1]; [1]Department of Molecular Therapy, National Institute of Neuroscience, NCNP, Tokyo, Japan, [2]Department of Biochemistry and Cellular Biology, National Institute of Neuroscience, NCNP, Tokyo, Japan

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

Kinesins 1

B112/P1974 **Cryo-Electron Microscopy 3-D Analysis of heterodimeric KIF3 Motor Head Domains on Microtubules.** C. Page[1], S. Guzik[2], I. Rayment[3], A. Hoenger[1], S.P. Gilbert[2]; [1]MCD-Biology, University of Colorado at Boulder, Boulder, CO, [2]Biology, Rensselaer Polytechnic Institute, Troy, NY, [3]Biochemistry, University of Wisconsin, Madison, WI

B113/P1975 **Development of improved microscopy and data analysis tools for understanding multimotor transport.** K.J. Mickolajczyk[1], Q. Feng[1], J. Bernstein[2], L. Crow[3], J. Fricks[3], W.O. Hancock[1]; [1]Biomedical Engineering, Penn State University, University Park, PA, [2]Applied Statistics, Lawrence Livermore National Lab, Livermore, CA, [3]Statistics, Arizona State University, Tempe, AZ

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

B115/P1977 **Conformational switching of microtubule and cooperative binding of kinesin-1 as a base for polarized transport.** T. Shima[1], M. Morikawa[2], J. Kaneshiro[3], T. Kambara[1], S. Kamimura[4], T. Yagi[5], H. Iwamoto[6], S. Uemura[7], H. Shigematsu[8], T. Ichimura[3], T.M. Watanabe[3], R. Nitta[8,9], Y. Okada[1,10], N. Hirokawa[2]; [1]Laboratory for Cell Polarity Regulation, RIKEN Quantitative Biology Center, Osaka, Japan, [2]Department of Cell Biology and Anatomy, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan, [3]Laboratory for Comprehensive Bioimaging, RIKEN Quantitative Biology Center, Osaka, Japan, [4]Department of Biological Sciences, Faculty of Science and Engineering, Chuo University, Tokyo, Japan, [5]Department of Life Sciences, Faculty of Life and Environmental Sciences, Prefectural University of Hiroshima, Hiroshima, Japan, [6]Life and Environmental Division, SPring-8, Japan Synchrotron Radiation Research Institute, Hyogo, Japan, [7]Department of Biological Sciences, Graduate School of Science, The University of Tokyo, Tokyo, Japan, [8]Structural Biology Group, RIKEN Center for Life Science Technologies, Kanagawa, Japan, [9]Department of Physiology and Cell Biology, Graduate School of Medicine, Kobe University, Hyogo, Japan, [10]Department of Physics and Universal Biology Institute, Graduate School of Science, The University of Tokyo, Tokyo, Japan

B116/P1978 **Phosphorylation of multiple sites of Alcadein α is required for kinesin-1 association and Golgi exit of Alcadein α.** Y. Sobu[1], A.C. Nairn[2], M. Kinjo[3], S. Hata[1], T. Suzuki[1]; [1]Laboratory of Neuroscience, Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo, Hokkaido, Japan, [2]Department of Psychiatry, Yale University School of Medicine, New Haven, CT, [3]Laboratory of Molecular Cell Dynamics, Faculty of Advanced Life Science, Hokkaido University, Sapporo, Hokkaido, Japan

B117/P1979 **Enhanced fast velocity of APP transport by kinesin-1 is regulated by KLC1 phosphorylation.** S. Kato[1], K. Chiba[1], Y. Sobu[1], K. Chien[2], R. Wang[2], A.C. Nairn[3], M. Kinjo[4], S. Hata[1], T. Suzuki[1]; [1]Graduate school of Pharmaceutical Sciences,Hokkaido University, Laboratory of neuroscience, Sapporo, Japan, [2]Icahn School of Medicine at Mount Sinai, Department of Genetics and Genomic 18 Sciences, New York, NY, [3]Yale University School of Medicine, Department of Psychiatry, New Haven, CT, [4]Faculty of Advanced Life Science, Hokkaido University, Laboratory of Molecular Cell Dynamics, Sapporo, Japan

B118/P1980 **Kinesin-2 motors adapted their stepping behaviour for progressive transport on axonemes and microtubules.** W.L. Stepp[1], G. Merck[1], F. Mueller-Planitz[2], Z. Ökten[1,3]; [1]Department für Physik, Technische Universität München, Munich, Germany, [2]Biomedical Center, Ludwigs Maximilians Universität, Munich, Germany, [3]Munich Center for Integrated Protein Science, Munich, Germany

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

B120/P1982 **Interrogating Emergent Transport Properties for Molecular Motor Ensembles: A Semi-analytical Approach.** S. Bhaban[1], D. Materassi[2], M. Li[3], T.S. Hays[3], M.V. Salapaka[1]; [1]Electrical Engineering, University of Minnesota, Twin Cities, Minneapolis, MN, [2]Electrical Engineering and Computer Science, University of Tennessee, Knoxville, Knoxville, TN, [3]Genetics, Cell Biology, and Development, University of Minnesota, Twin Cities, Minneapolis, MN

B121/P1983 **Motor reattachment kinetics play a dominant role in multimotor-driven cargo transport.** Q. Feng[1,2], K.J. Mickolajczyk[1,3], G. Chen[1,3], W.O. Hancock[1,2,3]; [1]Biomedical Engineering, Penn state university, State College, PA, [2]Huck institute of life sciences, Penn State University, State College, PA, [3]Intercollege Graduate Degree Program in Bioengineering, Penn State University, State College, PA

B122/P1984 **Effect of membrane coupling on multiple-kinesin transport.** J.D. Lopes[1], D. Quint[1], D.E. Chapman[2], A. Gopinathan[1], L. Hirst[1], J. Xu[1]; [1]Physics, University of California, Merced, Merced, CA, [2]Natural Science, University of California, Irvine, Irvine, CA

B123/P1985 **Intracellular cargo transport by single-headed kinesin monomers.** K.I. Schimert[1], B.G. Budaitis[2], K.J. Verhey[1,2,3]; [1]Biophysics Program, University of Michigan, Ann Arbor, MI, [2]Cellular and Molecular Biology Program, University of Michigan, Ann Arbor, MI, [3]Department of Cell and Developmental Biology, University of Michigan, Ann Arbor, MI

B124/P1986 **The cover-neck bundle is important for teams of kinesin-1 motors to transport high-load in cells.** B.G. Budaitis[1], K.I. Schimert[2], S. Jariwala[3], B.J. Grant[3], K.J. Verhey[1,2,4]; [1]Program of Cellular and Molecular Biology, University of Michigan, Ann Arbor, MI, [2]Biophysics Program, University of Michigan, Ann Arbor, MI, [3]Department of Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor, MI, [4]Department of Cell and Developmental Biology, University of Michigan, Ann Arbor, MI

B125/P1987 **A fluid membrane enhances the velocity of cargo transport by small teams of kinesin-1.** Q. Li[1], K. Tseng[2], S.J. King[3], W. Qiu[2], J. Xu[1]; [1]Physics, University of California, Merced, Merced, CA, [2]Physics, Oregon State University, Corvallis, OR, [3]Burnett School of Biomedical Sciences, University of Central Florida, Orlando, FL

B126/P1988 **Origins of thermal stability of kinesin activity in cells.** K. Chase[1], F. Doval[2], M. Vershinin[2]; [1]Physics, Oregon State University, Corvallis, OR, [2]Physics Astronomy, University of Utah, Salt Lake City, UT

Tubulin and Associated Proteins

B128/P1989 **Native Kinesin-1 Does Not Bind Preferentially to GTP-Tubulin-Rich Microtubules In Vitro.** Q. Li[1], S.J. King[2], J. Xu[1]; [1]Physics, University of California Merced, Merced, CA, [2]Burnett School of Biomedical Sciences, University of Central Florida, Orlando, FL

B129/P1990 **Mechanism of microtubule stabilization by kinesin-5.** G. Chen[1], A.B. Asenjo[2], H.J. Sosa[2], W.O. Hancock[1]; [1]Biomedical Engineering, Pennsylvania State University, University Park, PA, [2]Department of Physiology and Biophysics, Albert Einstein College of Medicine, Bronx, NY

B130/P1991 **Investigating dynein function in a mouse model carrying a Charcot-Marie-Tooth type 2O linked mutation.** S. Nandini[1], J. Conley Calderon[1], T.T. Sabblah[1], R. Love[1], L.E. King[1], S.J. King[1]; [1]Burnett School of Biomedical Sciences, University of Central Florida, Orlando, FL

B131/P1992 **CLASP1 is Required for CLASP2 Localization and Function at Microtubules in Interphase Cells.** R.J. Thoppil[1], A.A. Sanders[1], E.J. Lawrence[1], K. Chang[1], S. Narasimhan[1], M. Zanic[1], I. Kaverina[1]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B132/P1993 **Microtubule acetylation induced by α-tubulin acetyltransferase overexpression impairs hepatic protein trafficking and lipid droplet motility.** J.L. Groebner[1], M.M. Girón Bravo[1], M. Rothberg[1], D.J. Tuma[2], P.L. Tuma[1]; [1]Department of Biology, The Catholic University of America, Washington, DC, [2]Department of Internal Medicine, University of Nebraska, Omaha, NE

B133/P1994 **Human γ-tubulin isotypes: differential expression during neuronal development and under oxidative stress.** E. Draberova[1], V. Sulimenko[1], S. Vinopal[1], T. Sulimenko[1], V. Sladkova[1], L. D'Agostino[2], M. Sobol[3], P. Hozak[3], L. Kren[4], C.D. Katsetos[2], P. Draber[1]; [1]Department of Biology of Cytoskeleton, Institute of Molecular Genetics CAS, Prague, Czech Republic, [2]Department of Pathology and Laboratory Medicine, Drexel University College of Medicine, Philadelphia, United States, [3]Department of Biology of the Nucleus, Institute of Molecular Genetics CAS, Prague, Czech Republic, [4]Department of Pathology, University Hospital Brno, Brno, Czech Republic

B134/P1995 **Human tubulin isotypes A1B/B2B and A1B/B3 modulate sensitivity to MAP-dependent microtubule depolymerization.** S. Ti[1], V.G. Ghani[1], M.C. Pamula[1], T.M. Kapoor[1]; [1]Laboratory of Chemistry and Cell Biology, The Rockefeller University, New York, NY

B135/P1996 **Elucidating the Role of a Human β-tubulin, TUBB4B: Functional Analysis of a Novel Patient-Derived Mutation.** S.M. Schreiner[1], D.L. Sackett[2], J.K. Moore[1]; [1]Cell and Developmental Biology, University of Colorado Anschutz Medical Center, Aurora, CO, [2]Cytoskeletal Dynamics Unit, Eunice Kennedy Shriver NICHD, National Institutes of Health, Bethesda, MD

B136/P1997 **Targeted localization of microtubule severing enzymes *in vivo*.** S.R. Advani[1,2], J.L. Ross[2], T.J. Maresca[3]; [1]Molecular and Cellular Biology Program, University of Massachusetts Amherst, Amherst, MA, [2]Department of Physics, University of Massachusetts Amherst, Amherst, MA, [3]Department of Biology, University of Massachusetts Amherst, Amherst, MA

B137/P1998 **TACC3 regulates the dynamic microtubule plus-end in an *in-vitro* environment.** G. Cammarata[1], B. Erdogan[1], B. Pratt[1], H. Nazarenko[1], Q. Coughlin[1], P. Ebbert[1], L.A. Lowery[1]; [1]Biology, Boston College, Chestnut Hill, MA

B138/P1999 **Inhibitory effects of eucalyptol on diabetes-associated loss of glomerular slit junctions and podocyte foot process effacement.** D. Kim[1]; [1]Food Science and Nutrition, Hallym University, Chuncheon, South Korea

B139/P2000 **SUMO interacts non-covalently with tubulin and the TOG protein Stu2/XMAP215.** M. Greenlee[1], A. Alonso[1], M. Rahman[1], T. Tabb[1], N. Meednu[2], S. Morris[1], R.K. Miller[1]; [1]Biochemistry and Molecular Biology, Oklahoma State University, Stillwater, OK, [2]Biology, University of Rochester, Rochester, NY

B140/P2001 ***C. elegans* microtubules are highly dynamic and have non-canonical lattices.** S. Chaaban[1], C. Hsu[1], S. Redemann[2], T. Müller-Reichert[2], J.M. Kollman[3], H.K. Bui[4], G.J. Brouhard[1]; [1]Biology, McGill University, Montréal, QC, [2]Technische Universität Dresden, Dresden, Germany, [3]Biochemistry, University of Washington, Seattle, WA, [4]Anatomy and Cell Biology, McGill University, Montréal, QC

B141/P2002 **TACC3 mitigates Nocodazole-induced growth cone effects and is required for proper embryonic neural development.** E. Lee[1], B. Erdogan[1], L.A. Lowery[1]; [1]Biology, Boston College, Chestnut Hill, MA

B142/P2003 **Sequence-encoded charge patterning of the intrinsically disordered tail of FtsZ impacts polymerization and bacterial cell division.** M.C. Cohan[1], A.E. Posey[1], A. Mittal[1], S.J. Grigsby[2], A.S. Holehouse[1], P.J. Buske[2], P.A. Levin[2], R.V. Pappu[1]; [1]Biomedical Engineering, Washington University in Saint Louis, Saint Louis, MO, [2]Biology, Washington University in Saint Louis, Saint Louis, MO

Microtubules and Cell Division

B143/P2004 **UNC-45A is a novel spindle-associated microtubule destabilizing protein that antagonizes the effect of paclitaxel in cancer cells.** A. Mooneyham[1,2], Q. Yang[3], Y. Iizuka[1,2], C. Coombes[3], M. McClellan[3], V. Shridhar[4], J. Meints[5], M.K. Lee[5], M.K. Gardner[3], M. Bazzaro[1,2]; [1]Obstetrics, Gynecology and Women's Health, University of Minnesota, Minneapolis, MN, [2]Masonic Cancer Center, University of Minnesota, Minneapolis, MN, [3]Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN, [4]Experimental Pathology, Mayo Clinic College of Medicine, Rochester, MN, [5]Neuroscience, University of Minnesota, Minneapolis, MN

B144/P2005 **A Microtubule Organizing Center Directing Intracellular Transport in the Early Mouse Embryo.** J. Zenker[1], M.D. White[1], R.M. Templin[2], R.G. Parton[2], O. Thorn-Seshold[3], S. Bissiere[1], N. Plachta[1]; [1]IMCB, A*STAR, Singapore, Singapore, [2]IMB, University of Queensland, Brisbane, Australia, [3]Department of Pharmacy, Ludwig-Maximilians-University, Munich, Germany

B145/P2006 **Tissue-specific degradation of essential centrosome components in vivo reveals distinct microtubule populations at noncentrosomal MTOCs.** M.D. Sallee[1], J.C. Zonka[1], B. Raftrey[1], J.L. Feldman[1]; [1]Biology, Stanford University, Stanford, CA

B146/P2007 **Reconstitution of aster movement and cell division plane positioning in Xenopus egg extract.** J.F. Pelletier[1,2,3], C.M. Field[1,3], N. Fakhri[2], J.S. Oakey[1,4], J.C. Gatlin[1,5], T.J. Mitchison[1,3]; [1]Marine Biological Laboratory, Woods Hole, MA, [2]Department of Physics, Massachusetts Institute of Technology, Cambridge, MA, [3]Department of Systems Biology, Harvard Medical School, Boston, MA, [4]Department of Chemical Engineering, University of Wyoming, Laramie, WY, [5]Department of Molecular Biology, University of Wyoming, Laramie, WY

B147/P2008 **Spindle morphology tailoring through time: Interplay between spindle architecture and morphogenesis of the mammalian brain.** D.C. Vargas-Hurtado[1], V. Marthiens[1], C. Pennetier[1], R. Basto[1]; [1]UMR144, Subcellular structure and cellular dynamics, Institut Curie, Paris, France

B148/P2009 **CENP-E-PRC1 interaction provides a temporal cue for central spindle assembly.** Y. Liu[1,2], W. Wang[1,2], P.Y. Yao[2], D. Li[1], X. Wang[1,2], h. wang[1], Y. Li[1], X. Liu[1,2], 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

B149/P2010 **Structures of growing and shortening microtubules suggest that anaphase forces act in part on bending protofilaments.** J.R. McIntosh[1], E.T. O'Toole[1], E.V. Ulyanov[2], F. Ataullakhanov[3], N.B. Gudimchuk[2]; [1]M.C.D.Biology, Univ. Colorado, Boulder, CO, [2]Physics, Lomonosov Moscow State University, Moscow, Russia, [3]Physiochem. Pharmacol, Cntr Theoret. Problems, Moscow, Russia

B150/P2011 **Cdk1 phosphorylation of Nde1 and CENP-F contributes to G2-M Nuclear Envelope and Kinetochore dynein recruitment.** C. L. Wynne[1], C. Bertipaglia[1], D. Doobin[1], R.B. Vallee[1]; [1]Pathology and Cell Biology, Columbia University Medical Center, New York, NY

B151/P2012 **Loss of Fodrin Gives Mitotic Defects.** R.K. Nellika[1], J.S. Sreeja[1], S. Sengupta[1]; [1]Division of Cancer Research, Rajiv Gandhi Centre for Biotechnology, Trivandrum, India

B152/P2013 **Structural Basis for Katanin Self Assembly.** S. Nithianantham[1], F.J. McNally[1], J. Al-Bassam[1]; [1]Molecular and Cellular Biology, University of California, Davis, CA

B153/P2014 **Dynamic Instability of Microtubule Minus Ends.** C. Strothman[1], M. Podolski[1], A. Rahman[2], I. Richardson[2], M. Zanic[1,2]; [1]Department of Cell and Developmental Biology, Vanderbilt University Medical School, Nashville, TN, [2]Department of Chemical and Biomolecular Engineering, Vanderbilt University, Nashville, TN

B154/P2015 **Autocatalytic microtubule nucleation determines the size and mass of spindles.** F. Decker[1,2,3], D. Oriola[1,2,3], B. Dalton[1,2,3], J. Brugués[1,2,3]; [1]Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany, [2]Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, [3]Center for Systems Biology Dresden, Dresden, Germany

B155/P2016 **Elucidating the mechanics of aster positioning using labile hydrogel microenvironments.** T. Sulerud[1], J. Pelletier[2], M. Tomschik[1], B.E. Noren[3], A.M. Kloxin[4], J.S. Oakey[3], J.C. Gatlin[1]; [1]molecular, cellular and life sciences, University of Wyoming, Laramie, WY, [2]Systems biology, Harvard medical school, Boston, MA, [3]Chemical engineering, University of Wyoming, Laramie, WY, [4]Chemical and bio molecular engineering, University of Delaware, Newark, DE

Assembly and Disassembly of Cilia/Flagella 2

B157/P2017 **Architecture of mammalian centriole distal appendages supports a matrix that gates the primary cilium.** T.T. Yang[1], W. Chong[1], W. Wang[2], G. Mazo[3], B. Tanos[4], Z. Chen[1], T. Tran[1], Y. Chen[1], R.R. Weng[1], C. Huang[1], W. Jane[5], M.B. Tsou[3], J. Liao[1,6]; [1]Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan, [2]Institute of Biochemistry and Molecular Biology, National Yang Ming University, Taipei, Taiwan, [3]Cell Biology Program, Memorial Sloan-Kettering Cancer Center, New York, NY, [4]Institute of Cancer Research, London, United Kingdom, [5]Institute of Plant and Microbial Biology, Academia Sinica, Taipei, Taiwan, [6]Genome and Systems Biology Degree Program, National Taiwan University, Taipei, Taiwan

B158/P2018 **Myosin-Va is required for preciliary vesicle transportation to the mother centriole during ciliogenesis.** C. Wu[1,2], H. Chen[1], T.K. Tang[1,2]; [1]Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan, [2]Taiwan International Graduate Program in Interdisciplinary Neuroscience, National Yang-Ming University and Academia Sinica, Taipei, Taiwan

B159/P2019 **Exploring PACSIN membrane tubulation regulation during intracellular ciliogenesis using 3D electron microscopy.** C. Insinna-Kettenhofen[1], Q. Lu[1], I. Teixeira[1], A.S. Harned[2], E. Semler[1], J. Stauffer[1], V. Magidson[1], K. Narayan[2], C. Westlake[1]; [1]LCDS, NIH/NCI Frederick National Laboratory, Frederick, MD, [2]ATRF, NIH/NCI Frederick National Laboratory, Frederick, MD

B160/P2020 **A Bioactive Peptide Amidating Enzyme Is Required for Ciliogenesis.** D. Kumar[1], D. Strenkert[2], R.S. Patel-King[1], S.S. Merchant[2], R.E. Mains[3], B.A. Eipper[1,3], S.M. King[1]; [1]Department of Molecular Biology and Biophysics, University of Connecticut Health Center, Farmington, CT, [2]Department of Chemistry and Biochemistry, University of California Los Angeles, Los Angeles, CA, [3]Department of Neuroscience, University of Connecticut Health Center, Farmington, CT

B161/P2021 **A mechanistic study of how O-GlcNAcylation levels regulates cilia lengths in mammalian cells.** J. Tian[1], H. Qin[1]; [1]Biology department, Texas AM University, College Station, TX

B162/P2022 **The role of IFT54 in tubulin transport and cilia stability.** J. Wingfield[1], K.F. Lechtreck[1]; [1]Cellular Biology, University of Georgia, Athens, GA

B163/P2023 **The flagellar associating protein FAP85 of *Chlamydomonas* is one of the microtubule inner proteins.** J. Kirima[1], H. Kojima[2], K. Oiwa[1,2]; [1]Graduate School of Life Science, University of Hyogo, Harima, Japan, [2]Advanced ICT Research Institute, Kobe, Japan

B164/P2024 **The growing motile cilium tip undergoes a time-dependent development process.** M. Reynolds[1,2], T. Phetruen[1,3], R. Fisher[1], K. Chen[1], Y. Wu[1], B. Pentecost[1], G. Gomez[2], P. Ounjai[3], H. Sui[1]; [1]Wadsworth Center, New York State Department of Health, Albany, NY, [2]Biology, The University of Scranton, Scranton, PA, [3]Biology, Mahidol University, Bangkok, Thailand

B165/P2025 **Phosphatidylinositol 4,5-bisphosphate (PIP2) is Essential for Cilium Assembly and Function in *Drosophila melanogaster*.** A. Gupta[1,2], J.A. Brill[1,2]; [1]Cell biology, Hospital for Sick Children, Toronto, ON, [2]Molecular Genetics, University of Toronto, Toronto, ON

B166/P2026 **Identification and characterization of cilia proteins in *Caenorhabditis elegans*.** T.Y. Su[1], A. Dammermann[1]; [1]Max F. Perutz Laboratories, University of Vienna, Vienna, Austria

B167/P2027 **TrypTag.org – Genome wide protein localisation reveals organelle sub-domains, with functional consequences in the flagellum.** J.D. Sunter[1], R.J. Wheeler[2], S. Dean[2], B. Edwards[2], K. Gull[2]; [1]Department of Biological and Medical Sciences, Oxford Brookes University, Oxford, United Kingdom, [2]Sir William Dunn School of Pathology, University of Oxford, Oxford, United Kingdom

B168/P2028 **Mammalian primary cilia disassembly is heterogeneous but primarily occurs via rapid whole cilium shedding.** M. Mirvis[1], W.J. Nelson[1,2]; [1]Molecular and Cellular Physiology, Stanford University, Stanford, CA, [2]Biology, Stanford University, Stanford, CA

B169/P2029 **How cells control the size of their organelles: Flagellar length control in Chlamydomonas.** D. Bauer[1], W.F. Marshall[1]; [1]Biophysics, University of California - San Francisco, San Francisco, CA

B170/P2030 **THE ROLE OF SMALL GTPASE ARL3 IN THE FORMATION AND FUNCTION OF THE CHLAMYDOMONAS FLAGELLA.** H. Qin[1], X. Jiang[1]; [1]Department of Biology, Texas AM University, College Station, TX

B171/P2031 **The contraction of Centrin filaments initiates assembly of the cilium by pumping IFT and flagellar precursors from the Zone of Exclusion (ZOE) into the ciliary/flagellar stubs.** C. Wood[1], J. Salisbury[2], J.L. Rosenbaum[3]; [1]Dept Cell Biology, Harvard University, Boston, MA, [2]Cell Biology, Mayo Clinic Medical School, Rochester, MN, [3]Dept MCDB, Yale University, New Haven, CT

B172/P2032 **Biochemical and Structural Insights into the Interaction of Myristoylated Cargo with Unc119 Protein and Their Release by Arl2/3.** M. Jaiswal[1], E.K. Fansa[2], A. Wittinghofer[2], S.K. Kösling[2]; [1]Department of Cellular Logistics, Max-Planck Institute for Biophysical Chemistry, Göttingen, Germany, [2]Max-Planck Institute for Molecular Physiology, Dortmund, Germany

Sensory and Signaling Functions of Cilia

B173/P2033 **Loss of Arf4 causes severe degeneration of the exocrine pancreas but not cystic kidney disease or retinal degeneration.** J.N. Pearring[1], J.T. San Agustin [2], E.S. Lobanova[1], C.J. Gabriel[1], W.J. Monis[2], E.C. Lieu[1], M.W. Stuck[2], V.Y. Arshavsky[1], G.J. Pazour[2]; [1]Department of Ophthalmology, Duke University, Durham, NC, [2]Program in Molecular Medicine, University of Massachusetts Medical School, Worcester, MA

B174/P2034 **An uncharacterized transport pathway for membrane proteins in primary cilia revealed by high-speed super-resolution microscopy.** A. Ruba[1], W. Luo[1], W. Yang[1]; [1]Department of Biology, Temple University, Philadelphia, PA

B175/P2035 **Ciliary GPCRs are required for adipogenesis.** K.I. Hilgendorf[1], P.K. Jackson[1]; [1]Microbiology and Immunology, Stanford University, School of Medicine, Stanford, CA

B176/P2036 **Isolation of ciliary proteins from the transient primary cilium of differentiating 3T3-L1 pre-adipocytes.** T.N. Browne[1], B. Henderson[1], L.B. Cook[1]; [1]Biology, The College at Brockport, State University of New York, Brockport, NY

B177/P2037 **Use of a new inducible Mchr1-CreER mouse model to study the role of primary cilia in obesity.** S.E. Engle[1], T.L. Masters[1], P.J. Antonellis[1], R. Bansal[1], L.S. Whitehouse[1], N.F. Berbari[1]; [1]Biology, Indiana University Purdue University Indianapolis, Indianapolis, IN

B178/P2038 **Deficiency of IFT-A protein, THM1, sensitizes pre-adipocytes to insulin signaling and differentiation, and heightens adipose insulin sensitivity in a pre-obese state.** D.T. Jacobs[1], B.A. Allard[1], L.M. Silva[1], A. Al-Namaani[1], E. Agborbesong[1], T. Wang[1], P.V. Tran[1]; [1]Anatomy and Cell Biology, University of Kansas Medical Center, Kansas City, KS

B179/P2039 **Primary hypothalamic neuronal culture for assessing primary cilia associated signaling.** R. Bansal[1], S.E. Engle[1], P.J. Antonellis[1], T.L. Masters[1], L.S. Whitehouse[1], K. Stickel[1], A.J. Baucum II[1], T.R. Cummins[1], N.F. Berbari[1]; [1]Biology, Indiana University Purdue University Indianapolis, Indianapolis, IN

B180/P2040 **Unusual elemental composition of the statoliths of Mnemiopsis leidyi and Beroë ovata.** A.G. Moss[1]; [1]Biological Sciences, Auburn University, Auburn, AL

B181/P2041 **Investigating the Biological Role of the Voltage Sensitive Phosphatase.** W. Ratzan[1], S.C. Kohout[1]; [1]Cell Biology and Neuroscience, Montana State University, Bozeman, MT

B182/P2042 **Adenylyl Cyclase 3 Localizes to Osteocyte Primary Cilia and Contributes to Mechanotransduction.** M.P. Duffy[1], M.E. Sup[1], C.R. Jacobs[1]; [1]Biomedical Engineering, Columbia University in the City of New York, New York, NY

B183/P2043 **Three dimensional architecture of primary cilia in kidney cells.** S. Sun[1,2], R. Fisher[1], S. Bowser[1], B. Pentecost[1], H. Sui[1,2]; [1]Division of Translational Medicine, Wadsworth Center, Albany, NY, [2]Department of Biomedical Sciences, University at Albany, School of Public Health, Albany, NY

B184/P2044 **Multiple clinical, targeted kinase inhibitors influence ciliary dynamics.** A.A. Kiseleva[1,2], V.A. Korobeynikov[3], A.S. Nikonova[1], M.B. Einarson[1], E. Nicolas[4], P. Zhang[1], J.R. Peterson[4], E.A. Golemis[1]; [1]Molecular Therapeutics Program, Fox Chase Cancer Center, Philadelphia, United States, [2]Biochemistry and Biotechnology, Kazan Federal University, Kazan, Russia, [3]Department of Pathology and Cell Biology, Columbia University, New York, United States, [4]Cancer Biology Program, Fox Chase Cancer Center, Philadelphia, United States

B185/P2045 **Roles of Primary Cilia in the Oligodendrocyte Lineage.** A. Subediak[1], J.L. Fuchs[1]; [1]Biological Sciences, University of North Texas, Denton, TX

B186/P2046 **A Bioactive Peptide Amidating Enzyme is Specifically Released in Ciliary Ectosomes during Mating in *Chlamydomonas*.** D. Kumar[1], R. Luxmi[2], M. Bartolotta[1,3], R.E. Mains[2], S.M. King[1], B.A. Eipper[1,2]; [1]Department of Molecular Biology and Biophysics, University of Connecticut Health Center, Farmington, CT, [2]Department of Neuroscience, University of Connecticut Health Center, Farmington, CT, [3]Wheaton College, Norwood, MA

B187/P2047 ***Chlamydomonas* Secretes Amidated Peptides during Mating.** R. Luxmi[1], D. Kumar[2], C.E. Blaby-Haas[3], R.E. Mains[1], S.M. King[2], B.A. Eipper[1,2]; [1]Department of Neuroscience, University of Connecticut Health Center, Farmington, CT, [2]Department of Molecular Biology and Biophysics, University of Connecticut Health Center, Farmington, CT, [3]Brookhaven National Laboratory, Upton, NY

B188/P2048 **Characterization of the role of Diaphanous-related formin (DIAPH) in cilia.** O. Palander[1,2], W.S. Trimble[1,2]; [1]Cell Biology, The hospital for sick children, Toronto, ON, [2]Biochemistry, University of Toronto, Toronto, ON

B189/P2049 **Regulation of INPP5E ciliary localization by phosphorylation.** M.B. Sierra-Rodero[1,2,3], D. Cilleros-Rodriguez[1,2,3], R. Martin-Morales[1,2,3], P. Barbeito[1,2,3], F.R. Garcia-Gonzalo[1,2,3]; [1]Alberto Sols Biomedical Research Institute CSIC-UAM (IIBM), Madrid, Spain, [2]La Paz University Hospital Research Institute (IdiPAZ), Madrid, Spain, [3]Department of Biochemistry, Autonomous University of Madrid, Madrid, Spain

B190/P2050 **RAB-28 regulates axonemal architecture and extracellular vesicle biogenesis in the extracellular vesicle releasing IL2 neurons of C. elegans.** J.S. Akella[1], J. Wang[1], F. Rizvi[1], K. Nguyen[2], D. Hall[2], M. Barr[1]; [1]Genetics, Rutgers University, Piscataway, NJ, [2]Albert Einstein College of Medicine, Bronx, NY

B191/P2051 **Disruption of primary cilia components leads to reduced proliferation in myoblasts.** C. Boyle[1], V. Zora[1], S. Dornbush[1], Z. Gromley[1], A.S. Gromley[1]; [1]DeBusk College of Osteopathic Medicine, Lincoln Memorial University, Harrogate, TN

B192/P2052 **Loss of neuronal cilia alters olfactory bulb morphology.** J.C. McIntyre[1]; [1]Neuroscience, University of Florida, Gainesville, FL

Cytokinesis 1

B194/P2053 **Role of the Anillin Homologue in Cytokinesis of Cryptococcus neoformans.** S. Altamirano[1], N. Paladugu[1], M. Gandhi[1], I. Aboobakar[2], J. Heitman[2], S. Chandrasekaran[3], L. Kozubowski[1]; [1]Genetics and Biochemistry, Clemson University, Clemson, SC, [2]Molecular Genetics and Microbiology, Duke University, Durham, NC, [3]Biology, Furman University, Greenville, SC

B195/P2054 **Role of Aurora Kinases in Single-Cell Regeneration of Stentor.** A. Lin[1], W.F. Marshall[1]; [1]Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

B196/P2055 **The role of mitotic cell-substrate adhesion remodelling in animal cell division.** C.L. Dix[1], H.K. Matthews[1], S. McLaren[1], L. Wolf[2], P. Almada[1], R. Henriques[1], M. Boutros[2], B. Baum[1]; [1]Medical Research Council Laboratory for Molecular Cell Biology, University College London, London, United Kingdom, [2]Division of Signaling and Functional Genomics, German Cancer Research Center (DKFZ), and Department for Cell and Molecular Biology, Medical Faculty Mannheim, Heidelberg University, Heidelberg, Germany

B197/P2056 **Aurora A kinase restricts contractile ring components to a narrow equatorial zone during cytokinesis in human cells.** S. Mangal[1], E. Zanin[1]; [1]Center for Integrated Protein Science CIPSM, Department Biology II, Ludwig-Maximilians University, Munich (Planegg-Martinsried), Germany

B198/P2057 **Programmed variations of cytokinesis contribute to morphogenesis in the *C. elegans* embryo.** X. Bai[1], B. Chen[2], R. Simmons[1], B. Nebenfuehr[1], L. Klebanow[1], D. Mitchell[1], E. Betzig[2], J.N. Bembenek[1]; [1]Biochemistry and Cellular and Molecular Biology, the University of Tennessee, Knoxville, Knoxville, TN, [2]Janelia Research Campus, HHMI, Ashburn, VA

B199/P2058 **Systematic analysis of atx-2 suppressors reveal novel regulators of PAR-5/14-3-3sigma function during mitosis in Caenorhabditis elegans.** M.F. Gnazzo[1], A.R. Skop[1], A.R. Villarreal[1]; [1]Genetics, UW-Madison, Madison, WI

B200/P2059 **Characterization of the mammalian midbody transcriptome reveals important factors necessary for cytokinesis and cell fate determination.** R.D. Dahn[1], J.M. Gilbert[1], K.J. VanDenHeuvel[1], A. Jambhekar[2], J.M. Shivas[3], L. Qin[1], O.K. Olukoga[1], M.D. Blower[2], A.R. Skop[1]; [1]Genetics, UW-Madison, Madison, WI, [2]Molecular Biology and Genetics, Harvard University, Boston, MA, [3]Leica Microsystems, Allendale, NJ

B201/P2060 **Studying the role of active Ran in cytokinesis in early *C. elegans* embryos.** I. Ozugergin[1], K. Mastronardi[1], B. Williams[1], A.J. Piekny[1], D. Beaudet[1]; [1]Biology, Concordia University, Montreal, QC

B202/P2061 **Developing a Light-Induced Z-ring Disassembly (LIZRD) Assay to Probe FtsZ's Role in E. coli Cell Division.** R.J. McQuillen[1], C. Coltharp[1], C.H. Bohrer[1], J. Xiao[1]; [1]Biophysics & Biophysical Chemistry, Johns Hopkins School of Medicine, Baltimore, MD

B203/P2062 **Active Ran regulates anillin function during cytokinesis.** D. Beaudet[1], T. Akhshi[2], C. Law[1], A.J. Piekny[1]; [1]Biology, Concordia University, Montreal, QC, [2]Biochemistry, University of Toronto, Toronto, ON

B204/P2063 **Cell-intrinsic and extrinsic control of cytokinetic diversity in the C. elegans embryo.** T. Davies[1], N. Romano Spica[1], B. Lesea-Pringle[1], J. Dumont[2], M.M. Shirasu-Hiza[3], J.C. Canman[1]; [1]Pathology and Cell Biology, Columbia University Medical Centre, New York, NY, [2]Institut Jacques Monod, Paris, France, [3]Genetics, Columbia University Medical Centre, New York, NY

B205/P2064 **Integrated cytoplasmic reorganization during human iPS cell mitosis.** S.M. Rafelski[1], Allen Inst. for Cell Science[1]; [1]Allen Institute, for Cell Science, Seattle, WA

B206/P2065 **Microtubule tips act as signaling hubs for positioning the cleavage furrow.** V. Verma[1], T.J. Maresca[1]; [1]Biology, University of Massachusetts, Amherst, MA

B207/P2066 **Vps4 Induces a Dynamic Subunit Turnover in ESCRT-III to Mediate Membrane Remodelling During Cytokinesis.** B.E. Mierzwa*[1,2,3], N. Chiaruttini*[4], L. Redondo-Morata*[5], J. Moser von Filseck[4], J. König[6,7], J. Larios[4], I. Poser[8], T. Müller-Reichert[7], S. Scheuring[5,9], A. Roux[4,10], D.W. Gerlich[1]; [1]Institute of Molecular Biotechnology of the Austrian Academy of Sciences (IMBA), Vienna, Austria, [2]Present address: Department of Cellular and Molecular Medicine, University of California San Diego, La Jolla, CA, [3]Present address: Ludwig Institute for Cancer Research, San Diego, CA, [4]Department of Biochemistry, University of Geneva, Geneva, Switzerland, [5]U1006 INSERM, Aix-Marseille Université, Marseille, France, [6]Electron Microscopy Unit, Francis Crick Institute, London, United Kingdom, [7]Experimental Center, Medical Faculty Carl Gustav Carus, Dresden University of Technology, Dresden, Germany, [8]Max Planck Institute for Molecular Cell Biology and Genetics, Dresden, Germany, [9]Departments of Anesthesiology and Physiology Biophysics, Weill Cornell Medicine, New York, NY, [10]Swiss National Centre for Competence in Research Programme Chemical Biology, Geneva, Switzerland. *contributed equally to the work

B208/P2067 **Crosstalk between the Cdc42 GEFs Gef1 and Scd1 comprise a signaling network that coordinates sequential cytokinetic events.** B.S. Hercyk[1], M. Das[1]; [1]Biochemistry & Cellular and Molecular Biology, University of Tennessee, Knoxville, TN

B209/P2068 **Binucleation fails to activate a tetraploidy checkpoint and instead causes chromosome segregation errors in the mouse preimplantation embryo.** L.G. Paim[1], G. FitzHarris[1,2]; [1]Centre de Recherche du CHUM, Montréal, QC, [2]Department of Obstetrics and Gynaecology, Université de Montréal, Montréal, QC

B210/P2069 **ROCK regulates cytokinesis through phosphorylation of ZIP kinase.** T. Ono[1], M. Matsushita[1], K. Hamao[1]; [1]Department of Biological Science, Graduate School of Science, Hiroshima University, Higashi Hiroshima, Japan

B211/P2070 **Disruption of the division-to-growth transition in fission yeast yields a novel phenotype of precocious cell growth without cell separation.** J. Rich[1], M. Das[1]; [1]Biochemistry & Cellular and Molecular Biology, University of Tennessee, Knoxville, Knoxville, TN

B212/P2071 **A novel role of Wee1 in regulating actomyosin ring constriction.** S.E. Dundon[1], T.D. Pollard[1,2,3]; [1]Molecular, Cellular, and Developmental Biology, Yale University, New Haven, CT, [2]Molecular Biophysics and Biochemistry, Yale University, New Haven, CT, [3]Cell Biology, Yale University, New Haven, CT

B213/P2072 **Cleavage-furrow formation without myosin or F-actin in *Chlamydomonas*.** M. Onishi[1], K. Pecani[2], T. Jones IV[1], J.G. Umen[3], F.R. Cross[2], J.R. Pringle[1]; [1]Genetics, Stanford University School of Medicine, Stanford, CA, [2]The Rockefeller University, New York, NY, [3]Donald Danforth Plant Science Center, St. Louis, MO

B214/P2073 **Anillin and Septin Colocalize with Myosin II in Nodes and Filamentous Assemblages within the Forming Cytokinetic Contractile Ring.** C. Garno[1,2], B. Samasa[1,3], Z. Irons[1,3], J.H. Henson[1,3], C.B. Shuster[1,2]; [1]Friday Harbor Laboratories, University of Washington, Friday Harbor, WA, [2]Department of Biology, New Mexico State University, Las Cruces, NM, [3]Department of Biology, Dickinson College, Carlisle, PA

B215/P2074 **Imaging of bacterial cell division components reveals subcomplexes with distinct dynamics.** M.J. Holmes[1], E.C. Garner[1]; [1]Department of Molecular and Cellular Biology, Harvard University, Cambridge, MA

B216/P2075 **FLIRT: Fast local infrared thermoptogenetics for spatiotemporal control of ts protein function during cytokinesis.** S. Hirsch[1], S. Sundaramoorthy[2], Y. Zhuravlev[1], T. Davies[2], J.C. Waters[3], M.M. Shirasu-Hiza[1], J. Dumont[4], J.C. Canman[2]; [1]Genetics and Development, Columbia University Medical Center, New York, NY, [2]Pathology and Cell Biology, Columbia University Medical Center, New York, NY, [3]Cell Biology, Harvard Medical School, Boston, MA, [4]Cell Division and Reproduction, Institut Jacques Monod, Paris, France

Kinetochore Assembly and Functions 2

B217/P2076 **Human Replication Licensing Factor Cdt1 Serves as an Essential Link for Stabilizing Kinetochore Microtubule Attachments.** S. Agarwal[1], K.P. Smith[1], Y. Zhou[2], A. Suzuki[3], R.J. McKenney[4], D. Varma[1]; [1]Cell and Molecular Biology, Northwestern University Feinberg School of Medicine, Chicago, IL, [2]Biochemistry and Biophysics, University of North Carolina at Chapel Hill, Chapel Hill, NC, [3]Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [4]Molecular and Cellular Biology, University of California - Davis, Davis, CA

B218/P2077 **Role of the human RZZ complex in coordinating the formation of stable kinetochore-microtubule attachments and proper chromosome alignment.** M.A. Amin[1], R.J. McKenney[2], D. Varma[1]; [1]Cell and Molecular Biology, Northwestern University Feinberg School of Medicine, Chicago, IL, [2]Molecular and Cellular Biology, University of California - Davis, Davis, CA

B219/P2078 **Nonsense-mediated mRNA decay regulates mRNA levels for kinetochore proteins in *Saccharomyces cerevisiae*.** S.I. Graves[1], J.N. Dahlseid[1]; [1]Biology & Chemistry, Gustavus Adolphus College, Saint Peter, MN

B220/P2079 **Regulation of PKA activity during Mitosis.** D.A. Parmiter[1], J. Choy[1], S.B. Shah[1]; [1]Biology, Catholic University of America, Washington, DC

B221/P2080 **The molecular requirements for epigenetic establishment of centromeres depend on the type of underlying DNA.** G.A. Logsdon[1], C.W. Gambogi[1], E.J. Barrey[2], P. Heun[2], B.E. Black[1]; [1]Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA, [2]Wellcome Trust Centre for Cell Biology, University of Edinburgh, Edinburgh, United Kingdom

B222/P2081 **RbAp46/48 (Lin-53) - Hat-1 complex is crucial for *de novo* centromere formation in C. elegans.** Z. Lin[1], K. Yuen[1]; [1]School of Biological Sciences, The University of Hong Kong, Hong Kong, Hong Kong

B223/P2082 **A potential new error correction mechanism for chromosome segregation in anaphase.** D. Papini[1], M. Levasseur[1], J.M. Higgins[1]; [1]Institute for Cell and Molecular Biosciences (ICaMB), Medical School, Framlington Place, Newcastle upon Tyne NE2 4HH, UK, Newcastle University, Newcastle upon Tyne, United Kingdom

B224/P2083 **Structural studies of the budding yeast kinetochore using single-molecule localization microscopy.** K. Cieslinski[1], J. Ries[1], S. Hoerner[1]; [1]CBB, EMBL, Heidelberg, Germany

B225/P2084 **Investigating the role of kinetochore dynein-dynactin in Spindle Assembly Checkpoint function.** A. Hodges[1], T. Biebighauser[1], L.R. Heasley[1], R. Wimbish[1], S.M. Markus[1], J.G. DeLuca[1]; [1]Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO

B226/P2085 **Regulation of kinetochore plasticity during anaphase.** K. Dhatchinamoorthy[1], B. Slaughter[1], J.J. Lange[1], J. Unruh[1], J.L. Gerton[1,2]; [1]Stowers Institute for Medical Research, Kansas City, MO, [2]Department of Biochemistry & Molecular Biology, The University of Kansas School of Medicine, Kansas City, KS

B227/P2086 **Determining the Molecular Basis for Differences in Binding Affinity Between Human and Mouse Aurora Kinase B.** S.S. Dipali[1], A.L. Nguyen[1], K. Schindler[1]; [1]Genetics, Rutgers University, New Brunswick, NJ

B228/P2087 **PCH-2 (TRIP13): an essential regulator of spindle assembly checkpoint strength.** L. Defachelles[1], C. Nelson[2], A. Russo[1], N. Bhalla[1]; [1]Department of Molecular, Cell and Developmental Biology, University of California Santa Cruz, Santa Cruz, CA, [2]Fred Hutchinson Cancer Research Center, Seattle, WA

B229/P2088 **MOLECULAR REQUIREMENTS FOR THE TRANSITION FROM LATERAL TO END-ON MICROTUBULE BINDING AND DYNAMIC COUPLING.** M. Chakraborty[1], A.V. Zaytsev[1], M. Godzi[2], E. Tarasovetc[1], A. Figueiredo[3], F. Ataullakhanov[2], E.L. Grishchuk[1]; [1]Physiology Department, University of Pennsylvania, Philadelphia, PA, [2]Center for Theoretical Problems of Physicochemical Pharmacology, Russian Academy of Sciences, Moscow, Russia, [3]Chromosome Instability & Dynamics Laboratory, Universidade do Porto, Porto, Portugal

B230/P2089 **Molecular mechanisms that prevent mislocalization of centromeric histone H3 variant CENP-A and chromosomal instability (CIN) in human cells.** R.L. Shrestha[1], J. Kim[1], G.S. Ahn[1], A. Rossi[1], L. Ozbun[1], G. Pegoraro[1], D.R. Foltz[2], M.A. Basrai[1]; [1]National Cancer Institute, National institutes of health, Bethesda, MD, [2]Department of Biochemistry and Molecular Genetics, Northwestern University, Chicago, IL

B231/P2090 **Centromere dysfunction impacts the centrosome causing PCM dispersion during mitosis and centriole loss in the following interphase.** S. Gemble[1], D. Fachinetti[1], R. Basto[1]; [1]UMR144, Institut Curie, Paris, France

B232/P2091 **Defining The Physical and Spatial Properties of the Spindle Assembly Checkpoint Across Species.** L.R. Heasley[1], J.G. DeLuca[1], S.M. Markus[1]; [1]Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO

B233/P2092 **Kinetochore recruitment of the Ska complex is regulated by RSA-1 in *C. elegans*.** K.I. Lange[1], A. Suleman[1], M. Srayko[1]; [1]Biological Sciences, University of Alberta, Edmonton, AB

B234/P2093 **Outer kinetochore phosphatases - PP2A-B56 and PP1 – differently contribute to the establishment of chromosome-microtubule attachments.** D. Conti[1,2], K.A. Cieslinski[3], J. Ries[3], V.M. Draviam[1]; [1]London, Queen Mary University of London, London, United Kingdom, [2]Genetics, University of Cambridge, Cambridge, United Kingdom, [3]Cell Biology and Biophysics, EMBL, Heidelberg, Germany

B235/P2094 **An Optimized Method for 3D Fluorescence Co-Localization Applied to Human Kinetochore Protein Architecture.** A. Suzuki[1], S.K. Long[1], E.D. Salmon[1]; [1]Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC

Spindle Assembly 2

B236/P2095 **MAARS: A novel high content acquisition software for the analysis of mitotic defects in fission yeast.** T. LI[1], H. Mary[1], M. Grosjean[1], J. Fouchard[1], S. Cabello[1], C. Reyes[1], Y. Gachet[1], S. Tournier[1]; [1]LBCMCP, Centre de Biologie Intégrative (CBI), Toulouse, France

B237/P2096 **Microtubules push chromosomes apart in anaphase.** C. Yu[1], S. Redemann[2], H. Wu[3], T.Y. Yeon[1], T. Müller-Reichert[2], D.J. Needleman[1,4]; [1]School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, [2]Medical Faculty Carl Gustav Carus, Technische Universität Dresden, Dresden, Germany, [3]Department of Physics, Harvard University, Cambridge, MA, [4]Department of Molecular and Cellular Biology and Center for Systems Biology, Harvard University, Cambridge, MA

B238/P2097 **The mitotic spindle is chiral due to torques generated by motor proteins.** J. Simunic[1], B. Polak[1], M. Novak[2], Z. Boban[2], B. Kuzmić[1], N. Pavin[2], I.M. Tolić[1]; [1]Division of Molecular Biology, Ruđer Bošković Institute, Zagreb, Croatia, [2]Department of Physics, Faculty of Science, University of Zagreb, Zagreb, Croatia

B239/P2098 **NuMA Targets Dynein to Microtubule Minus-Ends at Mitosis.** C.L. Hueschen[1,2], S.J. Kenny[3], K. Xu[3], S. Dumont[1,4]; [1]Dept. of Cell Tissue Biology, University of California, San Francisco, San Francisco, CA, [2]Biomedical Sciences Graduate Program, University of California, San Francisco, San Francisco, CA, [3]Dept. of Chemistry, University of California, Berkeley, Berkeley, CA, [4]Dept. of Cellular Molecular Pharmacology, University of California, San Francisco, San Francisco, CA

B240/P2099 **Sensing of the Magnitude of Centromeric Tension at Metaphase Elicits a Graded Cellular Response.** S. Mukherjee[1], D. Tank[1], Q. Yang[1], M.K. Gardner[1]; [1]Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN

B241/P2100 **Mechanical maturation of the mammalian centromere regulates force signaling at metaphase.** L.A. Harasymiw[1,2], D. Tank[1], M. McClellan[1], N. Panigrahy[1], M.K. Gardner[1]; [1]Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN, [2]Medical Scientist Training Program, University of Minnesota, Minneapolis, MN

B242/P2101 **Microtubule destabilizing activity of selfish centromeres drives non-Mendelian segregation.** T. Akera[1], E. Trimm[1], M.A. Lampson[1]; [1]Department of Biology, University of Pennsylvania, Philadelphia, PA

B243/P2102 **Determining the molecular requirements for taxol-induced spindle multipolarity.** C.M. Scribano[1,2], J. Wan[1,3], B.A. Weaver[1,4]; [1]Cell and Regenerative Biology, University of Wisconsin, Madison, WI, [2]Molecular and Cellular Pharmacology Training Program, University of Wisconsin, Madison, WI, [3]Physiology Training Program, University of Wisconsin, Madison, WI, [4]Oncology, University of Wisconsin, Madison, WI

B244/P2103 **The Role of Actin-Microtubule Crosslinker Shortstop in Cell Division.** E.B. Dewey[1], C.A. Johnston[1]; [1]Biology, University of New Mexico, Albuquerque, NM

B245/P2104 **Most kinetochore fibers in human cells form via mechanisms intrinsic to the kinetochores and not by capture of astral microtubules.** V. Sikirzhytski[1], F. Renda[1], I. Tikhonenko[1], B.F. McEwen[1], A. Khodjakov[1]; [1]Transnational Medicine, Wadsworth Center, Albany, NY

B246/P2105 **Physical Confinement Impairs Chromosome Segregation during Cell Division.** X. Wan[1], K. Konstantopoulos[1]; [1]Chemical & Biomolecular Engineering, Johns Hopkins University, Baltimore, MD

B247/P2106 **Regulation of microtubule crosslinks during spindle assembly.** A. Ismael[1], J.E. Aiken[1], J.K. Moore[1]; [1]Cell & Developmental Biology, University of Colorado, Anschutz Medical Campus, Aurora, CO

B248/P2107 **Minimal ingredients for coupled spindle assembly and chromosome bi-orientation in a computational model of fission yeast mitosis.** C. Edelmaier[1], A. Lamson[1], Z.R. Gergely[2], J.R. McIntosh[2], M.A. Glaser[1], M.D. Betterton[1,2]; [1]Physics, University of Colorado Boulder, Boulder, CO, [2]MCDB, University of Colorado Boulder, Boulder, CO

B249/P2108 **Mechanisms of spindle assembly and scaling across Pipid frogs.** K. Miller[1], R. Heald[1]; [1]Molecular and Cell Biology, UC Berkeley, Berkeley, CA

B250/P2109 **The Effects of Microtubule Length, Dynamics and Bundling on Spindle Assembly.** Z.R. Gergely[1,2], P.J. Flynn[1], C. Edelmaier[1], N. Santander[1], J.R. McIntosh[2], M.D. Betterton[1]; [1]Department of Physics, University of Colorado at Boulder, Boulder, CO, [2]Department of MCD Biology, University of Colorado at Boulder, Boulder, CO

B251/P2110 **Adaptor binding sites in the clathrin terminal domain directly recruit the microtubule stabilizing protein GTSE1 to the mitotic spindle.** Y. LIN[1], A. Rondelet[1], P. Brinkert[1], A.W. Bird[1]; [1]mechanistic cell biology, Max Planck Institute of Molecular Physiology, Dortmund, Germany

B252/P2111 **Clathrin promotes mitotic spindle assembly via interaction with the microtubule depolymerase inhibitor GTSE1.** A. Rondelet[1], Y. Lin[1], S. Bendre[1], P. Brinkert[1], N. Schmidt[1], A.W. Bird[1]; [1]Mechanistic cell biology, Max Planck Institute of Molecular Physiology, Dortmund, Germany

G1, G1-S, and S Phase Regulation

B253/P2112 **Assessing Reproductive Toxicity of Halogenated Flame Retardants Using a Novel *in vitro* Human Spermatogenesis Model.** A.N. Steves[1], J.M. Bradner[2], K. Fowler [3,4], D. Clarkson-Townsend[2], B. Gill[3,4], A. Turry[3,4], W. Caudle[2], G.W. Miller[2], A.W. Chan[5,6], C.A. Easley[3,4]; [1]Genetics and Molecular Biology Program, Emory University, Atlanta, GA, [2]Rollins School of Public Health, Emory University, Atlanta, GA, [3]College of Public Health, University of Georgia, Athens, GA, [4]Regenerative Bioscience Center, University of Georgia, Athens, GU, [5]Department of Human Genetics, Emory University, Atlanta, GA, [6] Division of Neuropharmacology and Neurologic Diseases, Yerkes National Primate Research Center, Atlanta, GA

B254/P2113 **Regulation of cell cycle progression by cell-cell and cell-matrix forces.** M. Uroz[1], S. Wistorf[1], X. Serra-Picamal[1], V. Conte[1], M. Sales-Pardo[2], P. Roca-Cusachs[1,3], R. Guimera[2], X. Trepat[1,3,4,5]; [1]Institute for Bioengineering of Catalonia (IBEC), Barcelona, Spain, [2]Departament d'Enginyeria Química, Universitat Rovira i Virgili, Tarragona, Spain, [3]Unitat de Biofísica i Bioenginyeria, Facultat de Medicina, Universitat de Barcelona, Barcelona, Spain, [4]Institució Catalana de Recerca i Estudis Avançats, Barcelona, Spain, [5]Center for Networked Biomedical Research on Bioengineering, Biomaterials and Nanomedicine, CIBER-BBN, Barcelona, Spain

B255/P2114 **Temperature-induced uncoupling of cell cycle regulatory mechanisms.** H. Falahati[1], S. Di Talia[2], E. Wieschaus[3]; [1]Quantitative and Computational Biology, Princeton University, Princeton, NJ, [2]Cell Biology, Duke University, Durham, NC, [3]Molecular Biology, HHMI/Princeton University, Princeton, NJ

B256/P2115 **Elucidating the Role of Securin in Regulating Separase during Cortical Granule Exocytosis.** C. Turpin[1], J.N. Bembenek[1]; [1]BCMB, University of Tennessee-Knoxville, Knoxville, TN

B257/P2116 **Spatiotemporal characterization of the human proteome.** D. Mahdessian[1], D.P. Sullivan[1], F. Danielsson[1], C. Gnann[1], R. Schutten[1], M. Uhlén[1], E. Lundberg[1]; [1]Affinity Proteomics, Science for life laboratory (KTH), Stockholm, Sweden

B258/P2117 **Cell fate decision via p53 status in response to nucleoside analog-inducing DNA replication stress.** M. Iimori[1], Y. Kataoka[1,2], K. Matsuoka[2], E. Oki[3], H. Saeki[3], Y. Maehara[3], H. Kitao[1]; [1]Department of Molecular Cancer Biology, Graduate School of Pharmaceutical Sciences, Kyushu University, Fukuoka, Japan, [2]Drug Discovery and Development I, Taiho Pharmaceutical Co., Ltd., Tsukuba, Japan, [3]Department of Surgery and Science, Kyushu University, Fukuoka, Japan

B259/P2118 **Phosphorylation regulates protein-RNA phase separation.** T.M. Gerbich[1], A.S. Gladfelter[1]; [1]Biology, UNC-Chapel Hill, Chapel Hill, NC

B260/P2119 **The p38 MAP kinase pathway promotes cell size uniformity by linking cell cycle progression to cell size.** S. Liu[1,2], M.B. Ginzberg[1], N. Patel[1], M. Hild[3], Z. Li[4], J. Jenkins[3], M.W. Kirschner[5], R. Kafri[1,2]; [1]Cell Biology, The Hospital for Sick Children, Toronto, ON, [2]Department of Molecular Genetics, University of Toronto, Toronto, ON, [3]Novartis Institutes for BioMedical Research, Cambridge, MA, [4]Department of Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor, MI, [5]Department of Systems Biology, Harvard Medical School, Boston, MA

B261/P2120 **LKB1 links metabolic homeostasis to accurate chromosome segregation in mitosis.** Y. Huang[1], M. Wang[1], W. Wang[1], X. Liu[1], X. Yao[1]; [1]Anhui Key Laboratory for Cellular Dynamics & Chemical Biology, University of Science and Technology of China, Hefei, China

B262/P2121 **Deletion of Cul3 in the mouse mammary gland.** K. Schmidt[1], N. Rosa[1], C.M. Cummings[1]; [1]Biology Program, Stockton University, Galloway, NJ

B263/P2122 **Protein kinase C delta drives HGF-induced proliferation of equine satellite cells.** A.M. Brandt[1], M. Gonzalez[1], S.E. Johnson[1]; [1]Animal and Poultry Sciences, Virginia Tech, Blacksburg, VA

B264/P2123 **Proximity based proteomic screen identifies novel associations of the polo like kinase 1 (Plk1).** Y.A. Garcia[1], N. Filbert[1], W. Cohn[1], J. Whitelegge[1], J.Z. Torres[1]; [1]Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles, CA

B266/P2124 **Details Matter: Noise and Model Structure Set the Relationship between Cell Size and Cell Cycle Timing.** F. Barber[1], P. Ho[2], A.W. Murray[1,3], A. Amir[2]; [1]Molecular and Cellular Biology, Harvard University, Cambridge, MA, [2]School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, [3]FAS Center for Systems Biology, Harvard University, Cambridge, MA

B267/P2125 **Functional characterization of the ORFs YJR141W & YJL055W in Saccharomyces cerevisiae.** O. Rosenow[1], C. Balfany[1], S. Shields[1]; [1]Biology, Gustavus Adolphus College, Saint Peter, MN

Tumor Suppressors and Regulation of Oncogenes

B269/P2126 **Is the Eicosanoid Producing Enzyme 12-Lipoxygenase (ALOX12) a Tumor Suppressor?** G.F. Gerlach[1], P. Niethammer[1]; [1]Cell Biology, Memorial Sloan Kettering Cancer Center, New York, NY

B270/P2127 **Tumor suppressive role of Sestrin2 during colitis and colon carcinogenesis.** S. Ro[1,2], X. Xue[2], Y.M. Shah[2], J. Lee[2]; [1]Biochemistry, University of Nebraska, Lincoln, NE, [2]Molecular Integrative Physiology, University of Michigan, Ann Arbor, MI

B271/P2128 **PLK1-mediated RIP3 phosphorylation promotes G2/M abundance of RIP3.** K. Gupta[1], B. Liu[1]; [1]Surgery, University of Wisconsin--Madison, Madison, WI

B272/P2129 **Novel Biogenic Role for the Retinoblastoma Protein Rb.** R. Camicia[1], A.C. Lloyd[1]; [1]MRC Laboratory for Molecular Cell Biology, UCL, London, United Kingdom

B273/P2130 **Loss of SPINT2 promotes YAP activation and tolerance to aneuploidy.** H. Zhang[1], K. Kotynkova[2], D. Pellman[1,3], N.J. Ganem[2,4]; [1]Department of Cell Biology, Harvard Medical School, Boston, MA, [2]Department of Pharmacology and Experimental Therapeutics, Boston University School of Medicine, Boston, MA, [3]Howard Hughes Medical Institute and Department of Pediatric Oncology, Dana-Farber Cancer Institute, Boston, MA, [4]Department of Medicine, Division of Hematology and Oncology, Boston University School of Medicine, Boston, MA

B274/P2131 **Tumor suppressor cyclin C activates Bax in a redox-sensitive manner.** J. Jezek[1], K. Chang[1], V. Ganesan[1], P. Kadiyam Sundarasivarao[1], A. Di Cristofano[2], K. Campbell[3]; [1]Molecular Biology, Rowan University SOM, Stratford, NJ, [2]Albert Einstein Medical School, Bronx, NY, [3]Fox Chase Cancer Center, Philadelphia, PA

B275/P2132 **Suppression of *RAC1*-driven malignant melanoma by Group A PAK inhibitors.** D. Araiza Olivera Toro[1,2], Y. Feng[2], G. Semenova[2], T. Prudnikova[2], J. Rhodes[2], J. Chernoff[2]; [1]Instituto de Química, Universidad Nacional Autónoma de México, México City, Mexico, [2]Cancer Biology, Fox Chase Cancer Center, Philadelphia, PA

B276/P2133 **miR-195 regulates the response of non-small cell lung cancer to microtubule targeting agents by targeting CHEK1.** X. Yu[1], Y. Zhang[1], L. Du[2], X. Ma[1], A. Pertsemlidis[1]; [1]Greehey Children's Cancer Research Institute, The University of Texas Health Science Center at San Antonio, San Antonio, TX, [2]Chemistry and Biochemistry, Texas State University, San Marcos, TX

B277/P2134 **TP53 gene status is a critical determinant of phenotypes induced by ALKBH3 knockdown in non-small cell lung cancers.** T. Kogaki[1], I. Ohshio[1], M. Kawaguchi[1], M. Kimoto[1], K. Kitae[1], H. Hase[1], Y. Ueda[1], K. Jingushi[1], K. Tsujikawa[1]; [1]Graduate School of Pharmaceutical Sciences, Osaka University, Suita, Japan

B278/P2135 **Akt 1 and PA28 do not have a synergistic effect on the Wnt pathway in cancer.** E.J. Thornburg[1], T.B. Nguyen[1], L.F. Barton[1]; [1]Biology, Austin College, Sherman, TX

B279/P2136 **The Cdc42/Rac1 regulator CdGAP, a novel E-cadherin transcriptional co-repressor with Zeb2 in breast cancer, is regulated by RSK phosphorylation and binding to 14-3-3 adaptor proteins.** A. Ben Djoudi Ouadda[1], V. Calabrese[2], Y. He[1], A. Pelletier[3], J. Côté[3], P. Siegel[4], P.P. Roux[2], N. Lamarche-Vane[1]; [1]Anatomy and Cell Biology, RI-MUHC, McGill University, Montreal, QC, [2]Institute for Research in Immunology and Cancer (IRIC), Montreal, QC, [3]Institut de Recherches cliniques de Montreal, Montreal, QC, [4]Goodman Cancer Research Centre, McGill University, Montreal, QC

B280/P2137 **Steroid receptors can facilitate the binding of each other and the pioneer factor FoxA1 to active enhancers in breast cancer cell lines through a dynamic assisted loading mechanism.** E.E. Swinstead[1], V. Paakinaho[1], D.M. Presman[1], T.B. Miranda[1], S. Baek[1], D.A. Ball[1], T.S. Karpova[1], G.L. Hager[1]; [1]NCI, NIH, Bethesda, MD

B281/P2138 **Investigating the Epigenetic Regulation of the Breast Cancer Susceptibility Gene, *BRCA1*.** L.A. Duran [1], L. Delgado-Cruzata[1]; [1]Science, John Jay College of Criminal Justice, New York City, NY

B282/P2139 **Understanding the Role and Regulation of the SENP1 SUMO Isopeptidase in Pancreatic Cancer.** D.M. Bouchard[1], M.J. Matunis[1]; [1]Biochemistry and Molecular Biology, Johns Hopkins School of Public Health, Baltimore, MD

Tumor Invasion and Metastasis 2

B283/P2140 **Matrix stiffness influences oral squamous cell carcinoma behaviour through EMT changes.** B. Franzen Matte[1,2], J.K. Placone[1], A. Kumar[1], M. Lamers[2], A.J. Engler[1]; [1]Bioengineering, University of California San Diego, San Diego, CA, [2]Oral Pathology, Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil

B284/P2141 **Differential Regulation of Mammary Cancer Invasivity due to Matrix Stiffness and Oncogenic Mutation.** C.M. Plunkett[1], A. Kumar[1], J.K. Placone[1], J. Yang[2], A.J. Engler[1]; [1]Bioengineering, University of California San Diego, La Jolla, CA, [2]Pharmacology, University of California San Diego, La Jolla, CA

B285/P2142 **The Morphological Characteristics of Carcinoma Migration Phenotypes are Differentially Regulated by the ROCK Isoforms.** R.J. Jerrell[1], A. Parekh[1,2,3,4], M.J. Leih[1]; [1]Otolaryngology, Vanderbilt University Medical Center, Nashville, TN, [2]Vanderbilt-Ingram Cancer Center, Vanderbilt University Medical Center, Nashville, TN, [3]Biomedical Engineering, Vanderbilt University, Nashville, TN, [4]Cancer Biology, Vanderbilt University, Nashville, TN

B286/P2143 **A novel Twist1-PKD1 axis promotes epithelial dissemination.** D. Georgess[1], O.K. Sirka[1], G. Frid[1], A. Choi[1], N.M. Neumann[1], A.J. Ewald[1]; [1]Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD

B287/P2144 **G1P3-induced mtROS augment caveolae mediated endocytosis of E-cadherin to promote breast cancer metastasis.** N. Chowdhury[1], J. Mccullough[1], A. Davenport[1], V. Cheriyath[1]; [1]Biological and Environmental Sciences, Texas AM University-Commerce, Commerce, TX

B288/P2145 **Prostate Specific Membrane Antigen promotes prostate tumor progression and survival by conferring resistance to hypoxic stress.** A.C. Lewis[1], A.M. Ponce[2], D. Anukam[1], L.H. Shapiro[1], L.A. Caromile[1]; [1]Center for Vascular Biology, UCONN Health, Farmington, CT, [2]Biology, The University of Texas at El Paso, El Paso, TX

B289/P2146 **The role of antioxidant enzymes in the proliferation and survival of extracellular matrix-detached SKOV3 cells.** C.A. Davison-Versagli[1], C.L. Libbing[1]; [1]Biology Department, Saint Mary's College, Notre Dame, IN

B290/P2147 **Role of NADPH Oxidase (NOX-1) in TNF-α mediated cellular response in regulation of cell death and survival.** B.N. Waghela[1], C.M. Pathak[1]; [1]Department of Cell Biology, Indian Institute of Advanced Research (IIAR), Gandhinagar, India

B291/P2148 **Effects of ASCT2 (alanine/serine/cysteine transporter 2 / SLC1A5) downregulation in human colon cancer HCT-116 cells.** C. Carneiro[1], 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

B292/P2149 **Effects of LAT1 (L-type amino acid transporter 1 / SLC7A5) downregulation in human colon cancer HCT-116 cells.** A. Oliveira[1], C. Carneiro[1], P. Soares-da-Silva[1,2]; [1]Phyzat Biopharmaceuticals, Porto, Portugal, [2]Center for Drug Discovery and Innovative Medicines, MedInUP, Porto, Portugal

B293/P2150 **Insulin inhibits VEGF-induced endothelial permeability and metastasis by inhibiting TGase2 in the lung of diabetic mice.** H. Jeon[1], Y. Lee[1], Y. Kim[1], K. Ha[1]; [1]Molecular and Cellular Biochemistry, Kangwon National University of Medicine, Chuncheon-si, Gangwon-do, Korea, Korea, South

B294/P2151 **Centrosome amplification triggers a non-canonical Senescence-Associated Secretory Phenotype and HIF1-α activation.** S.K. Wu[1,2], R. Picone[1,2], M.S. Levine[3], S. Papathanasiou[1,2], M. Kwon[1,2], M. Janiszewska[4], K. Polyak[4], A. Spektor[1,2], A.J. Holland[3], D. Pellman[1,2]; [1]Pediatric Oncology, Dana Farber Cancer Institute, BOSTON, MA, [2]Cell Biology, Harvard Medical School, BOSTON, MA, [3]Molecular Biology and Genetics, Johns Hopkins School of Medicine, Baltimore, MD, [4]Medical Oncology, Dana Farber Cancer Institute, Boston, MA

B295/P2152 **Metastatic melanoma cells commandeer p53 activity to promote the survival of a therapy resistant subpopulation.** M.R. Webster[1], A. Kaur[1], B.L. Ecker[2], A. Ndoye[1], C. Kugel[1], S. Basu[3], A. Valiga[1], J.L. Appleton[1], M.E. Murphy[3], A.T. Weeraratna[1]; [1]Tumor Microenvironment and Metastasis, The Wistar Institute, Philadelphia, PA, [2]Department of Surgery, University of Pennsylvania, Philadelphia, PA, [3]Molecular and Cellular Oncology, The Wistar Institute, Philadelphia, PA

B296/P2153 **PLCγ1 mediated migration and invasion of HEK293 cells stably expressing non small cell lung carcinoma associated EGFR mutants.** S. Mittal[1], M.S. Rajala[1]; [1]School of Biotechnology, Jawaharlal Nehru University, New Delhi, India

B297/P2154 **Myoferlin depletion reduces autocrine TGF-β1 production to regulate epithelial-mesenchymal transition in breast cancer cells.** J. Weist[1,2], V. Barnhouse[1], V. Shukla[1], S.N. Ghadiali[1,3,4], D.A. Kniss[1,5], J.L. Leight[1,2]; [1]Department of Biomedical Engineering, College of Engineering, The Ohio State University, Columbus, OH, [2]The James Comprehensive Cancer Center, The Ohio State University, Columbus, OH, [3]Dorothy M. Davis Heart and Lung Research Institute, College of Medicine and Wexner Medical Center, The Ohio State University, Columbus, OH, [4]Department of Internal Medicine (Division of Pulmonary, Critical Care and Sleep Medicine), College of Medicine and Wexner Medical Center, The Ohio State University, Columbus, OH, [5]Department of Obstetrics and Gynecology (Division of Maternal-Fetal Medicine and Laboratory of Perinatal Research), College of Medicine and Wexner Medical Center, The Ohio State University, Columbus, OH

B298/P2155 **Hepatitis B virus-human chimeric transcript HBx-LINE1 serves as a molecular sponge specific for hepatocellular miR-122 and promotes hepatocellular carcinoma progression via depleting miR-122.** H. LIANG[1,2], X. Chen[2], Y. Liu[1], K. ZEN[2]; [1]Department of Biology, Georgia State University, Atlanta, GA, [2]School of life science, Nanjing University, Nanjing, China

B299/P2156 **Hepatitis B virus X protein induces the development of hepatocellular carcinoma by stabilizing HIF-1α.** I. Kang[1], S. Kang[1], H. Park[1], J. Kim[1], J. Lee[1], J. Ahn[1]; [1]Department of Microbiology Molecular Biology, Chungnam National University, Daejeon, Korea, South

B300/P2157 **Selected mitochondrial DNA landscapes activate the UPRmt to promote metastasis.** T.C. Kenny[1], D. Germain[1]; [1]Tisch Cancer Institute, Icahn School of Medicine at Mount Sinai, New York, NY

B301/P2158 **Glioma mouse models reveal subtype specific cell dynamics.** G.A. Shamsan[1], C.J. Liu[1], B.C. Braman[1], S.K. Rathe[2], R.L. Klank[1], B.R. Tschida[2], H. Clark[3], S.S. Rosenfeld[4], D.A. Largaespada[2,5], D.J. Odde[1]; [1]Biomedical Engineering, University of Minnesota, Minneapolis, MN, [2]Masonic Cancer Center, University of Minnesota, Minneapolis, MN, [3]Laboratory Medicine and Pathology, University of Minnesota, Minneapolis, MN, [4]Medical Oncology, Mayo Clinic, Jacksonville, FL, [5]Pediatrics, University of Minnesota, Minneapolis, MN

B302/P2159 **Characterization of anoikis-resistant endothelial cells after PIK3CA (phosphatidylinositol 4,5-bisphosphate 3-kinase, catalytic subunit alpha) gene silencing.** A.S. Mesquita[1], A.S. Cruz[1], S.A. Lopes[2], P.C. Pernambuco Filho[2], J.O. Onyeisi[1], C.C. Lopes[1,2], H.B. Nader[1]; [1]Bioquímica, Universidade Federal de São Paulo, São Paulo, Brazil, [2]Ciências Biológicas, Universidade Federal de São Paulo, São Paulo, Brazil

B303/P2160 **Effect of MTA3 overexpression on B16 melanoma cells.** B.A. Frommer[1], J.L. Cox[1]; [1]Biochemistry, ATSU, Kirksville, MO

B304/P2161 **Differential effect of human and bovine lactoferrins on breast cancer cells MDA-MB-231 and MCF-7.** N. Rodríguez-Ochoa[1], P. Cortes-Reynosa[1], J. Ramirez-Ricardo[1], M. De La Garza Amaya[1], E. Perez Salazar[1]; [1]Cell Biology, Center for Research and Advanced Studies of the National Polytechnic Institute, Mexico City, Mexico

B305/P2162 **Extracellular vesicles from MDA-MB-231 cell stimulated with linoleic acid promote migration and invasion through Src/FAK and PI3K/Akt signaling pathways.** J. Ramirez-Ricardo[1], E. Leal-Orta[1], M. Thompson-Bonilla [2], E. Perez Salazar[1]; [1]Biologia Celular, Centro de Investigación y de Estudios Avanzados del IPN, Ciudad de Mexico, Mexico, [2]Medicina Genomica, Hospital "Regional 1º de Octubre" ISSSTE., Ciudad de Mexico, Mexico

B306/P2163 **Role of PI3K/Akt2 on migration induced by extracellular vesicles from MDA-MB-231 breast cancer cells stimulated with linoleic acid in MCF10A cells.** E. Leal-Orta[1], J. Ramirez-Ricardo[1], O. Galindo-Hernandez[1], E. Perez Salazar[1]; [1]Biologia Celular, Cinvestav-IPN, Mexico, Mexico

Cancer Therapy: Novel Techniques and Therapeutics

B307/P2164 **Fast constitutive turnover of the potential ADC target Prolactin Receptor (PRLR) is mediated by a 21-amino acid region in its cytoplasmic domain.** J. Andreev[1], N. Thambi[2], A. Perez Bay[1], G. Thurston[1]; [1]Oncology & Angiogensis, Regeneron Pharmaceuticals, Tarrytown, NY, [2]Research, Advaxis, Princeton, NJ

B308/P2165 **Characterization of a novel anti-cancer compound that targets ch-TOG/CKAP5.** D. Jaunky[1], K. Larocque[1], B.B. Jaunky[1], P. Forgione[2], A.J. Piekny[1]; [1]Biology, Concordia University, Montreal, QC, [2]Chemistry, Concordia University, Montreal, QC

B309/P2166 **Hyperthermia upregulates SLC22A16 expression and downregulates ABCG2 expression via ROS production and enhances the cytotoxicity of doxorubicin.** H. Kurokawa[1], H. Ito[2], H. Matsui[1]; [1]Faculty of Medicine, University of TSUKUBA, 3058575, Japan, [2]Graduate School of Medical and Dental Sciences, Kagoshima University, 8908544, Japan

B310/P2167 **A novel anti-cancer drug disrupts or regresses a variety of multi-cellular tumor spheroids.** K. Larocque[1], D. Jaunky[1], S. Hong[2], J. Oh[2], A.J. Piekny[1]; [1]Biology, Concordia University, Montreal, QC, [2]Chemistry, Concordia University, Montreal, QC

B311/P2168 **Peptide antagonists of AGR2 inhibit cancer cell migration.** C. Garri[1], S. Howell[2], K. Tiemann[1], A. Tiffany[3], F. Jalali-Yazdi[3], T. Takahashi[2], R. Langraf[4], D. Agus[1,5], R. Roberts[2,3,5], K. Kani[1,5]; [1]Lawrence J. Ellison Institute for Transformative Medicine, University of Southern California, Los Angeles, CA, [2]Department of Chemistry, University of Southern California, Los Angeles, CA, [3]Mork Family Department of Chemical Engineering and Material Science, University of Southern California, Los Angeles, United States, [4]Department of Biochemistry and Molecular Biology, University of Miami, Miami, FL, [5]Norris Comprehensive Cancer Center, University of Southern California, Los Angeles, CA

B312/P2169 **Stressed out: DNA damage delivered at ultrahigh dose rates reduces cellular stress and apoptosis.** D.H. Al-Rawi[1], M. Rafat[1], S. Vemireddy [1], E. Schuler [1], P. Maxim [1], B.W. Loo[1], G. King[1]; [1]Department of Radiation Oncology, Stanford Medical School, Stanford, CA

B313/P2170 **9-Aminoacridine inhibits ribosome biogenesis and synergizes with cytotoxic drugs to induce selective killing of p53-deficient cells.** L. Anikin[1,2], D. Pestov[1]; [1]Cell Biology Neuroscience, Rowan University School of Osteopathic Medicine, Stratford, NJ, [2]Graduate School of Biomedical Sciences, Rowan University, Stratford, NJ

B314/P2171 **Telomerase-dependent maintenance of telomeres: involvement of hnRNP A1 and hnRNP A2.** T.V. Wang[1], C. Chen[2], Y. Hsiao[1], P. Huang[1], T. Wang[3]; [1]Molecular and Cellular Biology, Chang Gung University, Kwei-San, Taiwan, [2]Graduate Institute of Health Industry Technology, Chang Gung University of Science and Technology, Kwei-San, Taiwan, [3]Tissue Bank, Chang Gung Memorial Hospital, Kwei-San, Taiwan

B315/P2172 **HER2-targeting ADC containing cleavable linker for targeted therapy of HER2-positive gastric cancer.** S. Shin[1,2], Y. Park[3], S. Park[1,2], E. Ju[1,2], E. Ko[1,2], C. Chung[3], S. Song[1,2,4], S. Jeong[1,2], E. Choi[1,2,4]; [1]Institute for Innovative Cancer Research, Seoul, South Korea, [2]Center for Advancing Cancer Therapeutics, Seoul, South Korea, [3]New Drug Research Center, LegoChem Biosciences, Inc., Daejeon, South Korea, [4]Radiation Oncology, University of Ulsan College of Medicine, Seoul, South Korea

B316/P2173 **The Anti-melanoma Effects of Heat Shock Protein Inhibitors.** Y. Xiao[1], Y. Yan[1], Y. Yang[1]; [1]Department of Biological Sciences, Emporia State University, Emporia, KS

B317/P2174 **Internalization of CD239, a laminin receptor, in human breast cancer: a novel antigen for antibody-drug conjugates.** Y. Kikkawa[1], Y.O. Enomoto[2], A. Fujiyama[2], T. Fukuhara[3], N. Harashima[1], Y. Sugawara[1], K. Ikari[1], Y. Negishi[4], F. Katagiri[1], K. Hozumi[1], M. Nomizu[1], Y. Ito[2]; [1]Department of Clinical Biochemistry, Tokyo University of Pharmacy and Life Sciences, Hachioji, Japan, [2]Graduate School of Science and Engineering, Kagoshima University, Kagoshima, Japan, [3]Laboratory of Oncology, Tokyo University of Pharmacy and Life Sciences, Hachioji, Japan, [4]Department of Drug Delivery and Molecular Biopharmaceutics, Tokyo University of Pharmacy and Life Sciences, Hachioji, Japan

B318/P2175 **Dysregulation of human mitochondrial ClpP protease activity by acyldepsipeptides leads to apoptotic cell death.** K.S. Wong[1], M.F. Mabanglo[1], W.A. Houry[1]; [1]Department of Biochemistry, University of Toronto, Toronto, ON

B319/P2176 **Biomarker studies for identification of USP7i sensitive cancer cell lines.** B. Cunnion[1], I. Sokiriniy[1], L. Wang[2], J. Wu[1], C. Grove[1], S. Kumar[1], W.W. Hancock[2], F. Wang[1]; [1]Progenra Inc., Malvern, PA, [2]Division of Transplant Immunology, Department of Pathology and Laboratory Medicine, Children's Hospital of Philadelphia and University of Pennsylvania, Philadelphia, PA

B320/P2177 **Toxicological Effects of NCKU-21, a Phenanthrene Derivative, on Cell Growth and Migration of A549 and CL1-5 Human Lung Adenocarcinoma Cells.** C. Wu[1]; [1]Pharmacy, Taipei Medical University, Taipei, Taiwan

B321/P2178 ***In Vitro* Cytotoxicity Study of Mitochondria Targeted IR780-based NanoGUMBOS in Breast Cancer Cells.** M. Chen[1], N. Bhattarai[1], K.C. McDonough[2], R. Perez[1], I.M. Warner[1]; [1]Department of chemistry, Louisiana State University, Baton Rouge, LA, [2]Department of Food Science, Louisiana State University, Baton Rouge, LA

B322/P2179 **Selective Killing of Cancer Cells by Mixed-Charge Gold Nanoparticles Targeting Endo-Lysosomal System.** M. Borkowska[1], M. Siek[1], D. Kolygina[1], S. Lach[1], Y. Sobolev[1], Y. Jeong[1], K. Kandere-Grzybowska[1,2], B.A. Grzybowski[1,3]; [1]Center for Soft and Living Matter, Institute of Basic Science (IBS), Ulsan, Ulju-gun, South Korea, [2]School of Life Sciences, Ulsan National Institute of Science and Technology (UNIST), Ulsan, Ulju-gun, South Korea, [3]Department of Chemistry, Ulsan National Institute of Science and Technology (UNIST), Ulsan, Ulju-gun, South Korea

B323/P2180 **Nanoparticle-Neural Stem Cells for Targeted Ovarian Cancer Treatment.** Z.A. Patel[1], J.M. Berlin[1], W. Abidi[1]; [1]Molecular Medicine, City of Hope, Duarte, CA

B324/P2181 **Internalization and Uptake of Targeted Molecular Imaging Agents (TMIAs) Through Clathrin-Mediated Endocytosis.** N.A. Omar[1], E.A. Pattie[1], T.C. Anderson[1], C. Donahue[1], H.F. Schmitthenner[2], I.M. Evans[1]; [1]GSOLS, Rochester Institute of Technology, Rochester, NY, [2]Chemistry and Materials Science, Rochester Institute of Technology, Rochester, NY

B325/P2182 **Arrayed CRISPR-based imaging screen reveals that the coatomer subunit alpha (COPA) regulates surface expression of the ADC target prolactin receptor (PRLR).** A.E. Perez Bay[1], A. Kalsy[1], N. Thambi[1], T. Young[1], E. Pasnikowski[1], J. Andreev[1], C. Daly[1]; [1]Oncology-Angiogenesis, Regeneron Pharmaceuticals, Tarrytown, NY

B326/P2183 **Potential lung cancer therapy by the development of stigmasterol-solid lipid nanoparticles as drug delivery system.** Z. Torres[1], Y. Delgado[2], K.H. Griebenow[1]; [1]Chemistry, University of Puerto Rico, Rio Piedras, PR, [2]Biochemistry Pharmacology, San Juan Bautista School of Medicine, Caguas, PR

B327/P2184 **A novel bicyclic binder of a prostate cancer marker Glutamate Carboxypeptidase II.** K. Blažková[1,2], P. Šácha[2], J. Konvalinka[1,2]; [1]Developmental and Cell Biology, Faculty of Natural Sciences, Charles University, Prague, Czech Republic, [2]Proteases of Human Pathogens, Institute of Organic Chemistry and Biochemistry, Prague, Czech Republic

B328/P2185 **A human full length preparation of ERCC1-XPF suitable to test compounds targeted to DNA repair mechanisms.** D.J. Jay[1], M. Weinfeld[1]; [1]Experimental Oncology, Cross Cancer Institute, Edmonton, AB

MONDAY

B329/P2186 **Human radon exposure and a medium throughput system to study alpha particle irradiation in cellular assays.** F.K. Stanley[1], S. Zarezadeh[1], J.L. Irvine[1], C.D. Dumais[2], K. Dumais[2], A.A. Goodarzi[1]; [1]Biochemistry and Molecular Biology, University of Calgary, Calgary, AB, [2]Canadian Association of Radon Scientists and Technologists, Calgary, AB

B330/P2187 **Validation of label-free impedance-based technology for potency assessment of immune cell-mediated cytolysis and immune checkpoint modulation.** F. Cerignoli[1], B. Xi[1], B. Lamarche[1], N. Yu[1], L. Muir[1], Y. Abassi[1]; [1]ACEA Biosciences Inc, San Diego, CA

B331/P2188 **Pro-inflammatory macrophages-derived extracellular vesicles facilitate anticancer drug delivery to metastatic ovarian cancer.** L. Guo[1], Y. Zhang[1], C. Wang[1], M. Feng[1]; [1]School of Pharmaceutical Sciences, Sun Yat-sen University, Guangzhou, China

B332/P2189 **Acoustic Force Cytometry: high throughput cell-cell avidity screening and sorting.** W. Scheper[1], R. Braster[2], G. Sitters[2], F. Oswald[2], R.P. Driessen[2], T. Schumacher[1], A. Candelli[2]; [1]Department of Immunology, the Netherlands Cancer Institute, Amsterdam, Netherlands, [2]LUMICKS B.V., Amsterdam, Netherlands

B333/P2190 **Lipid Nanoparticles as Drug Delivery Systems for Cancer Therapy: Uptake and Response of Falcarindiol and Synthesis and Effect of Antibody Conjugated Nanoparticles.** M.K. Notabi[1], E. Ollé[1], P. Walke[2], M.Ø. Andersen[1], E.C. Arnspang[1]; [1]Department of Chemical Engineering, Biotechnology and Environmental Technology, University of Southern Denmark, Odense, Denmark, [2]Department of Cancer and Inflammation Research, University of Southern Denmark, Odense, Denmark

B334/P2191 **Combined nanotherapy based on MAPK kinase inhibitor and clinically approved cytotoxic agent for colorectal cancer.** B.A. Cisterna[1,2], S. Alamos[1], C. Vilos[1,2]; [1]Laboratory of Nanomedicine and Targeted Delivery, Center for Integrative Medicine and Innovative Science, Faculty of Medicine, Center for Bioinformatics and Integrative Biology, Faculty of Biological Sciences, Universidad Andres Bello, Santiago, Chile, [2]Center for the Development of Nanoscience and Nanotechnology (CEDENNA), Santiago, Chile

B335/P2192 **Novel Conjugation Chemistry for Antibody-Drug Conjugates.** T.I. Chio[1], K. Mukherjee[2], H. Gu[1], S. Ghosh[1], S.L. Bane[1]; [1]Chemistry, State University of New York at Binghamton, Binghamton, NY, [2]Medicine, Massachusetts General Hospital/Harvard Medical School, Boston, MA

Tumor Microenvironment 1

B336/P2193 **Investigating the role of microenvironmental stress in transcriptional control and cancer progression.** S. Chittiboyina[1], S. Jayaraman[1], K.B. Hodges[1], S.A. Lelievre[1]; [1]Basic Medical Sciences, Purdue University, West Lafayette, IN

B337/P2194 **Oscillatory HIF-1α induction promotes proliferation of hypoxic cells through a lactate dependent quorum autophagy response.** Kshitiz[1,2], J. Afzal[1], H. Chang[2], Y. Suhail[1], M. Hubbi[1], C. Dang[1,3], A. Levchenko[2]; [1]Medicine, The Johns Hopkins Medical Institutions, Baltimore, MD, [2]Biomedical Engineering, Yale University, New Haven, CT, [3]Abramson Cancer Center, University of Pennsylvania, Philadelphia, PA

B338/P2195 **Environmental availability of cystine drives usage of glutamine as a TCA cycle substrate and causes glutamine addiction.** A. Muir[1], L.V. Danai[1], D.Y. Gui[1], C.Y. Waingarten[1], C.A. Lewis[2], M.G. Vander Heiden[1,3]; [1]Koch Institute for Integrative Cancer Research and Department of Biology, Massachusetts Institute of Technology, Cambridge, MA, [2]Whitehead Institute for Biomedical Research and Department of Biology, Massachusetts Institute of Technology, Cambridge, MA, [3]Dana-Farber Cancer Institute, Boston, MA

B339/P2196 **One carbon metabolism-mediated protein methylation triggered by histidine regulates the filaments formation and preservation of CTP synthase.** W. Lin[1,2], A. Chakraborty[3], P. Wang[1,2], Y. Lee[1], L. Pai[1,2,3]; [1]Department of Biochemistry, College of Medicine, Chang Gung University, Taoyuan, Taiwan, [2]Molecular Medicine Research Center, College of Medicine, Chang Gung University, Taoyuan, Taiwan, [3]Graduate Institute of Biomedical Sciences, College of Medicine, Chang Gung University, Taoyuan, Taiwan

B340/P2197 **O-GlcNAcylation plays a role in galectin expression regulation in human cancer cell lines.** A.A. Sherazi[1], K. Jariwala[1], A.M. Cybulski[1], A.V. Timoshenko[1]; [1]Biology, The University of Western Ontario, London, ON

B341/P2198 **LIPID IMAGING IN PROSTATE CANCER.** C.A. Bader[1], A. Sorvina[1], R.D. Brooks[1], I.D. Johnson[1], E. Carter[2], P. Lay[2], E. Parkinson-Lawrence[1], M. Massi[3], S.E. Plush[1], D. Brooks[1]; [1]School of Pharmacy and Medical Science, University of South Australia, Adelaide, Australia, [2]Vibrational Spectroscopy Core Facility and School of Chemistry, The University of Sydney, Sydney, Australia, [3]School of Chemistry, Curtin University, Perth, Australia

B342/P2199 **Optimization of a Chromatin Immunoprecipitation Assay to Assess Target Genes of the *FOXC2* Transcription Factor in Melanoma.** D.Z. Bushhouse[1], K.M. Hargadon[1]; [1]Biology, Hampden-Sydney College, Hampden-Sydney, VA

B343/P2200 **Optogenetic manipulation and monitoring of YAP signalling in tumours.** A.M. Dowbaj[1], M. Montagner[1], R. Jenkins[1], M. Jiang[2], K.M. Hahn[3], M. Howell[2], E. Sahai[1]; [1]Tumour Cell Biology Laboratory, The Francis Crick Institute, London, United Kingdom, [2]High Throughput Screening Laboratory, The Francis Crick Institute, London, United Kingdom, [3]Department of Pharmacology, UNC Chapel Hill School of Medicine, Chapel Hill, NC

B344/P2201 **A low affinity leukotriene B4 receptor-2 regulates proliferation of malignant Colon Cancer Cells.** J. Park[1], J. Kim[1]; [1]Department of Biotechnology, College of Life Sciences and Biotechnology, Korea university, Seoul, Korea, South

B345/P2202 **Transmembrane 4 L six family member 5 (TM4SF5) forms complex with SLC members for cell survival and homeostasis.** J. Kim[1], J. Lee[1]; [1]Pharmacy, Seoul National University, Seoul, Korea, South

B346/P2203 **Large-scale expansion and banking of novel 2D and 3D cancer models from the Human Cancer Models Initiative: Results of a pilot study.** J. Clinton[1], A. Ruchinskas[1], P. McWilliams-Koeppen[1], S. Paul[1], D. Yin[1], R. Newman[1]; [1]ATCC Cell Systems, ATCC, Gaithersburg, MD

B347/P2204 **TISSUE PROTEOME ANALYSIS OF HORMONE RECEPTOR-POSITIVE BREAST CANCER.** K. Karaosmanoglu Yoneten[1], A. Gunes[2], M. KASAP[3], N.Z. Utkan[4], G. AKPINAR[3], B. Gurel[5], S.A. Guler[4]; [1]Department of Biomedical Engineering, Technology Faculty, Kocaeli University, Kocaeli, Turkey, [2]Department of General Surgery, Derince Training and Research Hospital, Kocaeli, Turkey, [3]Department of Medical Biology, Medical Faculty, Kocaeli University, Kocaeli, Turkey, [4]Department of General Surgery, Medical Faculty, Kocaeli University, Kocaeli, Turkey, [5]Department of Medical Pathology, Medical Faculty, Kocaeli University, Kocaeli, Turkey

B348/P2205 **The importance of cellular oxygenation measurements in the analysis of hypoxia-induced signalling and related metabolic adaptation.** M. Potter[1], J. Hynes[2], A. Nijhuis[3], C. Carey[2], C. Zois[1], A. Harris[1], H. Keun[3], K. Morten[1]; [1]University of Oxford, Oxford, United Kingdom, [2]Luxcel Biosciences, Cork, Republic of Ireland, [3]Imperial College London, London, United Kingdom

B349/P2206 **Tunneling Nanotubes (TNTs) mediate bidirectional transfer of specific vesicular cargo and proteins between leukemia and stroma cells.** M.D. Kolba[1], M. Zareba-Koziol[2], W. Dudka-Ruszkowska[1], A. Kominek[1], K. Srpan[3], J. Wlodarczyk[2], D.M. Davis[3], K. Piwocka[1]; [1]Laboratory of Cytometry, Department of Biochemistry, Nencki Institute of Experimental Biology, Polish Academy of Sciences, Warsaw, Poland, [2]Laboratory of Cell Biophysics, Department of Molecular and Cellular

Neurobiology, Nencki Institute of Experimental Biology, Polish Academy of Sciences, Warsaw, Poland, [3]Manchester Collaborative Centre for Inflammation Research, University of Manchester, Manchester, United Kingdom

B350/P2207 **3-D Carcinoma Cell Culture Model for in vitro Evaluation of Anticancer Drugs.** N. Hansraj[1], F. Guitteye[1,2], A. Madabushi[1], L. Jackson[1,3]; [1]Natural Physical Sciences, Baltimore City Community College, Baltimore, MD, [2]Department of Biology, Morgan State University, Baltimore, MD, [3]Department of Biology, University of Maryland, Baltimore County, Baltimore, MD

Chromatin and Chromosome Organization

B352/P2208 **CRISPR-Based DNA Imaging in Living Cells Reveals Cell Cycle-Dependent Chromosome Dynamics.** H. Ma[1], L. Tu[2], A. Naseri[3], Y. Chung[4], D. Grunwald[2], S. Zhang[3], T. Pederson[1]; [1]Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School, Worcester, MA, [2]RNA Therapeutics Institute, University of Massachusetts Medical School, Worcester, MA, [3]Department of Computer Science, University of Central Florida, Orlando, MA, [4]Kavli Institute for the Physics and Mathematics of the Universe, University of Tokyo, Tokyo, Japan

B353/P2209 **Measuring local chromatin compaction using fluorescence lifetime imaging.** P. Choppakatla[1], H. Funabiki[1]; [1]Funabiki Lab, Rockefeller University, New York, NY

B354/P2210 **Structure and dynamics of the Polycomb body.** J. Smigova[1], P. Juda[1], O. Raska[1], E. Bartova[1,2], I. Raska[1]; [1]Charles University, First Faculty of Medicine, Prague, Czech Republic, [2]Institute of Biophysics of the CAS, v.v.i., Brno, Czech Republic

B355/P2211 **Condensin II drives large-scale chromatin folding and genome compartmentalization in Drosophila.** L.F. Rosin[1], S. Nguyen[1], O. Crocker[1], E. Joyce[1]; [1]Genetics, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA

B356/P2212 **BAC transgene arrays as a system to dissect regulatory elements of large-scale chromatin organization.** B. Zhao[1], A.S. Belmont[1]; [1]Cell and Developmental Biology, University of Illinois, Urbana, IL

B357/P2213 **DNA Helicase and temperature regulation of mitotic chromosome condensation.** D. Shen[1], R.V. Skibbens[1]; [1]Biological Sciences, Lehigh University, Bethlehem, PA

B358/P2214 **Genome organization and metastatic potential in breast cancer.** M. Gaillard[1], J. Cutler[1], T. Luperchio[1], B. Brener[2], P. Wu[3], J. Taylor[2], D. Writz[3], K. Reddy[1]; [1]Biological Chemistry, Johns Hopkins University, School of Medicine, Center for Epigenetics, Baltimore, MD, [2]Biology and Computer Science, Johns Hopkins University, Baltimore, MD, [3]Chemical and Biomolecular Engineering, Johns Hopkins University, Institute for Nanobiotechnology, Baltimore, MD

B359/P2215 **Lamina associated domain dynamics during cell cycle investigated by super-resolution microscopy.** E. DeBoy[1], J. Cutler[1], M. Gaillard[1], K. Reddy[1]; [1]Biological Chemistry, Johns Hopkins University School of Medicine, Baltimore, MD

B360/P2216 **Extracellular divalent ions rescue aberrant nuclear morphology through a novel heterochromatin formation pathway.** P.Z. Liu[1], A.D. Stephens[1], L.M. Almassalha[2], H. Chen[3,4], T. O'Halloran[3,4], V. Backman[2], S.A. Adam[5], R.D. Goldman[5], E.J. Banigan[6], J.F. Marko[1,6]; [1]Department of Molecular Biosciences, Northwestern University, Evanston, IL, [2]Department of Biomedical Engineering, Northwestern University, Evanston, IL, [3]The Chemistry of Life Processes Institute, Northwestern University, Evanston, IL, [4]Department of Chemistry and Department of Molecular Biosciences, Northwestern University, Evanston, IL, [5]Department of Cell and Molecular Biology, Northwestern University Feinberg School of Medicine, Chicago, IL, [6]Department of Physics and Astronomy, Northwestern University, Evanston, IL

B361/P2217 **Characterization of nucleolar-localized H4 histone variant, H4G.** M. Long[1], W. Shi[1], X. Sun[1], T. Ishibashi[1]; [1]Life Science, The Hong Kong University of Science and Technology, HONG KONG, Hong Kong

Epigenetics and Chromatin Remodeling

B362/P2218 **Hippocampal Neuron Stimulation Promotes Intracellular Tip60 HAT Dynamics with Concomitant Genome Reorganization and Synaptic Gene Activation.** A.M. Karnay[1], F. Elefant[2]; [1]Neurobiology and Anatomy, Drexel University, Philadelphia, PA, [2]Biology, Drexel University, Philadelphia, PA

B363/P2219 **β-actin dependent global chromatin organization and gene expression programs control cellular identity.** X. Xie[1], B. Almuzaini[2], N. Drou[1], S. Kremb[1], A. Yousif[1], A. Ostlund Farrants[3], K. Gunsalus[1,4], P. Percipalle[1,3]; [1]Biology Program, New York University - Abu Dhabi, Abu Dhabi, United Arab Emirates, [2]Department of Medical Genomic, King Abdullah International Medical Research Center, Ryad, Saudi Arabia, [3]Molecular Biosciences, The Wenner-Gren Institute, Stockholm University, Stockholm, Sweden, [4]Center for Genomics and Systems Biology and Department of Biology, New York University, New York, United States

B364/P2220 **PRC2-Ezh1 mediates transcription of hippocampal genes.** M.A. Saez[1], B. Van Zundert[1], M. Montecino[1]; [1]Center for Biomedical Research, Andres Bello University, Santiago, Chile

B365/P2221 **Chromatin dependent glucocorticoid receptor plasticity within the cancer genome.** J.A. Hoffman[1], K.W. Trotter[1], T.K. Archer[1]; [1]Epigenetics and Stem Cell Biology Laboratory, National Institute of Environmental Health Sciences, Research Triangle Park, NC

B366/P2222 **CEBPs orchestrates distinct enhancer landscapes in liver versus adipose tissue.** D.M. Cohen[1,2], J.R. Remsberg[1,2], M.A. Lazar[1,2,3], B.A. Garcia[4], D.J. Steger[1,2]; [1]The Institute for Diabetes, Obesity, and Metabolism, University of Pennsylvania, Philadelphia, PA, [2]Division of Endocrinology, Diabetes, and Metabolism, University of Pennsylvania, Philadelphia, PA, [3]Genetics, University of Pennsylvania, Philadelphia, PA, [4]Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA

B367/P2223 **Comparative chromatin proteome analysis in Xenopus egg extracts identified the bipartite nucleosome remodeling complex, composed of HELLS-CDCA7, whose defects cause ICF syndrome.** C. Jenness[1], H. Funabiki[1]; [1]Lab of Chromosome and Cell Biology, The Rockefeller University, New York, NY

B368/P2224 **Measuring DNA Methyltransferase Activity in Breast Cancer Cells.** M. Muyalde[1], L.A. Duran [1], L. Delgado-Cruzata[1]; [1]Program for Research Initiatives in Science and Math, John Jay College of Criminal Justice, New York, NY

B369/P2225 **Dissecting the synthetic lethality between *htz1Δ* and *RPB2-2^SL^*: the interplay between RNA Pol II and the nucleosome dynamics.** M.S. Santisteban[1], C.L. Bright[1], E.G. Gerges[1]; [1]Biology, University of North Carolina at Pembroke, Pembroke, NC

B370/P2226 **Investigating the role of NuA4 and Swr1 in regulating RNA splicing in *Saccharomyces cerevisiae*.** T.S. Gunning[1], L.M. Palfini[1], R.S. Maisner[1], X. Cheng[2], J. Cote[1], T.L. Kress[1]; [1]Biology, The College of New Jersey, Ewing, NJ, [2]St-Patrick Research Group in Basic Oncology, Laval University Cancer Research Center, Quebec City, Canada

B371/P2227 **Elucidating the function of histone H4 acetylation in RNA splicing in *Saccharomyces cerevisiae*.** A.G. Mendizabal[1], J.S. Kopew[1], N. Paripati[1], T.L. Kress[1]; [1]Biology, The College of New Jersey, Ewing, NJ

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B372/P2228 **Age-related changes in diurnal non-coding RNA correlates with changes in genome-wide facultative heterochromatin.** J. Park[1], W. Belden[1]; [1]Animal Sciences Department, Rutgers University, The State University of New Jersey, New Brunswick, NJ

B373/P2229 **Neurodegenerative Disease Proteinopathies Are Connected To Distinct Histone Post-Translational Modifications.** M.P. Torrente[1]; [1]Chemistry, Brooklyn College- City University of New York, Brooklyn, NY

Nucleocytoplasmic Transport

B375/P2230 **Nuclear Envelope As A Physical Barrier In Electrotransfection.** L.D. Cervia[1], L. Wang[1], C. Chang[1], M. Mao[1], F. Yuan[1]; [1]Biomedical Engineering, Duke University, Durham, NC

B376/P2231 **Characterizing mRNA export at high resolution in individual nuclear pores in single cells.** R. Ben-Yisahy[1], A. Ashkenazy[1], A. Mor[1], A. Shraga[1], Y. Garini[2], Y. Shav-Tal[1]; [1]Faculty of Life Sciences, Bar-Ilan University, Ramat Gan, Israel, [2]Department of Physics, Bar-Ilan University, Ramat Gan, Israel

B377/P2232 **Identification of a small, PH domain-embedded region responsible for the nuclear-cytoplasmic distribution of RGNEF.** M. Tavolieri[1], C. Droppelmann[2], D. Campos-Melo[2], K. Volkening[1], M. Strong[1]; [1]Department of Clinical Neurological Sciences, Schulich School of Medicine Dentistry, Western University, London, ON, [2]Molecular Medicine Group, Robarts Research Institute, London, ON

B378/P2233 **The role of specific sequence patterns of FG Nups on transport through the NPC.** M. Peyro[1], V.S. Nibber[1], M. Soheilypour[1], M. Mofrad[1]; [1]Bionegineering and Mechanical Engineering, University of California Berkeley, Berkeley, CA

B379/P2234 **Quantitative analysis of nuclear translocation of ERK by using a novel single molecule technique.** K. Mouri[1], Y. Okada[1,2]; [1]QBiC, RIKEN, Osaka, Japan, [2]Grad. Sch. Sci., Dept. Phys., Univ. Tokyo, Tokyo, Japan

B380/P2235 **Super-resolution microscopy reveals the transport route of transmembrane proteins into the nucleus.** K.C. Mudumbi[1], R. Czapiewski[2], W. Luo[1], E. Schirmer[2], W. Yang[1]; [1]Biology, Temple University, Philadelphia, PA, [2]The Wellcome Trust Centre for Cell Biology, University of Edinburgh, Edinburgh, United Kingdom

B381/P2236 **High nuclear export efficiency and conformational changes of pre-ribosomal subunits revealed by high-speed super-resolution microscopy.** J. Kelich[1], A. Goryaynov[1], K. Herbine[1], W. Yang[1]; [1]Biology, Temple University, Philadelphia, PA

B382/P2237 **Karyopherins regulate nuclear pore complex barrier and transport function.** L.E. Kapinos[1], B. Huang[1], C. Rencurel[1], R.Y. Lim[1]; [1]Biozentrum, University of Basel, Basel, Switzerland

B383/P2238 **A novel role for the Calcineurin phosphatase at the nuclear pore.** C.P. Wigington[1], J. Roy[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 Bimolecular and Biomedical Research, University College Dublin, Dublin, Republic of Ireland, [3]Chemistry-BMC, Uppsala University, Uppsala, Sweden, [4]Lunenfeld-Tanenbaum Research Institute at Mount Sinai Hospital, University of Toronto, Toronto, Canada

B384/P2239 **Soluble host factors CPSF6 and CypA determine the HIV-1 nuclear import pathway.** G. Xue[1], H. Yu[1], S. Goh[2], A. Gres[3], S. Sarafianos[3], J. Luban[2], V.N. KewalRamani[1]; [1]Center for Cancer Research, National Cancer Institute, Frederick, MD, [2]Program in Molecular Medicine, University of Massachusetts Medical School, Worcester, MA, [3]Biochemistry, University of Missouri, Columbia, MO

B385/P2240 **In vivo analysis of RanBP1 and RanBP3 roles in Ran-GTP gradient formation and Ran pathway function.** K. Yau[1], A. Arnaoutov[1], M. Dasso[1]; [1]NICHD, NIH, Bethesda, MD

B386/P2241 **Altering NTF2 levels in melanoma cell lines affects cancer cell characteristics.** L.D. Vukovic[1], B.A. Stohr[2], D.L. Levy[1]; [1]Department of Molecular Biology, University of Wyoming, Laramie, WY, [2]Department of Pathology, University of California, San Francisco, CA

B387/P2242 **Mechanistic Study of the Attenuation of Androgen Receptor Expression Level by TSG101-ART27 Interaction.** Y. Lin[1], P. Ouyang[1]; [1]Anatomy, Chang Gung University, Taoyuan, Taiwan

B388/P2243 **Structural determinants of Dnase1L3 that alter its localization during inflammation.** J.J. McCord[1,2], F. Harsini[2], K.N. Abbott[1], S. Chebrolu[2], R. Sutton[2,3], P.A. Keyel[1]; [1]Biological Sciences, Texas Tech University, Lubbock, TX, [2] Cell Physiology and Molecular Biophysics, Texas Tech University Health Science Center, Lubbock, TX, [3]Center for Membrane Protein Research, Texas Tech University Health Sciences Center, Lubbock, TX

B389/P2244 **Tau protein disrupts nucleocytoplasmic transport in Alzheimer's disease.** B. Eftekharzadeh[1], G. Daigle[2], L.E. Kapinos[3], C. Cook[4], S. Dujardin[1], Y. Carlomango[4], A. Amaral[1], S. Wegmann[1], L. Petrucelli[4], J. Rothstein[2], B. Hyman[1]; [1]Neurology, Massachusetts General Hospital/ Harvard Medical school, Boston, MA, [2]Neurology, Johns Hopkins University/Brain Science Institute, Baltimore, MD, [3] Biozentrum, University of Basel, Basel, Switzerland, [4]Department of Neuroscience, Mayo Clinic, Jacksonville, FL

B390/P2245 **ROCK-dependent phosphorylation of NUP62 regulates p63 nuclear transport in squamous cell carcinoma.** M. Hazawa[1], A. Kobayashi[1], R. Wong[1]; [1]Institute for Frontier Science Initiative, Kanazawa University, Kanazawa, Japan

The Nuclear Envelope and Nuclear Pore Complexes 1

B391/P2246 **A nuclear localization signal is sufficient to target membrane proteins to the nuclear envelope in plants.** N.R. Groves[1], J.F. McKenna[2], I. Meier[1,3]; [1]Molecular Genetics, The Ohio State University, Columbus, OH, [2]Biological and Medical Sciences, Oxford Brookes University, Oxford, United Kingdom, [3]Center for RNA Biology, The Ohio State University, Columbus, OH

B392/P2247 **Biochemical fractionation of *Xenopus* extract to identify components limiting for nuclear growth.** P. Chen[1], K. Nelson[2], M. Tomschik[1], J.C. Gatlin[1], J.S. Oakey[2], D.L. Levy[1]; [1]Molecular Biology, University of Wyoming, LARAMIE, WY, [2]Chemical Petroleum Engineering, University of Wyoming, LARAMIE, WY

B393/P2248 **SPOP regulates the levels of the nuclear pore protein NupJ.** J. Ong[1], J.Z. Torres[1]; [1]Department of Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles, CA

B394/P2249 **Actin facilitates nuclear envelope breakdown by separating nuclear membranes from the lamina in starfish oocytes.** N. Wesolowska[1], P. Machado[2], M. Mori[3], U. Matti[1], Y. Schwab[1,2], P. Lénárt[1]; [1]Cell Biology and Biophysics, European Molecular Biology Laboratory, Heidelberg, Germany, [2]Electron Microscopy Core Facility, European Molecular Biology Laboratory, Heidelberg, Germany, [3]Center of Developmental Biology, Riken, Japan

B395/P2250 **Mixing of parental genomes after fertilization in *C. elegans* involves fusion and fenestration of pronuclear membranes.** M.M. Rahman[1], I. Chang[2], A.S. Harned[2], K. Narayan[2], O. Cohen-Fix[1]; [1]Laboratory of Cell Molecular Biology, National Institute of Diabetes Digestive Kidney Diseases, Bethesda, MD, [2]Center for Molecular Microscopy, Frederick National Laboratories for Cancer Research, Frederick, MD

B396/P2251 **Basket nucleoporins "fingerprints".** V. Aksenova[1], A. Smith[1], H. Lee[1], S. Chen[1], S.G. Regmi[1], C. Echeverria[1], A. Arnaoutov[1], M. Dasso[1]; [1]Division of Molecular and Cellular Biology, National Institute of Child Health and Human Development, Bethesda, MD

B397/P2252 **Analysis of individual subunits within the Nup107-160 complex of the Nuclear Pore.** S.G. Regmi[1], V. Aksenova[1], S. Chen[1], A. Arnaoutov[1], H. Lee[1], A. Smith[1], C. Echeverria[1], E.A. Turcotte[1], M. Dasso[1]; [1]Division of Molecular and Cellular Biology, National Institute of Child Health and Human Development, Bethesda, MD

B398/P2253 **Nucleoporin-dependence of Karyopherin Dynamics in Mammalian Cells.** C. Echeverria[1], K. Plevock Haase[1], S.G. Regmi[1], S. Chen[1], V. Aksenova[1], A. Smith[1], A. Arnaoutov[1], M. Dasso[1]; [1]NICHD, National Institutes of Health, Bethesda, MD

B399/P2254 **Functional analysis of nucleoporins on the cytoplasmic face of the nuclear pore complex.** S. Chen[1], V. Aksenova[1], S.G. Regmi[1], A. Arnaoutov[1], H. Lee[1], A. Smith[1], C. Echeverria[1], E.A. Turcotte[1], M. Dasso[1]; [1]Division of Molecular and Cellular Biology, National Institute of Child Health and Human Development, Bethesda, MD

B400/P2255 **Torsin A expression in budding yeast reveals a connection to conserved lumenal domains of the nuclear pore complex.** M. Chalfant[1], C. Zhao[2], S. Borah[1], K.W. Barber[3], C.D. Schlieker[1,2], P. Lusk[1]; [1]Department of Cell Biology, Yale School of Medicine, New Haven, CT, [2]Department of Molecular Biophysics and Biochemistry, Yale University, New Haven, CT, [3]Department of Cellular and Molecular Physiology, Yale School of Medicine, New Haven, CT

B401/P2256 **Chm7/CHMP7 is recruited to nuclear envelope herniations through the winged helix domain of Heh1/LEM2.** D.J. Thaller[1], S. Borah[1], M. Allegretti[2], P. Ronchi[3], M. Beck[2], P. Lusk[1]; [1]Cell Biology, Yale School of Medicine, New Haven, CT, [2]Structural and Computational Biology Unit, European Molecular Biology Laboratory (EMBL), Heidelberg, Germany, [3]Electron Microscopy Core Facility, European Molecular Biology Laboratory (EMBL), Heidelberg, Germany

B402/P2257 **Towards defining the interactome of LEM-domain proteins and ESCRTs during nuclear pore complex biogenesis.** S. Borah[1], D.J. Thaller[1], Z. Hakhverdyan[2], M.P. Rout[2], P. Lusk[1]; [1]Department of Cell Biology, Yale University, New Haven, CT, [2]Laboratory of Cellular and Structural Biology, The Rockefeller University, New York, NY

B403/P2258 **DNA-origami based platforms for investigating the properties of FG-nups within nuclear pore complex-like architectures.** Q. Shen[1], P.E. Fisher[1], B. Akpinar[2], K.K. Chung[1], T.J. Melia[1], B. Hoogenboom[2,3], C. Lin[1], P. Lusk[1]; [1]Department of Cell Biology, Yale University School of Medicine, New Haven, CT, [2]London Centre for Nanotechnology, University College London, London, United Kingdom, [3]Chemistry Department, Imperial College London, London, United Kingdom

B404/P2259 **Nuclear Pore Selective Barrier Dynamics as Revealed by High-Speed Atomic Force Microscopy in Colorectal Cancer Cells.** M.S. Mohamed[1,2,3], A. Kobayashi[1,2,3], A. Taoka[3], T. Watanabe-Nakayama[2], Y. Kikuchi[3], M. Hazawa[1,2,3], T. Minamoto[4], Y. Fukumori[3], N. Kodera[2], T. Uchihashi[2], T. Ando[2], R. Wong[1,2,3]; [1]Cell-Bionomics Research Unit, Innovative Integrated Bio-Research Core, Institute for Frontier Science Initiative, Kanazawa University, Ishikawa, Kanazawa, Kakuma-machi, Japan, [2]Bio-AFM Frontier Research Center, Kanazawa University, Ishikawa, Kanazawa, Kakuma-machi, Japan, [3]Division of Natural System, School of Natural Science and Technology, Kanazawa University, Ishikawa, Kanazawa, Kakuma-machi, Japan, [4]Division of Translational and Clinical Oncology, Cancer Research Institute, Kanazawa University, Ishikawa, Kanazawa, Kakuma-machi, Japan

B405/P2260 **Complete 3D mapping of FG domains for all eleven FG-Nups in living cell NPCs using super-resolution microscopy.** J. Yu[1], J. Kelich[1], Y. Li[1], J. Kim[1], N. Guessaymi[1], M. Klein[1], W. Yang[1]; [1]Biology, Temple University, Philadelphia, PA

B406/P2261 **Correlative Light and Electron Microscopy at the Nuclear Envelope Herniations.** M. Allegretti[1], D.J. Thaller[2], P. Ronchi[3], Y. Schwab[3,4], P. Lusk[2], M. Beck[1,4]; [1]Structural and Computational Biology Unit, European Molecular Biology Laboratory, Heidelberg, Germany, [2]Department of Cell Biology, Yale School of Medicine, New haven, CT, [3]Electron Microscopy Core Facility, European Molecular Biology Laboratory, Heidelberg, Germany, [4]Cell Biology and Biophysics Unit, European Molecular Biology Laboratory, Heidelberg, Germany

B407/P2262 **Opening windows into the Cell: taking the next step in Structural Biology.** G. Heiss[1], A. Rigort[1], D. Rossum[1]; [1]Analytical Instruments, Thermo Fisher Scientific, Eindhoven, Netherlands

B408/P2263 **On the microrheology of the Nuclear Pore Complex: Nature evolved a novel super nanopore!.** R. Moussavi-Baygi[1], M. Mofrad[1]; [1]Applied Science & Technology, UC Berkeley, Berkeley, CA

B409/P2264 **Genome-wide screen indicates that the spatial organization of genomes is dynamically regulated by transcription factors.** D.G. Brickner[1], J.H. Brickner[1]; [1]Molecular Biosciences, Northwestern University, Evanston, IL

B410/P2265 **Sphingolipid homeostasis is critical for nuclear envelope integrity.** S. Hwang[1], E.M. Torres[1]; [1]Molecular, Cell and Cancer Biology, UMass Medical School, Worcester, MA

B411/P2266 **Nuclear envelope defects on *S. japonicus* lagging chromosomes.** I. Lee[1,2], E. Stokasimov[1,2], D. Pellman[1,2,3]; [1]Pediatric Oncology, Dana-Farber Cancer Institute, Boston, MA, [2]Cell Biology, Harvard Medical School, Boston, MA, [3]Howard Hughes Medical Institution, Chevy Chase, MD

B412/P2267 **Analysis of Gp210 function in *Drosophila melanogaster*.** B. Jenkins[1], B.N. Darwin[1], A. Chang[1], C. Lambo[1], S.D. Speese[1]; [1]Neurology, Oregon Health and Science University, Portland, OR

B413/P2268 **Aurora B-mediated exclusion of HP1a from late-segregating chromatin prevents formation of micronuclei.** B. Warecki[1], W. Sullivan[1]; [1]MCD Biology, UC Santa Cruz, Santa Cruz, CA

Membrane Fission and Coat Proteins

B415/P2269 **The Structural Basis of an ESCRT-III Membrane Assembly.** H.C. Nguyen[1], N. Talledge[1,2], J. McCullough[2], D.M. Wenzel[2], J.J. Skalicky[2], W.I. Sundquist[2], A. Frost[1,2,3]; [1]Department of Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA, [2]Department of Biochemistry, University of Utah, Salt Lake City, UT, [3]Chan Zuckerberg Biohub, San Francisco, CA

B416/P2270 **A new model for COPII-mediated cargo export from the endoplasmic reticulum.** O. Shorn[1], I. Nevo-Yassaf[1], T. Aviad[1], J. Shepchelovich[1], Y. Yaffe[1], E. Perlson[2], A. Yeheskel[3], M. Pasmanik-Chor[3], G.H. Patterson[4], C. Kaether[5], K. Hirschberg[1]; [1]Pathology, Tel Aviv University, Tel Aviv, Israel, [2]Physiology and Pharmacology, Tel Aviv University, Tel Aviv, Israel, [3]Bioinformatics Unit, G.S.W. Faculty of Life Sciences, Tel Aviv University, Tel Aviv, Israel, [4]Section on Biophotonics, NIBIB, National Institutes of Health, Bethesda, MD, [5]Leibniz Institute for Age Research, Fritz Lipmann Institute, Jena, Germany

B417/P2271 **"Clusterase" model of dynamin-mediated membrane fission.** T. Takeda[1], T. Kozai[2], H. Yang[1], S. Kaho[1], K. Yusuke [2], A. Tadashi [1], Y. Hiroshi [1], T. Uchihashi[3], T. Ando[4], K. Takei[1]; [1]Neuroscience, Okayama University, Okayama, Japan, [2]Physics, Kanazawa University, Kanazawa, Japan, [3]Physics, Nagoya University, Nagoya, Japan, [4]Bio-AFM Frontier Research Center, Kanazawa University, Kanazawa, Japan

B418/P2272 **Structural Basis of Mitochondrial Receptor Binding and GTP-Driven Conformational Constriction by Dynamin-Related Protein 1.** R. Kalia[1,2], R.Y. Wang[1], A. Yusuf[1], P.V. Thomas[1], D.A. Agard[1], J.M. Shaw[2], A. Frost[1,2]; [1]Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA, [2]Biochemistry, University of Utah, Salt Lake City, UT

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B419/P2273 **Escaping the bar: modulating dynamin function and T-tubule maintenance through SH3-PRD domain interaction.** J. Laiman[1], Y. Liu[1]; [1]Institute of Molecular Medicine, National Taiwan University, Taipei, Taiwan

B420/P2274 **Identification of cargoes trafficked by the retromer and CCC complexes using quantitative proteomics.** S. Swarup[1], C. Bell[1], J.A. Paulo[1], S.P. Gygi[1], J.W. Harper[1]; [1]Department of Cell Biology, Harvard Medical School, Boston, MA

Rab GTPases

B421/P2275 **A Rab32 trafficking pathway that prevents bacterial infections.** M. Baldassarre[1], V. Solano-Collado[1], D. Mancuso[1], S. Spano[1]; [1]Institute of Medical Sciences, University of Aberdeen, Aberdeen, United Kingdom

B422/P2276 **Regulation of connecdenn/DENND1 guanine nucleotide exchange factor activity by Arf5.** G. Kulasekaran[1], M. Girard[1], M. Fotouhi[1], P.S. McPherson[1]; [1]Department of Neurology and Neurosurgery, Montreal Neurological Institute, McGill University, Montreal, QC

B423/P2277 **Arf6 is a negative regulator of axonal elongation in cultured rat hippocampal neurons.** S. Alvarez[1,2], F. Bodaleo[1,2], M. Fukuda[3], C.E. Gonzalez-Billault[1,2]; [1]Biology, Universidad de Chile, Santiago, Chile, [2]Geroscience Center for Brain Health and Metabolism, Santiago, Chile, [3]Tohoku University, Sendai, Japan

B424/P2278 **Cdk5-dependent phosphorylation of GRAB, a guanine nucleotide exchange factor for Rab8, regulates neuronal migration in the developing cerebral cortex.** K. Furusawa[1], A. Asada[1], C. Gonzalez-Billaul[2,3], M. Fukuda[4], S. Hisanaga[1]; [1]Biological Sciences, Tokyo Metropolitan University, Minami-Osawa, Japan, [2]Biology, Universidad de Chile, Las Palmeras, Chile, [3]FONDAP Geroscience Center for Brain Health and Metabolism, Santiago, Chile, [4]Developmental Biology and Neurosciences, Tohoku University, Sendai, Japan

B425/P2279 **Disruption of Rab8a and Rab11a causes formation of basolateral microvilli in neonatal enteropathy.** Q. Feng[1], E.M. Bonder[1], A.C. Engevik[2], L. Zhang[1,3,4], M.J. Tyska[5], J.R. Goldenring[2,5,6], N. Gao[1,4]; [1]Department of Biological Sciences, Rutgers University, Newark, NJ, [2]Department of Surgery, and Epithelial Biology Center, Vanderbilt University School of Medicine, Nashville, TN, [3]Department of Pathology, University Medical Center of Princeton, Plainsboro, NJ, [4]Rutgers Cancer Institute of New Jersey,, Piscataway, NJ, [5]Department of Cell Developmental Biology, Vanderbilt University School of Medicine, Nashville, TN, [6]Nashville VA Medical Center, Nashville, TN

B426/P2280 **Intracellular logistics of LIS1, cytoplasmic dynein, and unconventional microtubules.** M. Yamada[1]; [1]Cell Biology & Biochemistry, University of Fukui, Yoshida-Gun, Fukui Prefecture, Japan

B427/P2281 **The small GTPase Rab10 regulates the formation of tubular endosomes.** K. Etoh[1], M. Fukuda[1]; [1]Department of Developmental Biology and Neurosciences, Tohoku University, Sendai, Japan

B428/P2282 **Rab4 and Rab14 effector Rabip4' interacts with lysosomal small GTPase Arl8b and promotes cargo trafficking to lysosomes.** R. Marwaha[1], P. Chawla[1], D. Khatter[1], M. Sharma[1]; [1]Department of Biological Sciences, Indian Institute of Science Education and Research, Mohali, S.A.S Nagar, Mohali, 140306, India

B429/P2283 **Role of Small GTPases on differentiation of pre-adipocyte.** Y. Huang[1], M. Veisaga[2], M.A. Barbieri[3,4,5]; [1]Chemistry and Biochemistry, FIU, Miami, FL, [2]Biomolecular Science Institute, FIU, Miami, FL, [3]Biological Sciences, FIU, Miami, FL, [4]International Center for Tropical Botany, FIU, Miami, FL, [5]Fairchild Tropical Botanic Garden, Miami, FL

B430/P2284 **Early-sorting endosomes in cancer cells show drastically altered morphology, EGFR signaling and degradation but maintain significant organization of regulatory Rab-GTPases and recycling function.** K.E. Tubbesing[1], A. Malhotra[1], J.M. Ward [1], A. Rudkouskaya[1], M.M. Barroso[1]; [1]Molecular and Cellular Physiology, Albany Medical College, Albany, NY

B431/P2285 **TRAPP complex substrate specificity is mediated by the Rab GTPase hypervariable domain.** L.L. Thomas[1], S. van der Vegt[1], J.C. Fromme[1]; [1]Weill Institute for Cell and Molecular Biology/Department of Molecular Biology and Genetics, Cornell University, Ithaca, NY

B432/P2286 **The RAB2B-GARIL5 complex promotes cytosolic DNA-induced interferon responses.** M. Takahama[1], T. Saitoh[1]; [1]Institute for Enzyme Research, Tokushima University, Tokushima, Japan

B433/P2287 **Defining the PI3Kβ-Rab5 Interface.** S.D. Heitz[1], J.M. Backer[1,2], A.R. Bresnick[2], J. Flanagan[3]; [1]Molecular Pharmacology, Albert Einstein College of Medicine, Bronx, NY, [2]Biochemistry, Albert Einstein College of Medicine, Bronx, NY, [3]Auckland Cancer Society Research Centre, University of Auckland, Auckland, New Zealand

B434/P2288 **High dose of EGF ligand leads to greater EGFR degradation via Rab7 activation.** C.C. Palsuledesai[1], T. Shideler[1], R. Suderman[2], T. Shi[3], C.D. Nicora[3], R.D. Smith[3], S. BasuRay[1], W. Hlavacek[2], A. Wandinger-Ness[1,4]; [1]Department of Pathology, University of New Mexico, Albuquerque, NM, [2]Theoretical Biology and Biophysics Group, Theoretical Division, Los Alamos National Laboratory, Los Alamos, NM, [3]Biological Sciences Division, Pacific Northwest National Laboratory, Richland, WA, [4]Comprehensive Cancer Center, University of New Mexico, Albuquerque, NM

B435/P2289 **Deciphering TRAPP complex function.** A. Joiner[1], L.L. Thomas[1], J.C. Fromme[1]; [1]Weill Institute for Cell and Molecular Biology, Cornell University, Ithaca, NY

Endocytic Trafficking 1

B436/P2290 **TFEB regulates endocytic trafficking of essential LYNUS components to mediate mTORC1 signaling and autophagy flux.** I.C. Nnah[1], C. Saqcena[1], D. Medina Sanabria[2], A. Ballabio[2], R. Dobrowolski[1]; [1]Biological Sciences, Rutgers University, Newark, NJ, [2]TIGEM, Naples, Italy

B437/P2291 **Functional analysis of PI3P effector candidate SNX in Entamoeba histolytica.** N. Watanabe[1,2,3], T. Nozaki[2,3], K. Nakada-Tsukui[2]; [1]Graduate School of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan, [2]Department of Parasitology, National Institute of Infectious Diseases, Tokyo, Japan, [3]Graduate School of Medicine, The University of Tokyo, Tokyo, Japan

B438/P2292 **Syntaxin-6 defines a cellular compartment distinct from the trans-Golgi network that accumulates internalized somatostatin receptor 2.** W.A. Alshafie[1], V.G. Francis[1], P.S. McPherson[1], T. Stroh[1]; [1]Neurology and Neurosurgery, McGill University, Montreal, QC

B439/P2293 **Involvement of the HPV E6 protein in the trafficking of several cellular SNX27 cargoes through the PDZ binding motif.** P. Massimi[1], J. Broniarczyk[1], L. Banks[1]; [1]Tumour Virology, ICGEB, Trieste, Italy

B440/P2294 **Loss of Myosin Vb Results in Alterations in Trafficking of Enterocyte Apical Transporters.** A.C. Engevik[1,2], M.A. Engevik[3], B.C. Knowles[1,2], V.G. Weis[1,2], N. Ameen[4], H. Koepsell[5], J.R. Goldenring[1,2,6]; [1]Epithelial Biology Center, Vanderbilt University School of Medicine, Nashville, TN, [2]Surgery, Vanderbilt University School of Medicine, Nashville, TN, [3]Pathology, Baylor College of Medicine, Houston, TX, [4]Pediatrics, Yale, New Haven, CT, [5]Molecular Plant Physiology and Biophysics, University of Würzburg, Würzburg, Germany, [6]Nashville VA Medical Center, Nashville, TN

B441/P2295 **The effect of ONO RS-082 on the localization of Amyloid Precursor Protein in stressed cells.** A.Y. Tarren[1], A.L. Munlyn[1], E.B. Cluett[1]; [1]Biology, Ithaca College, Ithaca, NY

B442/P2296 **Reduced expression of the Endosomal Sorting Complex Required for Transport (ESCRT)-associated factor HD-PTP/PTPN23 in mice causes reduced fat accumulation and increased mortality.** B.A. Davies[1], J.A. Payne[1], Z. He[1], S.K. Jachim[1,2], S.F. Bronk[3], K. Jeganathan[1,4], B.G. Childs[1], D.J. Baker[1,4], J.M. Van Deursen[1,4], D.J. Katzmann[1]; [1]Department of Biochemistry and Molecular Biology, Mayo Clinic College of Medicine, Rochester, MN, [2]Biological Sciences Department, Virginia Tech, Blacksburg, VA, [3]Division of Gastroenterology, Mayo Clinic College of Medicine, Rochester, MN, [4]Department of Pediatric and Adolescent Medicine, Mayo Clinic College of Medicine, Rochester, MN

B443/P2297 **Genome-wide siRNA screen identifies GBF1-interacting protein UNC50 as a differential regulator of Shiga toxin trafficking.** A.S. Selyunin[1], L. Iles[2], G. Bartholomeusz[2], S. Mukhopadhyay[1]; [1]Pharmacology Toxicology, The University of Texas at Austin, Austin, TX, [2]Experimental Therapeutics, The University of Texas MD Anderson Cancer Center, Houston, TX

B444/P2298 **Interrogating the thiol-disulfide redox status of the mammalian cell surface by ratiometric fluorescence imaging.** L. Jiang[1], C. Thorpe[1]; [1]Chemistry and Biochemistry, University of Delaware, Newark, DE

B445/P2299 **PI4K2A controls PI4P production and Rab7-cycling in late endosomal compartments.** T. Baba[1], D.J. Tóth[1], N. Sengupta[1], T. Balla[1]; [1]Section on Molecular Signal Transduction, Program for Developmental Neuroscience, Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD

B446/P2300 **Regulation of membrane scission in yeast endocytosis.** D. Menon[1,2], M. Kaksonen[2]; [1]Cell Biology and Biophysics, EMBL, Heidelberg, Germany, [2]Department of Biochemistry, University of Geneva, Geneva, Switzerland

B447/P2301 **Elucidating the Endocytosis Mechanism of Cx36.** C.G. Fisher[1], M. Falk[1]; [1]Biological Sciences, Lehigh University, Bethlehem, PA

B448/P2302 **NECAPs are negative regulators of the AP2 clathrin adaptor complex.** G.M. Beacham[1], E.A. Partlow[1], J.J. Lange[2], G. Hollopeter[1]; [1]Molecular Medicine, Cornell University, Ithaca, NY, [2]Stowers Institute for Medical Research, Kansas City, MO

B449/P2303 **QUANTITATIVE IMAGING AND STATISTICAL ANALYSIS OF THE DYNAMICS OF CLATHRIN-DEPENDENT AND -INDEPENDENT ENDOCYTOSIS REVEALS A DIFFERENTIAL ROLE OF ENDOPHILINA2 IN DYNAMIN2 RECRUITMENT.** L. Bbertot[1], A. Grassart[1], T. Lagache[2], G. Nardi[3], J. Olivo-Marin[3], N. Sauvonnet[1]; [1]Unité de Pathogénie Microbienne Moléculaire, Institut pasteur, Paris, France, [2]Department of Biological Sciences, Columbia University, New-York, NY, [3]Unité d'Analyse d'images biologiques, Institut Pasteur, Paris, France

B450/P2304 **Kidney proximal epithelial cells apically express the neuronal-surface P-antigen (NSPA) cross-targeted by anti-ribosomal P antibodies from lupus patients.** M.M. Bravo-Zehnder PhD[1,2], D.L. Valenzuela[1], Á. Jurado[2], F. Segovia Miranda PhD[2], T. Toledo[1], C.S. Espinoza[1], F. Barake[1], C. Vio PhD[2], G. Méndez MD[3], L. Massardo MD[1,2], A. Gonzalez, MD, PhD[1,2]; [1]Centro de Biología Celular y Biomedicina, Facultades de Medicina y Ciencia, Universidad San Sebastián, Santiago, Chile, [2]Centro de Envejecimiento y Regeneración, Facultad de Ciencias Biológicas, Pontificia Universidad Católica de Chile, Santiago, Chile, [3]Departamento de Anatomía Patológica, Facultad de Medicina, Pontificia Universidad Católica de Chile, Santiago, Chile

B451/P2305 **TrkA signaling endosomes: Association with Rab7 and Rab11 and dynamic fusion and fission events as possible mechanisms of signaling endosome diversification.** K.A. Barford[1], A. Keller[2], K. McDaniel[1], C. Deppmann[2], B. Winckler[1]; [1]Cell Biology, University of Virginia, Charlottesville, VA, [2]Biology, University of Virginia, Charlottesville, VA

B452/P2306 **ApoER2 and Its Ligand Reelin Follow a Clathrin-Independent Endocytosis.** J. Santana[1], M. Marzolo[1]; [1]Cellular and Molecular Biology, Pontifical Catholic University of Chile, Santiago, Chile

B453/P2307 **Alpha-arrestins Aly1 and Aly2 regulate trafficking of the glycerophosphoinositol transporter, Git1 and impact lipid homeostasis in cells.** B. Robinson[1], S. Anaokar[1], A. Nikiforov[1], P. Ziegler[1], J. Patton-Vogt[1], A.F. ODonnell[1]; [1]Dept. of Biological Sciences, Duquesne University, Pittsburgh, PA

B454/P2308 **Screening of the ScUbl yeast deletion library for modifiers of Aly1- or Aly2-mediated resistance to rapamycin in an undergraduate lab course.** R.W. Bowman[1], M. Hall[1], A.F. ODonnell[1]; [1]Dept. of Biological Sciences, Duquesne University, Pittsburgh, PA

B455/P2309 **Systematic analysis of the molecular architecture of endocytosis reveals a nanoscale actin nucleation template that drives efficient vesicle formation.** M. Mund[1], J. van der Beek[1], J. Deschamps[1], S. Dmitrieff[1], J. Monster[1], A. Picco[2], F. Nedelec[1], M. Kaksonen[2], J. Ries[1]; [1]Cell Biology and Biophysics, European Molecular Biology Laboratory, Heidelberg, Germany, [2]Department of Biochemistry, University of Geneva, Geneva, Switzerland

B456/P2310 **NBEAL2 is required for retention of endocytosed and megakaryocyte synthesized α-granule cargo proteins.** R.W. Lo[1,2], L. Li[2], R. Leung[2], F.G. Pluthero[2], W.H. Kahr[1,2,3]; [1]Biochemistry, University of Toronto, Toronto, ON, [2]Cell Biology Program, The Hospital for Sick Children, Toronto, ON, [3]Paediatrics, University of Toronto, Toronto, ON

B457/P2311 **Clathrin Light Chain A is Specifically Required for Efficient Cell Spreading and Migration.** O. Tsygankova[1,2], J.H. Keen[1,2]; [1]Biochem and Mol Biol, Jefferson University, Philadelphia, PA, [2]Sidney Kimmel Cancer Center, Jefferson University, Philadelphia, PA

Establishment and Maintenance of Polarity

B459/P2312 **Suppressors of *pam-1*: Uncovering the role of PAM-1 in regulation of anterior-posterior polarity in the one-cell *C. elegans* embryo.** R.L. Lyczak[1], A. Otto[1], D. Uibel[1], D. Stephens[1], D.M. Saturno[1], E. Jaeger[1]; [1]Biology Dept, Ursinus College, Collegeville, PA

B460/P2313 **Suppressor screening to identify new regulators of anterior-posterior axis establishment in *Caenorhabditis elegans*.** D. Benton[1], Z. Lee[1], A. Kilner[1], A. Kimble[1], K. Power[1], E. Jaeger[1], R.L. Lyczak[1]; [1]Biology Dept, Ursinus College, Collegeville, PA

B461/P2314 **Deciphering the role of centrosomes in symmetry breaking of the C. *elegans* zygote.** K. Klinkert[1], C. Busso[1], S. Herrman[1], L. von Tobel[1], P. Gönczy[1]; [1]Swiss Institute for Experimental Cancer Research (ISREC), School of Life Sciences, Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland

B462/P2315 **Microtubule Array/AP-1/SEC-15 Ensemble Regulates a Sorting Role of Rab-11-Enriched Apical Endosomal Intermediates in *C. elegans* Intestine.** H. Ye[1], P. Yi[1], R. Zhang[1]; [1]College of Life Science and Technology, Huazhong University of Science and Technology, Wuhan, China

B463/P2316 **Assessing a role for membrane trafficking in polarization of the intestinal epithelium.** M. Pickett[1], J.L. Feldman[1]; [1]Biology, Stanford University, Stanford, CA

MONDAY

B464/P2317 **Induction of apically mistrafficked epiregulin is sufficient to disrupt apico-basolateral polarity in MDCK cells in 3D.** B. Singh[1], G. Bogatcheva[1], R.J. Coffey[1,2]; [1]Medicine, Vanderbilt University Medical Center, Nashville, TN, [2]Veterans Affairs Medical Center, Nashville, TN

B465/P2318 **Leptin signaling disrupts tight junctions in the mammary gland.** I. Tenvooren[1], M. Jenks[1], K.L. Cook[2], K. Wang[3], K. Bonin[3], V. Seewaldt[4], S.A. Lelievre[5], P. Vidi[1]; [1]Cancer Biology, Wake Forest University Health Sciences, Winston-Salem, NC, [2]Department of Surgery, Wake Forest University Health Sciences, Winston-Salem, NC, [3]Department of Physics, Wake Forest University, Winston-Salem, NC, [4]Population Sciences, City of Hope, Duarte, CA, [5]Basic Medical Sciences, Purdue University, West Lafayette, IN

B466/P2319 **Regulation of epithelial junctions and polarity by the Scribble/SGEF/Dlg complex.** S. Awadia[1], F. Huq[2], T.R. Arnold[2], T. Hou[3], Y. Sun[3], P. Massimi[4], L. Banks[4], E. Fuentes[3], A.L. Miller[2], R. Garcia-Mata[1]; [1]Department of Biological Sciences, University of Toledo, Toledo, OH, [2]Department of Molecular, Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI, [3]Department of Biochemistry, University of Iowa, Iowa City, IA, [4]Tumour Virology Group, ICGEB, Trieste, Italy

B467/P2320 **Epithelial Membrane Protein 2 and Adenomatous Polyposis Coli interactions regulate apical-basal polarity.** A.C. Lesko[1,2], C.G. Ahlers[1,2], A.T. Lyons[1,2], J.R. Prosperi[1,2,3]; [1]College of Science, University of Notre Dame, Notre Dame, IN, [2]Department of Biological Sciences Harper Cancer Research Institute, University of Notre Dame, Notre Dame, IN, [3]Department of Biochemistry and Molecular Biology, Indiana University School of Medicine- South Bend, South Bend, IN

B468/P2321 **Developing an assay to analyze the molecular events leading to establishment of polarity during polarized growth.** X. Cheng[1], M. Bezanilla[1]; [1]Biology, Dartmouth College, Hanover, NH

B469/P2322 **Dissecting Roles for a Signalling Mucin and Effector Cdc42p-MAP Kinase Pathway in Polarity Establishment and Metabolic Reprogramming.** A. Prabhakar[1], N. Vadaie[2], T. Krzystek[1], P.J. Cullen[1]; [1]Biological Sciences, University at Buffalo, The State University of New York, Buffalo, NY, [2]University of California, San Diego, San Diego, CA

B470/P2323 **Cellular Polarity is Directed by Electrophoresis and Electrically Driven Water Flow.** A. Sarkar[1], B.M. Kobylkevich[1], B.R. Carlberg[1], M.A. Messerli[1]; [1]Biology Microbiology, South Dakota State University, Brookings, SD

B471/P2324 **Mechanisms connecting the conserved protein kinases Kin1, Pom1, and Ssp1 in fission yeast cell polarity and division.** M. Lee*[1], S.F. Rusin[1], N. Jenkins[1,2], A.N. Kettenbach[1,2], J.B. Moseley[1]; [1]Department of Biochemistry and Cell Biology, The Geisel School of Medicine at Dartmouth, Hanover, NH, [2]Norris Cotton Cancer Center, The Geisel School of Medicine at Dartmouth, Lebanon, NH

B472/P2325 **Drosophila neural stem cells are polarised by their daughter cells.** J. Januschke[1], N. Loyer[1]; [1]Cell & Developmental Biology, University of Dundee, Dundee, United Kingdom

B473/P2326 **Characterising the molecular mechanism of the fission yeast memory-based growth polarity landmarks Rax1 and Rax2.** H.L. Johnson[1], S. Ashraf[1], C. Spanos[1], K.E. Sawin[1]; [1]Wellcome Centre Cell Biology, University of Edinburgh, Edinburgh, United Kingdom

B474/P2327 **MARK2 regulates directed cell migration and cytoskeleton polarization through modulation of MYPT1- Myosin II activity.** A.M. Pasapera-Limon[1], T. Amos[2], S.M. Heissler[1], Y. Nishimura[1], R.S. Fischer[1], J.R. Sellers[1], C.M. Waterman[1]; [1]Cell Biology, NHLBI-NIH, Bethesda, MD, [2]Molecular Physiology and Biophysics, Thomas Jefferson University, Philadelphia, PA

B475/P2328 **Exploration and stabilization of Ras1 zone during fission yeast mating: a mechanism with positive and negative feedback regulation.** B. Khalili[1,2], L. Merlini[2], S.G. Martin[2], D. Vavylonis[1]; [1]Physics, Lehigh University, 18015, PA, [2]Fundamental Microbiology, University of Lausanne, Lausanne, Switzerland

Neuronal Degeneration - ALS, HSP, and SCA

B477/P2329 **Enhanced Outgrowth and Regeneration in Adult Motor Neurons from Amyotrophic Lateral Sclerosis Mouse Models.** Z. Osking[1], K. Skruber[1], J. Ayers[2,3], R. Hildebrandt[4], D. Borchelt[2,3], T. Read[1], E.A. Vitriol[1]; [1]Department of Anatomy and Cell Biology, University of Florida, Gainesville, FL, [2]Department of Neuroscience, University of Florida, Gainesville, FL, [3]Center for Translational Research in Neurodegenerative Disease, University of Florida, Gainesville, FL, [4]Department of Molecular Genetics and Microbiology, University of Florida, Gainesville, FL

B478/P2330 **Characterizing SMA patient-derived mutations to connect proteomic environment with disease-related phenotypes.** A.C. Raimer[1], S. ten Have[2], K. Gray[1], A.M. Spring[3], A. Lamond[2], A.G. Matera[1,4]; [1]Curriculum in Genetics and Molecular Biology, UNC Chapel Hill, Chapel Hill, NC, [2]Centre for Gene Regulation Expression, University of Dundee, Dundee, United Kingdom, [3]SPIRE Postdoctoral Fellowship Program, UNC Chapel Hill, Chapel Hill, NC, [4]Biology and Genetics, UNC Chapel Hill, Chapel Hill, NC

B479/P2331 **Rho guanine nucleotide exchange factor (RGNEF) as a pro-survival factor on in vitro and in vivo models.** B.M. Withers[1,2], C. Droppelmann[2], D. Campos-Melo[2], M.J. Strong[1,2]; [1]Neuroscience, Schulich School of Medicine and Dentistry, London, ON, [2]Molecular Medicine Group, Robarts Research Institute, London, ON

B480/P2332 **A new genetic mouse model for SPAST-based Hereditary Spastic Paraplegia reveals the importance of toxic gain-of-function mechanisms.** L. Qiang[1], E. Piermarini[1], L. Leo[1], H. Muralidharan[1], G.M. Alexander[1], L.E. Hennessy[1], L.V. Zholudeva[1], S. Fernandes[1], W. Yu[1], M.A. Lane[1], T.D. Heiman-Patterson[1], P.W. Baas[1]; [1]Neurobiology and Anatomy, Drexel University College of Medicine, Philadelphia, PA

B481/P2333 **The RNA binding protein Zfp106 protects against neurotoxicity caused by *C9orf72* GGGGCC repeats.** B. Celona[1], J. Von Dollen[2], S.C. Vatsavayai [3], R. Kashima[1], J. Johnson[2], A.A. Tang[4], A. Hata[1], B.L. Miller[3], E.J. Huang[4], N. Krogan[2], W.W. Seeley[3,4], B.L. Black[1,5]; [1]Cardiovascular Research Institute, University of California, San Francisco, San Francisco, CA, [2]Cellular and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA, [3]Neurology, University of California, San Francisco, San Francisco, CA, [4]Pathology, University of California, San Francisco, San Francisco, CA, [5]Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

B482/P2334 **SOD1^{G93A} mouse model of ALS presents increased expression of NLRP1 and NLRP3 in cells from spinal cord.** R. Barboza[1], P.O. Castro[1], R.S. Lima[2], M.F. Ferrari[2]; [1]Departamento de Ciências Biológicas, Universidade Federal de Sao Paulo, Diadema, Brazil, [2]Departamento de Genética e Biologia Evolutiva, Universidade de Sao Paulo, Sao Paulo, Brazil

B483/P2335 **Autophagolysosome disruption in *Drosophila* models of ALS/FTD caused by C9orf72 mutations.** K.M. Cunningham[1], K. Zhang[1], M. Senturk[2], H. Sung[1], K. Ruan[1], Z. Zuo[3], H.J. Bellen[2,3], T.E. Lloyd[1,4]; [1]Neurology, Johns Hopkins School of Medicine, Baltimore, MD, [2]Developmental Biology, Baylor College of Medicine, Houston, TX, [3]Neuroscience, Baylor College of Medicine, Houston, TX, [4]Neuroscience, Johns Hopkins School of Medicine, Baltimore, MD

B484/P2336 **The ataxin-1 interactome reveals direct connection with multiple disrupted nuclear transport pathways.** S. Zhang[1], N.A. Williamson[2], D.A. Jans[3], M.A. Bogoyevitch[1]; [1]Cell Signalling Research Laboratories, Department of Biochemistry and Molecular Biology, University of Melbourne, Parkville, Victoria 3010, Australia, [2]Bio21 Molecular Science and Biotechnology Institute, University of Melbourne, Parkville, Victoria 3010, Australia, [3]Nuclear Signalling Lab., Department of Biochemistry and Molecular Biology, Monash University, Clayton, Victoria 3800, Australia

B485/P2337 **Sirt1 restores proper calcium homeostasis to achieve neuroprotection in spinocerebellar ataxia type 7.** C.A. Stoyas[1], D. Bushart[2], J. Auwerx[3], V.G. Shakkottai[2], A.R. La Spada[1]; [1]Pediatrics, University of California San Diego, La Jolla, CA, [2]Neurology, University of Michigan, Ann Arbor, MI, [3]Laboratory of Integrative and Systems Physiology, École Polytechnique Fédérale de Lausanne, Lausanne, Switzerland

B486/P2338 **A neuroprotective agent that inactivates pro-degenerative TrkA and preserves mitochondria.** K. Feinberg[1], A. Kolaj[1], W. Chan[2], N. Grinshtein[1], J.R. Krieger[3], M.F. Moran[3,4], L.L. Rubin[2], F.D. Miller[1,4,5], D.R. Kaplan[1,4]; [1]Neurosciences and Mental Health Program, Hospital for Sick Children, Toronto, ON, [2]Department of Stem Cell and Regenerative Biology and Harvard Stem Cell Institute, Harvard University, Cambridge, MA, [3]Cell Biology, Hospital for Sick Children, Toronto, ON, [4]Molecular Genetics, University of Toronto, Toronto, ON, [5]Physiology, University of Toronto, Toronto, ON

B487/P2339 **Post-Translational Modifications of Dipeptide Repeat Proteins in c9orf72-Associated ALS.** M. Meykler[1], M.P. Torrente[1]; [1]Chemistry, CUNY Brooklyn College, Brooklyn, NY

Neuronal Signal Transduction, Cell-Cell Interactions

B488/P2340 **Intra-Axonal Translational Control Mechanisms for ER Chaperone Protein mRNAs.** A. Pacheco[1], J.L. Twiss[2], G. Gallo[1]; [1]Shriners Hospitals Pediatric Research Center, Temple University, Philadelphia, PA, [2]Dept of Biological Sciences, University South Carolina, Columbia, SC

B489/P2341 **The adaptor protein FEZ1 links metabotropic glutamate receptors to the autophagy pathway.** M. Donoso[1], M. Kalinowska[1], C. Castillo[1], A. Francesconi[1]; [1]Neuroscience, Albert Einstein College of Medicine, Bronx, NY

B490/P2342 **A pair of E3 ubiquitin ligases coordinate responses of DCC to its ligand, netrin-1.** C. Monkiewicz[1], N. Boyer[2], S. Menon[1], S.L. Gupton[1,3]; [1]Cell Biology and Physiology, University of North Carolina at Chapel Hill, School of Medicine, Chapel Hill, NC, [2]Neurobiology Curriculum, 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

B491/P2343 **CHL1 and SLIT1 Colocalize in the Intermediate Zone During Embryonic Development.** C. Levinger[1], P. Tran[1], A.G. Wright[1]; [1]Biology and Physical Sciences, Marymount University, Arlington, VA

B492/P2344 **Glia and pioneer neurons direct hierarchical assembly of the C. elegans brain.** G. Rapti[1], C. Li[1], A. Shan[1], Y. Lu[1], S. Shaham[1]; [1]Laboratory of Developmental Genetics, The Rockefeller University, New York, NY

B493/P2345 **PLCβ1 escorts Ago2 to stress granules to change the miR population in response to Osmotic Stress.** A. Singla[1], S. Scarlata[1]; [1]Chemistry and Biochemistry, Worcester Polytechnic Institute, Worcester, MA

Dynamics of Proteins and Organelles in Neurons

B494/P2346 **The ataxia disease gene VPS13D plays an essential role in mitochondrial morphology and transport in Drosophila neurons.** R. Insolera[1], E. Seong[2], L.M. Rivera-Perez[1], D. Lozano[1], M. Burmeister[2,3,4,5], C.A. Collins[1]; [1]MCDB, University of Michigan, Ann Arbor, MI, [2] Molecular and Behavioral Neuroscience Institute, University of Michigan, Ann Arbor, MI, [3] Department of Human Genetics, University of Michigan, Ann Arbor, MI, [4] Department of Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor, MI, [5]Department of Psychiatry, University of Michigan, Ann Arbor, MI

B495/P2347 **Fear conditioning affects adenosine$_{2A}$ receptor and glutamate transporter 1 expression during memory consolidation.** H.E. Merens[1], L. De Falcis[2], D. Cusmano[3], S. Chatterjee[4], T. Abel[4], J.C. Tudor[2]; [1]Chemistry, University of Pennsylvania, Philadelphia, PA, [2]Biology, Saint Joseph's University, Philadelphia, PA, [3]Biology, University of Pennsylvania, Philadelphia, PA, [4]Molecular Physiology and Biophysics, Carver College of Medicine University of Iowa, Iowa City, IA

B496/P2348 **Neurofilament transport may be regulated by the proximity of neurofilaments to their microtubule tracks.** T.L. Nguyen[1], P. Jung[1], A. Brown[2]; [1]Department of Physics and Astronomy and Quantitative Biology Institute, Ohio University, Athens, OH, [2]Department of Neuroscience, Ohio State University, Colombus, OH

B497/P2349 **Nmnat mitigates sensory dysfunction in a *Drosophila* model of paclitaxel-induced peripheral neuropathy.** J.M. Brazill[1], R.G. Zhai[1], B. Cruz[1]; [1]Molecular and Cellular Pharmacology, University of Miami Miller School of Medicine, Miami, FL

B498/P2350 **A preliminary association study in Turkish population: Do IL-17 and UCP2 Gene variants Contributes to The Ethiology of Microtia?** K. Ozdilli[1], M. Bekerecioglu[2], S. Pehlivan[3], B. Buyukgural[4]; [1]Medipol University Hospital, Istanbul, Turkey, [2]Plastic and Reconstructive Surgery, Sutcu Imam University, Kahramanmaras, Turkey, [3]Medical Biology, Istanbul University, Istanbul, Turkey, [4]Plastic and Reconstructive Surgery, Private Clinic, Istanbul, Turkey

B499/P2351 **Alterations in Protein Expression Levels Following Exposure to Mild Traumatic Brain Injury Simulation in 2.5D Culture System.** K. Gilpin[1], T.J. O'Shaughnessy[1]; [1]Materials Science & Technology Division, Naval Research Laboratory, Washington DC, DC

B500/P2352 **Expression of WIPI2B counteracts age-related decline in autophagosome biogenesis in neurons.** A.K. Stavoe[1], E.L. Holzbaur[1]; [1]Physiology, University of Pennsylvania, Philadelphia, PA

B501/P2353 **Autophagy at the synapse: from biogenesis to breakdown.** S.E. Hill[1,2,3], S. Yang[1,2,3], D.A. Colón-Ramos[1,2,3]; [1]Cell Biology, Yale University, New Haven, CT, [2]Neuroscience, Yale University, New Haven, CT, [3]Program in Cellular Neuroscience, Neurodegeneration and Repair, Yale University, New Haven, CT

B502/P2354 **Clarification of the roles of γ-secretases associated with autophagy.** H. Heo[1], J. Chang[1]; [1]Department of Biomedical Sciences, Ajou University School of Medicine, Suwon, Korea, South

B503/P2355 **ER-mitochondria tethering by PDZD8 regulates Ca^{2+} dynamics in mammalian neurons.** Y. Hirabayashi[1], S. Kwon[1], H. Paek[1], W.M. Pernice[2], M.A. Paul[1], J. Lee[1], P. Erfani[1], A. Raczkowski[3], D.S. Petrey[4], L.A. Pon[2], F. Polleux[1]; [1]Department of Neuroscience, Columbia University, New York, NY, [2]Department of Pathology and Cell Biology, Columbia University, New York, NY, [3]Simons Electron Microscopy Center, New York Structural Biology Center, New York, NY, [4]Department of Systems Biology, Columbia University, New York, NY

B504/P2356 **A retrograde autophagic filter that removes mitochondria in distal nodes of Ranvier.** N.A. Marahori[1], S. Hannan[1], B. Plomer[1], T. Kleele[1,2], M. Schifferer[3,4], M. Lakadamyali[5,6], M.S. Brill[1], T. Misgeld[1,3,4]; [1]Institute of Neuronal Cell Biology, Technical University Munich, Munich, Germany, [2]Laboratory of Experimental Biophysics, École polytechnique fédérale de Lausanne, Lausanne, Switzerland, [3]German Center for Neurodegenerative Diseases (DZNE) Munich, Munich, Germany, [4]Munich Cluster for Systems Neurology (SyNergy), Munich,

Germany, [5]Perelman School of Medicine, Department of Physiology, University of Pennsylvania, Philadelphia, PA, [6]Institute for Advanced Study (TUM-IAS), Technical University Munich, Munich, Germany

B505/P2357 **Preliminary characterization of mitochondrial damage-associated molecular patterns using a three-dimensional microfluidic *ex vivo* model of the blood-brain barrier/neurovascular unit.** A.M. Medina-Lopez, B.S.[1,2], I.I. Torres-Vazquez[1,2], H. Shinogle-Decker, B.S.[1,2], T. Neeland[2], N. Martinez-Rivera, Ph.D.[2], E. Rosa-Molinar, Ph.D.[1,2]; [1]1Department of Pharmacology and Toxicology and Neuroscience Graduate Program, University of Kansas, Lawrence, KS, [2]2Microscopy and Analytical Imaging Resource Core Laboratory, University of Kansas, Lawrence, KS

B506/P2358 **Identification of the NAB2 Nuclear Localization Signal.** T. Grant[1], S. D'Angelo-Early[1], J.M. LaVallee[1], S. Kletsov[1], K.W. Adams[1]; [1]Biological Sciences, Bridgewater State University, Bridgewater, MA

B507/P2359 **Endogenous alpha-synuclein expression patterns revealed using a novel mouse model.** A. Caputo[1], Y. Liang[1], V.M. Kehm[1], E. Luna[1], S.C. Decker[1], B. Zhang[1], K.C. Luk[1]; [1]Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, PA

Establishing and Maintaining Organelle Structure 2

B509/P2360 **Subcellular fractionation of suspension CHO cells producing a monoclonal antibody by a differential and isopicnic centrifugation based protocol.** S.P. Rodriguez[1], M.R. Lira[1], N.V. Cruz[1], M.T. Roldán[1], O.T. Ramírez[2]; [1]1Departamento de Biología Molecular y Biotecnología, Instituto de Investigaciones Biomédicas, Universidad Nacional Autónoma de México, Mexico City, Mexico, [2]Departamento de Medicina Molecular y Bioprocesos, Instituto de Biotecnología, Universidad Nacional Autónoma de México, Cuernavaca, Morelos, Mexico

B510/P2361 **Homeostatic remodeling of mammalian membranes in response to dietary lipid perturbations is essential for cellular fitness.** I. Levental[1], K.R. Levental[1]; [1]Integrative Biology and Pharmacology, University of Texas Health Science Center at Houston, Houston, TX

B511/P2362 **Exploring the Proteome of Multilocalizing Proteins.** 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], G. Galea[2], R. Pepperkok[2], M. Uhlén[1], E. Lundberg[1]; [1]SciLifeLab, Royal Institute of Technology (KTH), Stockholm, Sweden, [2]European Molecular Biology Laboratory (EMBL), Heidelberg, Germany

B512/P2363 **Retrograde Localization of the Contractile Vacuole during Chemotaxis and Cellular Streaming in Dictyostelium discoideum.** S. Fadil[1], K. Smith[1], M. Beshay[1], N. Bawazir[1], M. Myre[2], C. Janetopoulos[1]; [1]Biological Sciences, University of the Sciences, Philadelphia, PA, [2]Biological Sciences, University of Massachusetts, Lowell, Lowell, MA

B513/P2364 **The Amyloid-β Precursor Protein, a protein relevant to the pathology of Alzheimer's disease, is a permanent resident of the tubular endoplasmic reticulum.** V. Muresan[1], Z. Ladescu Muresan[1]; [1]Pharmacology, Physiology and Neuroscience, Rutgers University - New Jersey Medical School, Newark, NJ

B514/P2365 **Live-cell imaging of GFP-MxA-endosomes and GFP-MxA-reticulum in human Huh7 hepatoma cells.** D. Davis[1], P.B. Sehgal[1]; [1]Cell Biology & Anatomy, and Medicine, New York Medical College, Valhalla, NY

B515/P2366 **A functional interplay between small GTPase Rab10 and exostosin-1 regulates ER morphology and dynamics.** D. Kerselidou[1], F. Mattijssens[2], S. Daakour[1,3], B. Dohai[3], K. Salehi-Ashtiani[3], M. Thiry[1], P. VanVlierberghe[2], F. Dequiedt[1], J. Twizere[1]; [1]GIGA-R, University of Liege, Liege, Belgium, [2]Center for Medical Genetics, Ghent University Hospital, Ghent, Belgium, [3]Centre for Science and Engineering, New York University Abu Dhabi, Abu Dhabi, United Arab Emirates

B516/P2367 **The role of Myelinophore organelles in myelin sheath formation.** S.A. O'Sullivan[1], M.S. Domowicz[1], S. Szuchet[1]; [1]Neurology, University of Chicago, Chicago, IL

B517/P2368 **The centriole assembly factor, CPAP, is important for nascent basal body assembly and organization within a multi-ciliary array.** M.D. Ruehle[1], C.G. Pearson[1]; [1]Cell and Developmental Biology, University of Colorado School of Medicine, Aurora, CO

B518/P2369 **Identification of Key Rab and Kif Proteins Required for Tether-Dependent Golgi Organization in Epistatic High-Content Screens.** S. Liu[1], W.X. Majeed[1], M. Betts[2], V. Starkviene[1], B. Storrie[1]; [1]Physiology and Biophysics, University of Arkansas for Medical Sciences, Little Rock, AR, [2]BioQuant, University of Heidelberg, Heidelberg, Germany

B519/P2370 **Model of nucleolar assembly in a developing embryo.** L. Mohapatra[1], S.C. Weber[2], J. Kondev[1]; [1]Department of Physics, Brandeis University, Waltham, MA, [2]Department of Biology, McGill University, Montreal, QC

B520/P2371 **LEM2 recruits CHMP7 for ESCRT-mediated nuclear envelope closure in fission yeast and human cells.** A. Von Appen[1], M. Gu[2], D. LaJoie[3], W.I. Sundquist[2], K.S. Ullman[3], A. Frost[1]; [1]Department of Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA, [2]Department of Biochemistry, University of Utah, Salt Lake City, UT, [3]Department of Oncological Sciences, Huntsman Cancer Institute, Salt Lake City, UT

B521/P2372 **The role of DNA content in regulating cell shapes and sizes during zebrafish development.** T. Menon[1], S. Nair[1]; [1]Department of Biological Sciences, Tata Institute of Fundamental Research, Mumbai, India

B522/P2373 **Inhibition of MEK1/2 and MLK3 impairs plasma membrane repair responses to bacterial pore-forming toxins.** S. Ray[1], P.A. Keyel[1]; [1]Biological Sciences, Texas Tech University, Lubbock, TX

B523/P2374 **ESCRT membrane scission revealed by optical tweezers.** J. Schöneberg [1,2,3], S. Yan[2,3,4], A.H. Bahrami[1], M. Righini[5], I. Lee[2,3], M.R. Pavlin[2,6], L. Carlson[2,3], D.H. Goldman[2,3,4], G. Hummer[1,7], C. Bustamante[2,3,4,5,6,8,9], J.H. Hurley[2,3,5,8]; [1]Theoretical Biophysics, Max Planck Institute of Biophysics, Frankfurt a. M., Germany, [2]California Institute for Quantitative Biosciences, UC Berkeley, Berkeley, CA, [3]Molecular and Cell Biology, UC Berkeley, Berkeley, CA, [4]Howard Hughes Medical Institute, UC Berkeley, Berkeley, CA, [5]Department of Chemistry, UC Berkeley, Berkeley, CA, [6]Biophysics Graduate Group, UC Berkeley, Berkeley, CA, [7]Institute of Biophysics, Goethe University, Frankfurt/M, Germany, [8]Molecular Biophysics and Integrated Bioimaging Division, Lawrence Berkeley National Laboratory, Berkeley, CA, [9]Department of Physics, UC Berkeley, Berkeley, CA

B524/P2375 **The Mechanism of the Membrane Binding of the F-BAR Domain Protein GAS7.** M. Ab Fatah[1], S. Suetsugu[1]; [1]Molecular Medicine and Cell Biology Laboratory, Nara Institute of Science and Technology, Nara, Japan

B525/P2376 **AMPK Regulates Peroxisomal Cargo Proteins Import via PEX5 Phosphorylation.** J. Jing[1], D. Tripathi[1], R. Dere[1], C. Walker[1,2]; [1]CPEH, Baylor college of Medicine, Houston, TX, [2]CTCR, Texas AM University, Houston, TX

B526/P2377 **The peroxisomal AAA-ATPase Pex1/Pex6 unfolds substrates by processive threading.** B.M. Gardner[1], D.T. Castanzo[1], S. Chowdhury[2], G. Stjepanovic[1,3], M.S. Stefely[1], J.H. Hurley[1,3,4], G.C. Lander[2], A. Martin[1,4,5]; [1]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, [2]Department of Integrative Structural and Computational Biology, The Scripps Research Institute, La Jolla, CA, [3]Molecular Biophysics and Integrated Bioimaging Division, Lawrence Berkeley National Laboratory, Berkeley, CA, [4]California Institute for Quantitative Biosciences, University of California, Berkeley, Berkeley, CA, [5]University of California, Berkeley, Howard Hughes Medical Institute, Berkeley, CA

B527/P2378 **Diurnal regulation of peroxisome function in RPE cells.** L.L. Daniele[1], J. Caughey[2], A. Dhingra[1], D. Alexander[3], N.J. Philp[4], K. Boesze-Battaglia[1]; [1]Biochemistry, SDM, University of Pennsylvania, Philadelphia, PA, [2]School of Dental Medicine, University of Pennsylvania, Philadelphia, PA, [3]Program in Cell and Molecular Biology, Biomedical Graduate Studies, University of Pennsylvania, Philadelphia, PA, [4]Pathology, Anatomy, and Cell Biology, Thomas Jefferson University Department of Pathology, A, Philadelphia, PA

B528/P2379 **How to build a granule: distinct roles for globular and intrinsically-disordered domains in P granule assembly.** H. Schmidt[1], J. Smith[1], A. Putnam[1], G. Seydoux[1]; [1]HHMI, Department of Molecular Biology & Genetics, Johns Hopkins Medical School, Baltimore, MD

B529/P2380 **Nano-scale size holes in ER sheets provide an alternative to tubules for highly-curved membranes.** L.K. Schroeder[1], A.E. Barentine[1,2], S. Schweighofer[1,3], D. Baddeley[1,4,5], J. Bewersdorf[1,2,5], S. Bahmanyar[6]; [1]Cell Biology, Yale University, New Haven, CT, [2]Biomedical Engineering, Yale University, New Haven, CT, [3]Biochemistry, University of Vienna, Vienna, Austria, [4]4Auckland Bioengineering Institute, Auckland University, Auckland, New Zealand, [5]Nanobiology Institute, Yale University, New Haven, CT, [6]Molecular Cellular and Developmental Biology, Yale University, New Haven, CT

B530/P2381 **The ribosome preservation factor Stm1 regulates ribosome abundance under starvation.** P. Kimmig[1], K. Kostova[2,3], J.S. Weissman[2,3], M. Peter[1]; [1]Institute of Biochemistry,, ETH Zurich, Zurich, Switzerland, [2]Howard Hughes Medical Institute, University of California, San Francisco, San Francisco, CA, [3]Department of Cellular and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA

Mitochondrial Metabolism and Physiology

B531/P2382 **Inter-ethnic variations of mitochondrial DNA polymerase (POLG1) in two large American populations and their functional analysis.** P. Bajpai[1], B. Singh[1], K.M. Owens[1], V. Srinivasasainagendra[2], H.K. Tiwari[2], K.K. Singh[1,3,4]; [1]Department of Genetics, University of Alabama at Birmingham, Birmingham, AL, [2]Department of Biostatistics, University of Alabama at Birmingham, Birmingham, AL, [3]Departments of Pathology, Environmental Health, Center for Free Radical Biology, Center for Aging and UAB Comprehensive Cancer Center, University of Alabama at Birmingham, Birmingham, AL, [4]Birmingham Veterans Affairs Medical Center, Birmingham, AL

B532/P2383 **Mitochondrial Calcium Uniporter controls AMPK activity and lipid metabolism.** D. Tomar[1,2], F. Jaña[2], Z. Dong[1,2], N. Nemani[1,2], S. Santhanam[1,2], A. Tripathi[1,2], E. Carvalho[1,2], S. Rajan[1,2], D.S. Wijesinghe[3], R.S. Ahima[4], M. Madesh[1,2]; [1]Department of Medical Genetics Molecular Biochemistry, Temple University, Philadelphia, PA, [2]Center for Translational Medicine, Temple University, Philadelphia, PA, [3]Department of Surgery, Virginia Commonwealth University, Richmond, VA, [4]Division of Endocrinology, Diabetes and Metabolism, John Hopkins University, Baltimore, MD

B533/P2384 **Deciphering the function of CLYBL, a missing human gene and a mitochondrial orphan metabolic enzyme.** H. Shen[1], V. Mootha[1]; [1]Department of Molecular Biology, Massachusetts General Hospital/Howard Hughes Medical Institute, Boston, MA

B534/P2385 **Sulfotransferase 1C2 (SULT1C2) post-translationally increases mitochondria respiration.** A.L. Kolb[1], S.J. Atkinson[1], Z. Pfaffenberger[2], J. Collett[3], D.P. Basile[3], R.L. Bacallao[2]; [1]Biology, Indiana University-Purdue University Indianapolis, Indianapolis, IN, [2]Medicine, Indiana University School of Medicine, Indianapolis, IN, [3]Cellular and Integrative Physiology, Indiana University School of Medicine, Indianapolis, IN

B535/P2386 **Characterization of mitochondrial metabolic oscillations in live rodents.** Y.S. Ng[1], D. Chen[2], N. Porat-Shliom[1], W. Losert[2], R. Weigert[1,3]; [1]Laboratory of Cellular and Molecular Biology, National Cancer Institute, Bethesda, MD, [2]College of Computer, Mathematical, and Natural Sciences, University of Maryland, College Park, MD, [3]Intracellular Membrane Trafficking Section, National Institute of Dental and Craniofacial Research, Bethesda, MD

B536/P2387 **S6 kinase 1 plays a key role in mitochondrial morphology and cellular energy flow.** Q. Tran[1], J. Jung[2], J. Park[1], H. Lee[1], Y. Hong[1], H. Cho[1], M. Kim[1], S. Park[1], S. Kim[3], K. Kim[2], M. Cho[4], J. Park[1]; [1]Department of Pharmacology and Medical Science, Chungnam National University, Daejeon, South Korea, [2]Department of Applied Chemistry, Kyunghee University, Yongin, South Korea, [3]Department of Neurosurgery, Institute for Cancer Research, College of Medicine, Chungnam National University, Daejeon, South Korea, [4]College of Veterinary Medicine, Seoul National University, Seoul, South Korea

B537/P2388 **Deep mutational scanning reveals characteristics important for mitochondrial targeting of a tail-anchored protein.** A. Keskin[1], E. Akdogan[1], C.D. Dunn[1,2]; [1]Department of Molecular Biology and Genetics, Koç University, Istanbul, Turkey, [2]Institute of Biotechnology/HiLIFE, University of Helsinki, Helsinki, Finland

B538/P2389 **Sengers syndrome associated mitochondrial acylglycerol kinase, is a subunit of the human TIM22 protein import complex.** Y. Kang[1], D. Stroud[2], M.J. Baker[1], D.P. De Souza[3], A. Frazier[4], M. Liem[5], D. Tull[3], S. Mathivanan[5], M. McConville[3], D. Thorburn[4], M.T. Ryan[2], D. Stojanovski[1]; [1]Department of Biochemistry and Molecular Biology, The Bio21 Molecular Science and Biotechnology Institute, Melbourne University, Melbourne, Australia, [2]Department of Biochemistry and Molecular Biology, Monash Biomedicine Discovery Institute, Monash University, Melbourne, Australia, [3]Metabolomics Australia, The Bio21 Molecular Science and Biotechnology Institute, Melbourne University, Melbourne, Australia, [4]Department of Paediatrics, Murdoch Children's Research Institute, Melbourne University, Melbourne, Australia, [5]Department of Biochemistry and Genetics, La Trobe Institute for Molecular Science, La Trobe University, Melbourne, Australia

B539/P2390 **Functional analysis of mitochondria subpopulations by novel nanoscale flow cytometry platform.** J.A. MacDonald[1], A.M. Bothun[1], A.R. Ivanov[2], J.L. Tilly[1], D.C. Woods[1]; [1]Biology Department, Northeastern University, Boston, MA, [2]The Barnett Institute of Chemical and Biological Analysis, Northeastern University, Boston, MA

B540/P2391 **Mitochondrial subpopulations exhibit differential dynamic responses to support increased energy demand during exocytosis.** N. Porat-Shliom[1], L.N. Malec[1], O. Harding[1], R. Weigert[1]; [1]Laboratory of Cellular and Molecular Biology, National Institute of Health, NCI, Bethesda, MD

B541/P2392 **Nutrient-regulated destruction of mitochondrial metabolite carriers by the MDC pathway.** M. Schuler[1], A.M. Litwiller[1], T. Tedeschi[1], T.J. Campbell[1], J.M. Shaw[1], A.L. Hughes[1]; [1]Department of Biochemistry, University of Utah, Salt Lake City, UT

B542/P2393 **From *Dictyostelium* to Human Airway Epithelium: Adenine Nucleotide Translocase as a Protector Against Cigarette Smoke.** J. Nguyen[1,2], C. Kliment[1,3], S.M. Claypool[4], P. Iglesias[5], R. Sidhaye[3], D.N. Robinson[1,2,6]; [1]Cell Biology, Johns Hopkins University, Baltimore, MD, [2]Pharmacology and Molecular Sciences, Johns Hopkins University, Baltimore, MD, [3]Medicine, Division of Pulmonary and Critical Care, Johns Hopkins University, Baltimore, MD, [4]Physiology, Johns Hopkins University, Baltimore, MD, [5]Electrical and Computer Engineering, Johns Hopkins University, Baltimore, MD, [6]Chemical and Biomolecular Engineering, Johns Hopkins University, Baltimore, MD

B543/P2394 **Tracking global changes in acetylated mitochondria by immunofluorescence provides new insight into HDAC class I and class III crosstalk.** A. Law[1], H. Horita[1], K. Middleton[1]; [1]RD Department, Cytoskeleton Inc., Denver, CO

B544/P2395 **Posttranslational Arginylation Enzyme Ate1 Controls Mitochondrial Functions and Cellular Warburg Effects.** C. Jiang[1], D.M. Patel[1], A. Kumar[1], B.T. Moorthy[1], M. Birnbaum[1], B. Alfonso[2], J. Huang[2], A. Barrientos[3,4], T. Lampidis[5,6], F. Fontanesi[4], F. Zhang[1,6]; [1]Molecular Cellular Pharmacology, University of Miami, Miami, FL, [2]Human Genetics, University of Miami, Miami, FL, [3]Department of Neurology, University of Miami, Miami, FL, [4]Biochemistry Molecular Biology, University of Miami, Miami, FL, [5]Cell Biology, University of Miami, Miami, FL, [6]Sylvester Comprehensive Cancer Center, University of Miami, Miami, FL

B545/P2396 **Mitochondrial protein transport in *Trypanosoma brucei*: The divergent machinery for conserved function.** M. Chaudhuri[1], U. SINGHA[1], J.T. Smith[1], L. Quinones[1], C. Darden[1]; [1]Microbiology and Immunology, Meharry Medical College, Nashville, TN

B546/P2397 **Investigation of the role of ubiquitination in mitochondrial dynamics and mitophagy.** S. Shields[1]; [1]Biology, Gustavus Adolphus College, Saint Peter, MN

B547/P2398 **Improvement of Cell Metabolism through Direct Mitochondrial Transfer.** M. Kim[1], J. Hwang[1], C. Yun[1], C. Park[1], Y. Choi[1]; [1]Biotechnology, CHA university, Seongnam, Korea, South

B548/P2399 **Loss-of-function mutations in the SIGMAR1 gene cause distal hereditary motor neuropathy by impairing ER-mitochondria tethering and Ca2+ signaling.** S. Zanin[1,2], E. Gregianin[3], A. Petrucci[4], G. Vazza[3], R. Rizzuto[2], G. Pallafacchina[1,2]; [1]CNR Neuroscience Institute, University of Padova, Padova, Italy, [2]Department of Biomedical Sciences, University of Padova, Padova, Italy, [3]Department of Biology, University of Padova, Padova, Italy, [4]Neuromuscular and Rare Neurological Diseases Centre, San Camillo-Forlanini Hospital of Rome, Rome, Italy

B549/P2400 **Kinetic model of free radical generation in complex II of mitochondria.** P. Lee[1], J. Bazil[2]; [1]Molecular and Integrative Physiology, University of Michigan, Ann Arbor, MI, [2]Physiology, Michigan State University, East Lansing, MI

B550/P2401 **The new functions of the Nek family in mitochondria context.** T.D. Hanchuk[1], A.P. Oliveira[2], T.I. Lima[1], P.F. Slepicka[1], L.d. Silveira[1], J. Kobarg[1,3]; [1]Biochemistry and Tissue Biology, Unicamp, Campinas, Brazil, [2]Institute of Biomedical Sciences, USP, São Paulo, Brazil, [3]Faculty of Pharmaceutical Sciences, Unicamp, Campinas, Brazil

B551/P2402 **Mitochondrial electron transport chain Complex I and II in the modulation of Ca^{2+} homeostasis in breast cancer cells.** F. Jaña[1,2], P. Cruz[2,3], G. Bustos[2,3], F. Urra[2,3], C.E. Basualto-Alarcon[2,3], M. Ríos[2,3], M. Madesh[4], J.C. Cardenas[2,3]; [1]University of Aysén, Coyhaique, Chile, [2]Geroscience Center for Brain Health and Metabolism, Santiago, Chile, [3]Program of Anatomy and Developmental Biology, Institute of Biomedical Sciences, University of Chile, Santiago, Chile, [4]Department of Medical Genetics and Molecular Biochemistry, Center for Translational Medicine, Temple University, Philadelphia, PA

B552/P2403 **Examining the role of ubiquitination in mitochondrial morphology, membrane potential, and mitophagy in Saccharomyces cerevisiae.** M.R. Mir[1], S. Shields[1]; [1]Biology, Gustavus Adolphus College, Saint Peter, MN

B553/P2404 **Bioinformatic and functional analysis of uncharacterized open reading frames YPL247C and YGR021W in *Saccharomyces cerevisiae*.** Z. Brown[1], M.R. Mir[1], S. Shields[1]; [1]Biology, Gustavus Adolphus College, Saint Peter, MN

B554/P2405 **Bioinformatic and functional characterization of the ORFs YPR117W and YHL018W in Saccharomyces cerevisiae.** D. Edholm[1], N. Carlson[1], S. Shields[1]; [1]Biology, Gustavus Adolphus College, Saint Peter, MN

B555/P2406 **MICU2 Restricts Spatial Crosstalk Between $InsP_3R$ and MCU Channels by Regulating Threshold and Gain of MICU1-Mediated Inhibition and Activation of MCU.** R. Payne[1], H. Hoff[1], A. Roskowski[1], J.K. Foskett[1,2]; [1]Physiology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, [2]Cell and Developmental Biology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

Cellular Lipid Metabolism and Membrane Dynamics

B556/P2407 **Phosphatidylinositol synthesis is controlled at the level of substrate availability.** N. Sengupta[1], D.J. Tóth[1], J. Pemberton[1], Y. Kim[1], T. Balla[1]; [1]NICHD, NIH, Bethesda, MD

B557/P2408 **Acute control of plasma membrane PtdIns(4,5)P2.** R.C. Wills[1], J.P. Zewe[1], B. Goulden[1], G. Hammond[1]; [1]Department of Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

B558/P2409 **Uncovering a novel and Ca^{2+} dependent mechanism that regulates phosphatidylinositol 4-phosphate production at the plasma membrane.** I. Ulengin-Talkish[1], R.K. Bond[1], A. Gingras[2], N. St-Denis[2], M.S. Cyert[1]; [1]Biology, Stanford University, Stanford, CA, [2]Lunenfeld-Tanenbaum Research Institute, Mount Sinai Hospital, Toronto, Canada

B559/P2410 **Novel biosensors for an enigmatic phosphoinositide.** B. Goulden[1], J.P. Zewe[1], R.C. Wills[1], J.E. Pacheco[1], G.R. Hammond[1]; [1]Department of Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

B560/P2411 **Diffusion of lipids and GPI-anchored proteins in actin-free plasma membrane vesicles measured by STED-FCS.** E. Sezgin[1], C. Eggeling[1]; [1]Weatherall Institute of Molecular Medicine, University of Oxford, Oxford, United Kingdom

B561/P2412 **Membrane scission activity of Endophilin A2 depending on phospholipid composition.** K. Kida[1], M. Kitamata[1], K. Hanawa-Suetsugu[1], S. Suetsugu[1]; [1]Molecular Medicine and Cell Biology Laboratory, Nara Institute of Science and Technology, Nara, Japan

B562/P2413 **Rab1 is essential of lipid droplet biogenesis.** I. Nevo-Yassaf[1], A. Dukhovny[2], K. Hirschberg[1], E.H. Sklan[2]; [1]Pathology, Tel Aviv University, Tel Aviv, Israel, [2]Clinical Microbiology and Immunology, Tel Aviv University, Tel Aviv, Israel

B563/P2414 **Rapid sterol transfer in vitro by a StAR-kin domain from Lam4p, a Lipid transfer protein Anchored at a Membrane contact site (LAM) in yeast.** L.H. Wong[1], T. Levine[1]; [1]UCL Institute of Ophthalmology, University College London, London, United Kingdom

B564/P2415 **Recycling of lysosome membranes in neurons is regulated by lysosomal ganglioside levels.** M. Boutry[1,2,3,4,5], J. Branchu[2,3,4,5], C. Lustremant[2,3,4,5], J. Pernelle[2,3,4,5], R. Matusiak[2,3,4,5], A. Seyer[6], M. Poirel[6], B. Colsch[7], A. Pierga[2,3,4,5], K. Dobrenis[8], A. Durr[2,3,4,5,9], A. Brice[2,3,4,5], F. Mochel[2,3,4,5,9], H. El Hachimi[1,2,3,4,5], G. Stevanin[1,2,3,4,5,9], f. darios[2,3,4,5]; [1]Laboratoire de Neurogénétique, Ecole Pratique des Hautes Etudes, PSL Research University, F-75013, Paris, France, [2]Sorbonne Universités, UPMC Univ Paris 06, UMR S 1127, F-75013, Paris, France, [3]Inserm, U1127, F-75013, Paris, France, [4]CNRS, UMR 7225, F-75013, Paris, France, [5]Institut du Cerveau et de la Moelle épinière, ICM, F-75013, Paris, France, [6]Profilomic SA, F-92100, Boulogne-Billancourt, France, [7]CEA, DRF/Institut Joliot/SPI/LEMM, Université Paris-Saclay, F-91191, Gif-sur-Yvette, France, [8]Rose F. Kennedy Intellectual and Developmental Disabilities Research Center, Albert Einstein College of Medicine, Bronx, NY, [9]Centre de référence de Neurogénétique, Fédération de génétique, APHP, La Pitié-Salpêtrière Hospital, F-75013, Paris, France

B565/P2416 **Lipid-laden macrophages downregulate Akt phosphorylation and metabolize lipid droplets via autophagy.** R. Sultana[1], I. Ratnayake[2], M. Schenk[1], P. Ahrenkiel[2], N. Thiex[1]; [1]Biology Microbiology Department, South Dakota State University, Brookings, SD, [2]Department of Nanoscience Nanoengineering, South Dakota School of Mines Technology, Rapid City, SD

B566/P2417 **Mechanisms of selective death of tumor cells after COPI complex depletion.** A. Gasparian[1], M. Aksenova[1], D. Oliver[1], E. Levina[2], S. Lee[1], K. Mythreye[3], M. Wyatt[1], E. Broude[1], M. Shtutman[1]; [1]Drug Discovery and Biomedical Sciences, University of South Carolina, Columbia, SC, [2]Biological Sciences, University of South Carolina, Columbia, SC, [3]Chemistry and Biochemistry, University of South Carolina, Columbia, SC

B567/P2418 **The GOLPH3 oncogene controls the intra-Golgi recycling of sphingolipid glycosylating enzymes to promote proliferation.** R. Rizzo[1], D. Supino[1], B. Lombardi[1], D. Russo[1], F. Russo[1], M. Zhukovsky[1], P. Pothukuchi[1], L. Sticco[1], S. Capasso[1], L. Capolupo[1], G. Boncompain[2], N. Dathan[1], G. Turacchio[1], F. Zito Marino[3], G. Acquino[3], C. Vitagliano[3], P. Henklein[4], H. Clausen[5], U. Mandel[5], A. Budillon[3], S. Parashuraman[1], F. Perez[2], L.M. Obeid[6], Y.A. Hannun[6], A. Luini[1], G. D'Angelo[1]; [1]Institute of Protein Biochemistry, National Research Council of Italy, Naples, Italy, [2]Institut Curie, Paris, France, [3]Istituto Nazionale Tumori 'G. Pascale', Naples, Italy, [4]Biochemistry Department, Berlin University, Berlin, Germany, [5]Department of Cellular and Molecular Medicine, University of Copenhagen, Copenhagen, Denmark, [6]Medical Center, Stony Brook University, Stony Brook, NY

B568/P2419 **Molecular mechanisms of Scavenger Receptor SR-BI regulation: linking HDL binding to cholesterol transport.** P.E. Marques[1], S. Nyegaard[1], R.F. Collins[1], W.S. Trimble[1], S. Grinstein[1]; [1]Cell Biology, The Hospital for Sick Children, Toronto, ON

B569/P2420 **FUSEXINS, a family of sexual, somatic and viral cell fusion proteins.** C. Valansi[1], D. Moi[2], E. Leikina[3], E. Matveev[1], M. Graña[4], L.V. Chernomordik[3], H. Romero[5], P.S. Aguilar[2], B. Podbilewicz[1]; [1]Biology, Technion- Israel Institute of Technology, Haifa, Israel, [2]Laboratorio de Biología Celular de Membranas, Instituto de Investigaciones Biotecnologicas "Dr. Rodolfo A. Ugalde" (IIB), Buenos Aires, Argentina, [3]Section on Membrane Biology, Eunice Kennedy Shriver National Institute of Child Health and Human Development, Bethesda, MD, [4]Unidad de Bioinformática, Institut Pasteur Montevideo, Montevideo, Uruguay, [5]Ecología y Evolución, Universidad de la República, Montevideo, Uruguay

B570/P2421 **Short Chain Ceramides Disrupt Segregation of Liquid-ordered from Liquid-disordered Components in the Plasma Membrane.** D. Holowka[1], B.A. Baird[1]; [1]Department of Chemistry and Chemical Biology, Cornell University, Ithaca, NY

B571/P2422 **Pattern formation and stochastic geometry sensing in a lipid kinase-phosphatase competitive reaction.** S.D. Hansen[1,2], W. Huang[3], Y. Lee[3], P. Bieling[1,4], J.T. Groves[1,3]; [1]California Institute for Quantitative Biosciences, University of California Berkeley, Berkeley, CA, [2]Chemistry and Biochemistry, University of Oregon, Eugene, OR, [3]Chemistry, University of California Berkeley, Berkeley, CA, [4]Systemic Cell Biology, Max Planck Institute of Molecular Physiology, Dortmund, Germany

B572/P2423 **Ca2+ releases E-Syt1 autoinhibition to couple ER-plasma membrane tethering with lipid transport.** X. Bian*[1,2,3], Y. Saheki[1,2,3,4], P. De Camilli[1,2,3,5]; [1]Department of Neuroscience and Cell Biology, Yale University School of Medicine, New Haven, CT, [2]Howard Hughes Medical Institute, New Haven, CT, [3]Program in Cellular Neuroscience, Neurodegeneration, and Repair, Yale University School of Medicine, New Haven, CT, [4]Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore, Singapore, [5]Kavli Institute for Neuroscience, Yale University School of Medicine, New Haven, CT

Kinases and Phosphatases 2

B574/P2424 **WITHDRAWN**

B575/P2425 **The β4-subunit of the voltage-gated calcium channel down-regulates Wnt/β-catenin signaling and cell proliferation.** M. Rima[1,2,3], M. Daghsni[3,4], A. Lopez[5], Z. Fajloun[2], L. Lefrancois[5], M. Dunach[6], Y. Mori[7], P. Merle[5], J.L. Bruses[8], M. De Waard[1,3,9], M. Ronjat[1,3]; [1]LabEx Ion Channels Science and Therapeutics, Nantes, France, [2]Azm Center for Research in Biotechnology and Applications, Lebanese University, Tripoli, Lebanon, [3]L'institut du thorax, INSERM, CRNS, University of Nantes, Nantes, France, [4]Laboratoire de Génétique Humaine, Université de Tunis El Manar - School of Medicine, Tunis, Tunisia, [5]Hepathology - Croix-Rousse Hospital, Claude Bernard University - Centre of Research in Cancerology of Lyon, Lyon, France, [6]Universitat Autonoma de Barcelona, Barcelona, Spain, [7]Department of Synthetic Chemistry and Biological Chemistry, Kyoto University - Graduate School of Engineering, Kyoto, Japan, [8]Natural Sciences, Mercy College, Dobbs Ferry, NY, [9]Smartox Biotechnology, Saint-Martin d'Hères, France

B576/P2426 **Divergence in the temporal dynamics of Extracellular-signal regulated kinase (ERK) activity between subcellular compartments.** J.D. Keyes[1], A. Ganesan[2], J. Zhang[1,2]; [1]Pharmacology, University of California San Diego, San Diego, CA, [2]Biomedical Engineering, The Johns Hopkins University School of Medicine, Baltimore, MD

B577/P2427 **Transient activation of fission yeast AMPK is required for cell proliferation during osmotic stress.** K.L. Schutt[1], J.B. Moseley[1]; [1]Biochemistry and Cell Biology, Dartmouth College, Hanover, NH

B578/P2428 **Signal transduction of human Fc gamma RIIIb for neutrophil extracellular trap (NET) formation.** O. Alemán[1], N. Mora[1], E. Uribe-Querol[2], C. Rosales[1]; [1]Instituto de Investigaciones Biomédicas, Universidad Nacional Autónoma de México, Mexico City, Mexico, [2]Facultad de Odontología, Universidad Nacional Autónoma de México, Mexico City, Mexico

B579/P2429 **Testing a model of CK1 autoinhibition.** S.N. Cullati[1], Z.C. Elmore[1], R.X. Guillen[1], J. Chen[1], K.L. Gould[1]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B580/P2430 **ASK1 Activation in Platelets by Oxidized LDL is Independent of CD36.** K. Golla[1], R. Sharma[1], M. Naik[1], U. Naik[1]; [1]Cardeza Foundation for Hematologic Research and Center for Vascular Biology Research, Department of Medicine, Thomas Jefferson University, Philadelphia, PA

B581/P2431 **ARL11/ARLTS1 is a novel regulator of ERK signaling in macrophages.** S.B. Arya[1], H. Kaur[1], A. Tuli[1]; [1]Cell Biology and Immunology, CSIR-Institute of Microbial Technology, Chandigarh, India

B582/P2432 **Cdk2 dependent activation of β-cell metabolism is eclipsed by its inhibitory effect on plasma membrane excitability and insulin secretion.** S.M. Sdao[1], C. Poudel[1], B.A. Schmidt[1], K.M. Mortensen[1], M.J. Merrins[1]; [1]Department of Biomolecular Chemistry, University of Wisconsin-Madison, Madison, WI

B583/P2433 **PTP activity for IRS-1 regulated by the interaction of C1-Ten with PIP3 via SH2 domain.** E. Kim[1], D. Kim[2], H. Jeong[2], A. Koh[2], J. Lee[2], W. Cho[3], S. Ryu[2]; [1]Division of Integrative Biosciences and Biotechnology, Pohang University of Science and Technology, Pohang, South Korea, [2]Department of Life Sciences, Pohang University of Science and Technology, Pohang, South Korea, [3]Departments of Chemistry, University of Illinois at Chicago, Chicago, IL

B584/P2434 **Role of ERK Pathway Inhibition and Retinoic Acid on the Neuronal Differentiation of Mouse ES Cells. Author: Sri Kona, PI: Dr. Eduardo Martinez Ceballos, Southern University and A and M College, Btr LA.** S.D. KONA[1]; [1]Biology, Southern University and A and M College, Baton Rouge, LA

B585/P2435 **Extracellular acidosis induces EMT of breast cancer cells via SRC/FAK pathway in vitro.** D. Katoh[1], R. Hashizume[1], K. Imanaka-Yoshida[1], T. Yoshida[1]; [1]Department of Pathology and Matrix Biology, Mie University Graduate School of Medicine, Tsu, Mie, Japan

B586/P2436 **Mechanisms of cross pathway regulation in *Saccharomyces cerevisiae*.** B. Wang[1], J.P. Shellhammer[1], A.E. Allen[1], S.K. Suzuki[1], H.G. Dohlman[1]; [1]Pharmacology, University of North Carolina at Chapel Hill, Chapel Hill, NC

B587/P2437 **The role of MAPK and SCF in the destruction of Med13 in cyclin C mediated cell death.** D.C. Stieg[1], S.D. Willis[1], J. Scuorzo[2], M. Song[2], V. Ganesan[1], R. Strich[1], K.F. Cooper[1]; [1]Molecular Biology, Rowan University Graduate School of Biomedical Sciences, Stratford, NJ, [2]Medicine, Rowan University School of Osteopathic Medicine, Stratford, NJ

B588/P2438 **Snf1 dependent destruction of Med13 is required for programmed cell death following oxidative stress in yeast.** S.D. Willis[1], D.C. Stieg[1], R. Shah[1], A.K. Strich[1], K.F. Cooper[1]; [1]Molecular Biology, Rowan University, Stratford, NJ

B589/P2439 **Cdk1, by Stimulating Mitochondrial Respiration, Restricts the Metabolic Amplifying Pathways of Insulin Secretion.** T. Gregg[1], R.S. Dhillon[2], H.R. VanDeusen[1], B.A. Schmidt[1], S.M. Sdao[1,2], J.N. Larmie[1], C. Poudel[1], K.W. Eliceiri[3], J.M. Denu[2], M.J. Merrins[1,2]; [1]Medicine, University of Wisconsin-Madison, Madison, WI, [2]Biomolecular Chemistry, University of Wisconsin-Madison, Madison, WI, [3]Biomedical Engineering, University of Wisconsin-Madison, Madison, WI

B590/P2440 **Involvement of specific Akt isoforms in the decidualization mechanisms of the mouse uterus.** P. Adam[1], F. Fabi[1], F. Demontigny[1], L. Tardif[1], S. Parent[1], E. Asselin[1]; [1]Medical Biology, Université du Québec à Trois-Rivières, Trois-Rivières, QC

Signaling Receptors (RTKs and GPCRs)

B591/P2441 **Analysis of receptor tyrosine kinase and G-protein coupled receptor signaling dynamics on micro-structured surfaces.** P. Lanzerstorfer[1], Y. Yoneyama[2], E. Sevcsik[3], D. Zindel[4], F. Hakuno[2], G. Schütz[3], C. Krasel[4], M. Bünemann[4], S. Takahashi[2], J. Weghuber[1]; [1]University of Applied Sciences Upper Austria, Wels, Austria, [2]Department of Animal Sciences, The University of Tokyo, Tokyo, Japan, [3]Institute of Applied Physics, Technical University Vienna, Vienna, Austria, [4]Institute for Pharmacology, Philipps-University Marburg, Marburg, Germany

B592/P2442 **Engineering Cell Sensing and Responses Using a GPCR-Coupled CRISPR-Cas System.** P.P. Dingal[1,2,3], N.H. Kipniss[1], L. Labanieh[1], Y. Gao[4], L.S. Qi[1,2,3]; [1]Bioengineering, Stanford University, Stanford, CA, [2]ChEM-H, Stanford University, Stanford, CA, [3]Chemical Systems Biology, Stanford University, Stanford, CA, [4]Cancer Biology Program, Stanford University, Stanford, CA

B593/P2443 **Developing platforms to interrogate membrane protein oligomerization and its functional impact.** A. Khan[1], B. Hawes[2], A. Weinglass[1]; [1]Screening and Compound Profiling, Merck Sharp Dohme Corp., Kenilworth, NJ, [2]Project Management, Merck Sharp Dohme Corp., Kenilworth, NJ

B594/P2444 **Manipulating and quantifying cAMP *in vivo* in *Caenorhabditis elegans*.** A. Cianciulli[1], T.R. Buerkert[1], R.J. Schuck[1], E. Li[1], M. Nelson[1]; [1]Biology, Saint Joseph's University, Philadelphia, PA

B595/P2445 **Localization of MCHR1 to a transient primary cilium in differentiating pre-adipocytes alters MCH signaling.** H. Ophardt[1], H. Abdullah[1], L. Galbier[1], R. Shen[1], L.B. Cook[1]; [1]Biology, The College at Brockport, State University of New York, Brockport, NY

B596/P2446 **To Investigate the Roles of Lysophosphatidic Acid Type 2 Receptor in Cell Senescence.** W. Chen[1], H. Lee[1]; [1]Life Science, National Taiwan University, Taipei, Taiwan

B597/P2447 **Coagulation factor VIIa-mediated protease-activated receptor 2 activation leads to enhanced topoisomerase1 level and contributes to breast cancer progression.** A. ROY[1], P. SEN[1]; [1]Department of Biological Chemistry, Indian Association for the Cultivation of Science, kolkata, India

B598/P2448 **Molecular Signatures of Opioid Receptors in Response to Ethanol.** S.J. Tobin[1], O. Golfetto[1], S. Biswas[1], D.L. Wakefield[1], E.E. Cacao[1], V. Vukojevic[2], L. Terenius[2], T. Jovanovic-Talisman[1]; [1]Molecular Medicine, Beckman Research Institute of the City of Hope Comprehensive Cancer Center, Duarte, CA, [2]Clinical Neuroscience, Karolinska Institutet, Stockholm, Sweden

B599/P2449 **Activation of Airway T2R Bitter Taste Receptors by Pseudomonas aeruginosa Quinolones.** J.R. Freund[1], B. Chen[1], D.B. McMahon[1], N.D. Adappa[1], J.N. Palmer[1], D.W. Kennedy[1], D.R. Reed[2], P. Jiang[2], R.J. Lee[1,3]; [1]Otorhinolaryngology, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA, [2]Monell Chemical Senses Center, Philadelphia, PA, [3]Physiology, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA

B600/P2450 **LAT-associated molecules show distinct kinetic and spatial recruitment during TCR signaling in T cells.** J. Yi[1], L. Balagopalan[1], K. McIntire[1], T. Nguyen[1], L.E. Samelson[1]; [1]NCI, National Institutes of Health, Bethesda, MD

B601/P2451 **Basigin (CD147) associates with toll-like receptor 4 (TLR4) via its transmembrane domain.** J.D. Ochrietor[1], J.M. Brown[1]; [1]Department of Biology, University of North Florida, Jacksonville, FL

B602/P2452 **Optogenetic control of TrkA signaling.** J.M. Hope[1], L. Duan[1], S. Guo[1], A. François[2,3,4,5], Q. Ong[1], G. Scherrer[2,3,4,5], B. Cui[1]; [1]Department of Chemistry, Stanford University, Stanford, CA, [2]Stanford Neurosciences Institute, Stanford University, Stanford, CA, [3]Department of Molecular and Cellular Physiology, Stanford University, Stanford, CA, [4]Department of Neurosurgery, Stanford University, Stanford, CA, [5]Department of Anesthesiology, Perioperative and Pain Medicine, Stanford University, Stanford, CA

B603/P2453 **The Na,K-ATPase β_2-subunit modulates epidermal growth factor signaling through NF2/Merlin.** A. Litan[1,2], Z. Li[1], O. Vagin[3], S.A. Langhans[1]; [1]Nemours/A.I DuPont Hospital for Children, Wilmington, DE, [2]Biological Sciences, University of Delaware, Newark, DE, [3]VA Greater Los Angeles Healthcare System, Los Angeles, CA

B604/P2454 **Single-molecule study of VEGFR2 spatiotemporal organization on the endothelial cell surface.** B. Da Rocha-Azevedo[1], A. Dasgupta[1], S. Lee[1,2], T. Kim[1], K. Jaqaman[1]; [1]Biophysics, UT Southwestern Medical Center, Dallas, TX, [2]Korea University, Seoul, South Korea

B605/P2455 **A 3D culture system identifies a new mode of cetuximab resistance in colorectal cancer and provides means to overcome cetuximab resistance.** B. Singh[1], G. Bogatcheva[1], R.J. Coffey[1,2], R. Graves-Deal[1]; [1]Medicine, Vanderbilt University Medical Center, Nashville, TN, [2]Veterans Affairs Medical Center, Nashville, TN

B606/P2456 **Alternative Dopamine Signaling in Macrophages.** E. Nickoloff[1], K. Runner[1], R. Nolan[1], P. Gaskill[1]; [1]Pharmacology and Physiology, Drexel University, Philadelphia, United States

B607/P2457 **The phosphatase PTPRG inactivates AXL sequestered in membrane lipid domains by the tumor suppressor OPCML.** J. Antony[1,2], E. Zanini[1], Z. Kelly[1], R. Huang[2], J. Thiery[2], H. Gabra[1,3], C. Recchi[1]; [1]Surgery and Cancer, Imperial College London, London, United Kingdom, [2]National University of Singapore, Singapore, Singapore, [3]Clinical Discovery Unit, Early Clinical Development, AstraZeneca, Cambridge, United Kingdom

B608/P2458 **Automated imaging-based technique for simultaneous monitoring of Ca^{2+} and DAG biosensors enables detailed characterization of GPCR signaling pathways.** J.E. Clayton[1]; [1]Applications, BioTek Instruments, Winooski, VT

Rho-Family GTPases

B609/P2459 **The RhoGAP SPV-1 acts through CDC-42 to regulate calcium signaling in the *C. elegans* spermatheca during embryo transits.** J. Bouffard[1], A.D. Cecchetelli[2], C. Clifford[2], R. Zaidel-Bar[3,4], E.J. Cram[2]; [1]Bioengineering, Northeastern University, Boston, MA, [2]Biology, Northeastern University, Boston, MA, [3]Mechanobiology Institute, Singapore, Singapore, [4]Cell and Developmental Biology, Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv, Israel

B610/P2460 **Flares of active Rho and F-actin locally reinforce the tight junction barrier in response to mechanical stress.** R.E. Stephenson[1], T. Higashi[1,2], I. Erofeev[3], T.R. Arnold[1], B. Coy[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

B611/P2461 **Cytokines augment GEF-H1 expression through a cytoskeleton-dependent self-regulatory cycle in the tubular epithelium.** S. Venugopal[1], Q. Dan[1], P. Speight[1], A. Kapus[1], K. Szaszi[1]; [1]Surgery, Keenan Research Center for Biomedical Science, Toronto, ON

B612/P2462 **RhoGDI Mediates Spatiotemporal Patterning of GTPase Activity During Cell Wound Repair.** A.E. Golding[1], W.M. Bement[1,2,3]; [1]Graduate Program in Cell and Molecular Biology, University of Wisconsin-Madison, Madison, WI, [2]Department of Zoology, University of Wisconsin-Madison, Madison, WI, [3]Laboratory of Cell and Molecular Biology, University of Wisconsin-Madison, Madison, WI

B613/P2463 **Identifying signaling connections in cancer cell motility using partial correlation analysis of simultaneously-imaged Rho GTPase and RhoGEF activities.** D.J. Marston[1], M. Vilela[2], G. Danuser[2], J. Sondek[1], K.M. Hahn[1]; [1]Pharmacology, UNC-Chapel Hill, Chapel Hill, NC, [2]Cell Biology, UT Southwestern Medical Center, Dallas, TX

B614/P2464 **Co-regulation of Rac and Rho Signalling in Cell Motility by a Scaffold RhoGAP BPGAP1.** C.Q. Pan[1], P.J. Chua[2], T.W. Chew[1], S.Y. Er[1], P. . Chaudhuri[1], D.C. Wong[1], A. Salim[3], A. Thike[4], C. Koh[5], C. Lim[6], P.H. Tan[4], B.H. Bay[2], A.J. Ridley[7], B.C. Low[1]; [1]Biological Sciences, Mechanobiology Institute, National University of Singapore, Singapore, Singapore, [2]Department of Anatomy, Yong Loo Lin School of Medicine, National University Health System, National University of Singapore, Singapore, Singapore, [3]Department of Mathematics and Statistics, La Trobe University, Bundoora, Australia, [4]Department of Pathology, Singapore General Hospital, Singapore, Singapore, [5]Division of Molecular Genetics Cell Biology, School of Biological Sciences, Nanyang Technological University, Singapore, Singapore, [6]Department of Biomedical Engineering, Mechanobiology Institute, National University of Singapore, Singapore, Singapore, [7]Randall Division of Cell and Molecular Biophysics, King's College London, London, United Kingdom

B615/P2465 **Rac3 GTPase regulates breast cancer invasion and metastasis by controlling adhesion and matrix degradation.** S.K. Donnelly[1,2], R. Cabrera[1], S.P. Mao[1], J.R. Christin[3], B. Wu[4], W. Guo [3], J.J. Bravo-Cordero[5], J.S. Condeelis[1,2], J.E. Segall[1,2], L. Hodgson[1,2]; [1]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 Cell Biology, Albert Einstein College of Medicine, Bronx, NY, [4]Biophysics and Biophysical Chemistry, School of Medicine, Johns Hopkins University, Baltimore, MD, [5]Department of Medicine, Division of Hematology and Medical Oncology, Icahn School of Medicine, Tisch Cancer Institute at Mount Sinai, New York, NY

B616/P2466 **Cdc42 Regulates Dynein and Actin in Terminal Differentiation of Human Erythroblasts.** T. Goto[1], K. Ubukawa[2], I. Kobayashi[2], Y. Guo[2], K. Asanuma[3], N. Takahashi[2], H. Wakui[1], W. Nunomura[1,4]; [1]Dept of Life Sci., Grad Sch. of Engin. Sci., Akita Univ., Akita, Japan, [2]Dept. of Hematol., Nephrol., Rheumatol., Grad. Sch. of Med., Akita Univ., Akita, Japan, [3]Cent. for Radioisotope, BERSC, Akita Univ., Akita, Japan, [4]Res. Cent. for Engin. Sci., Grad. Sch. of Engin. Sci., Akita Univ., Akita, Japan

B617/P2467 **Proteins that Specify the Polarity GTPase Cdc42 to a Differentiation MAPK Pathway.** S. Basu[1], B. Li[1], G. Kimble[1], K.G. Kozminski[2,3], P.J. Cullen[1]; [1]Biological Sciences, University at Buffalo, Buffalo, NY, [2]Biology, University of Virginia, Charlottesville, VA, [3]Cell Biology, University of Virginia, Charlottesville, VA

B618/P2468 **Role of MYOGEF in the regulation of membrane blebbing.** M. Jiao[1], D. Wu[1], Q. Wei[1]; [1]Department of Biological Sciences, Fordham University, Bronx, NY

B619/P2469 **Complex Colony Morphology as a Multicellular Behavior with Macroscopic Benefits.** J. Chow[1], P.J. Cullen[1], D.M. Ferkey[1]; [1]Biological Sciences, SUNY Buffalo, Buffalo, NY

B620/P2470 **Breaking and entering: a pore-ensics analysis.** J.G. Lam[1,2], S. Vadia[2], S. Pathak-Sharma[1], E. McLaughlin[3], X. Zhang[3], J.A. Swanson[4], S.M. Seveau[1]; [1]Microbial Infection and Immunity, The Ohio State University, Columbus, OH, [2]Microbiology, The Ohio State University, Columbus, OH, [3]Center for Biostatistics, The Ohio State University, Columbus, OH, [4]Microbiology and Immunology, University of Michigan Medical School, Ann Arbor, MI

B621/P2471 **Snf4 promotes Snf1/AMPK GEF activity for Arf3 activation during glucose starvation.** Y. Chen[1], J. Hsu[1], F.S. Lee[1,2]; [1]Institute of Molecular Medicine, National Taiwan University, Taipei, Taiwan, [2]Department of Medical Research, National Taiwan University Hospital, Taipei, Taiwan

B622/P2472 **Deregulation of Rho GTPase Family Members in Myelodysplastic Syndromes and Acute Myeloid Leukemia.** L. Bueno de Paiva[1], F.V. Pericole[1], C.O. Torello[1], A.J. Ridley[2], S.T. Saad[1], M. Lazarini[1,3]; [1]Hematology and Blood Transfusion Center, University of Campinas, Campinas, Brazil, [2]Randall Division of Cell and Molecular Biophysics, Kings College London, London, United Kingdom, [3]Department of Pharmaceutical Sciences, Federal University of São Paulo, São Paulo, Brazil

B623/P2473 **Investigation of RhoA binding proteins using BioID system.** A. Kushiya[1], S. Yamada[2], K. Yoshino[3], Y. Kato[1], A. Takeuchi[4], L.A. Sabourin[5], A.V. Cybulsky[6], M. Yamanoue[1], Y. Shirai[1], S. Ueda[1]; [1]Department of Agrobioscience, Kobe University, Kobe, Japan, [2]Department of Biomedical Engineering, University of California, Davis, Davis, CA, [3]Biosignal Research Center, Kobe University, Kobe, Japan, [4]Analytical Laboratory, Kobe Pharmaceutical University, Kobe, Japan, [5]Department of Cellular and Molecular Medicine, University of Ottawa, Ottawa, Canada, [6]Department of Medicine, McGill University, Montreal, Canada

B624/P2474 **Paclitaxel induces post-translational modifications of RhoGDI alpha as a mechanism to regulate RhoA activity.** H. Horita[1], A. Law[1], K. Middleton[1]; [1]RD Department, Cytoskeleton Inc., Denver, CO

B625/P2475 **Intermolecular steric inhibition of Ephexin4 is relieved by Elmo1.** K. Kim[1,2,3], J. Lee[1,2,3], S. Lee[1,2], H. Moon[1,2,3], B. Park[1,2], D. Kim[1,2], Y. Joo[4], D. Park[1,2,3,5]; [1]School of Life Sciences, Gwangju Institute of Science and Technology, Gwangju, South Korea, [2]Aging Research Institute, Gwangju Institute of Science and Technology, Gwangju, South Korea, [3]Research Center for Cellular Homeostasis, Ewha Womans University, Seoul, South Korea, [4]Department of Internal Medicine, Chonnam National University Medical School, Gwangju, South Korea, [5]Department of Biomedical Science and Engineering, Gwangju Institute of Science and Technology, Gwangju, South Korea

B626/P2476 **GTPase Steering by an Enzymatic Corral.** T.A. Burke[1], N.R. Davenport[1], W.M. Bement[1]; [1]Laboratory of Cell and Molecular Biology, The University of Wisconsin at Madison, Madison, WI

B627/P2477 **The dual Rho GEF/Rac GAP protein Bcr regulates p38 MAPK signaling and cell proliferation.** S.E. Kohrt[1], A.D. Dubash[1]; [1]Biology, Furman University, Greenville, SC

B628/P2478 **An artificial cell-like system linking cell size and GTPase signaling pathways.** P. Torre[1], M. Good[1], J.G. Bermudez[1]; [1]Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

Cytoskeleton-Membrane Interactions: Septins

B630/P2479 **Oligomerization properties and structural plasticity of shs1 capped-rod in interaction with membranes.** C. Taveneau[1], G. Pehau-Arnaudet[2], A. Di cicco[1], D. Levy[1], A. Bertin[1]; [1]Institut Curie, Paris, France, [2]Institut Pasteur, Paris, France

B631/P2480 **Membrane reshaping by curvature sensitive septin filaments.** C. Taveneau[1], A. Beber[1], H. Isambert[1], P. Bassereau[1], D. Levy[1], P. Milhiet[2], s. mangenot[1], A. Bertin[1]; [1]Department of physical chemistry, Institut Curie, Paris, France, [2]Structure and Dynamics of nucleoproteic and membrane assemblies, Structural Biology Center, Montpellier, France

B632/P2481 **Dynamic exchange of septin complexes in plasma membrane filaments.** I.M. Mucha-Kruczyńska[1,2], M. Bańko[2], E. Platonova[2], H. Ewers[1,2]; [1]Institute for Chemistry and Biochemistry, Freie Universität Berlin, Berlin, Germany, [2]Randall Division of Cell and Molecular Biophysics, King's College London, London, United Kingdom

B633/P2482 **Deciphering the regulatory role of Septin9 N- terminus in mammalian septin polymerization.** F. Soroor[1,2], W.S. Trimble[1,2]; [1]Department of Biochemistry, University of Toronto, Toronto, ON, [2]Cell Biology Program, Hospital for Sick Children, Toronto, ON

B634/P2483 **Mechanisms controlling micron-scale membrane curvature recognition by septins.** K. Cannon[1], A.S. Gladfelter[1]; [1]Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC

B635/P2484 **Analysis of septin assembly using optogenetics and in vitro reconstitution.** B. Woods[1], A.S. Gladfelter[1]; [1]Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC

Mechanotransduction 1

B636/P2485 **The role of focal adhesion-localized calcium sparks in the sensing of extracellular matrix mechanical properties.** A.Y. Moalim[1], S.V. Plotnikov[1]; [1]Department of Cell and Systems Biology, University of Toronto, Toronto, ON

B637/P2486 **Substratum stiffness modulates proliferation downstream of Wnt3a by regulating integrin-linked kinase and frizzled-1.** S. Han[1], M. Pang[2], C.M. Nelson[1,2]; [1]Molecular Biology, Princeton University, Princeton, NJ, [2]Chemical and Biological Engineering, Princeton University, Princeton, NJ

B638/P2487 **Stopping Transformed Growth with Rigidity Sensing Modules: Turning a Devil into an Angel.** B. YANG[1], H. Wolfenson[2], N. Nakazawa[1], S. Liu[3], J. Hu[3], M.P. Sheetz[1,2]; [1]Mechanobiology Institute, National University of Singapore, Singapore, Singapore, [2]Department of Biological Sciences, Columbia University, New York, NY, [3]Department of Mechanical Engineering, Columbia University, New York, NY

B639/P2488 **Myofibroblast Differentiation of Fetal Fibroblasts is Inhibited in Response to ECM Rigidity and TGF-b1.** R.J. Jerrell[1], M.J. Leih[1], A. Parekh[1,2,3,4]; [1]Otolaryngology, Vanderbilt University Medical Center, Nashville, TN, [2]Vanderbilt-Ingram Cancer Center, Vanderbilt University Medical Center, Nashville, TN, [3]Biomedical Engineering, Vanderbilt University, Nashville, TN, [4]Cancer Biology, Vanderbilt University, Nashville, TN

B640/P2489 **Plasma Membrane and Cell Surface Mechanics in Embryonic Stem Cells.** H. De Belly[1], M. Winzi[2], J. Guck[2], C. Lamaze[3], K. Chalut[4], E.K. Paluch[1]; [1]LMCB, University College London, London, United Kingdom, [2]Cellular Machines, Technical University Dresden, Dresden, Germany, [3]Laboratoire Trafic, Signalisation et Ciblage Intracellulaires, Insitut Curie, Paris, France, [4] Cambridge Stem Cell Institute, Wellcome Trust/Medical Research Council, Cambridge, United Kingdom

B641/P2490 **Fibrillar Force Generation by Fibroblasts Depends on Microenvironmental Stiffness.** V. Maruthamuthu[1], M. Eftekharjou[1], D. Palmer[2], B. McCoy[1]; [1]Mechanical Aerospace Engineering, Old Dominion University, Norfolk, VA, [2]Biological Sciences, Old Dominion University, Norfolk, VA

B642/P2491 **Force triggers YAP nuclear entry by mechanically regulating transport across nuclear pores.** A. Elosegui-Artola[1], I. Andreu[2,3], A. Beedle[4], A. Lezamiz[4], M. Uroz[1], A. Kosmalska[1,5], R. Oria[1,5], J.Z. Kechagia[1], P. Rico-Lastres[4,6], A. Le Roux[1], C.M. Shanahan[4], X. Trepat[1,5,7], D. Navajas[1,5], S. Garcia-Manyes[4,6], P. Roca-Cusachs[1,5]; [1]Institute for Bioengineering of Catalonia, Barcelona, Spain, [2]Mondragon University, Arrasate, Spain, [3]CEIT and TECNUN (University of Navarra), San Sebastian, Spain, [4]Randall Division of Cell and Molecular Biophysics, King's College London, London, United Kingdom, [5]University of Barcelona, Barcelona, Spain, [6]King's College London, King's College London, London, United Kingdom, [7]Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain

B643/P2492 **Modulation of T cell Priming by Dendritic Cell Stiffness.** D. Blumental[1,2], V. Chandra[1,2], J.K. Burkhardt[1,2]; [1]Pathology and Laboratory Medicine, Children's Hospital of Philadelphia, Philadelphia, PA, [2]Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, PA

B644/P2493 **Force Dynamics During T Cell Activation.** D.A. Garcia[1], A. Upadhyaya[1]; [1]Physics, University of Maryland, College Park, MD

B645/P2494 **B cell mechanosensing: is it a myth?** S. Shaheen[1], Z. Wan[1], Z. Li[1], W. LIU[1]; [1]School of Life Sciences, Institute for Immunology, Tsinghua University, Beijing, China

B646/P2495 **The lamellipodium is a myosin independent mechanosensor.** P.W. Oakes[1,2,3,4,5], T.C. Bidone[1,2,6], Y.M. Beckham[1,2,3], A.V. Skeeters[4], G. Ramirez-San Juan[1,2,3], S.P. Winter[7], G.A. Voth[1,2,6], M.L. Gardel[1,2,3]; [1]Institute for Biophysical Dynamics, University of Chicago, Chicago, IL, [2]James Franck Institute, University of Chicago, Chciago, IL, [3]Department of Physics, University of Chicago, Chicago, IL, [4]Department of Physics Astronomy, University of Rochester, Rochester, NY, [5]Department of Biology, University of Rochester, Rochester, NY, [6]Department of Chemistry, University of Chicago, Chicago, IL, [7]Interdisciplinary Scientist Training Program, University of Chicago, Chicago, IL

B647/P2496 **Control of cell morphology, stiffness, and differentiation by substrates with independently tunable elasticity and viscous dissipation.** E.E. Charrier[1], P.A. Janmey[1], K. Pogoda[1], R.G. Wells[2]; [1]Institute for Medicine and Engineering, University of Pennsylvania, Philadelphia, PA, [2]School of Medicine, University of Pennsylvania, Philadelphia, PA

B648/P2497 **Microtubule-based control of motor-clutch system mechanics in glioma cell migration.** L.S. Prahl[1,2], P.F. Bangasser[1,2], M. Hemmat[1,2], S.S. Rosenfeld[1,3,4], D.J. Odde[1,2]; [1]Physical Sciences-Oncology Center, University of Minnesota, Minneapolis, MN, [2]Biomedical Engineering, University of Minnesota, Minneapolis, MN, [3]Cancer Biology, Cleveland Clinic, Cleveland, OH, [4]Medical Oncology, Mayo Clinic, Jacksonville, FL

B649/P2498 **Sea anemone as a model to study inner ear hair bundle mechanotransduction and Usher proteins interactions.** V. Michel[1,2,3], C. Sabourault[4], C. Petit[1,2,3,5,6]; [1]UMRS1120, INSERM, Paris, France, [2]Université Pierre et Marie Curie - Paris 6, Sorbonne Universités, Paris, France, [3]Neuroscience - Génétique et Physiologie de l'Audition, Pasteur Institut, Paris, France, [4]UMR7138, Equipe Symbiose Marine, Université Côte d'Azur, Nice, France, [5]Collège de France, Paris, France, [6]Syndrome de Usher et Autres Atteintes Rétino-Cochléaires, Institut de la Vision, Paris, France

B650/P2499 **Magnetic Bead Pulling Forces on Soft Substrates Calibrated Using Traction Force Microscopy.** V. Maruthamuthu[1], J. Bush[1], J. Poole[1]; [1]Mechanical & Aerospace Engineering, Old Dominion University, Norfolk, VA

B651/P2500 **Normal extracellular matrix restricts cancer cell proliferation via mechanosensitive epigenetic reprogramming.** R. Kaukonen[1], A. Isomursu[1], A. Mai[1], H. Sihto[2], H. Joensuu[2,3], J. Ivaska[1,4]; [1]Centre for Biotechnology, University of Turku, Turku, Finland, [2]Laboratory of Molecular Oncology, Translational Cancer Biology program, University of Helsinki, Helsinki, Finland, [3]Department of Oncology, Helsinki University Central Hospital, Helsinki, Finland, [4]Department of Biochemistry and Food Chemistry, University of Turku, Turku, Finland

B652/P2501 **Using proximity based biotin identification (BioID) to identify mechano-sensitive interactions surrounding α-catenin.** J.S. Cheah[1], S. Yamada[1]; [1]Biomedical Engineering, University of California, Davis, Davis, CA

B653/P2502 **The epithelial circumferential actin belt regulates YAP/TAZ through nucleocytoplasmic shuttling of Merlin.** K. Yamashita[1], K.T. Furukawa[1], N. Sakurai[1], S. Ohno[1]; [1]Department of Molecular Biology, Yokohama City University, Yokohama, Japan

B654/P2503 **Mechanosensing in endothelial cells involves novel heparin receptor transmembrane protein 184A.** B.E. Tsaousis[1], C.J. Brown[1], S.N. Farwell[1], L.J. Lowe-Krentz[1]; [1]Department of Biological Sciences, Lehigh University, Bethlehem, PA

B655/P2504 **Mechanical behaviors of catch bonds under varied loads.** B. Chen[1]; [1]Engineering Mechanics, Zhejiang Univ., Hangzhou, China

B656/P2505 **Mechanosensitivity in LIM domain proteins.** J.D. Winkelman[1], C.A. Anderson[2], D.R. Kovar[2,3], M.L. Gardel[1,4,5]; [1]Institute for Biophysical Dynamics, The University of Chicago, Chicago, IL, [2]Molecular Genetics and Cell Biology, The University of Chicago, Chicago, IL, [3]Biochemistry and Molecular Biology, The University of Chicago, Chicago, IL, [4]James Franck Institute, The University of Chicago, Chicago, IL, [5]Physics, The University of Chicago, Chicago, IL

Intermediate Filaments

B657/P2506 **ADP-ribosylation of vimentin induces changes in morphology and motility of microglia through enhancing phosphorylation of vimentin at Ser^{56} and disassembly of vimentin filaments.** L. Xie[1], F. Yang[1], C.Y. Chung[1,2]; [1]The School of Pharmaceutical Science and Technology, Tianjin University, Tianjin, China, [2]Pharmacology, Vanderbilt University, Nashville, TN

B658/P2507 **The role of vimentin intermediate filaments in confined cell migration.** A.E. Patteson[1], P.A. Janmey[1]; [1]Physiology, University of Pennsylvania, Philadelphia, PA

B659/P2508 **A role for 14-3-3 in recruitment of keratin filaments to mechanically sensitive cadherin junctions.** R.A. Mariani[1], G.F. Weber[1]; [1]Biological Sciences, Rutgers University-Newark, Newark, NJ

B660/P2509 **Influence of nebulin on the assembly mechanics of desmin intermediate filaments.** M.A. Caragea[1], D.A. Hernandez[1], R. Kirmse[2], H. Herrmann[3], G.M. Conover[1]; [1]Department of Chemistry, Texas AM University, College Station, TX, [2]Department of Molecular, Cellular and Developmental Biology, University of Colorado, Boulder, CO, [3]Molecular Genetics, German Cancer Research Center, Heidelberg, Germany

B661/P2510 **Adaptive Multiple Orientation Analysis for the Segmentation of Intermediate Filament Networks.** M. Kittisopikul[1,2], T. Shimi[1], A.E. Goldman[1], R.D. Goldman[1], K. Jaqaman[2]; [1]Cell and Molecular Biology, Feinberg School of Medicine, Northwestern University, Chicago, IL, [2]Biophysics, University of Texas Southwestern Medical Center, Dallas, TX

B662/P2511 **The Effects of Vimentin Serine 72 phosphorylation in OxLDL uptake mechanism in macrophage.** S. Kim[1], Y. Park[1]; [1]School of Medicine, Ewha Womans University, Seoul, South Korea

B663/P2512 **Keratin intermediate filament recruitment to cell-cell contacts is dependent on proper actin localization and function.** H.Ü. Mücahit[1], G.F. Weber[1], A.J. Rodriguez[1]; [1]Biology, Rutgers University, Newark, NJ

B664/P2513 **Optogenetic perturbation of intermediate filament networks.** R. Sanghvi-Shah[1], S. Paranjpe[1], J. Baek[1], R. Dobrowolski[1], G.F. Weber[1]; [1]Biological Sciences, Rutgers University-Newark, Newark, NJ

Cell-Cell Junctions 2

B666/P2514 **The gap junction Nexus controls localization and mobility of neural proteins.** R.F. Stout[1,2], D.C. Spray[2]; [1]Biomedical Sciences, New York Institute of Technology College of Osteopathic Medicine, Old Westbury, NY, [2]Dominick P. Purpura Department of Neuroscience, Albert Einstein College of Medicine, Bronx, NY

B667/P2515 **Molecular machinery of gap junction turnover.** M.M. Falk[1], J.T. Fong[1], R.M. Kells[1], W. Nimlamool[1], A.F. Thevenin[1]; [1]Biological Sciences, Lehigh University, Bethlehem, PA

B668/P2516 **Desmoplakin bears tension under externally applied load but not during epithelial monolayer growth and homeostasis.** A.J. Price[1], A.R. Dunn[1,2]; [1]Biophysics, Stanford University, Stanford, CA, [2]Chemical Engineering, Stanford University, Stanford, CA

B669/P2517 **Proximity Labeling Proteomics of Desmosomes Reveals Novel Components Essential for Epidermal Integrity.** K.A. Badu-Nkansah[1,2], T.H. Lechler[1,2]; [1]Cell Biology, Duke University Medical Center, Durham, NC, [2]Dermatology, Duke University Medical Center, Durham, NC

B670/P2518 **Increased cardiac arrhythmogenesis associated with gap junction remodeling with upregulation of RNA binding protein FXR1.** M. Chu[1], S.M. Novak[1], C. Cover[1], A. Wang[1], I. Chinyere[2], E. Juneman[2], D.C. Zarnescu[3], P. Wong[4], C.C. Gregorio[1]; [1]Cellular Molecular Medicine, University of Arizona, Tucson, AZ, [2]Sarver Heart Center, University of Arizona, Tucson, AZ, [3]Molecular and Cellular Biology, University of Arizona, Tucson, AZ, [4]Department of Biomedical Engineering, Pennsylvania State University, University Park, PA

B671/P2519 **Dynamic Equilibrium of Endothelial Cell Junctions is Required for Vessel Morphogenesis.** J. Yang[1], r. kilker[1], A. Horowitz[1]; [1]medicine, Thomas Jefferson University, Philadelphia, PA

B672/P2520 **Miniaturized Permeability Assay for Whole Genome Screening.** C.M. Simonneau[1], A. Horowitz[1,2]; [1]Medicine, Thomas Jefferson University, Philadelphia, PA, [2]Cancer Biology, Thomas Jefferson University, Philadelphia, PA

B673/P2521 **Desmosomal Regulation of Gap Junctions via Ras: Implications for Cardiocutaneous Disease.** C.Y. Kam[1], A.D. Dubash[2], F. Sheikh[3], P.D. Lampe[4], S. Polo[5], K.J. Green[1,6]; [1]Department of Pathology, Northwestern University, Chicago, IL, [2]Department of Biology, Furman University, Greenville, SC, [3]Department of Medicine, University of California-San Diego, La Jolla, CA, [4] Translational Research Program, Fred Hutchinson Cancer Research Center, Seattle, WA, [5]FIRC Institute of Molecular Oncology, Milan, Italy, [6]Department of Dermatology, Northwestern University, Chicago, IL

B674/P2522 **Connexin 43 loss induces proliferation and invasion pathways in non-neoplastic breast epithelium.** S.F. Fostok[1], D.B. Bazzoun[1,2], F.A. Yassine[1], S.A. Lelievre[2,3], M. El-Sibai[4], R.S. Talhouk[1]; [1]Department of Biology, American University of Beirut, Beirut, Lebanon, [2]Department of Basic Medical Sciences, Purdue University, West Lafayette, IN, [3]Purdue University Center for Cancer Research, Purdue University, West Lafayette, IN, [4]Department of Natural Sciences, Lebanese American University, Beirut, Lebanon

B675/P2523 **Dynasore disrupts gap junction-mediated cell-cell communication.** C.L. Bell[1], D.O. Osakue[1], S.A. Murray[1]; [1]Cell Biology, University of Pittsburgh, School of Medicine, Pittsburgh, PA

B676/P2524 **Using concatemerization as a tool to investigate the dominant effect of the mutation N188T of Connexin46.** Y. Stahl[1], P. Schadzek[1], M. Preller[2,3], A. Ngezahayo[1,4]; [1]Institut für Biophysik, Leibniz Universität, Hannover, Germany, [2]Institute of Biophysical Chemistry, Medical School (MHH), Hannover, Germany, [3]Center for Structural Systems Biology, German Electron Synchrotron (DESY), Hamburg, Germany, [4]Center for System Neuroscience (ZSN), Hannover, Germany

B677/P2525 **Understanding the Molecular Mechanisms Regulating Gap Junction Turnover and its Relevance to Disease in an Animal Model.** C.A. Hyland[1], A. Madaan[1], M. Falk[1]; [1]Biological Sciences, Lehigh University, Bethlehem, PA

B678/P2526 **Connexin43 (Cx43) and Zebrafish Fin Regeneration.** A.D. Hoptak-Solga[1]; [1]Biological Sciences, Kutztown University, Kutztown, PA

B679/P2527 **Desmoplakin promotes cell migration via coordinated control of p38 MAPK and Rho GTPase signaling.** J.L. Bendrick[1], N.B. Haight[1], A.D. Dubash[1]; [1]Biology, Furman University, Greenville, SC

B680/P2528 **The MAL/SRF pathway regulates desmosomal gene expression and protein localization in cancer cells.** L. Eldredge[1], A.D. Dubash[1]; [1]Biology, Furman University, Greenville, SC

B681/P2529 **Investigating the Role of Connexin 32 in Cell Cycle, Cell Viability and Epithelial to Mesenchymal Transition of Normal Breast and Breast Cancer Cells.** A. Adak[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

B682/P2530 **The cell-cell adhesion component PLEKHA7 regulates the pro-tumorigenic MIR17HG long non-coding RNA in colon epithelial cells.** M.C. Bridges[1], J. Nair-Menon[1], A. Kourtidis[1]; [1]Regenerative Medicine and Cell Biology, The Medical University of South Carolina, Charleston, SC

B683/P2531 **The role of calcium in Rho-dependent remodeling of epithelial tight junctions.** S. Varadarajan[1], R.E. Stephenson[1], T. Higashi[2], A.L. Miller[1]; [1]Molecular, Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI, [2]Fukushima Medical University, Fukushima, Japan

Integrins and Cell-ECM Interactions 1

B684/P2532 **Myosin-X filopodia during cancer cell invasion.** G. Jacquemet[1], I. Paatero[1], E. Peuhu[1], J. Ivaska[1]; [1]Turku Centre for Biotechnology, University of Turku and Åbo Akademi University, Turku, Finland

B685/P2533 **Actin retrograde flow actively aligns and orients ligand-engaged integrins in focal adhesions.** V. Swaminathan[1], J.K. Mathew[2], S. Mehta[3], P. Nordenfelt[4], T.I. Moore[5], N. KOGA[6], D. Baker[7], R. Oldenbourg[3], T. Tani[3], S. Mayor[2], T.A. Springer[5], C.M. Waterman[1]; [1]Cell Biology and Physiology Center, National Heart Lung and Blood Institute, Bethesda, MD, [2]National Centre for Biological Sciences, Bangalore, India, [3]Eugene Bell Center, Marine Biological Laboratory, Woods Hole, MA, [4]Division of Infection Medicine, Lund University, Lund, Sweden, [5]Program in Cellular and Molecular Medicine, Harvard Medical School, Boston, MD, [6]Institute for Molecular Science, Okazaki, Japan, [7]Department of Biochemistry, University of Washington, Seattle, WA

B686/P2534 **Increase in the protein levels of an anti-sprouting factor and integrin receptor, Thy-1, with age in the supraoptic nucleus: implications for a role in collateral axonal sprouting.** T. Dalzell[1], S. Whiteman[1], M. Andersen[1], J. Askvig[1]; [1]Biology, Concordia College, Moorhead, MN

B687/P2535 **Spatiotemporal regulation of focal adhesions disassembly at the G2/M transition of the cell cycle.** H.R. Thiam[1], A.M. Pasapera-Limon[1], E.K. Degaga[2], J.S. Urbach[2], C.M. Waterman[1]; [1]NHLBI, National Institute of Health, Bethesda, MD, [2]Department of Physics and The Institute for Soft Matter Synthesis and Metrology, Georgetown University, Washington, DC

B688/P2536 **Extracellular Matrix Substrates Affect Focal Adhesion Kinase (FAK) Distribution in Prostatic Smooth Muscle Cells.** D.A. Osorio Rodriguez[1], A.M. Santos[1], H.F. Carvalho[1]; [1]Structural and Functional Biology, State University of Campinas, Campinas, Brazil

B689/P2537 **Alternative splicing of tenascin-C modulates cell-matrix interactions during inflammation and disease.** S.P. Giblin[1], K.S. Midwood[1]; [1]Kennedy Institute of Rheumatology, University of Oxford, Oxford, United Kingdom

B690/P2538 **Germline stem cell maintenance control by adipocyte collagen in adult *Drosophila* females.** L.N. Weaver[1], D. Drummond-Barbosa[1]; [1]Biochemistry and Molecular Biology Department, The Johns Hopkins University, Baltimore, MD

B691/P2539 **BMP4-induced differentiation sensitizes glioblastoma tumor initiating cells to mechanical inputs.** J.H. Hughes[1,2], S.Y. Wong[1,2], S. Kumar[1,3]; [1]Bioengineering, University of California, Berkeley, Berkeley, CA, [2]UC Berkeley - UCSF Graduate Program in Bioengineering, Berkeley, CA, [3]Chemical and Biomolecular Engineering, University of Berkeley, Berkeley, CA

B692/P2540 **Mechanical modulation of glycolysis through phosphofructokinase and its activators in a KRAS-dependent manner.** J. Park[1], T. Isogai[1], C.J. Burckhardt[1], B. Gao[1], R. Bachoo[1], G. Danuser[1]; [1]The Lyda Hill Department of Bioinformatics, University of Texas Southwestern Medical Center, Dallas, TX

B693/P2541 **A Cautionary Tail: Changes in Integrin Behavior with Labeling.** C.G. Galbraith[1], M.W. Davidson[2], J.A. Galbraith[1]; [1]OCSSB/BME, OHSU, Portland, OR, [2]National High Magnet Laboratory, FSU, Tallahassee, FL

B694/P2542 **Directly measuring integrin conformational change on the cell surface using Interferometric Photoactivation Localization Microscopy (iPALM).** T.I. Moore[1,2], J. Aaron[3], T. Chew[3], H.F. Hess[4], T.A. Springer[1,2]; [1]Biological Chemistry and Molecular Pharmacology, Harvard Medical School, Boston, MA, [2]Program in Cellular and Molecular Medicine, Boston Children's Hospital, Boston, MA, [3]Advanced Imaging Center, Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA, [4]Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA

B695/P2543 **A regulatory mechanism in the inside-out integrin signaling pathway.** P. Zhang[1], J. Wu[1]; [1]Molecular Therapeutics Program, Fox Chase Cancer Center, Philadelphia, PA

Chaperones, Protein Folding, and Quality Control 1

B697/P2544 **Polyphosphate protects organisms against DNA-damaging agents.** F. Beaufay[1], A. Franz[1], U. Jakob[1,2]; [1]Department of Molecular, Cellular, and Developmental Biology, University of Michigan, Ann Arbor, MI, [2]Department of Biological Chemistry, University of Michigan, Ann Arbor, MI

B698/P2545 **GIV/Girdin Mediates Cell Survival during Endoplasmic Reticulum Stress.** P. Nguyen[1], R. Calderon[1], Y. Rodriguez[1], D. Bhandari[1]; [1]Chemistry and Biochemistry, California State University Long Beach, Long Beach, CA

B699/P2546 **Cytosolic proteostasis through importing of misfolded proteins into mitochondria.** L. Ruan[1,2], C. Zhou[3], E. Jin[2], A. Kucharavy[1,2], Y. Zhang[3], Z. Wen[3], L. Florens [3], R. Li[1,2]; [1]Department of Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD, [2]Department of Chemical and Biomolecular Engineering, Johns Hopkins University Whiting School of Engineering, Baltimore, MD, [3]Stowers Institute for Medical Research, Kansas City, MO

B700/P2547 **Hsp104 disaggregase: protein refolder or phase converter?** H. Yoo[1], E. Pilipenko[1], D.A. Drummond[1]; [1]Biochemistry and Molecular Biology, University of Chicago, Chicago, IL

B701/P2548 **Ire1 RNase specificity separates transcriptional and post-transcriptional regulation of ER protein homeostasis.** W. Li[1], V. Okreglak[1], J. Peschek[1], P. Kimmig[1], P. Walter[1,2]; [1]Department of Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA, [2]Howard Hughes Medical Institute, University of California San Francisco, San Francisco, CA

B702/P2549 **Clustering of IRE1α depends on sensing the type and level of ER stress, but not on its RNase activity.** D. Ricci[1], I. Marrocco[1,2], M. Dibos[1], D. Blumental[1], J. Vargas[1], S. Boyle[1], Y. Iwamoto[1], Y. Argon[1,3]; [1]Pathology and Laboratory Medicine, The Children's Hospital of Philadelphia, Philadelphia, PA, [2]Department of Biological Regulation, Weizmann Institute of Science, Rehovot, Israel, [3]University of Pennsylvania, Philadelphia, PA

B703/P2550 **Nuclear-import receptors reverse aberrant phase transitions of RNA-binding proteins with prion-like domains.** L. Guo[1], J. Shorter[1]; [1]Department of Biochemistry & Biophysics, University of Pennsylvania, Philadelphia, PA

B704/P2551 **Developing therapeutic protein disaggregases for Neurodegenerative Disease.** J.N. Lin[1], P. Carman[1], C.W. Gambogi[1], N. Kendsersky[2], J. Shorter[1]; [1]Department of Biochemistry Biophysics, University of Pennsylvania, Philadelphia, PA, [2]Department of Pharmacology, University of Pennsylvania, Philadelphia, PA

B705/P2552 **Modification of the ribosome as part of the adaptive response to oxidative stress in yeast.** J.A. Zinskie[1], D. Shedlovskiy[1], E. Gardner[1], D. Pestov[1], N. Shcherbik[1]; [1]Cell Biology and Neuroscience, Rowan University School of Osteopathic Medicine, Stratford, NJ

B706/P2553 **Engineering potentiated Hsp104 variants with enhanced substrate-specificity to counter neurodegeneration.** K.L. Mack[1], M.E. Jackrel[1], J.E. DeNizio[1], H. Kim[2], K.A. Caldwell[2], G.A. Caldwell[2], J. Shorter[1]; [1]Department of Biochemistry and Biophysics, Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA, [2]Department of Biological Sciences, University of Alabama, Tuscaloosa, AL

B707/P2554 **Yeast *FIT2* homologs mediate the crosstalk between lipid droplet biogenesis, the unfolded protein response and cytoplasmic proteostasis.** P.T. Shyu[1], W. Gien[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

B708/P2555 **Adaptive unfolded protein response facilitates melanogenesis.** A. KRISHNAN[1], J. TANWAR[1], R.K. MOTIANI[1], V.T. NATARAJAN[1], R.S. GOKHALE[1,2]; [1]CSIR-Institute of Genomics Integrative Biology, New Delhi, India, [2]National Institute Of Immunology, New Delhi, India

B709/P2556 **Exploring and enhancing the metazoan disaggregase system to combat protein aggregation.** E. Chuang[1,2], J. Shorter[1,2]; [1]Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA, [2]Pharmacology, University of Pennsylvania, Philadelphia, PA

B710/P2557 **A guardian factor that protects folding polypeptides from promiscuous degradation.** S. Zhang[1,2], C. Xu[1,2], K.E. Larrimore[2], D. Ng[1,2]; [1]Department of Biological Sciences, National University of Singapore, Singapore, Singapore, [2]Temasek Life Sciences Laboratory, Singapore, Singapore

B711/P2558 **Defining conserved and divergent functions of Hsp104.** Z.M. March[1], J. Shorter[1]; [1]Department of Biochemistry and Biophysics, Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA

B712/P2559 **Recognition of transmembrane domains by HRD1 E3 ligase during the membrane protein quality control.** M. Mariappan[1], S. Sun[1]; [1]Cell Biology, Yale University, New Haven, CT

B713/P2560 **Induction of Activator of G-Protein Signaling 3 Puncta: Role of Serine/Threonine Residues in the G- Protein Regulatory Domain and Lysosomal Inhibition.** A. VURAL[1], S.S. Oner[2], D. Ma[3], S.M. Lanier[1]; [1]Pharmacology, Wayne State University, Detroit, MI, [2]Goztepe Research and Training Hospital, Istanbul Medeniyet University, Istanbul, Turkey, [3]Molecular, Cellular and Developmental Biology, University of California, Santa Barbara, Santa Barbara, CA

B714/P2561 **Modeling Protein Aggregation and the Heat Shock Response in ALS iPSC-derived Motor Neurons.** E.R. Seminary[1], S.L. Sison[1], A.D. Ebert[1]; [1]Cell Biology, Neurobiology, and Anatomy, Medical College of Wisconsin, Milwaukee, WI

B715/P2562 **The activated endoplasmic reticulum stress sensor IRE1 oligomerizes into filaments contained in 30 nm membrane tubes of complex topology.** N.T. Tran[1,2], S.D. Carter[2,3], V. Belyy[1,2], D. Acosta-Alvear[4], G.J. Jensen[2,3], P. Walter[1,2]; [1]Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA, [2]Howard Hughes Medical Institute, Chevy Chase, MD, [3]Biophysics and Biology, California Institute of Technology, Pasadena, CA, [4]Molecular, Cellular, and Developmental Biology, University of California Santa Barbara, Santa Barbara, CA

B716/P2563 **Autoregulatory transcriptional control of prions by G-Quadruplex motifs in prion promoter.** P. Pradhan[1], V. Perumal[1], B. Kundu[1]; [1]Kusuma School of Biological Sciences, Indian Institute of Technology Delhi, New Delhi, India

Cell Death

B717/P2564 **Potential mechanisms of platelet-activating factor induced neutrophil NETosis.** Y. LI[1,2], V.P. Werth[1,2], M. Liu[1,2]; [1]Department of Dermatology, Perelman School of Medicine at University of Pennsylvania, Philadelphia, PA, [2]Department of Dermatology, Michael J. Crescenz V.A. Medical Center, Philadelphia, PA

B718/P2565 **Antiapoptotic proteins' expression profile upon FGF1 and FGF2 translocation.** A.M. Lampart[1], J. Sławski[1], M. Zakrzewska[1]; [1]Protein Engineering, University of Wrocław, Wrocław, Poland

B719/P2566 **The role of nuclear localization of translocated FGF1 and FGF2 for their antiapoptotic activity.** A.M. Lampart[1], J. Tomala[1], J. Sławski[1], M. Zakrzewska[1]; [1]Protein Engineering Department, University of Wrocław, Wrocław, Poland

B720/P2567 **The *cisd-1* gene regulates physiological apoptosis in a CED-13 dependent manner within the germline of *Caenorhabditis elegans*.** S.D. King[1], C.F. Gray[1], L. Song[1], R. Mittler[1], P.A. Padilla[1]; [1]Department of Biological Sciences, University of North Texas, Denton, TX

B721/P2568 **Two small GTPases function antagonistically in corpse removal of a developmental non-apoptotic dying cell.** L.M. Kutscher[1], W. Keil[1], S. Shaham[1]; [1]Laboratory of Developmental Genetics, The Rockefeller University, New York, NY

B722/P2569 **Modifiers of proteotoxicity associated with multisystem proteinopathy.** O.Y. Zhou[1], A.F. Ford[1,2], J. Shorter[1]; [1]Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA, [2]Neuroscience Graduate Group, Perelman School of Medicine at University of Pennsylvania, Philadelphia, PA

B723/P2570 **HMA induces changes in the nuclei and mitochondria of BHK21 cells in a caspase3-independent manner.** E.A. Peterson[1], Z.C. Murphy[2], E.M. Konieczko[1], M.J. Judy[1]; [1]Gannon University, Erie, PA, [2]University of Rochester, Rochester, NY

B724/P2571 **The importance of isoflavone metabolism to regulate lactating mammary epithelial cells.** Y. Tsugami[1], K. Matsunaga[1], T. Suzuki[1], T. Nishimura[1], K. Kobayashi[1]; [1]Hokkaido University, Research Faculty of Agriculture, Sapporo, Japan

B725/P2572 **The intrinsic ability of the Bax family to activate caspase 8-mediated cell death.** A.T. Nelson[1], A. Mañas[1], S. Wang[2], J. Xiang[1]; [1]Biology, Illinois Institute of Technology, Chicago, IL, [2]Human Genetics, Computation Institute, University of Chicago, Chicago, IL

B726/P2573 **Development of assays to detect apoptosis and necrosis in real time using a plate reader.** D.F. Lazar[1], K. Kupcho[1], J. Shultz[1], J. Hartnett[1], R. Hurst[1], W. Zhou[2], R. Akiyoshi[3], A. Niles[1]; [1]Promega Corporation, Madison, WI, [2]Promega Biosciences, San Luis Obispo, CA, [3]Olympus Corporation, Tokyo, Japan

B727/P2574 **Co-receptors are dispensable for tethering receptor-mediated phagocytosis of apoptotic cells.** J. Lee[1,2], B. Park[1,2], H. Moon[1,2], D. Lee[3], J. Cho[4], D. Park[1,2]; [1]School of Life Sciences and Bio Imaging Research Center, Gwangju Institute of Science and Technology, Gwangju, South Korea, [2]Research Center for Cellular Homeostasis, Ewha Womans University, Seoul, South Korea, [3]Department of Surgery and Pharmacology and Cell Biology, University of Pittsburgh, Pittsburgh, PA, [4]Department of Biology Education, Chosun University, Gwangju, South Korea

B728/P2575 **Behavior of labile ferrous ions and reactive oxygen species during ferroptotic response of cells.** M. Sato[1], T. Hirayama[2], T. Fujii[1], H. Nagasawa[2], I. Minoura[1]; [1]Goryo Chemical Inc., Sapporo, Japan, [2]Laboratory of Pharmaceutical and Medical Chemistry, Gifu Pharmaceutical Univ., Gifu, Japan

B729/P2576 **Peroxidasin (PXDN) Promotes Prostate Cancer Progression.** J. Dougan [1,2], L.J. Burton[1,2], O.A. Hawsawi[1], K. Jones[2], J. Zou[1], P. Nagappan[1], G. Wang [3], Q. Zhangb[3], N.J. Bowen[1], C. Hinton[1], V. Odero-Marah[1]; [1]Center for Cancer Research and Therapeutic Development, Biological science, Clark Atlanta University, Atlanta, GA, [2]School of medicine, Emory University, Atlanta, GA, [3]Chemistry, Xavier University, New Orleans, LA

B730/P2577 **Assaying free radical scavenging abilities of herbal remedies and anti-apoptotic gene expression effects of *Ginkgo biloba* in an *in vitro* stroke model.** K.M. McIntyre[1], R. Koseki[1], A. Brown[1], A. Ross[1], T. Johnson[1], K.J. Karnas[1], A.J. Ettinger[1]; [1]Biological Sciences, Cedar Crest College, Allentown, PA

B731/P2578 **Actin nucleation factors are important for caspase activation and cell death.** N.L. Leclair[1,2], V.L. King[1,2], K.G. Campellone[1,2]; [1]Department of Molecular and Cell Biology, University of Connecticut, Storrs, CT, [2]Institute for Systems Genomics, University of Connecticut, Storrs, CT

Biophysical Approaches to Cell Biology

B733/P2579 **Structure-function relationship of Hsp27 mutations involved in neurodegenerative Charcot-Marie-Tooth disease.** J.M. Bhatt[1], B. Holguin[1], A.K. Orta[1], J. Villalobos[1], R.A. Bernal[1]; [1]Chemistry, The University of Texas at El Paso, El Paso, TX

B734/P2580 **Molecular Principles behind the Emergence of Contractility in Actin Networks.** J. Komianos[1], G. Papoian[1]; [1]Chemistry and Biochemistry, University of Maryland at College Park, College Park, MD

B735/P2581 **Stress Relaxation Mechanism of Single Collagen Fibrils and Relaxation Induced Morphological Changes.** S. Iqbal[1], L. Kreplak[1]; [1]Physics and Atmospheric Science, Dalhousie University, Halifax, NS

B736/P2582 **Supergrowth: Effect of osmotic oscillations on the rate of cell growth and the regulation of the proteome.** B. Knapp[1], E.R. Rojas[2], K.C. Huang[2], F. Chang[1]; [1]Cell and Tissue Biology, UCSF, San Francisco, CA, [2]Bioengineering, Stanford, Stanford, CA

B737/P2583 **Temporal control of cellular phenotype.** G. Li[1], B.K. Kesler[1], A. Thiemicke[1], D.C. Rogers[1], G. Neuert[1]; [1]Molecular Physiology and Biophysics, Vanderbilt University, Nashville, TN

B738/P2584 **Soft matrix facilitates the activation of mesenchymal stromal cells into antifibrotic phenotypes by tumor necrosis factor-α.** S. Wong[1], A. Elujoba[1], J. Shin[1]; [1]Department of Pharmacology and Bioengineering, University of Illinois at Chicago College of Medicine, Chicago, IL

B739/P2585 **CRYPTOCHROMES: FROM LIGHT-DEPENDENT FLAVIN REDUCTION TO CIRCADIAN CLOCK REGULATION.** S. Foroutannejad[1], B. Crane[2], R.A. Maillard[1]; [1]Chemistry, Georgetown University, Washington, DC, [2]Chemistry and Chemical Biology, Cornell University, Ithaca, NY

B740/P2586 **Soft matrix enhances autocrine production of transforming growth factor-β1 to facilitate tumor necrosis factor-α activation of mesenchymal stromal cells.** S. Wong[1], A. Elujoba[1], J. Shin[1]; [1]Department of Pharmacology and Bioengineering, University of Illinois at Chicago College of Medicine, Chicago, IL

B741/P2587 **Integration of single molecule binding events in T cell activation.** S. Low-Nam[1], J.J. Lin[1], D.B. McAffee[1], S. Alvarez[1], S.D. Hansen[1], J.T. Groves[1]; [1]Chemistry, University of California, Berkeley, CA

B742/P2588 **Inferring emergent evolutionary features from alignments of intrinsically disordered regions despite poor sequence conservation.** A.S. Holehouse[1], R.M. Kiersten[1], M.O. Richardson[1], R.V. Pappu[1]; [1]Center for Biological Systems Engineering, Washington University in St. Louis, St. Louis, MO

B743/P2589 **Mobility of DNA-binding species in the nucleus: the transient anomalous subdiffusion model.** M.J. Saxton[1]; [1]Biochemistry & Molec Med, University of California, Davis, CA

B744/P2590 **Oscillatory heat dissipation by cell cycle signaling during early vertebrate embryogenesis.** J. Rodenfels[1], J. Howard[1], K.M. Neugebauer[1]; [1]Molecular Biophysics & Biochemistry, Yale University, New Haven, CT

B745/P2591 **Building the phase diagram of a cellular body in vivo.** A. Ladouceur[1], S.G. Thope[1], S.C. Weber[1]; [1]Biology, McGill University, Montreal, QC

B746/P2592 **How cells jump? Unraveling biophysical limits of cell motility in an ultra-fast swimming ciliate Halteria grandinella.** D. Krishnamurthy[1], F. Cockenpot[2], M. Prakash[1]; [1]Bioengineering, Stanford University, Stanford, CA, [2]ISAE-SUPAERO, Toulouse, France

B747/P2593 **mTORC1 controls rheology and phase separation by tuning ribosome concentration.** G. Brittingham[1], M. Delarue[1], S. Pfeffer[2], I.V. Surovtsev[3], K.J. Kennedy[4], S. Pinglay[1], I. Gutiérrez[1,4], D. Sang[1], G. Poterewicz[1], J. Chung[1], J.T. Groves[4,5], C. Jacobs-Wagner[3,5], B.D. Engel[2], L.J. Holt[1]; [1]Institute for Systems Genetics, NYU Langone Medical Center, New York, NY, [2]Department of Molecular Structural Biology, Max Planck Institute of Biochemistry, Munich, Germany, [3]Department of Molecular, Cellular and Developmental Biology, Yale University, New Haven, CT, [4]Department of Molecular and Cell Biology, U.C. Berkeley, Berkeley, CA, [5]Howard Hughes Medical Institute, Chevy Chase, MD

B748/P2594 **Impact of compressive stress on the C. albicans transdifferentiation.** M. Delarue[1], N.M. Chabot[1], G. Brittingham[1], L. Holt[1]; [1]Institute for Systems Genetics, NYU Langone Medical Center, New-York, NY

B749/P2595 **Cytoplasmic density dynamics in fission yeast studied by quantitative phase imaging.** P.D. Odermatt[1,2], K.C. Huang[2], F. Chang[1]; [1]Cell and Tissue Biology, University of California San Francisco, San Francisco, CA, [2]Bioengineering Department, Stanford University, Stanford, CA

B750/P2596 **A two-step mechanism to activate PARP-1 and stabilize it on a DNA break.** L. Zandarashvili[1], M. Langelier[2], P.M. Aguiar[3], B.E. Black[1], J.M. Pascal[2]; [1]Department of Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA, [2]Department of Biochemistry and Molecular Medicine, University of Montreal, Montreal, QC, [3]Department of Chemistry, University of Montreal, Montreal, QC

B751/P2597 **Morphological Changes of Epithelia Cells Induced by Viscous Conditions.** J. Flournoy[1], G. Sun[1], D. Maity[2], Y. Chen[1]; [1]Mechanical Engineering, Johns Hopkins University, Baltimore, MD, [2]Chemical and Biomolecular Engineering, Johns Hopkins University, Baltimore, MD

B752/P2598 **Molecular mechanisms of perilipins targeting to lipid droplets.** A.R. Thiam[1]; [1]Physique, Ecole Normale Supérieure, Paris, France

B753/P2599 **PEA-15 phosphorylation homeostasis and allosteric regulation of cell proliferation and apoptosis.** J. Marrero[1], S. Crespo[1], S. Hassan[1], Y. Wei[1]; [1]Chemistry, New Jersey City University, Jersey City, NJ

B754/P2600 **Understanding the Role and Regulation of Cell Wall Hydrolases in *Bacillus subtilis*.** S.A. Wilson[1], E.C. Garner[1]; [1]Molecular and Cellular Biology, Harvard University, Cambridge, MA

B755/P2601 **Fluorescence spectroscopy reveals two types of binding sites for endogenous ligands in CISD proteins.** R.A. Skoiik[1], R. Guan[1], R. Napier[1], M.E. Konkle[2], M.A. Menze[1]; [1]Biology, University of Louisville, Louisville, KY, [2]Chemistry, Ball State University, Muncie, IN

B756/P2602 **Crystal structure of thioredoxin reductase from Cryptococcus neoformans in complex with FAD a potential target for antifungal drug.** C.P. Bravo Chaucanés[1], N. F Valadares[1], A.K. Abadio[2], M.S. S. Felipe[1], J.A. R. G. Barbosa[1]; [1]Celular Biology, Biophysical laboratory, University of Brasilia, Brasilia, Brazil, [2] UNEMAT, University of Mato Grosso State, Nova Xavantina, Mato Grosso, Brazil

Tissue Development and Morphogenesis 2

B758/P2603 **Sheath Cell Invasion and Trans-differentiation Repair Mechanical Damage Caused by Loss of Caveolae in the Zebrafish Notochord.** J.N. Garcia[1], J. Bagwell[1], B. Njaine[2], J. Norman[1], D. Levic[1], S. Wopat[1], S. Miller[3], X. Liu[4], J. Locasale[4], D. Stainier[2], M. Bagnat[1]; [1]Department of Cell Biology, Duke University, Durham, NC, [2]Department of Developmental Genetics, Max Planck Institute for Heart and Lung Research, Bad Nauheim, Germany, [3]Department of Pathology, Duke University, Durham, NC, [4]Department of Pharmacology and Cancer Biology, Duke University, Durham, NC

B759/P2604 **Wnt5b regulates basal constriction during neuroepithelial tissue folding.** M.R. Visetsouk[1], R.J. Garde[1], E.J. Falat[1], J.L. Wendlick[1], C. Kwas[1], J.H. Gutzman[1]; [1]Biological Sciences, University of Wisconsin-Milwaukee, Milwaukee, WI

B760/P2605 **Apical cell-cell adhesions reconcile symmetry and asymmetry in zebrafish neurulation.** C. Guo[1], X. Wei[1]; [1]Ophthalmology, University of Pittsburgh, Pittsburgh, PA

B761/P2606 **Rho signaling is fine-tuned by multiple feedback mechanisms during epithelial morphogenesis.** K.L. Ong[1], C. Collier[1], S. DiNardo[1]; [1]Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B762/P2607 **Direct quantification of swelling pressures that drive chick neural tube morphogenesis.** W.G. Stewart[1], J.L. Pelesko[1], J.P. Gleghorn[1]; [1]Biomedical Engineering, University of Delaware, Newark, DE

B763/P2608 **Interphase localization of Abnormal Spindle to the nucleus is important for proper brain size.** T. Schoborg[1], S. Smith[1], L. Smith[1], C.J. Fagerstrom[1], Y. Yu[2], T. Lee[2], N.M. Rusan[1]; [1]Cell Biology Physiology Center, National Institutes of Health, Bethesda, MD, [2]Janelia Research Campus, Ashburn, VA

B764/P2609 **iPSC Derived Cerebral Organoids Reveal Early Developmental Malformations In Schizophrenia.** A. Dimitri[1], L. Bayona Chuye[1], S. Dhiman[1], P. Sarder[1], M.K. Stachowiak[1], E.K. Stachowiak[1]; [1]Pathology and Anatomical Sciences, State University of New York at Buffalo, Buffalo, NY

B765/P2610 **Smc5/6 complex maintains genome stability in the stem and progenitor cells of developing mouse cerebral cortex.** A. Boyko[1], M. Xu[1], M. Pryzhkova[1], P.W. Jordan[1]; [1]Biochemistry and Molecular Biology, Johns Hopkins University Bloomberg School of Public Health, Baltimore, MD

B766/P2611 **Glial cell remodeling and peripheral nerve re-organization during metamorphosis in Drosophila.** A. Subramanian[1], M. SIEFERT[1], S. BANERJEE[1], K. VISHAL[1], K. BERGMANN[1], C. CURTS[1]; [1]BIOLOGY, MIAMI UNIVERSITY, Oxford, OH

B767/P2612 **Tissue macrophages modulate alveolar epithelial and myofibroblast differentiation during fetal lung sacculation.** C. Borges-Pereira[1,2], S. Libório-Ramos[1,2], C. Barbosa-Matos[1,2], C. Ribeiro-Freitas[1,2], F. Morais-Santos[1,2], C. Antunes[1,2], A. Longatto-Filho[1,2,3,4], S. Granja[1,2], J. Correia-Pinto[1,2,5], S. Costa[1,2]; [1]ICVS/3B's - PT Government Associate Laboratory, Braga-Taipas, Portugal, [2]School of Medicine, University of Minho, Life and Health Sciences Research Institute (ICVS), Braga, Portugal, [3]Barretos Cancer Hospital, Molecular Oncology Research Center, Barretos, Brazil, [4]Faculty of Medicine, University of São Paulo, Laboratory of Medical Investigation, São Paulo, Brazil, [5]Hospital de Braga, Department of Pediatric Surgery, Braga, Portugal

B768/P2613 **A Novel Role for Paxillin during Mammary Gland Morphogenesis.** W. Xu[1], G.J. Goreczny[1], E.C. Olson[1], C.E. Turner[1]; [1]Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY

B769/P2614 **Smooth muscle differentiation guides domain branching in the embryonic mouse lung.** K. Goodwin[1], C.M. Nelson[1,2]; [1]Chemical and Biological Engineering, Princeton University, Princeton, NJ, [2]Molecular Biology, Princeton University, Princeton, NJ

B770/P2615 **Extracellular matrix remodeling and activation of focal adhesion kinase direct airway epithelial branching morphogenesis.** J.W. Spurlin, III[1], M.J. Siedlik[1], M. Pang[1], S. Jayaraman[1], C.M. Nelson[1,2]; [1]Chemical and Biological Engineering, Princeton University, Princeton, NJ, [2]Molecular Biology, Princeton University, Princeton, NJ

B771/P2616 **A microfluidic *ex vivo* culture model of neonatal mouse lungs to investigate alveolar development.** R.A. McKee[1], M.D. Athanasopoulos[1], J.P. Gleghorn[1]; [1]Department of Biomedical Engineering, University of Delaware, Newark, DE

B772/P2617 **Epithelial deformation during lung development as a driver of localized growth signaling.** R.M. Gilbert[1], Z.A. Sexton[1], J.P. Gleghorn[1]; [1]Biomedical Engineering, University of Delaware, Newark, DE

B773/P2618 **Precision abscission for cell surface integrity and plant fitness.** Y. Lee[1], T. Yoon[1], J. Lee[1], M. Lee[1], J. Lee[1], S. Oh[1], H. Chen[1], S. Jeon[1], H. Cho[1], H. Mang[1], J. Kwak[1,2]; [1]Center for Plant Aging Research, IBS, Deagu, South Korea, [2]Department of New Biology, DGIST, Deagu, South Korea

B774/P2619 **Alterations in indices of internal anatomical structure of Brachypodium distachyon and Kazakhstani varieties of soft wheat under the action of Puccinia recondita pathogen.** N. Omirbekova[1], A. Akhmetova[2], Z. Zhunusbayeva[1], A. Zhussupova[1], S. Kenzhebayeva[1], A. Sailauova[1,2], S. Zhangisina[2]; [1]Institute of Ecology, al-Farabi Kazakh National University, Almaty, Kazakhstan, [2]al-Farabi Kazakh National University, Almaty, Kazakhstan

B775/P2620 **Epithelial Cell Reintegration: Stray Cells Find Their Way Home.** N.S. Dawney[1], D. Na[1], D.T. Bergstralh[1]; [1]Department of Biology, University of Rochester, Rochester, NY

B776/P2621 **MafA transcription factor as a marker of differentiated β-cells of islets of Langerhans in rats.** M. Kaligin[1], A. Pliushkina[1], M. Titova[1], A. Titova[1], A. Gumerova[1], A. Kiyasov[1]; [1]Morphology and general pathology, Kazan Federal University, Kazan, Russia

B777/P2622 **Cxcl12a induces Snail1b expression to initiate collective migration and sequential FGF-dependent neuromast formation in the zebrafish Lateral Line primordium.** U.M. NEELATHI[1], D. Dalle Nogare[1], A.B. Chitnis[1]; [1]NICHD, National Institutes of Health, Bethesda, MD

B778/P2623 **A Strain Map of Zebrafish Gastrulation Describes the Mechanics of Convergence and Extension and Emergence of Left-Right Chirality during Epiboly.** J. ZHONG[1,2], D. Bhattacharya[2,3], A.J. Kabla[4], S. Tavakoli[5], P.T. Matsudaira[1,2,3]; [1]Mechanobiology Institute, National University of Singapore, Singapore, Singapore, [2]Center for BioImaging

Sciences, National University of Singapore, Singapore, Singapore, [3]Singapore-MIT Alliance for Research and Technology, National University of Singapore, Singapore, Singapore, [4]Engineering, University of Cambridge, Cambridge, United Kingdom, [5]Faculty of Arts and Sciences, Harvard University, Cambridge, MA

B779/P2624 **Histone methyltransferase G9a is essential for osteoblastic differentiation and skull bone formation during development.** H. Ideno[1], K. Komatsu[1], A. Shimada[1], Y. Arai[2], K. Nakashima[1], M. Tachibana[3], H. Kimura[4], A. Nifuji[1]; [1]Department of Pharmacology, Tsurumi University School of Dental Medicine, Yokohama, Japan, [2]Graduate School of Dentistry, Nihon University, Chiyoda, Japan, [3]Institute for Enzyme Research, The University of Tokushima, Tokushima, Japan, [4]Department of Biological Sciences, Tokyo Institute of Technology, Yokohama, Japan

B780/P2625 **Effect of Sugar Cane Extract (SCE) Supplementation on Corticosterone Secretion in induced by ACTH injection Male Rats.** M. Zheng[1,2], M. Mizu[3], T. Furuta[3], G. Watanabe[1,2], K. Nagaoka[1,2]; [1]Department of Basic Veterinary Science, Gifu University, Tokyo, Japan, [2]Department of Veterinary Medicine, Tokyo University of Agriculture and Technology, Tokyo, Japan, [3]Product Development Division, Mitsui Sugar Co.,Ltd, Tkyo, Japan

B781/P2626 **Systematically modulating cell-cell adhesion reveals cellular mechanisms of epithelial remodeling in *Drosophila*.** X. Wang[1], K.E. Kasza[1]; [1]Department of Mechanical Engineering, Columbia University, New York, NY

B782/P2627 **Microtubule Dynamics in Developing Mammary Epithelium.** A.K. Fraser[1], A.J. Ewald[1]; [1]Cell Biology and Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, MD

Tissue Mechanics

B783/P2628 **Emergence of tissue mechanics from cellular processes: shaping a fly wing.** M. Merkel[1,2], R. Etournay[3,4], M. Popovic[2], G. Salbreux[2,5], S. Eaton[3], F. Julicher[2]; [1]Department of Physics, Syracuse University, Syracuse, NY, [2]Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, [3]Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany, [4]Institut Pasteur, Paris, France, [5]Crick Institute, London, United Kingdom

B784/P2629 **Role of dynamics on the formation of zebrafish organ of asymmetry.** G. Erdemci-Tandogan[1], J.D. Amack[2], L. Manning[1]; [1]Department of Physics, Syracuse University, Syracuse, NY, [2]Department of Cell and Developmental Biology, State University of New York, Upstate Medical University, Syracuse, NY

B785/P2630 **Coordinated cell area fluctuations drive junction extension in epithelial cell quadruplets.** J. Großhans[1], D. Kong[1], S. Eule[2], F. Wolf[2]; [1]Institute for Developmental Biochemistry, University of Göttingen, göttingen, Germany, [2]Dynamics and Self organisation, Max Planck Institute, Göttingen, Germany

B786/P2631 **Ultra-fast contractions and emergent pattern dynamics: Primitive epithelium in Trichoplax adherence as a "living active solid".** S. Armon[1], M. Bull[2], B. Marty[3], M. Prakash[1]; [1]Bio Engineering, Stanford University, Stanford, CA, [2]Applied Physics, Stanford University, Stanford, CA, [3]Computer Science, Ecole Polytechnique, Paris, France

B787/P2632 **Identifying the molecular and mechanical requirements for coordinated tissue invagination.** M.A. Fuentes[1], B. He[1]; [1]Biological Sciences, Dartmouth College, Hanover, NH

B788/P2633 **A collective solid-fluid transition in confluent 3D tissues.** M. Merkel[1], L. Manning[1]; [1]Department of Physics, Syracuse University, Syracuse, NY

B789/P2634 **Epithelial cells spatiotemporally coordinate molecular activities and mechanical forces to drive radial intercalation during ductal elongation.** N.M. Neumann[1], M.C. Perrone[2,3], J.H. Veldhuis[2,3], R.J. Huebner[1], H. Zhan[1], P.N. Devreotes[1], G.W. Brodland[2,3], A.J. Ewald[1]; [1]Cell Biology and Center for Cell Dynamics, Johns Hopkins University School of Medicine, Baltimore, MD, [2]Centre for Bioengineering and Biotechnology, University of Waterloo, Waterloo, ON, [3]Civil and Environmental Engineering, University of Waterloo, Waterloo, ON

B790/P2635 **Exploring the cell mechanics behind the T1 transition.** K. Cavanaugh[1], M.L. Gardel[1,2]; [1]Cell and Molecular Biology, University of Chicago, Chicago, IL, [2]Physics, University of Chicago, Chicago, IL

B791/P2636 **A role for desmosomal cadherins in creating complex tissues.** J.A. Broussard[1], O. Nekrasova[1], J.L. Koetsier[2], K.J. Green[1]; [1]Pathology and Dermatology, Northwestern University, Chicago, IL, [2]Pathology, Northwestern University, Chicago, IL

B792/P2637 **Apical myosin activation induces Rab11 puncta accumulation near the apical cortex.** W. Chen[1], B. He[1]; [1]Biological Sciences, Dartmouth College, Hanover, NH

B793/P2638 **Differential Regulation of Actin Dynamics during Collective Cell Migration.** H. Olson[1], H. McGraw[1,2], A. Nechiporuk[1]; [1]Cell, Developmental Cancer Biology, Oregon Health Science University, Portland, OR, [2]School of Biological Sciences, Division of Cell Biology Biophysics, University of Missouri-Kansas City, Kansas City, MO

B794/P2639 **A Rho GAP with a curved membrane-binding domain regulates morphogenesis via CDC-42.** H. Raduwan[1], M. Soto[1]; [1]Pathology and Lab. Med., Rutgers - RWJMS, Piscataway, NJ

B795/P2640 **Dynamic imaging of actin cytoskeleton in cardiac progenitors reveal the importance of intercellular tension during organogenesis.** E.S. Koo[1,2], S.E. Fraser[1,2,3], L.A. Trinh[1,3]; [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

B796/P2641 **Tissue architecture of the *C. elegans* syncytial germline is maintained by actomyosin contractility of an extra-cellular inner tube.** P. Agarwal[1], R. Zaidel-Bar[1,2]; [1]Mechanobiology Institute, National University of Singapore, Singapore, Singapore, [2]Cell and Developmental Biology, Sackler Faculty of Medicine, Tel-Aviv University, Tel-Aviv, Israel

B797/P2642 **Cell-nonautonomously tunable actomyosin flows orient distinct cell division axes.** K. Sugioka[1], B. Bowerman[1]; [1]Institute of Molecular Biology, University of Oregon, Eugene, OR

Stem Cells and Pluripotency

B798/P2643 **Cell Type-Specific Response to Spindle Misorientation and Effects on Tissue Growth.** A.S. Parra[1], C.A. Johnston[1]; [1]Biology, University of New Mexico, Albuquerque, NM

B799/P2644 **Phosphatidylinositol transfer proteins control Apical Golgi Distribution, Polarity and division of Neural Stem Cells During Neurogenesis.** S.K. Hur[1], Z. Xie[1], V.A. Bankaitis[1]; [1]MolecularCellular Medicine Department, College of Medicine, Texas AM University, College Station, TX

B800/P2645 **Regulation of cell division by the intrinsic and extrinsic activities of *small ovaries* is required for germline development.** L. Benner[1,2], E.A. Castro[3], C. Whitworth[4], K.R. Cook[4], B. Oliver[2], D.A. Lerit[3]; [1]Department of Biology, Johns Hopkins University, Baltimore, MD, [2]National Institute of Diabetes and Digestive and Kidney Diseases, NIH, Bethesda, MD, [3]Department of Cell Biology, Emory University, Atlanta, GA, [4]Department of Biology, Indiana University, Bloomington, IN

B801/P2646 **Activity of the Arp2/3 complex is necessary for embryonic stem cell differentiation.** F.M. Aloisio[1], D.L. Barber[1]; [1]Department of Cell & Tissue Biology, University of California San Francisco, San Francisco, CA

B802/P2647 **The Expression of Sarcomeric Proteins During Myogenesis in C2C12 Myogenic Stem Cells.** G.R. Walker[1], J.E. Budde[1], R. Nyaboke[2], V. Silivis[1], N.T. Osborne[1], A.M. Mossor[1]; [1]Biological Sciences, Youngstown State University, Youngstown, OH, [2]Department of Curriculum and Instruction, University of Toledo, Toledo, OH

B803/P2648 **Glutamine sustains Cripto expression and function, enabling MyosinII/RAB11A-dependent endosomal/exosomal trafficking in stem cells to promote tissue regeneration.** E. Duell[1], M. Hoover[1], E. Booker[2], B. Williams[1], C. Arellano-Garcia[1], W. Fischer[2], P. Gray[2], J.A. Kelber[1]; [1]Biology, California State University Northridge, Northridge, CA, [2]Salk Institute for Biological Studies, La Jolla, CA

B804/P2649 **Quantification of Nuclear Morphology Changes During Induced Pluripotent Stem Cell Differentiation.** C. Wesley[1], D.L. Levy[1]; [1]Molecular Biology, University of Wyoming, Laramie, WY

B805/P2650 **Nuclear transport protein, Transportin Serine-Arginine rich, is required for germline stem cell proliferation and self-renewal in *Drosophila*.** T.D. Hinnant[1], E.T. Ables[1]; [1]Biology, East Carolina University, Greenville, NC

B806/P2651 **Placenta derived mesenchymal stem cells increases invasion ability of trophoblast via alteration of mitochondrial function.** J. Seok[1], J. Choi[2], J.J. Kim[1], S. Lim[1], H. Jeong[1], S. Park[3], G. Kim[1]; [1]Biomedical Science, CHA University, Seongnam, South Korea, [2]Dermatology, Northwestern University, Chicago, IL, [3]Pathology, University of Ulsan College of Medicine, Seoul, South Korea

B807/P2652 **BCP1 is a positive regulator of Notch signaling pathway in the regulation of mammalian neural stem cells.** J. Kim[1], D. Han[1], S. Byun[1], M. Kwon[1], K. Yoon[1]; [1]Genetic Engineering, Sungkyunkwan University, Suwon, South Korea

B808/P2653 **A *Hoxc* dependent skin zip code controls regional adult stem cell regeneration.** Z. Yu[1,2], Z. Xu[1], H. Huang[1], D. Chen[1], K. Jiang[1], Z. Du[2], W. Xie[2], T. Kunieda[3], F. Wang[1], T. Chen[1]; [1]National Institute of Biological Sciences, Beijing, Beijing, China, [2]Tsinghua University, Beijing, China, [3]Okayama University, Okayama, Japan

B809/P2654 **Tousled-like Kinase 1-Regulated Differentiation in Murine Embryonic Stem Cells.** J. Lee[1,2], M. Kim[1,2], S. Park[1,2,3], Y. Jang[1,2]; [1]Initiative for Biological Function and Systems, Yonsei University, Seoul, Korea, South, [2]Department of Systems Biology, Yonsei University, Seoul, Korea, South, [3]Center for Genomic Integrity, Institute for Basic Science, Ulsan National Institute of Science and Technology, Ulsan, Korea, South

B810/P2655 **High Throughput Automated Patch Clamping and Cytotoxicity Investigations for Cardiac Safety: CiPA Compound Effects in Stem Cell-Derived Cardiomyocytes.** C.T. Bot[1], S. Stölzle-Feix[2], K. Juhasz[2], L. Dörr[2], M. Beckler[2], C. Haarmann[2], A. Obergrussberger[2], M. Rapedius[2], T. Götze[2], M. Vogel[2], M. George[2], A. Brüggemann[2], R. Haedo[1], N. Fertig[2]; [1]Nanion Technologies Inc., Livingston, NJ, [2]Nanion Technologies GmbH, Munich, Germany

B811/P2656 **Toxic effect of titanium dioxide nanoparticles (TiO2) on Wharton Jelly mesenchymal stem cells.** A.B. Peralta-Vega[1], J.R. Cáceres-Cortés[1], A. Parra-Barrera[1], M. Ramos-Godínez[1], R. López-Marure[2], G. Gutiérrez-Iglesias[3]; [1]Posgrado, Instituto Politecnico Nacional. Escuela Superior de Medicina, Mexico, Mexico, [2]Microscopia, Instituto Nacional de Cancerología, Mexico, Mexico, [3]Fisiologia, Instituto Nacional de Cardiología INCICH., México, Mexico

B812/P2657 **Is a microtubule-dependent mechano-transduction involved in early human Hematopoietic Stem Cells differentiation?** S. Biedzinski[1,2], B. Vianay[1,2], J. Larghero[3], S. Brunet[1,2,3], M. Théry[1,2]; [1]IUH Hoptial St Louis, INSERM U 1160, PARIS, France, [2]LPCV CEA CNRS INRA, CytomorphoLAb, GRENOBLE, France, [3]IUH Hopital St Louis; U Paris Diderot, Cell Therapy Unit, PARIS, France

B813/P2658 **Molecular and cellular phenotyping of mouse embryonic stem cells from diverse inbred laboratory mouse strains reveals strain-specific differences in cellular traits.** A. Czechanski[1], N. Raghupathy[1], C. Olivier[1], C. Byers[1], L.G. Reinholdt[1]; [1]The Jackson Laboratory, Bar Harbor, ME

B814/P2659 **Silencing Spermine Synthase in Mesenchymal Stem Cells mimics Snyder-Robinson Syndrome by showing impaired osteogenesis.** A.L. Ramsay[1], A.M. McEnerney[1], F.A. Fierro[1]; [1]Institute for Regenerative Cures, University of California Davis, Sacramento, CA

B815/P2660 **Isolation and Expansion of Human Skeletal Stem Cells.** A.M. McEnerney[1], C. Schumacher[1], F.A. Fierro[1]; [1]Institute for Regenerative Cures, University of California Davis, Sacramento, CA

B816/P2661 **Successful enrichment of cardiac progenitors following differentiation of EGFP-expressing transgenic mouse ES cells.** D. Sridharan[1], P.B. Seshagiri[1]; [1]Department of Molecular Reproduction, Development and Genetics, Indian Institute of Science, Bangalore, India

B817/P2662 **Genome-wide CRISPR-Cas9 Screens Reveal Genes Promoting Entry into a G0-like State in Human Neural Progenitors.** H.M. Feldman[1], P.J. Paddison[1]; [1]Human Biology Division, Fred Hutchinson Cancer Research Center, Seattle, WA

B818/P2663 **Analysis of marker gene transcripts and 35 cytokines in adipose tissue mesenchymal stem cells spanning 15 consecutive passages.** H. Xia[1], J.L. Myers[2], T. Hua[1], M.Y. Caballero[1], S. Valtier[3], G.J. Chaudry[1]; [1]Center for Advanced Molecular Detection, 59 Medical Wing, San Antonio, TX, [2]Medicine, University of Texas Health Science Center, San Antonio, TX, [3]Science and Technology, 59 Medical Wing, San Antonio, TX

Host-Pathogen/Host-Commensal Interactions 1

B820/P2664 **Cell surface vimentin is involved in matrix stiffness dependent infection of endothelial cells by *Listeria monocytogenes*.** E.E. Bastounis[1], J.A. Theriot[1,2,3], Y. Yeh[4]; [1]Biochemistry, Stanford University School of Medicine, Stanford, CA, [2]Department of Microbiology and Immunology, Stanford University School of Medicine, Stanford, CA, [3]Howard Hughes Medical Institute, Stanford University School of Medicine, Stanford, CA, [4]Department of Bioengineering, University of California San Diego, La Jolla, CA

B821/P2665 **Identification of polyubiquitinated species at sites of *Listeria monocytogenes* cell-to-cell spreading.** A.S. Dhanda[1], K.T. Lulic[1], J.A. Guttman[1]; [1]Biological Sciences, Simon Fraser University, Burnaby, BC

B822/P2666 **Spatial organization of the human tongue dorsum microbiome at the micron scale.** S.A. Wilbert[1], J.L. Mark Welch[2], F.E. Dewhirst [1,3], G.G. Borisy[1,3]; [1]The Forsyth Institute, Cambridge, MA, [2]Marine Biological Laboratory, Woods Hole, MA, [3]Harvard School of Dental Medicine, Boston, MA

B823/P2667 **Proteins in soy resistant to the digestive protease enzymes interact with intestinal epithelial cells and modulate metabolite absorption and microbiome profile in gut.** J. Lim[1], J. Ma[1]; [1]Food Biomaterials, Kyungpook University, Daegu, Korea, South

B824/P2668 **Chlamydia uses ARF GTPases as a switch to control microtubule stabilization and actin polymerization.** F. Paumet[1], J.T. Wesolowski[1], C. Xander[1]; [1]Microbiology and Immunology, Sidney Kimmel Medical College of Thomas Jefferson University, Philadelphia, PA

B825/P2669 **A Chlamydia trachomatis protein mediates the remodeling of epithelial cytoskeleton and cell-cell junctions.** L. Dolat[1], V.K. Carpenter[1], Y.S. Chen[1], R.H. Valdivia[1]; [1]Molecular Genetics and Microbiology, Duke University Medical Center, Durham, NC

B826/P2670 ***Neisseria gonorrhoeae* modifies its infectivity based on the properties of human cervical epithelial cells.** Q. Yu[1], L. WANG[1], D.C. Stein[1], W. Song[1]; [1]Cell Biology and Molecular Genetics, University of Maryland, College Park, MD

B827/P2671 **Toxoplasma gondii dysregulation of endothelial cell barrier function.** A. Franklin-Murray[1], M. Lodoen[1], C. Schneider[1], C. Tran[1]; [1]Molecular Biology & Biochemistry, University of California, Irvine, Irvine, CA

B828/P2672 **Studying the effect of the obligate endocellular bacteria Wolbachia on its host.** C. Uribe-Alvarez[1], N. Chiquete-Felix[1], A. Peña[1], S. Uribe-Carvajal[1]; [1]Molecular Genetics, Cellular Physiology Institute, Mexico City, Mexico

B829/P2673 **Shedding light on redox-sensitive MarR protein regulating EmrB and RND efflux pumps in B. thailandensis.** A. Sabrin[1], A. Gupta[1], A. Grove[1]; [1]Biological Sciences, Louisiana State University, Baton Rouge, LA

B830/P2674 **Thermodynamic protein instability is a pathogen-associated molecular pattern targeted by human defensins.** E. Kudryashova[1], W. Lu[2], D.S. Kudryashov[1]; [1]Chemistry and Biochemistry, The Ohio State University, Columbus, OH, [2]Biochemistry and Molecular Biology, University of Maryland School of Medicine, Baltimore, MD

B831/P2675 **BPX-01 Topical Minocycline Gel Reduces P. acnes-induced Inflammatory Lesions in Mice.** M. Hermsmeier[1], T. Sawant[1], J. Sin[1], K. Chowdhury[1], X. Chen[1], K. Chan[1], U. Nagavarapu[1]; [1]RD, BioPharmX, Menlo Park, CA

B832/P2676 **Innate immune variants of the surfactant protein in airway function after Klebsiella pneumoniae infection.** N. Thorenoor[1], X. Zhang[1], T.M. Umstead[1], S. Halstead[1], D.S. Phelps[1], J. Floros[1,2]; [1]Department of Pediatrics, The Pennsylvania State University College of Medicine, Hershey, PA, [2]Department of Obstetrics and Gynecology, The Pennsylvania State University College of Medicine, Hershey, PA

B833/P2677 **Plasma membrane remodeling by *Neisseria meningitidis* is driven by a wetting process along type IV pili fibers.** A. Charles-Orszag[1,2,3], F. Tsai[4,5,6], D. Bonazzi[1,2], V. Manriquez[1,2,3], M. Sachse[7], A. Mallet[7], C. Millien[8], S. Goussard[1,2], P. Lafaye[9], J. Krijnse-Locker[7], M. Piel[10,11], F. Brochard-Wyart[4,5,6], P. Bassereau[4,5,6], G. Dumenil[1,2,3]; [1]U1225, INSERM, Paris, France, [2]Unit of Pathogenesis of Vascular Infections, Institut Pasteur, Paris, France, [3]Université Paris Descartes, Paris, France, [4]Laboratoire Physico Chimie, Institut Curie, Paris, France, [5]PSL Research University, Paris, France, [6]UMR 168, CNRS, Paris, France, [7]Ultrapole, Institut Pasteur, Paris, France, [8]Paris Cardiovascular Research Center, Paris, France, [9]Antibody Engineering, Institut Pasteur, Paris, France, [10]Systems Biology of Cell Polarity and Cell Division, Institut Pierre-Gilles De Gennes, Paris, France, [11]UMR 144, Institut Curie, Paris, France

B834/P2678 **Cell-specific defense cascade in *Verticillium*-infected grafted tomato.** E.J. Robb[1], X. Xu[1], J. Blaya Fernandez[1], H. Shittu[1], A. Kurosky[2], R.N. Nazar[1]; [1]Molecular Cellular Biology, University of Guelph, Guelph, ON, [2]Department of Biochemistry and Molecular Biology, Department of Biochemistry and Molecular Biology, Galveston, TX

B835/P2679 **High Content Screening Implicates the PI3K-Akt Pathway in FAST Protein-Mediated Cell-to-Cell Fusion.** D.P. MacKenzie[1], R. Duncan[1]; [1]Microbiology and Immunology, Dalhousie University, Halifax, NS

Organ/Disease Biology and Therapeutic Targets 1

B837/P2680 **c-Abl kinase in Niemann-Pick type A disease: its implication in the pathogenic mechanisms leading to neurodegeneration.** T.A. Marín[1], C. De la Fuente[2], M.L. Acuña[1], J.F. Castro[1], A.R. Alvarez[2], S. Zanlungo[1]; [1] Facultad de Medicina, Pontificia Universidad Catolica de Chile, Santiago, Chile, [2]Facultad de Ciencias biologicas, Pontificia Universidad Catolica de Chile, Santiago, Chile

B838/P2681 **Analysis and modulation of cathepsin B and D in liver damage in *in-vitro* and *in-vivo* models of Niemann-Pick type C disease.** J.E. Oyarzún[1], M. Acuna[1], J.F. Castro[1], S. Zanlungo[1]; [1]Gastroenterologia, Pontificia Universidad Catolica de Chile, Santiago, Chile

B839/P2682 **REVEALING NOVEL FUNCTIONS OF GLUTAMATE CARBOXYPEPTIDASE II, A DIAGNOSTIC AND THERAPEUTIC TARGET IN NEUROPATHOLOGIES AND PROSTATE CANCER.** B. Vorlova[1,2], F. Sedlak[1,2], P. Kasparek[3], R. Sedlacek[3], P. Sacha[1], J. Konvalinka[1]; [1]Institute of Organic Chemistry and Biochemistry of the CAS, Prague, Czech Republic, [2]First Faculty of Medicine, Charles University, Prague, Czech Republic, [3]Czech Centre for Phenogenomics BIOCEV, Vestec, Czech Republic

B840/P2683 **PYROXD1; a novel cause of congenital myopathy highlights oxidative distress as a core mechanistic pathway in muscle and neurodegenerative disorders.** F.J. Evesson[1,2], H.A. Best[1,2], J. Zhang[1], G. Xu[1], F.A. Lemckert[1], N. Fossat[3,4], M.E. Graham[4,5], P.P. Tam[3,4], S.T. Cooper[1,2]; [1]Institute for Neuroscience and Muscle Research, Children's Hospital at Westmead, Sydney, Australia, [2]Discipline of Child and Adolescent Health, Faculty of Medicine, University of Sydney, Sydney, Australia, [3]Embryology Unit, Children's Medical Research Institute, Sydney, Australia, [4]Discipline of Medicine, Sydney Medical School, University of Sydney, Sydney, Australia, [5]Synapse Proteomics Group, Children's Medical Research Institute, Sydney, Australia

B841/P2684 **Inhibition of histone acetyltransferases specifically targeting H4K5 acetylation rescue myogenic differentiation of emerin-null myogenic progenitors.** K.A. Bossone[1], J.M. Holaska[1]; [1]Pharmaceutical Sciences, University of the Sciences, Philadelphia, PA

B842/P2685 **Myosin replacement in myofibrils is induced by Hsp90 activity.** K. Ojima[1], E. Ichimura[2], S. Muroya[1], M. Oe[1], T. Suzuki[2], T. Nishimura[2]; [1]Animal Products Research Division, Institute of Livestock and Grassland Science, NARO, Tsukuba, Japan, [2]Research Faculty of Agriculture, Hokkaido University, Sapporo, Japan

B843/P2686 **The lipid kinase PIKfyve in cardiac fibroblasts activation: a potential target to control cardiac fibrosis.** M. CINATO[1], L. Guitou[1], A. Timotin[1], O. KUNDUZOVA[1], H. Tronchere[1], F. BOAL[1]; [1]Institute of Cardiovascular and Metabolic Diseases (I2MC - UMR1048), Inserm / Université Toulouse III Paul Sabatier, TOULOUSE, France

B844/P2687 **MUTATIONAL AND BIOCHEMICAL ANALYSIS OF THE DUAL KINASE REGION OF UNC-89 (OBSCURIN).** Y. Matsunaga[1], H. Qadota[1], J.C. Moody[1], J.Q. Kwong[2], G.M. Benian[1]; [1]Pathology, Emory University, Atlanta, GA, [2]Pediatrics, Emory University, Atlanta, GA

B845/P2688 **Nuclear receptor interaction protein (NRIP) maintains Z-disc width through α-actinin-2 bound with CapZ.** S. Chen[1]; [1]Microbiology, National Taiwan University, Taipei, Taiwan

B846/P2689 **Roles of Interleukin-1 in the regulation of myoblast fusion and actin dynamics.** C. CHAWEEWANNAKORN[1,2], H. HATAKEYAMA[3], M. TSUCHIYA[4], Y. HAGIWARA[5], M. KOIDE[5], S. YOSHIDA[5], M. KANZAKI[2], K. SASAKI[1]; [1]Division of Advanced Prosthetic Dentistry, Tohoku University Graduate School of Dentistry, Sendai, Japan, [2]Tohoku University Graduate School of Biomedical Engineering, Sendai, Japan, [3]Frontier Research Institute for Interdisciplinary Science, Tohoku University, Sendai, Japan, [4]Department of Nursing, Tohoku Fukushi University, Sendai, Japan, [5]Department of Orthopaedic Surgery, Tohoku University Graduate School of Medicine, Sendai, Japan

B847/P2690 **Glucose-dependent insulinotropic polypeptide stimulates the differentiation of mammalian skeletal muscle cells.** M. Aoshima[1], Y. Ohno[2], S. Yokoyama[2], K. Ohashi[1], R. Ito[1,3], K. Nakamura[1], R. Fujimoto[1], K. Goto[1,2]; [1]Department of Physiology, Graduate School of Health Sciences, Toyohashi SOZO University, Toyohashi, Japan, [2]Department of Physiology, School of Health Sciences, Toyohashi SOZO University, Toyohashi, Japan, [3]Biological Sciences, Graduate School of Sciences and Technology for Innovation, Yamaguchi University, Yamaguchi, Japan

B848/P2691 **Effects of acute hypoxia on zebrafish cardiac tissue.** G. Hernandez[1], S. Britz[1], F. Frech[1], B. Schoffstall[1]; [1]Department of Biology, Barry University, Miami, FL

B849/P2692 **Role of Monocarboxylate Transporter 4 (MCT4) in muscle metabolism and physiology.** S. Bisetto[1], E. Loro[2], T.S. Khurana[2], R.A. Nowak[3], N.J. Philp[1]; [1]Department of Pathology, Anatomy and Cell Biology, Thomas Jefferson University, Philadelphia, PA, [2]Department of Physiology and Pennsylvania Muscle Institute, University of Pennsylvania, Philadelphia, PA, [3]Department of Animal Sciences, University of Illinois, Urbana, IL

B850/P2693 **Matriptase-2 suppresses hepcidin expression by cleaving multiple components of the hepcidin induction pathway.** M. Wahedi[1], A.W. Wortham[1], M.D. Kleven[1], N. Zhao[2], S. Jue[1], C.A. Enns[1], A. Zhang[1]; [1]Cell, Developmental, and Cancer Biology, Oregon Health Science University, Portland, OR, [2]Department of Nutritional Sciences, University of Arizona, Tucson, AZ

B851/P2694 **Predictors of inflammatory obesity and the protective role of catecholaminergic receptors expression in immune cells for its development.** F. Leite[1,2,3,4], M. Lima[3,4], F. Marino[5], M. Cosentino[5], L. Ribeiro[1,2,6]; [1]I3S-Instituto de Investigação e Inovação em Saúde,, I3S-Instituto de Investigação e Inovação em Saúde, University of Porto, Porto, Portugal, [2]Biomedicine Department, Faculty of Medicine University of Porto Portugal, Porto, Portugal, [3]Clinical Hematology Department, Centro Hospitalar of Porto, Porto, Portugal, [4]UMIB - Unit for Multidisciplinary Investigation in Biomedicine, ICBAS - Instituto de Ciências Biomédicas Abel Salazar, Porto, Portugal, [5]Center of Research in Medical Pharmacology, University of Insubria, Varese, Italy, [6]Public Health Sciences, Forensic and Medical Education Department, Faculty of Medicine, University of Porto, Porto, Portugal

B852/P2695 **Expression and regulation of the novel adipocyte enriched gene NRNP1.** N.S. Cairl[1], V. Kalman-Maltese[1], C.M. Smas[1]; [1]Department of Cancer Biology, University of Toledo College of Medicine and Life Sciences, Toledo, OH

B853/P2696 **Blocking Ca^{2+}-channel β_3 subunit reverses diabetes.** K. Lee[1], J. kim[1], M. Köhler[2], S. Ryu[3], P. Berggren[2]; [1]Division of Integrative Bioscience and Biotechnology, POSTECH, Pohang, South Korea, [2]The Rolf Luft Research Center for Diabetes and Endocrinology, Karolinska Institutet, Stockholm, Sweden, [3]Life Science, POSTECH, Pohang, South Korea

B854/P2697 **A role in olfaction for DLK in resistance to diet induced obesity.** H.N. Wong[1], L.B. Holzman[1]; [1]Medicine, University of Pennsylvania, Philadelphia, PA

B855/P2698 **High Throughput Idiosyncratic Drug-Induced Hepatotoxicity and Investigations of Chronic Proliferation of Cells with a Non-Invasive Approach.** C.T. Bot[1], S. Stölzle-Feix[2], K. Juhasz[2], L. Dörr[2], M. Beckler[2], R. Haedo[1], M. George[2], A. Brüggemann[2], N. Fertig[2]; [1]Nanion Technologies Inc., Livingston, NJ, [2]Nanion Technologies GmbH, Munich, Germany

B856/P2699 **Mutation of dgat2 uncouples lipolysis and lipoprotein synthesis in the zebrafish embryonic digestive organ resulting in excess ectopic lipid droplets.** M.H. Wilson[1], J.H. Thierer[1,2], S.A. Farber[1,2]; [1]Embryology, Carnegie Institution for Science, Baltimore, MD, [2]Biology, The Johns Hopkins University, Baltimore, MD

Hematopoietic System

B857/P2700 **Targeting lipoprotein(a)-induced endothelial cell metabolic changes to reduce inflammation and leukocyte migration.** J.G. Schnitzler[1], R.M. Hoogeveen[2], I. Nicorescu[1], M. Versloot[1], E.S. Stroes[2], J. Kroon[1]; [1]Dept. of Experimental Vascular Medicine, Academic Medical Centre, Amsterdam, Netherlands, [2]Dept. of Vascular Medicine, Academic Medical Centre, Amsterdam, Netherlands

B858/P2701 **Plasma sdLDL(small dense LDL) induced to modification of cellular cholesterol transport in foam cells.** M. Mori[1], S. Takizawa[1], R. Yamazaki[1], Y. Yamamoto[1], K. Imai[1], J. kasahara[1], K. Shimizu[1], M. Takahashi[1]; [1]Cellbiological Pathology, Chiba Inst. Sci., Chiba, Japan

B859/P2702 **Oxygen Concentration-Dependent Regulation of Erythropoiesis in Human Erythroblasts.** T. Goto[1], I. Kobayashi[2], K. Sugawara[2], K. Ubukawa[2], Y. Guo[2], K. Asanuma[3], N. Takahashi[2], H. Wakui[1], K. Sawada[2], W. Nunomura[1,4]; [1]Dept of Life Sci., Grad Sch. of Engin. Sci., Akita Univ., Akita, Japan, [2]Dept. of Hematol., Nephrol., Rheumatol., Grad. Sch. of Med., Akita Univ., Akita, Japan, [3]Cent. for Radioisotope, BERSC, Akita Univ., Akita, Japan, [4]Res. Cent. for Engin. Sci., Grad. Sch. of Engin. Sci., Akita Univ., Akita, Japan

B860/P2703 **Pharmacological activation of LPA receptors regulates murine erythro-megakaryocytic differentiation in myeloid lineage.** J. Chiang[1], W. Chen[1], K. Lin[1], H. Lee[1]; [1]Department of Life Science, National Taiwan University, Taipei, Taiwan

B861/P2704 **Changes in the Proliferation and Gene Expression of HUVECs in Response to Treatment with Plant Secondary Metabolites.** C. Howard[1], D. Nofziger[1], P. Joyner[1]; [1]Natural Science Division, Pepperdine University, Malibu, CA

B862/P2705 **Characterization of the mechanically-induced shape change of erythrocytes into polyhedrocytes.** V. Tutwiler[1], A.R. Mukhitov[2], A.D. Peshkova[2], G. Le Minh [2], J. Vicksman[1], C. Nagaswami[1], R.I. Litvinov[1], J.W. Weisel[1]; [1]University of Pennsylvania, Philadelphia, PA, [2]Kazan Federal Research University, Kazan, Russia

B863/P2706 **Immuno-suppressive drug causes Hepatic iron overload.** N. Sheikh[1], T. Akhtar[1]; [1]Deaprtment of Zoology, University of the Punjab, Lahore, Pakistan

B864/P2707 **Apoptosis Signal-Regulating Kinase 1 (ASK1) is a novel regulator of heparin-induced thrombocytopenia and thrombosis in mice.** P. Patel[1], Y. Zhou[1], S. McKenzie[1], U. Naik[1]; [1]Cardeza Foundation for Hematologic Research and Center for Vascular Biology Research, Department of Medicine, Thomas Jefferson University, Philadelphia, PA

B865/P2708 **Vitronectin regulates the fibrinolytic system and inflammation during the repair of cerebral cortex in stab-wounded mice.** K. Hashimoto[1,2,3,4], M. Tanabe[1,2], N. Ikeda[1], M. Nakashima[1,2], H. Ikeshima-Kataoka[5,6], Y. Miyamoto[1,2,4]; [1]Graduate School of Humanities and Sciences, Ochanomizu University, Tokyo, Japan, [2]Institute for Human Life Innovation, Ochanomizu University, Tokyo, Japan, [3]Research Fellow of Japan Society for the Promotion of Science, Tokyo, Japan, [4]Program for Leading Graduate Schools, Ochanomizu University, Tokyo, Japan, [5]Faculty of Science and Engineering, Waseda University, Tokyo, Japan, [6]Department of Pharmacology and Neuroscience, Keio University School of Medicine, Tokyo, Japan

B866/P2709 **Neuropeptide Y induces hematopoietic stem/progenitor cell mobilization by regulating matrix metalloproteinase-9 activity through Y1 receptor in osteoblasts.** H. Jin[1], M. Park[2], J. Bae[2], J. Lee[2], M. Jeong[1], S. Han[2]; [1]College of Veterinary Medicine, Kyungpook National University, Daegu, Korea, South, [2]Physiology, Kyungpook National University School of Medicine, Daegu, Korea, South

B867/P2710 **Partial Refractoriness of Platelets in Thrombotic Conditions.** A.D. Peshkova[1], G. Le Minh [1], I.A. Andrianova[1], J.W. Weisel[2], R.I. Litvinov[2]; [1]Institute of Fundamental Medicine and Biology, Kazan Federal University, Kazan, Russia, [2]Department of Cell and Developmental Biology, University of Pennsylvania School of Medicine, Philadelphia, PA

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B868/P2711 **A non-saponin fraction from Korean red ginseng prevents TNF-α-induced muscle atrophy via regulation of Akt/mTOR signaling in C2C12 myotubes.** M. Yeom[1], D. Cho[2], D. Hahm[1,3]; [1]Acupuncture and Meridian Science Research Center, College of Korean Medicine, Kyunghee University, Seoul, Korea, South, [2]Department of Biomedical Science, Graduate School, Kyunghee University, Seoul, Korea, South, [3]Department of Physiology, School of Medicine, Kyunghee University, Seoul, Korea, South

B869/P2712 **Transmembrane BAX Inhibitor Motif-6 (TMBIM6) protects against Cisplatin-induced testicular toxicity.** H.K. Kim[1], R.K. Yadav[1], K.R. Bhattarai[1], H.W. Jung[1], H.R. Kim[2], H.J. Chae[1]; [1]Pharmacology, Chonbuk National University, Jeonju-si, Korea, South, [2]Graduate School, DGIST, Jeonju-si, Korea, South

B870/P2713 **Immune Enhancement of Fucoidan in Raw264.7 cells.** H. Kim[1], H. An[1], s. Ahn[1], S. Yu[1]; [1]Department of Microbiology & Immunology, Pusan National University School of Medicine, Yangsan, South Korea

B871/P2714 **In vivo cellular reprogramming to restore respiratory function after SCI.** S. Fernandes[1], L.V. Zholudeva[1], M.A. Lane[1], P.W. Baas[1], L. Qiang[1]; [1]Neurobiology and Anatomy, Drexel University College of Medicine, PHILADELPHIA, PA

B872/P2715 **The study of new quaternary ammonium compounds specific activity to gram positive and gram negative bacteria in vitro and in vivo.** M. Agafonova[1], R. Kazakova[1], A. Lyubina[1], N. Shtyrlin[1], M. Zeldi[1], Y. Shtyrlin[1]; [1]Scientific and Educational Center of Pharmaceutics, Kazan (Volga region) Federal University, Kazan, Russia

B873/P2716 **Ametryn causes alterations of the prostatic components percentage of adult Wistar rats.** L. Cuquetto-Leite[1], F.J. Paiva da Silva[1], C. Capucho[1], I.B. Reis[1], K.M. Freitas[2], M.H. Dolder[1]; [1]Department of Structural and Functional Biology, University of Campinas, Campinas, Brazil, [2]Brazilian Agricultural Research Corporation, Embrapa, Seropédica, Brazil

B874/P2717 **Polyglutamine length dependent structural properties and phase behavior of huntingtin exon 1.** K.M. Ruff[1], J.B. Warner[2], A.E. Posey[1], E.A. Newcombe[3], P. Tan[4], E.A. Lemke[4], P.R. Gooley[3], D.M. Hatters[3], H.A. Lashuel[2], R.V. Pappu[1]; [1]Biomedical Engineering, Washington University in Saint Louis, Saint Louis, MO, [2]Laboratory of Molecular and Chemical Biology of Neurodegeneration, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, [3]1Department of Biochemistry and Molecular Biology, The University of Melbourne, Melbourne, Australia, [4]Structural and Computational Biology Unit, European Molecular Biology Laboratory, Heidelberg, Germany

B875/P2718 **Human adipose-derived multipotent mesenchymal stromal cells as a new target for a cell-mediated drug delivery.** L.S. Litvinova[1], V.V. Shupletsova[1], O.G. Khaziakhmatova[1], K.A. Yurova[1], V.V. Malashchenko[1], N.M. Todosenko[1], A.S. Timin[2], V.L. Kudryavtseva[2], G.B. Sukhorukov[2,3], A.J. Gow[2,4], E.N. Atochina-Vasserman[2,5], I.A. Khlusov[1,6,7]; [1]Department of Immunology and Cell Biotechnology, Immanuel Kant Baltic Federal University, Kaliningrad, Russia, [2]RASA Center in Tomsk, Tomsk Polytechnic University, Tomsk, Russia, [3]School of Engineering and Materials Science, Queen Mary University of London, London, United Kingdom, [4]Department of Pharmacology and Toxicology, Rutgers University, Piscataway, NJ, [5]RASA Center, Kazan Federal University, Kazan, Russia, [6]Department of Morphology and General Pathology, Siberian State Medical University, Tomsk, Russia, [7]Department of Polymers and Composite Materials, Tomsk State University, Tomsk, Russia

B876/P2719 **Ultrastructural studies of phagocytosis of synthetic microcapsules by human polymorphonuclear leukocytes.** T.A. Nevzorova[1], M.Y. Nikitina[1], A.A. Ponomareva[1], Y.V. Tarakanchikova[2], A.J. Gow[3,4], G.B. Sukhorukov[4,5], E.N. Atochina-Vasserman[1,4], R.I. Litvinov[1,6]; [1]RASA Center, Kazan Federal University, Kazan, Russia, [2]Saratov State University, Saratov, Russia, [3]Department of Pharmacology and Toxicology, Rutgers University, Piscataway, NJ, [4]RASA Center in Tomsk, Tomsk Polytechnic University, Tomsk, Russia, [5]School of Engineering and Materials Science, Queen Mary University of London, London, United Kingdom, [6]Perelman School of Medicine, University of Pennsylvania, Philadelphia, United States

B877/P2720 **Inhibitory effects of oleuropein on interleukin-4-induced asthmatic inflammation and emphysema in a smoke/OVA mouse model.** Y. Kim[1], Y. Kang[1]; [1]Food science and Nutrition, Hallym University, Gangwon-do, South Korea

B878/P2721 **Developing Novel Inhibitors of Gamma-Glutamyl Transpeptidase.** M.H. Hanigan[1], N. Wakeham[1], B.H. Mooers[2], S.S. Terzyan[3]; [1]Cell Biology, University of Oklahoma Health Sciences Center, Oklahoma City, OK, [2]Biochemistry and Molecular Biology, University of Oklahoma Health Sciences Center, Oklahoma City, OK, [3]Laboratory of Biomolecular Structure and Function, University of Oklahoma Health Sciences Center, Oklahoma City, OK

B879/P2722 **Differentiation of human induced pluripotent stem cells (hiPSCs) with a 57 kb ctns deletion.** M.L. Taub[1], R. Thiyagarajan[1], R. Duve[1], J. Mulkin[1], A. Kocaj[1]; [1]Biochemistry, University at Buffalo, Buffalo, NY

B880/P2723 **Use of submicron vaterite particles serves as an effective delivery vehicle to the respiratory portion of the lung.** O. Guslikova[1], O. Sidneeva[1], O. Sidneev[2], N. Pitaev[2], O. Kulikov[2], E. Tyutiaev[2], G.B. Sukhorukov[3,4], E. Atochina-Vasserman[4,5], D. Gorin[1,4], A.J. Gow[4,6]; [1]Chemistry, Saratov State University, Saratov, Russia, [2]Engineering, Ogarev Mordovia State University, Saransk, Russia, [3]School of Engineering and Material Sciences, Queen Mary University, London, United Kingdom, [4]RASA Center, Tomsk Polytechnic University, Tomsk, Russia, [5]RASA Center, Kazan Federal University, Kazan, Russia, [6]Pharmacology, Rutgers University, Piscataway, NJ

B881/P2724 **Overproduction of biologically active human bone morphogenetic protein-4 in Chinese hamster ovary cells.** N. HAN[1], J. PI[1], K. Baek[1], J. Yoon[1]; [1]Graduate School of Biotechnology, Kyunghee University, Yongin, South Korea