Sunday Poster Session

Learning Center, Exhibit Halls D-H

**Poster Set Up**
Saturday 5:30-6:00 pm

**Posters Displayed**
Saturday 6:00-8:00 pm
Sunday 7:30 am-3:00 pm

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

**Poster Tear Down**
Sunday 3:00-6:00 pm

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**Board Numbers**

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**Poster Presentation Guidelines**

- Presenters should ensure their posters are placed on the appropriate poster board for the duration of their assigned poster session and viewing. Please use the number starting with “B” for your poster board.

- Poster presenters should stand at their poster locations during the appropriate 90-minute time slot—odd board numbers, 12:00-1:30 pm or even board numbers, 1:30-3:00 pm. The specific time slot is included in the original poster notification emails sent on October 31. 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.
B9/P1009 Understanding the Role of Self-Reflection in a Course-Based Undergraduate Research Experience. C. Mishra1, K.L. Daniel1, K.L. Classe1; 2Biotechnology, Innovation and Regulatory Science Center, Purdue University, West Lafayette, IN, 3Biology, Texas State University, San Marcos, TX

B10/P1010 Embedding short-term research experiences in Biology curriculum enhances student engagement with science process. L.L. Dahlberg2, B. Wiggins2, S.R. Lee1, H. Jordt1, L. Lilly1, A. Groat Carmona1; 1School of Interdisciplinary Arts and Sciences, University of Washington, Tacoma, WA, 2Biology, University of Washington, Seattle, WA, 3Biology, Western Washington University, Bellingham, WA

B11/P1011 Research-in-the-classroom as a means to improve interest in STEM for multiple community college students. C. Priano1, L. Jayant1; 1Science, Borough of Manhattan Community College, New York, NY

B12/P1012 Same curriculum, different mice, different student outcomes: A comparison of a traditional lab course and a course-based undergraduate research experience. K.M. Cooper1, T. Hendrix1, K.M. Cooper1, J.N. Blattman1; 1School of Life Sciences, Arizona State University, Tempe, AZ

B13/P1013 Helping Students SOAR: Engaging Underrepresented Minority Undergraduates in Developmental Biology. R.M. Kao1; 1Science Department, Heritage University, Toppenish, WA

B14/P1014 Development of BioVEDA: An assessment tool to measure student understanding of biological variation with respect to experimental design and analysis. J. Hicks1, J. Dewey1, A. Schuchardt1; 2Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN, 3Biology Teaching and Learning, University of Minnesota, Minneapolis, MN

B15/P1015 Assessment of using Forensic Science as an Engagement Tool for Student Success in General Biology. C.A. Jones1; 1Biology, Lane College, Jackson, TN

B16/P1016 Modeling Human Problems with Slime Mold can Attract New Students to Science and Teach Important Skills. M.J. Dobro1; 1School of Natural Sciences, Hampshire College, Amherst, MA

B17/P1017 Implementation of a CURE module investigating yeast mating and cell fusion to build student research skills within the curriculum. A.C. Engel1; 1Department of Biology, Mills College, Oakland, CA

B18/P1018 Incorporation of CRISPR/Cas9 into a semester-long investigative lab on the cell biology of C. elegans. S.K. Olson1; 2Biology, Pomona College, Claremont, CA

B19/P1019 Integration of CRISP into the undergraduate curriculum. J. Pieczynski1, L. Kee1; 2Department of Biology, Rollins College, Winter Park, FL, 3Department of Biology, Stetson University, Deland, FL
B27/P1027 National Survey on Ethics/ RCR Integration within Course-based Undergraduate Research Experiences (CUREs). 
L.A. Diaz-Martinez1, A. Hernandez2, S. Corral3, 
J.M. Bhatt4, C. Arcy5, M. Rosenberg6, D. Esparza2, J.T. Olimpo1; 1Campus Office of Undergraduate Research Initiatives (COURI), 
The University of Texas at El Paso, El Paso, TX, 2Biological Sciences, The University of Texas at El Paso, El Paso, TX, 3Chemistry & Biochemistry, The University of Texas at El Paso, El Paso, TX, 4Biochemistry Molecular Biology, University of New Mexico, Albuquerque, NM

B28/P1028 The whole is greater than the sum of the parts: a research poster project provides an integrative framework for learning across courses in biology. P. DiSordi1, A. Elbassiony1,2, 
S. Guay3, A. Hamilton1, S. King1, J. Brown4, P. Molnar5, J. Stehlik5, M. Andrade1, C. Riggs5, 
A. Ashok1; 1Biological Sciences, University of Toronto, Scarborough, Toronto, ON, 2Graduate Program in Cell Systems Biology, University of Toronto, Scarborough, Toronto, ON, 3UTSC Library, University of Toronto, Scarborough, Toronto, ON, 4The Writing Centre, University of Toronto, Scarborough, Toronto, ON

B29/P1029 The Yeast ORFan Gene Project: Finding a place for uncharacterized genes to GO. P.X. Hanson1, T. Tobin1, E.D. Strome1, 
M.E. Miller1, D.P. Aiello1, J.B. Keeney1; 1Biology Department, Birmingham-Southern College, Birmingham, AL, 2Biology Department, Susquehanna University, Selinsgrove, PA, 3Department of Biological Sciences, Northern Kentucky University, Highland Heights, KY, 4Biology Department, Rhodes College, Memphis, TN, 5Biology Department, Austin College, Sherman, TX, 6Biology Department, Juniata College, Huntingdon, PA

B30/P1030 Building a culture of research: Factors that drive the development of an undergraduate research culture at a community college. I. Hewlett1; 1Science and Technology, Finger Lakes Community College, Canandaigua, NY

B31/P1031 Using Repetitive Summative Assessment to Increase Learning of Basic Calculations in an Introductory Biology Lab. J.H. Horne1, H. Woolley1, W. Schluchter1, J. Howard1; 1Biological Sciences, University of New Orleans, New Orleans, LA

B32/P1032 Interdisciplinary Classroom Undergraduate Research Experience (CURE) in bioinformatics: student learning and discoveries. E.R. Day1, S. Randles1, T. Migler-VonDollen1, A. Dekhtyar1, A.L. Goodman1; 1Chemistry and Biochemistry, California Polytechnic State University, San Luis Obispo, CA, 2Computer Science, California Polytechnic State University, San Luis Obispo, CA

B33/P1033 An investigative gene expression laboratory module that is flexible with respect to institutional resources, course goals, faculty expertise, and student agency. K.A. Kandil1; 1Biology, St. Olaf College, Northfield, MN

B34/P1034 Fabrication of retinal pigment epithelial cell sheets using a closed culture system for regenerative medicine. E. Matsumoto1, N. Koidi1, H. Hanawa1, 
M. Kiyama1, J. Kuwabara2, S. Takeda2, M. Takahashi2; 1Hitachi, Ltd., Hygo, Japan, 2RIKEN Center for Biosystems Dynamics Research, Hyogo, Japan, 3Sanpatec Co., Ltd., Osaka, Japan

B36/P1035 Genetically characterized cell lines to study human development and disease. C. Kenny1, A.T. Kodani2,3; 1Genetics and Genomics, Boston Children's Hospital, Boston, MA, 2Pediatrics, Harvard Medical School, Boston, MA

B37/P1036 Development of a Functional Readout for Assessment of Excitation-Contraction Coupling of Human Induced Pluripotent Stem Cell Derived Cardiomyocytes. X. Zhang1, Y. Abassi1; 1ACEA Biosciences, San Diego, CA

B38/P1037 Enhancing chemotaxis of encapsulated cells by genetic engineering. F. Watson1,2, 
H. Wang1,2, C.N. Alarcon1,2,3, B. Liu1,2, R.L. Klemke1; 1Pathology, UC San Diego, La Jolla, CA, 2Moores Cancer Center, UC San Diego, La Jolla, CA, 3Biomedical Sciences Program, UC San Diego, La Jolla, CA

B39/P1038 Encultured cells as delivery vehicles to treat cancer. C.N. Alarcon1,2,3, H. Wang1,2, 
B. Liu1,2, F. Watson1,2, S. Bearles1, C. Lee1, J.D. Bui1, R.L. Klemke1,2; 1Moores Cancer Center, UC San Diego, La Jolla, CA, 2Biomedical Sciences Program, UC San Diego, La Jolla, CA, 3Biopathology, UC San Diego, La Jolla, CA

B40/P1039 Encultured Cells: A Novel Platform for Delivering Oncolytic Viruses to Treat Metastatic Cancer. B. Liu1,2, H. Wang1,2, 
C.N. Alarcon1,2,3, F. Watson1,2, R.L. Klemke1,2; 1Pathology, UC San Diego, La Jolla, CA, 2Moores Cancer Center, UC San Diego, La Jolla, CA, 3Biomedical Sciences Program, UC San Diego, La Jolla, CA

B41/P1040 Scalable method for isolation of pure and functional exosomes from cell culture media. s. paul1, H. Branscombe1,2, M. Nahashetty1, S. Jacob1, J. Wells1, D. Yin1, R. Newman1; 1ATCC Cell systems, Gaithersburg, MD, 2Molecular Biology and Biophysics Unit, European Molecular Biology Laboratory (EMBL), Heidelberg, Germany

B42/P1041 Development of cameld nanobody based-LAMPole diagnostic tests for dengue and Zika viruses. D.J. Grab1,2, A. Sharma1, I. Burubulis1,2, A.T. Lehrer1, V.R. Nerurkar1, S. Magee1,2, D.J. Grab1; 1Uniformed Services University, Baltimore, MD, 2Johns Hopkins University, Baltimore, MD, 3University of Virginia, Charlottesville, VA, 4Universidad San Sebastian, Puerto Montt, Chile, 5University of Hawaii at Manoa, Honolulu, HI, 6Ghent University Global Campus, Incheon, South Korea, 7Vrije Universiteit Brussel, Brussels, Belgium

B43/P1042 The “Helene Medium”: specialized stem cell culture medium. C. Yang1, T. Matsuoka1; 1STEMCELL Co., Ltd., Tokyo, Japan

B44/P1043 Using BioID as a tool to explore the endosomal interaction of RME-8 and SNX-1 in C. elegans. S.B. Swords1, G. Heskeith1, A. Ginzas1, B. Grant1; 1Molecular Biology and Biochemistry, Rutgers University, Piscataway, NJ, 2Lunenfeld-Tanenbaum Research Institute, Toronto, ON

B45/P1044 u-track 3D: A tracking framework to quantify, observe and integrate intracellular dynamics in three dimensions. P. Roudot1, W. Legant1, K.M. Dean1, A. David1, D.W. Gerlich1, R. Fiolka1, E. Betzig1, G. Danuser1; 1Lyda Hill Department of Bioinformatics, UT Southwestern Medical Center, Dallas, TX, 2Janelia Farm Research Campus, Ashburn, VA, 3Department of Cell Biology, UT Southwestern Medical Center, Dallas, TX, 4Institute of Molecular Biotechnology of the Austrian Academy of Sciences, Vienna, Austria

B46/P1045 Bioinformatics Methods for Extracting Information from Still and Video Images. R. Phandhosthong1,2, A. Zahedi1,2, V. On1, A. Chaili1, G. Remark1; 1Cell, Molecular, Developmental Biology, University of California, Riverside, Riverside, CA, 2Molecular, Cell and Systems Biology, University of California, Riverside, Riverside, CA, 3Department of Bioengineering, University of California, Riverside, Riverside, CA, 4Department of Electrical and Computer Engineering, University of California, Riverside, Riverside, CA

B47/P1046 Machine learning powered parameter-free 2D and 3D image segmentation and object analysis pipeline. M. Jones1, L. Lai1, C. McBride1, S. McElroy1, J.S. Lee1, L.A. Lucas1; 1IDRiVision Technologies LLC, Bellevue, WA

B48/P1047 Deep learning enabled neurite segmentation and circuit analysis in retina development. H. Sasaki1, W. Yu1, C. Huang1, R. Wong1, J.S. Lee1, L.A. Lucas1; 1IDRiVision Technologies LLC, Bellevue, WA, 2Biological Structure, University of Washington, Seattle, WA

B49/P1048 A new open source toolkit for segmenting 3D intracellular structures in microscopy images. S.M. Rafelski1; 1Allen Inst. for Cell Science1, 2Allen Institute for Cell Science, Seattle, WA

B50/P1049 Quorum: Crowdsourcing image tracing through an engaging painting game. J.H. Iwasa1, J. Lin1, K. Santiago1; 1Biochemistry, University of Utah, Salt Lake City, UT

B51/P1050 CORBEL: Facilitating access to European Research Infrastructures. J. Ellenberg1, A. Keppeler1, F.C. Leitner1; 1Cell Biology and Biophysics Unit, European Molecular Biology Laboratory (EMBL), Heidelberg, Germany

B52/P1051 Cell Migration Analysis Using Automated Cell Imaging. R. McMillan1, J.A. Hesley1, J. McMillan1, M. Thomas1; 2Molecular Devices LLC, San Jose, CA, 3Platyplus Technologies Inc., Madison, WI

B53/P1052 Information processing in an animal lacking neurons or muscles: Phototaxis in Trichoplax adhaerens. C. Chai1, L. Kroo1, C. Aiello1, M. Prakash1; 1Bioengineering, Stanford University, Stanford, CA
New Technologies in Cell Biology: Fluorescence

B56/P1055 Identification of kinetic neurodegeneration events in patient-derived cell models. J.S. Lee1, T. Cheng2, T. Onishi3, C. Huang4, H. Sasaki5, M. Jones6, Y. Shi6, M. Hattori7, J. Ichiha8, T. Nagai9; 1IDRVision Technologies LLC, Bellevue, WA, 2Department of Biomolecular Science and Engineering, Osaka University, Osaka, Japan, 3Eli and Edythe Broad Center for Regenerative Medicine and Stem Cell Research, University of Southern California, Los Angeles, CA

B57/P1056 Monitoring voltage fluctuations of intracellular membranes. M. Sepehr Rad1, L.B. Cohen2,3, J. Baker4,5; 1Center for Functional Connectomics, Brain Science Institute, Korea Institute of Science and Technology (KIST), Seoul, South Korea, 2Department of Cellular and Molecular Physiology, Yale University School of Medicine, New Haven, CT, 3Department of Neuroscience, Korea University of Science and Technology, Daejeon, South Korea

B58/P1057 Potassium-sensitive nanoparticles for imaging neural tissues in vitro and in vivo. R.I. Dmitriev1,2, B.J. Mueller1, A.V. Zhdanov1, S.M. Borisov1, V. Tsvetarev1; 1School of Biochemistry and Cell Biology, University College Cork, Cork, Ireland, 2Institute for Regenerative medicine, I.M. Sechenov First Moscow State University, Moscow, Russia, 3Institute of Analytical Chemistry and Food Chemistry, Graz University of Technology, Graz, Austria, 4Department of Bioengineering, University of Maryland College Park, Baltimore, MD

B59/P1058 Optogenetic manipulation of membrane phospholipids in neurons with a newly engineered thermostable version of Magnets. L. Benedetti1,2, J.S. Marvin1, L.L. Looger1, P. De Camilli1,2,3,4; 1Neuroscience, Yale University School of Medicine, New Haven, CT, 2Cell Biology, Yale University School of Medicine, New Haven, CT, 3Yale University School of Medicine, Howard Hughes Medical Institute, New Haven, CT, 4Yale University School of Medicine, Program in Cellular Neuroscience, Neurodegeneration and Repair, New Haven, CT, 5Janelia Farm Research Campus, Howard Hughes Medical Institute, Ashburn, VA, 6Yale University School of Medicine, Kavli Institute for Neuroscience, New Haven, CT

B60/P1059 Optogenetic manipulation of tubulin post-translational modifications in living cells. Y. Chang1, Y. Lini2; 1Institute of Molecular Medicine, National Tsing Hua University, Taipei, Taiwan

B61/P1060 Light Inducible Cell Patterning and Biogenic Lithography. K.L. Naughton1, J. Boedicker1; 1Physics, University of Southern California, Los Angeles, CA

B62/P1061 CreLite: a red light-inducible Cre tool for mouse and zebrasfish. S. Yen1, J. Deng1, R.R. Behringer1, G.T. Eisenhoffer1; 1Genetics, UT MD Anderson Cancer Center, Houston, TX

B63/P1062 Red-Shifted Redox Sensors for Multiplex Imaging of Neuron Activity-Dependent and Compartment-Specific Redox Dynamics. S. Radhakrishnan1, J. Norley1, N. LeRoy1, S. Doan1, S. Norcross1, S. Snaider1, L. Huang1, M. Tantama1; 1Chemistry, Purdue University, West Lafayette, IN

B64/P1063 A molecular sensor reveals differences in macromolecular crowding between the cytoplasm and nucleus. G.T. Shubeita1, C. Murade1; 1Physics, New York University Abu Dhabi, Abu Dhabi, United Arab Emirates

B65/P1064 Designing bright, red-shifted, calcium indicators. C. Deo1, J. Seo1, L.D. Davis1; 1Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA

B66/P1065 Engineering of a Photostable, Monomeric, and Superfolder GFP Variant. F.M. Valbuena1, B. L. Fitzgerald1, R. Strack1; 1Molecular Genetics and Cell Biology, The University of Chicago, Chicago, IL

B67/P1066 Quantitative ATP imaging as a tool for investigating distribution, cell-cell correlation and rapid dynamics of energy level at single cell resolution. H. Vaginuma1, Y. Okada1,2; 1Center for Biosystems Dynamics Research (BDR), RIKEN, Saitama, Japan, 2School of Science, The University of Tokyo, Tokyo, Japan

B68/P1067 Sensors of Extracellular ATP for Interrogating Purinergic Signaling and Intracellular Second Messenger Dynamics in Neurons and Astrocytes. D. Cholog1, S. Valentino1, J. Conley1, S. Min1, E. Colomb1, M. Tantama1; 1Chemistry, Purdue University, West Lafayette, IN

B69/P1068 VIP Tags: A new technology for labeling and imaging cellular proteins. K. Beatty1; 1Biomedical Engineering, Oregon Health & Science University, Portland, OR

B70/P1069 A suite of Fluorogen-Activating Protein (FAP)-tagged vectors and organelle markers enables quantifiable dye-activated selective imaging of location-specific protein pools. N.A. Hager1, C.K. McAtee1, J.A. Warnick2, M.P. Bruche3, J.L. Brodsky4, A.F. O’Donnell4; 1Biological Sciences, University of Pittsburgh, Pittsburgh, PA, 2Biological Sciences, Duquesne University, Pittsburgh, PA, 3Biological Sciences, Carnegie Mellon University, Pittsburgh, PA

B71/P1070 Optimizing Leading Edge F-actin Visualization Using Multiple Actin Probes and Staining Methods Across Different Imaging Modalities. V. DesMarais1,2,3, R.J. Eddy1, V.P. Sharma1, O. Stone1, J.S. Condeelis3,4; 1Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, 2Analytical Imaging Facility, Albert Einstein College of Medicine, Bronx, NY, 3Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, 4Pharmacology, UNC Chapel Hill School of Medicine, Chapel Hill, NC

B72/P1071 Highly multiplexed and sensitive in situ protein imaging with signal amplification using immuno-SABER. S.K. Saka1,2, Y. Wang1, J.Y. Kishi1,2, B.J. Beliveau1, A.Z. Alza1, S. Lapan1, G. Pihan1, P. Yin1,2; 1Wysw Institute for Biologically Inspired Engineering at Harvard University, Boston, MA, 2Systems Biology, Harvard Medical School, Boston, MA

B73/P1072 Development of designer RNA-binding protein for live-cell imaging and manipulation of authentic RNAs. A. Takai1, Y. Okada1,2; 1Center for Biosystems Dynamics Research (BDR), RIKEN, Saitama, Japan, 2Graduate School of Science, The University of Tokyo, Tokyo, Japan

B74/P1073 Metadata and Optical Performance Tracking for Fluorescent Microscopes. M.M. Hammer1, F. Farzami1, M. Huisman1, D. Grunwald1; 1Umass Medical School, WORCESTER, MA

B75/P1074 Temperature controlled 633 nm biostimulation. S. Cohen1, V. Gomez-Godinez2, K. Chow1, M. Ono1, D. Pierce3, M. Berns1,2; 1Institute of Engineering in Medicine, University of California, San Diego, San Diego, CA, 2Beckman Laser Institute, University of California, Irvine, Irvine, CA

New Technologies in Cell Biology: CRISPR

B76/P1075 Molecular beacon technologies for live-cell imaging of single genomic loci and RNA transcripts. A.K. Chen1; 1Biomedical Engineering, College of Engineering, Peking University, Beijing, China

B77/P1076 Combining CRISPR and Molecular Beacons to Visualize Single Genomic Loci in Living Cells. X. Wu1, A.K. Chen1; 1Biomedical Engineering, College of Engineering, Peking University, Beijing, China

B78/P1077 Antibody validation using CRISPR knockout: An antibody toolbox for the major ALS/FTD disease gene C9ORF72. C. Laflika1, O. Gileadi1, Z. You1, T.M. Durcan1, P.S. McPherson1; 1Neurology and Neurosurgery, McGill University, Montreal, QC, 2Medicine, Oxford University, Oxford, United Kingdom

B79/P1078 In Vivo Directed Gene Editing with CRISPR/Cas9 using Peptide Based Nanoparticle. G. Divita1, N. Durany2, N. Desai2, M. Guidetti3, V. Josserand4, D. Diviccell, Nimes, France, 3AADDGEN LLC, Pacific Palisades, CA, 4IAB INSERM U1209, Grenoble, France

B80/P1079 Development of a CRISPR/Cas9-mediated gene editing and quality control pipeline to illuminate organization and dynamics in hiPSCs. R. Gunawardane1; 2Allen Institute for Cell Science, Seattle, WA

B81/P1080 DARPin-Modified Adeno-Associated Virus Vectors for Selective Targeting of CD4+ Cells. E.J. Kenkel1, H.S. De Silva Feeligne2, A.J. Kumar1, D. Stone3, K.R. Jerome1,2; 1Department of Laboratory Medicine, University of Washington, Seattle, WA, 2Vaccine and Infectious Disease Division, Fred Hutchinson Cancer Research Center, Seattle, WA
Actin and Associated Proteins 1

B91/P1089 Specificity of Rho family GTPases mediating BMP7-evoked chemotropic signal transduction. N.R. Gosala1; 1Pharmaceutical Sciences, St. John’s University, New York, NY

B92/P1090 Kettin, a large actin-binding protein with immunoglobulin-like repeats, is essential for sarcomeric actin assembly and larval development in Caenorhabditis elegans. K. Ono1; 2Z. Qin2; 3R.C. Johnsen3, D.L. Baillie1; 1Department of Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, 2Cardiology, University of Texas, MD Anderson Cancer Center, Houston, TX, 3Department of Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY

B93/P1091 The actin nucleation factors JMY and WHAMM promote caspase activation and programmed cell death. V. King2; 1, N. Leclair1; 1, V. Vlasi2; 1, N. Lebek2; 2, K. Campbell2; 1Department of Molecular and Cell Biology, University of Connecticut, Storrs, CT, 2Institute for Systems Genomics, University of Connecticut, Storrs, CT

B94/P1092 Hsc70 is a common component of actin-rich structures generated during bacterial infections. B. Walker1, 2, M.D. Chua1, J.A. Guttman1; 1Biological Sciences, Simon Fraser University, Burnaby, BC

B95/P1093 Effects of Drp1 phospho-mimetics and phosphorylation on activation by actin and cardiolipin. A. Liu1, A. Hatch1; 1Molecular and Cellular Biology, Dartmouth College, Hanover, NH

B96/P1094 Testing in-vivo cortactin siRNA silencing efficiency in mammalian testes. A. Sriman1, P. Pani1, D. Djaksgulova1, A. Vogel1; 1Cellular and Physiological Sciences, University of British Columbia, Vancouver, BC

B97/P1095 Transgenic Saccharomyces cerevisiae with engineered minimal fusion construct from Schizosaccharomyces pombe shows growth while lacking native WASP/myosin complex. M.J. Lipke1, E.B. Lewellyn1; 1Biological Sciences, St. Norbert College, De Pere, WI

B98/P1096 Epithelial-Mesenchymal homeostasis is perturbed by the ectopic expression of 35Da isoform of SG2NA. R. Gupta1; 1, S.K. GOSWAMI1; 1School of Life Sciences, Jawaharlal Nehru University, NEW DELHI, India

B99/P1097 Innovation in Drosophila Actin-Related Genes. C.M. Schroeder1; 1, H.S. Malik1; 1, Division of Basic Sciences, Fred Hutchinson Cancer Research Center, Seattle, WA, 1Howard Hughes Medical Institute, Seattle, WA

B100/P1098 F-actin Homeostasis through Transcriptional Regulation, Proteasome-mediated Actin Degradation, and Protection by Profilin. M. Onishi1, 2, K. Pecani1; 2, J. Jones1; 1, F. Fauser1, J. Villarrasa-Blasi1, R. Jinkerson1, M. Breker1, M. Jonakas1, F.R. Cross1; 1, J.R. Pringle1; 1, Biophysics Program, Department of Biological Sciences, University of British Columbia, Vancouver, BC

B101/P1099 Bispecific tagging and severing (BITS): a new gene editing tool in C. elegans using endogenous trans-splicing pathways. M.B. Russell1, G.S. Prince1, T.M. Ward1; 1, A.L. McKinney1, J.F. Walrho1r1; 1, B.P. Cormack1; 2, J.D. Boeker1; 1, Institute for Systems Genetics, NYU Langone Health, New York, NY, 2Department of Molecular Biology Genetics, JHU School of Medicine, Baltimore, MD

B88/P1087 CRISPR/Cas9 strategies for generation of Knock-ins in the sea urchin. J.A. Espinoza1, A. Hamdoun2; 1Scipros Institution of Oceanography, University of California San Diego, La Jolla, CA

B89/P1088 Karyotype engineering by chromosome fusion leads to reproductive isolation in yeast. J. Luo1; 1, X. Sun1; 1, B.P. Cormack1, J.D. Boeker1; 1, Institute for Systems Genetics, NYU Langone Health, New York, NY, 2Department of Molecular Biology Genetics, JHU School of Medicine, Baltimore, MD

B90/P1089 Rapidly increasing knock-in efficiency in Caenorhabditis elegans. C.V. Yingl1, D. Pruyne1; 1Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY

B102/P1100 Roles of FHOD-1 and CYK-1 in the development and maintenance of body wall muscles in Caenorhabditis elegans. S. Sundaramurthy1, S. Votra1, A. Laszlo1; 1Department of Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY

B104/P1102 Leiomodin-2: Regulator of cardiac thin filament length and contractile force. L. Mi-Mi1, 2, G.P. Farmar1, 2, R.M. Mayfield1, 3, J. Strom1, 2, M. Chu1, 2, C.T. Pappas1, 2, C.C. Gregorio1, 2, 3Department of Cellular and Molecular Medicine, University of Arizona, Tucson, AZ, 3Center for Molecular Cardiovascular Research Program, University of Arizona, University of Arizona, AZ

B105/P1103 Both tropomodulin’s actin binding sites are required to modulate dendrite development. K.T. Gray1, 2, H. Stefen1, 3, C. Keller1; 1, T. Ly1; 2, M. Colpa1; 1, G. Wayman1; 2, E. Pate1; 1, F. Hatzi1, 2, A.S. Kostykova1; 1Voiland School of Chemical Engineering and Bioengineering, Washington State University, Pullman, WA, 2Neurodegeneration and Repair Unit, University of New South Wales, School of Medical Sciences, Sydney, Australia, 3Neural Culture Core Facility, University of New South Wales, Sydney, Australia, 4Integrative Physiology and Neuroscience, Washington State University, Pullman, WA, 5Department of Biomedical Sciences, Macquarie University, Sydney, Australia

B106/P1104 The Drosophila melanogaster Rab GAP NR-tn plays a role in regulating non-muscle myosin II localization and function. A. Platenkamp1; 1, E. Detmar1; 1, L. Sepulveda1; 1, A. Ritz1; 1, S.L. Rogers2; 1, A. Applewhite2; 1, Biological, Reed College, Portland, OR, 2Biological, The University of North Carolina, Chapel Hill, NC

B107/P1105 Shootin1 Mediates an F-actin-adhesion Clutch to Form Dendritic Spines. R.F. Kastain1; 1, H. Katsuno1; 1, K. Baba1; 1, T. Minigishi1; 2, N. Inagaki1; 1, Division of Biological Science, Nara Institute of Science and Technology, Ikoma, Japan

B108/P1106 The sarcomeric formin Fhod3 nucleates actin filaments. A.A. Patel1; 1, A.M. Grunfeld1, 2, H. Nakano1, 2, A. Chaney1, 2, A. Nakano1; 3, M.E. Quinn1; 3, Molecular Biology Interdepartmental Doctoral Program, University of California, Los Angeles, Los Angeles, CA, 2Department of Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles, CA, 3Department of Molecular, Cell, and Developmental Biology, University of California, Los Angeles, Los Angeles, CA, 4Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research, University of California, Los Angeles, Los Angeles, CA
B121/P1119 Phospho-regulation of tropomyosin is crucial for actin cable turnover in fission yeast. S. Palani1, D. Koester2, A. Kamnev3, T. Hatanou1, T. Kanamaru1, H. Brooker2, J. Hernandez-Fernaud1, A. Jones1, J.B. Millar2, D.P. Mulvihill2, M. Balbasramanian1; 1Warwick Medical School, University of Warwick, Coventry, United Kingdom, 2Biosciences, University of Kent, Canterbury, United Kingdom

B122/P1120 Integrated control of formin-mediated actin assembly by a stationary inhibitor and mobile activator. M. Garabedian1, T. Stanislavova-Konovolova2, C. Lou1, T.J. Rand1, L.W. Pollard3, O.S. Sokolova2, B.L. Goode2; 1Biological Dept., Brandeis University, Waltham, MA, 2Bioengineering Dept., Moscow State University, Moscow, Russia

B123/P1121 Cortaxin stabilization of actin filaments requires actin-binding repeats and linker region, is disrupted by specific substitutions, and is independent of actin nucleotide state. A.N. Scherer1, N.S. Anand2, A.J. Koleske1; 1Department of Cell Biology, Yale University, New Haven, CT, 2Department of Molecular Biophysics and Biochemistry, Yale University, New Haven, CT, 3Department of Neuroscience, Yale University, New Haven, CT

B124/P1122 Constitutive activation of WASP renders neutrophils hyperactive. M. Kesarvi1, J. Record1, J. Krittikou2, H. Brauner1, M. He1, W. Song1, P. Vandenberge1, S. Snapper1, L. Westerberg1; 1Microbiology Tumor and Cell Biology, Karolinska Institutet, Stockholm, Sweden, 2Cell Biology Molecular Genetics, University of Maryland, College Park, MD, 3Center for Human Genetics, University Hospitals Leuven, Leuven, Belgium, 4Medicine, Harvard Medical School, Boston, MA

B125/P1123 RhoA mediated activation of the actin nucleating activity of DIAPH1 is enhanced by IQGAP1. A. Chen1, L.Y. Zhu1, A.R. Wilde1; 1Biotechnology, University of Toronto, Toronto, ON

B126/P1124 Twinfilins are important for turnover of lamelliodial and endocytic actin filament networks in mammalian cells. M. Hakala1, P. Lappalainen1; 1Institute of Biotechnology, University of Helsinki, Helsinki, Finland

B127/P1125 Spatio-temporal Integration of cAMP- and Store Operated Calcium Entry-Signaling Regulates Lamellipodial Dynamics in Migrating Cells. P. Brzezinska1, N. Simpson1, A. Jacobs1, J. Burke-Kleinman1, J. Mackell1, D.H. Maurice1; 1Biomedical and Molecular Sciences, Queen’s University, Kingston, ON

B128/P1126 Par-1 promotes Diaphanous-based actin networks required for nuclear compartmentalization in the syncytial Drosophila embryo. T. Jiang1, T. Harris1; 1Cell System Biology, University of Toronto, Toronto, ON

Kinesins 1

B130/P1127 MAP7 recruits kinesin-1 to target bidirectional cargo towards the microtubule plus end. A.R. Chaudhary1, H. Lu1, K.M. Trybus2, A.G. Hendrick5, D. Sept6, B.G. Budaitis7, S. Mak2, K.M. Trybus2, J. Kritikou1; 1Physics, University of Vermont, Burlington, VT

B131/P1128 Inhibition of kinesin and dynein motility by microtubule-associated septin 2/6/7 complexes. A. Suber1, E. Spilotis2; 1Biology, Drexel University, Philadelphia, PA

B132/P1129 The kinesin-4 motor KIF7 acts as a brake and an obstacle to other motors. Y. Yue1, T.L. Blasius1, K.J. Verhey1; 1Department of Cell and Developmental Biology, University of Michigan Medical School, Ann Arbor, MI

B133/P1130 In vitro Reconstitution of Kinesin-based mRNA Transport. S. Baumann1, M. Gill1, S. Maurer2; 1Cell and Developmental Biology, Centre for Genomic Regulation, Barcelona, Spain

B134/P1131 Motor disease mutations in human KIF1A disrupt autoinhibition of KIF1A motor. C. Kibra1, R.J. McKenney1, S. Niwa2; 1Molecular and Cellular Biology, University of California Davis, Davis, CA, 2Frontier Research Institute for Interdisciplinary Sciences (FRIS), Tohoku University, Sendai, Japan

B135/P1132 Microtubule Attachment Geometries Affect Kinesin Attachment Durations. S. Pyrassopoulos1, E.M. Ostap1; 1Pennsylvania Muscle Institute, Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA

B136/P1133 Neck Linker Docking is Critical for Kinesin-3 Force Production but at a Cost to Speed and Processivity. G. Budatis1, S. Jariwala1, D.N. Reinemann2, K.I. Schimer1, B.J. Grant1, D. Sept6, M.J. Lang1, K.J. Verhey1; 1Cellular and Molecular Biology, University of Michigan, Ann Arbor, MI, 2Department of Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor, MI, 3Department of Chemical and Biomolecular Engineering, Vanderbilt University, Nashville, TN, 4Biophysics Program, University of Michigan, Ann Arbor, MI, 5Division of Biological Sciences, Section of Molecular Biology, University of California, San Diego, La Jolla, CA, 6Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI, 7Department of Cell and Developmental Biology, University of Michigan, Ann Arbor, MI

B137/P1134 Cryo-EM structures reveal kinesin-1 triggers conformational switching of microtubules as a base for polarized transport. M. Morikawa1, T. Shima2, J. Kaneshiro1, T. Kambara1, S. Kamimura1, T. Yagi1, H. Iwamoto1, S. Uemura1, H. Shigematsu2, M. Shirozu1, T. Ichimura1, T.M. Watanabe2, R. Nitta3, Y. Okada4,5,6, N. Hirokawa7,1; 1Department of Cell Biology and Anatomy, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan, 2Department of Biological Sciences, Graduate School of Science, The University of Tokyo, Tokyo, Japan, 3Laboratory for Cell Polarity Regulation, RIKEN Center for Biosystems Dynamics Research, Osaka, Japan, 4Laboratory for Comprehensive Bioimaging, RIKEN Center for Biosystems Dynamics Research, Osaka, Japan, 5Department of Biological Sciences, Faculty of Science and Engineering, Chuo University, Tokyo, Japan, 6Department of Life Sciences, Faculty of Life and Environmental Sciences, Prefectural University of Hiroshima, Hiroshima, Japan, 7Life and Environmental Division, Spring-8, Japan Synchrotron Radiation Research Institute, Hyogo, Japan, 8Structural Biology Group, RIKEN Center for Biosystems Dynamics Research, Kanagawa, Japan, 9Department of...
Microtubule Nucleation and Organization

B149/P1145 Centrosomal microtubule organizing centers limit microtubule polymer in mammalian cells. K. Farrell1, T. Searns1,2,3; 1Biological Sciences, Stanford University School of Medicine, Stanford, CA

B150/P1146 A novel perinuclear non-centrosomal MTOC in Drosophila fat body cells controls nuclear positioning and collagen secretion through Nespire recruitment of Patronin and Ninein. Y. Zheng1,2,3; 1Department of Biomedical Sciences, Florida State University, Tallahassee, FL

B151/P1147 Live imaging of acentrosomal microtubule dynamics controlling early mammalian development. J. Zenker1,2,3; 1Biology, University of Utah, Salt Lake City, UT

B152/P1148 Nuclear rotation by a Golgi-derived MTOC formed during human cytomegalovirus infection. D.J. Procter1, D.F. Walsh1,2; 1Microbiology-Immunology, Northwestern University, Feinberg School of Medicine, Chicago, IL

B153/P1149 A two-step mechanism for the inactivation of microtubule organizing center function at the centrosome. J. Magescas1, J.C. Zonka1, J.L. Feldman2; 1Biology, Stanford University, Stanford, CA

B154/P1150 XMAP215 performs two distinct roles during MT nucleation: concentrator and catalyst. B.R. King1, M. Moritz1, D.A. Agard2, E. Muller1, T.N. Davis2; 1Microbiology, University of Washington, Seattle, WA, 2Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA

B155/P1151 Microtubule Array Dynamics in Dictyostelium: Laser Ablation Reveals Active Avoidance Behavior. I. Odell1, V. Sikirzhytski1, I. Tikhonenko1, A. Khodjakov1, M.P. Koonce1; 1Translational Medicine, Wadsworth Center, Albany, NY

B156/P1152 The Golgi Outpost Protein TPPP is Critical for Myelination by Mediating Microtubule Growth in Oligodendrocytes. M. Fu1, T. McAlcar1, J.A. Oses-Prieto1, H. Nguyen2, C. Lee1, R. Shi1, M. Nori1, T. Wang1, S. Schenk1, A. Burlingame2, S. Bechstedt1, B.A. Barres1; 1Neurobiology, Stanford, Stanford, CA, 2Anatomy and Cell Biology, McGill University, Montreal, QC, 3Pharmaceutical Chemistry, UCSF, San Francisco, CA, 4VA Hospital, Stanford, Stanford, CA

B157/P1153 A Pushing Mechanism for Aster Positioning in Large Cell Types. J.L. Meaders1, D.R. Burgess1; 1Biological, Boston College, Chestnut Hill, MA

B158/P1154 Investigating the contribution of PAR polarity proteins and cell cycle regulators in reorganizing non-centrosomal microtubules in dividing C. elegans intestinal epithelial cells. M.D. Sallee1, J.L. Feldman1,2; 1Biology, Stanford University, Stanford, CA

B159/P1155 Microtubule polymerization is promoted by organic osmylates in otherwise unfavorable conditions. R. Curtin1, D.L. Sackett1; 1NCHD. NIH, Bethesda, MD

B160/P1156 A balance of Rac1 and Myosin-II activity promotes septin-mediated guidance of CAMSAP-associated microtubules to focal adhesions. D.G. Merenich1, S. Donovan1, A. Gill2, P. Patel3, K.A. Myers3; 1Biological Sciences, University of the Sciences in Philadelphia, Philadelphia, PA

B161/P1157 Nonrandom y-TuNa-dependent spatial pattern of microtubule nucleation at the Golgi. A.A. Sanders1, K. Chang1, X. Zhu1, R.J. Thoppill1, W.R. Holmera1, J. Biro1, M. Biro1, B. Sissiere1, N. Plachta2; 1Microbiology, University of Minnesota, Minneapolis, MN, 2Department of Natural Sciences, Nippon Sport Science University, Yokohama, Japan

B162/P1158 The effect of local geometric surroundings on microtubule aster movement and positioning. T. Sulser1, J. Pelletier3; 1Molecular Biology, University of Wyoming, Laramie, WY, 2Cell Division Group, Marine Biological Laboratory, Woods Hole, MA, 3Systems Biology, Harvard, Boston, MA, 4Chemical and Bio-molecular engineering, University of Delaware, Newark, DE, 5Chemical Engineering, University of Wyoming, Laramie, WY

B163/P1159 Regulation of yTuRC-mediated microtubule nucleation studied by TIRF microscopy. T. Consolati1, J. Roostalu1, W. Lim1,2,3, J. Asthana1, J. Gannon1, T. Sury2; 1The Francis Crick Institute, London, United Kingdom, 2School of Life Science and Technology, Tokyo Institute of Technology, Tokyo, Japan
Tubulins and Associated Proteins

B167/P1163 Building a brain with microtubules: illuminating a role for Tuba1a in axon guidance. G.C. Buscaglia1, J.E. Aiken1,2, J.K. Moore3, E.A. Bates1,1; Pediatrics, University of Colorado Anschutz Medical Campus, Aurora, CO, 1Cell and Developmental Biology, University of Colorado Anschutz Medical Campus, Aurora, CO

B168/P1164 Human β-tubulin isotypes regulate microtubule protofilament number and stability. S. Ti,1, G.M. Alushin2,1, M. Ugeloni3,1, K. Ishihara2,3,1, J. Brugéus4,1,2; Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, 1Center for Systems Biology, Dresden, Germany, 2Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany

B169/P1165 Crucial role of α-tubulin acetylation under stress-induced autophagy in Arabidopsis thaliana: kinesin recruiting and easing microtubule interaction with autophagosomes. V. Oleniucă1, A.I. Yemets2, Y.B. Blume3; 1Department of Genomics and Molecular Biotechnology, Institute of Food Biotechnology and Genomics of Natl. Acad. of Sci. of Ukraine, Kyiv, Ukraine, 2Department of Cell Biology and Biotechnology, Institute of Food Biotechnology and Genomics of Natl. Acad. of Sci. of Ukraine, Kyiv, Ukraine

B170/P1166 Towards a comprehensive understanding of the MAP code. B. Monroy1, T.C. Tan1, A. Ramkumar1, D.W. Nowakowski2, K. On-Mckenny3; 1Molecular and Cellular Biology, University of California, Davis, Davis, CA

B171/P1167 Novel N-terminus truncated CLIP-170 (CLIP-170S) confers taxane resistance by impairing microtubule binding; systems-biology predicted Gleevac reverses drug resistance by selective CLIP-170S depletion. K. Kitani1, P.V. Thakkar1, N. Madhukar1, G. Galletti2, I. Barasoain3, J. Diaz1, H.V. Goodson1, M.A. Shah1,2, O. Elemento1,3, Pi. Giannakakou1,2; 1Hem/Onc, Weill Cornell Medicine, New York, NY, 2Bio-Logic, Centro de Investigaciones Biológicas (CIB,CSIC), Spain, Madrid, Spain, 3Chemistry and Biochemistry, University of Notre Dame, Notre Dame, IN

B172/P1168 Branched cytoskeletal networks and the generation of complexity in the Rhizarian amoeba Corallomyxa tenera. S.L. Guest1, S.C. Dawson1,2; 1Microbiology and Molecular Genetics, UC Davis, Davis, CA

B173/P1169 CLASP1 is Required for CLASP2 Localization and Function at Microtubules in Interphase Cells. R.J. Thoppil1, A.A. Sanders1, E.J. lawrence1,2; 1Institute of Structural Biophysics and Mechanobiology, The Rockefeller University, New York, NY

B174/P1170 Molecular Mechanism Of The Intrinsically Disordered Region Of CPAP Protein With Microtubules: An Insight Into Cerebral Microcephaly. N. Das1,2, C. Rhapsa3,4, K.P. Wall1,2, L.E. Hough1,2,5; 1Biofrontiers Institute, University of Colorado Boulder, Boulder, CO, 2Dept of MCD Biology, University of Colorado Boulder, Boulder, CO, 3Dept of Chemistry and Biochemistry, University of Colorado Boulder, Boulder, CO, 4Dept of Physics, University of Colorado Boulder, Boulder, CO

B175/P1171 UNC-45A: a novel microtubule destabilizer in neurons? L.L. Habicht1,2, A. Mooneyha, L. Lee1,3, D. Inniss1, Y. Izuka2, J. Meints3, H. Martinez3, M.K. Lee4, M. Bazzaro2,1; 1Institute of Microbiology and Virology, Brandenburg Medical School Theodor Fontane, Senftenberg, Germany, 2Department of Obstetrics, Gynecology and Women’s Health, University of Minnesota, Minneapolis, MN, 3Life Sciences Summer Undergraduate Research Program (LSSURP), University of Minnesota, Minneapolis, MN, 4Department of Neuroscience, University of Minnesota, Minneapolis, MN

B176/P1172 Investigation of microtubule bundling and sliding mechanisms for MAP7 function in axon branching. B.H. Yang1, S. Tymanskij2, L. Ma3; 1Department of Neuroscience, Vickie and Jack Farber Institute for Neuroscience, Thomas Jefferson University, Philadelphia, PA

B177/P1173 Functional anatomy of Stu1, a microtubule rescue factor from yeast. M.A. Nizioleti1,2, S. Majumdar1, L.M. Rice1; 1Biophysics, UT Southwestern Medical Center, Dallas, TX, 2Nencki Institute of Experimental Biology PAS, Warsaw, Poland

B178/P1174 Identifying and Understanding the Role of Microtubule Associated Proteins in C. elegans. M.V. Tran, J.L. Feldman1; 1Biosciences, Stanford University, Stanford, CA

B179/P1175 Cyttoplasmic p27kip1 is stabilized by paclitaxel and competes with stathmin for binding to tubulin heterodimers. S. Lober2, J.J. Correia1, D.T. Brown1, M.E. Graichen1; 1Department of Cell and Molecular Biology, University of Mississippi Medical Center, Jackson, MS

B180/P1176 Protein kinases potentially involved in yFus phosphorylation and associated with plant MT-nucleation centers. P.A. Karpov1, A.I. Yemets2, A. Rayevsky2, V. Sulimenko2, P. Dräber1, Y.B. Blume3; 1Department of Genomics and Molecular Biotechnology, Institute of Food Biotechnology and Genomics of Natl. Acad. of Sci. of Ukraine, Kyiv, Ukraine, 2Department of Cell Biology and Biotechnology, Institute of Food Biotechnology and Genomics of Natl. Acad. of Sci. of Ukraine, Kyiv, Ukraine

B181/P1177 Adapting a proximity labeling technique to identify novel non-centrosomal MTOC proteins in C. elegans. A.D. Sanchez1, T. Branon2, A.Y. Ting3, J.L. Feldman1; 1Biology, Stanford University, Stanford, CA, 2Chemistry, Massachusetts Institute of Technology, Cambridge, MA

B182/P1178 Identification and characterization of Vasohibins/SVBP as long-sought α-tubulin detyrosinating enzymes: importance for neuron and brain function. M. Moutin1,2, C. Aillaud2,1, C. Bosc1,1, L. pers1,1, P. Heemerkat2,1, J. Deloulme3,1,2, J. Le Frec’1,2, b. Boulan2,1, S. Syed5, Y. Couté6, M.S. Bogyo1, S. Humbert2,1, A. Andrieux1,2; 1Grenoble Institut des Neurosciences (GIN), Univ. Grenoble Alps, Grenoble, France, 2Grenoble Institut des Neurosciences (GIN), Inserm, U1216, Grenoble, France, 3Department of Pathology, Stanford University School of Medicine, Stanford, CA, 4BIG-BE, Univ. Grenoble Alps, CEA, INSERM, Grenoble, France, 5BIG-GPC, CEA, Grenoble, United States

B183/P1179 TPPP3 promotes microtubule bundling and network formation via weak interactions which enable the microtubule network to adapt the external stress changes. K. Oiwa1,2, T. Torisawa1,2; 1Graduate School of Life Science, University of Hyogo, Harima, Japan, 2Advanced ICT Research Institute, National Institute of Information and Communications Technology, Kobe, Japan, 3Structural Biology Center, National Institute of Genetics, Mishima, Japan

B184/P1180 Katanin spiral and ring structures shed light on power stroke for microtubule severing. E. Zehr1,2, A. Syzk3, G. Piszczek4, E. Szczesna4, X. Zuo5, A. Roll-Mecak1; 1Cell Biology and Biophysics Unit, National Institutes of Health, Bethesda, MD, 2Biophysics Core, National Institutes of Health, Bethesda, MD, 3X-Ray Science Division, Argonne National Laboratory, Argonne, IL

B185/P1181 Acute upregulation of the beta-tubulin tubb6 (beta 5, class S) linked to fiber regeneration causes muscle microtubule defects in mdx mice. D. Randazzo1, U. Khalique1, J.J. Belanto1, A. Kenea1, D.M. Talsness1, J.T. Othloff1, M.D. Tran1, K.J. Zaal1, K. Pak1, I. Pinal-Fernandez1,4, A.L. Mammen1, D.L. Sackett1, J.M. Ervasti1, E. Ralston1; 1Light Imaging Section, Office of Science and Technology, National Institute of Arthritis and Musculoskeletal and Skin Diseases, National Institutes of Health, Bethesda, MD, 2Biophysics Core, National Institutes of Health, Bethesda, MD, 3X-Ray Science Division, Argonne National Laboratory, Argonne, IL
B188/P1183 Primary Cilia Sense and Respond to Tubule Flow Differences Following Renal Ischemia-Reperfusion Injury. D.Z. Revel1, H. Hamada2, T. Inoue3, B.K. Yoder1; CDIB, University of Alabama at Birmingham, Birmingham, AL, 3Riken CBD, Riken, Japan, 1Cell Biology, Johns Hopkins University, Baltimore, MD

B189/P1184 Super-resolution microscopy reveals that the inversin compartment is a Structure of Alternating protein Complexes (StAC). H.W. Bennett1, P.K. Jackson1; Baxter Laboratory for Stem Cell Biology, Departments of Microbiology Immunology and Pathology, Stanford University School of Medicine, Stanford, CA

B190/P1185 Tulp3 regulates renal cystogenesis by trafficking of cystoproteins to primary cilia. V. Palcharla1, S. Hwang1; 1Biology, UT Southwestern Medical Center, Dallas, TX

B191/P1186 Super-resolution Detection of PI(4,5)P2 in the Ciliary Pocket: Toward Mechanisms of Pocket Form and Function. G. Garcia2, J.F. Reiter1; 1Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

B192/P1187 Gamete-specific ciliary protein kinase Cili-K regulates receptor-activated ciliary signaling in Chlamydomonas. M. Awasthi1, P. Ranjan1, W.J. Snell1; 1Department of Cell Biology and Molecular Genetics, University of Maryland, College Park, MD

B193/P1188 During its regulated mobilization to existing cilia in Chlamydomonas, a plasma membrane signaling protein is internalized and aligns along cytoplasmic microtubules before delivery to the ciliary base. P. Ranjan1, M. Awasthi1, W.J. Snell1; 1Department of Cell Biology and Molecular Genetics, University of Maryland College Park, College Park, MD

B194/P1189 Single-particle imaging reveals multimodal dynamics of a ciliary membrane protein in living C. elegans. J. van Krugten1,2, E.J. Peterman2,1; 1Physics and Astronomy, Vrije Universiteit Amsterdam, Amsterdam, Netherlands, 2LaserLaB Amsterdam, Amsterdam, Netherlands

B195/P1190 Use of Neuronal Cultures to Assess Primary Cilia Signaling. S.E. Engle1, L.S. Whitehouse1, R. Bansal1, P. Antonellis1, N.F. Berbari1; 1Biology, Indiana University-Purdue University Indianapolis, Indianapolis, IN

B196/P1191 Cell specific effects of cilia loss on drug-induced and motivated behaviors. J.C. McIntyre1, K. Jasso1, J. Roberts1, B. Setlow2; 1Neuroscience, University of Florida, Gainesville, FL, 2Psychiatry, University of Florida, Gainesville, FL

B197/P1192 GPCR-Specific Retention Mechanisms in Primary Cilia. A. Chadha1, D.S. Williams1; 1Jules Stein Eye Institute, University of California, Los Angeles, Los Angeles, CA

B198/P1193 Activation of the 6-3 fatty acid receptor FFAR4/GPR120 triggers cAMP-dependent mitogenesis and differentiation of preadipocytes via the primary cilia. K.I. Hilgenfort1, P.K. Jackson1; 1Microbiology and Immunology, Stanford University School of Medicine, Stanford, CA

B199/P1194 IFT-dependent cilia tip localization of the receptor-type guanylate cyclase GCY-22. S. van der Burght1, S. Rademakers1, J. Johnson2, M.R. Leroux1, G. Jansen2; 1Cell Biology, Erasmus MC, Rotterdam, Netherlands, 2Molecular Biology and Biochemistry, Simon Fraser University, Burnaby, BC

B200/P1195 Genetic interactions between ciliary proteins NPH4 and BB5S and their role in development. M.R. Bentley1, M.J. Croye1, R.S. Andersen1, S.C. Waldrep1, J.M. Parent1, B.K. Yoder1; 1Department of Cell, Developmental, and Integrative Biology, University of Alabama Birmingham, Birmingham, AL, 2Department of Pharmacology and Toxicology, University of Alabama Birmingham, Birmingham, AL

B201/P1196 Brain Somatic Mutations in MTOX Disrupt Neuronal Ciliogenesis, Leading to Focal Cortical Dysplasiam. S. Park1, J. Lim1, S. Ramakrishna1, S. Kim1, W. Kim1, J. Lee1, H. Kang1, J.F. Reiter1, D. Kim1, H. Kim1, J. Lee1; 1KAIST, Daejeon, South Korea, 2Hanyang University, Seoul, South Korea, 3Yonsei University College of Medicine, Seoul, South Korea, 4KISTI, Daejeon, South Korea, 5UCSF, San Francisco, United States

B202/P1197 The ciliary protein Inpp5e is required for axon guidance of multiple neuron tracts in mice. S. Constable1, T. Csapary1; 1Human Genetics, Emory University, Atlanta, GA

B203/P1198 Genetic and functional approaches highlight a novel ciliary complex implicated in Joubert syndrome. J.C. Van De Weghe1, T.D. Rusterholz1, A.E. Gomez2, R. Roepman1, R. Bachmann-Gagescu2, D. Doherty1; 1Pediatrics, University of Washington, Seattle, WA, 2Institute of Molecular Life Sciences, University of Zurich, Zurich, Switzerland, 3Department of Human Genetics, Radboud University Medical Center, Nijmegen, Netherlands

B204/P1199 Hedgehog pathway activity in six widely available cell lines. A.E. Gomez1, J.C. Van De Weghe1, D. Doherty1; 1Department of Pediatrics, Genetics Medicine Division, University of Washington School of Medicine, Seattle, WA

B205/P1200 CEP120 is required to recruit the centriolar distal end proteins for appendage assembly and ciliogenesis. J. Tsai1, C. Chang1, T.K. Tang1; 1Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan

B206/P1201 CRISPR/Cas9-Mediated Fluorescent Tagging of the Ciliary g-protein coupled receptor, MCHR1, in vivo. K.R. Jasso1, H. Kulaga2, R.R. Reed3, J.C. McIntyre1; 1Neuroscience, University of Florida, Gainesville, FL, 2Molecular Biology and Genetics, Johns Hopkins University, Baltimore, MD

B207/P1202 ADAMTS9, a metalloproteinase, is required for primary cilia. Y. Choi1, F. Hildebrandt2, H. Gee1; 1Department of Pharmacology, Yonsei University College of Medicine, Seoul, South Korea, 2Division of Nephrology, Department of Medicine, Boston Children’s Hospital, Harvard Medical School, Boston, MA

B208/P1203 Localization of MCHR1 to a transient primary cilia in differentiating pre-adipocytes inhibits genes that promote adipogenesis. H. Ophardt1, P. Galbier1, M. Walters1, D.A. Torres1, B. Camillaci1, B.H. Pratt1, L.B. Cook1, R. Shen1; 1Biology, The College at Brockport, State University of New York, Brockport, NY

B209/P1204 A novel protein ERICH3 regulates the BBSS ciliary trafficking and hedgehog signalling. M.M. ALSOLAMI1; 1Biomedical and biomolecular science, University College Dublin, Dublin, Ireland

Centrosome Assembly and Functions 1

B211/P1205 Role of SCF ubiquitin ligases in centrosome and microtubule biology. J.K. pangan1, M.J. Jones1; 1School of Biomedical Sciences, University of Queensland, Brisbane, Australia

B212/P1206 Co-translational protein targeting facilities centrosomal recruitment of PCNT during centrosome maturation. G.E. Sepulveda1, A. Antkowski1, I. Brust-Mascher2, K. Mahe1, T. Ou1, N.M. Castro1, L.N. Christensen2, L. Cheung1, X. Jiang1, D. Yoon4, L. Jao2; 1Department of Cell Biology and Human Anatomy, University of California, Davis, Davis, CA, 2Department of Anatomy, Physiology and Cell Biology, University of California, Davis, Davis, CA, 3Department of Pharmaceutical Chemistry, University of California, San Francisco, Davis, CA, 4Chan Zuckerberg Biohub, San Francisco, CA

B213/P1207 PPP1R35 is a novel centrosomal protein that regulates centriole length in concert with the microcephaly protein RTTN. A. Sydori1, E. Coya2, C. Rovelli1, E. Laurent1, H. Liu2, B. Raught1, V. Mennella1,2; 1Cell Biology, The Hospital for Sick Children, Toronto, ON, 2Princess Margaret Cancer Centre, University Health Network, Toronto, ON, 3Biochemistry, University of Toronto, Toronto, ON

B214/P1208 TgCentrin2 regulates invasion and proliferation by the human parasite Toxoplasma gondii. J.M. Leung1, J. Liu1, L.A. Wetzell12, J.M. Murray1, K. Hu1; 1Biology, Indiana University, Bloomington, IN, 2Molecular and Cellular Biology, University of California, Berkeley, CA
B215/P1209 STED nanoscopy of the centrosome linker reveals a CEP68-organized, periodic rootletin network anchored to a C-Nap1 ring at centrioles. X. Li1,2, R. Vlijmen1, J. Engelhardt1, S.W. Hell1,2, E. Schiebel2; 1Heidelberg Biosciences International Graduate School (HBIGS), Heidelberg, Germany, 2Zentrum für Molekular Biologie der Universität Heidelberg, Heidelberg, Germany, 3DKFZ-ZMBH Allianz, Heidelberg, Germany, 4Department of Optical Nanoscopy, German Cancer Research Center (DKFZ), Heidelberg, Germany, 5Department of Optical Nanoscopy, Max Planck Institute for Biophysical Chemistry, Heidelberg, Germany

B216/P1210 Dynamic post-transcriptional regulation of centrosome-associated RNA. P.W. Ryder1, D.A. Lerit1; 1Department of Cell Biology, Emory University, Atlanta, GA

B217/P1211 A free-running oscillator times and executes centriole biogenesis. M.G. Aydogan1, T.L. Steinacker1, A. Wainman1, L. Gartenmann1, S. Saurya1, M.A. Boemo1, J.W. Raff1; 1Sir William Dunn School of Pathology, University of Oxford, Oxford, United Kingdom

B218/P1212 Modeling the pattern formation of Pik4 towards fundamental understanding of centriole duplication. D. Takács1, D. Kitagawa1; 1Pharmaceutical Sciences, University of Tokyo, Tokyo, Japan

B219/P1213 Establishment and function of centrosome asymmetry in fly neuronal stem cells. E. Galla1, R.A. Nas1, A. Monnard1, P. Singh2, T.T. Pham1, D. Salvador Garcia2, A. Ferrand1, C. Cabernard4; 1Institute of Genetics and Development of Rennes, Université Rennes, Rennes, France, 2Saadiyat Campus, NYU Abu Dhabi, Abu Dhabi, United Arab Emirates, 3Biozentrum, University of Basel, Basel, Switzerland, 4Department of Cell Biology, University of Washington, Seattle, WA, 5Department of BioScience Bioengineering, Indian Institute of Technology Jodhpur, Rajasthan, India, 6Division of Cell Biology, MRC Laboratory of Molecular Biology, Cambridge, United Kingdom

B220/P1214 A Centriole-Independent Autocatalytic Mechanism Maintains The Mitotic Centrosome. G. Cabral1, T. Laos1, J. Dumont1, A. Dammermann1; 1Max F. Perutz Laboratories, University of Vienna, Vienna, Austria, 2Institut Jacques Monod, Paris, France

B221/P1215 Radial organization and pre-mitotic remodeling of mammalian centriolar distal appendages. D. Kong1, M. Bowler1, S. Sun1, R. Nanjundappa1, H. Sui1, M.R. Mahjoub3, J. Loncarek1; 1LPSD, NIH/NCI, Frederick, MD, 2Wadsworth Center, New York Department of Health, Albany, NY, 3Department of Cell Biology and Physiology, Washington University, St Louis, MO

B222/P1216 Restriction of Pericentriolar Material to the Proximal End of Centrioles is Regulated by Transcription and is Essential for Spermio genesis. B.J. Galletta1, J.M. Ortega1, C.J. Fagerstrom1, N.R. Rusak1; 1Cell Biology and Physiology Center, National Heart, Lung, and Blood Institute, Bethesda, MD

B223/P1217 Role of microtubule polyglutamylation in centrosome duplication. P. Singh1, V. Hame1, P. Guichard1, C. Janke1; 1Department of genotoxic stress and cancer-UMR 3348, Institut Curie, Orsay, France, 2Department of cell biology, University of Geneva, Geneva, Switzerland

B224/P1218 Function of CdkSrap2 during neculeation of mammalian erythroblasts. J. Tischer1, P. Tátrai12, D. Adams1, F. Gergely1; 1CRUK Cambridge Institute, University of Cambridge, Cambridge, United Kingdom, 2Solv Biotechnology, Budapest, Hungary, 3Welcome Trust Sanger Institute, Cambridge, United Kingdom

Cytokinesis 1

B225/P1219 Cell division, stem cell size heterogeneity and cell fate. A. Chaigne1, M.B. Smith2, C. Labouesse1, M. Agnew1, K. Chalut1, E.K. Paluch1; 1MRM/LMCC, University College London, London, United Kingdom, 2The Francis Crick Institute, London, United Kingdom, 3Stem Cell Institute, University of Cambridge, Cambridge, United Kingdom

B226/P1220 R-Ras1 and R-Ras2 regulate cell cycle G2/M progression in mouse embryonic fibroblasts. X. Duan1, X. Shang1, C. Hochsteller1, J. Johnson1, Y. Zheng1; 1Division of Experimental Hematology and Cancer Biology, Cincinnati Children’s Hospital Medical Center, Cincinnati, OH

B227/P1221 Cell size control in Schizosaccharomyces pombe. K.D. Collins1, F. Chang3; 1Cell and Tissue Biology, UC San Francisco, San Francisco, CA

B228/P1222 Stomatia: a new plasma membrane protein involved in cell division. F. Dona1, S.J. Terry1; 1Division of Cell Biology, King’s College London, London, United Kingdom

B229/P1223 The roles of GOLPH3 protein during cytokinesis. S. Sechi1, A. Frappolo1, R. Fraschini1, A. Karimpour-Ghahnavieh1, M. Timeyer1, M. Giansanti1; 1Istituto di Biologia e Patologia Molecolari, Università Sapienza di Roma, Consiglio Nazionale delle Ricerche, Roma, Italy, 2Division of Biotechnology and Biosciences, Università degli Studi di Milano Bicocca, Milano, Italy, 3Complex Carbohydrate Research Center, University of Georgia, Athens, GA

B230/P1224 The F-BAR domain of Rga7 relies on a cooperative mechanism of membrane binding with Rng10 during fission yeast cytokinesis. Y. Liu1, N.A. McDonald2, S.M. Naegeli1, K.L. Gould1, J. Wu1; 1Department of Cell Biology and Pharmacology, The Ohio State University, Columbus, OH, 2Cell and Developmental Biology, Vanderbilt University, Nashville, TN, 3Biological Chemistry and Pharmacology, The Ohio State University, Columbus, OH

B231/P1225 Coordination of cell polarity and cytokinesis by fission yeast kinase Orb2. J.O. Maglioni1, J.B. Moseley1; 1Biochemistry and Cell Biology, Dartmouth College, Hanover, NH

B232/P1226 PP2A inhibitory proteins regulate cell division symmetry in fission yeast. K.L. Schutt1, J.B. Moseley1; 1Biochemistry and Cell Biology, Dartmouth College, Hanover, NH

B233/P1227 Reconstitution of aster movement and cell division plane positioning mechanisms in Xenopus egg extract. J.F. Pelletier1, C.M. Field1, N. Fakhri1, J.S. Oakey4, J.C. Gatlin2, T.J. Mitchison1; 1Department of Systems Biology, Harvard Medical School, Boston, MA, 2Marine Biological Laboratory, Woods Hole, MA, 3Department of Physics, Massachusetts Institute of Technology, Cambridge, MA, 4Department of Chemical Engineering, University of Wyoming, Laramie, WY, 5Department of Molecular Biology, University of Wyoming, Laramie, WY

B234/P1228 Cortical flows of Myosin and spindle geometry establish physical asymmetry in fly neural stem cells. C. Roubinet1, A. Tsankova1, T. Pham1, A. Monnard1, E. Caussinus1, M. Affolter1, C. Cabernard4; 1MRC-LMB / University College London, London, United Kingdom, 2Biozentrum / University of Basel, Basel, Switzerland, 3Institute of Molecular Life Sciences / University of Zurich, Zurich, Switzerland

B235/P1229 Function and Regulation of Maternal Embryonic Leucine Zipper Kinase (MELK) in mitosis. S. Majumdar1, J. Sheltzer1, S. Liu1; 1Biological Sciences, University of Toledo, Toledo, OH, 2Cold Spring Harbor Laboratory, New York, NY

B236/P1230 The Potential Functions of Two RNA Binding Proteins in Control of Cell Shape in Dicyostelium discoideum. Y. Liu1, Q. Zhou1, V. Srivastava1, P. Kotthari1, D. Robinson1; 1Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD, 2Biology, Denison University, Granville, OH, 3Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA

B237/P1231 A Predictive Model of Dynamic Segregation Machinery. J. Gerh1, E. Rousseau1, B. Jones1, N. Munoz1, D.S. Chu1, S. Bianco1; 1Biology, San Francisco State University, San Francisco, CA, 2Industrial and Applied Genomics, IBM Research, San Jose, CA

B238/P1232 Turnover maintains organizational homeostasis and prevents hierarchical aggregation and tension loss in the cytokinetic contractile ring. S. Thiyagarajan1, S. Wang1, T.G. Chew1, J. Huang1, M. Balasubramanian1, B. O’Shaughnessy1; 1Chemical Engineering, Columbia University, New York, NY, 2Physics, Columbia University, New York, NY, 3Warwick Medical School, University of Warwick, Coventry, NY

B239/P1233 Flow-independent accumulation of motor-competent myosin II in the contractile ring is essential for cytokinesis. D.S. Osorio1, F. Chan1, J. Saramago1, J. Leite1, A.M. Silva1, A.F. Sobral1, R. Gassmann1, A.X. Carvalho1; 1Cytoskeletal Dynamics, Instituto de Investigación e Inovación en Saúde – i3S, Universidade do Porto, Porto, Portugal, 2Instituto de Biologia Molecular e Celular – iBMC, Porto, Portugal
G1, G1-S, and S Phase Regulation

B242/P1236 Tracking all four cell cycle phases using Fucci4 fluorescent reporters. B.T. Bajar1, R. Badiei1, M. Chung2, T. Meyer2, M.Z. Lini1,2; 1Bioengineering, Stanford University, Stanford, CA, 2Chemical and Systems Biology, Stanford University, Stanford, CA

B243/P1237 A size-invariant bud-duration timer enables robustness in yeast cell size control. C.A. Allard1, F. Decker1, O.D. Weiner1, J.E. Toetchber1, B.R. Graziano2; 1Biochemistry and Cell Biology, Dartmouth, Hanover, NH, 2Center for Systems Biology, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany

B244/P1238 Size uniformity of mammalian cells is actively maintained by a p38 MAPK-dependent regulation of G1-length. S. Liu1,2, M. Ginzberg1, N. Patel1, M. Hild2, B. Leung2, Z. Li1, Y. Chen1, N. Chang3, S. Dieta4, Y. Wang5, W.S. Trimble1, L. Wasserman1, J. Jenkins1, M.W. Kirschner1, R. Kafri1,2; 2Molecular Genetics, University of Toronto, Toronto, ON, 3Cell Biology, The Hospital for Sick Children, Toronto, ON, 4Novartis Institutes for Biomedical Research, Cambridge, MA, 5Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor, MI

B245/P1239 Cell cycle-dependent regulation of cytoplasmic density in Schizosaccharomyces pombe. G. Estevam1, P. Odermatt1, F. Chang1; 1Department of Cell and Tissue Biology, University of California San Francisco, San Francisco, CA

B246/P1240 A Heterogeneous Nuclear Ribonucleoprotein (hnRNP)-Like Protein in Chlamydomonas Functions as a Cell-cycle Repressor in the Retinoblastoma Cell-Size Control Pathway. D. Liu1,2, Lopez Paz3, J.G. Uren1; 1Biology Department, University of Missouri-St. Louis, St. Louis, MO, 2Donald Danforth Plant Science Center, St. Louis, MO

B247/P1241 Heat shock promotes replication stress survival. P. Patel1,2, K. Cheung3, Z. Kianfar1,2, S.A. Sabatino1,2; 1Molecular Science, Yeates School of Graduate Studies, Ryerson University, Toronto, ON, 2Chemistry and Biology, Ryerson University, Toronto, ON

B248/P1242 Cytosolic pH regulates cell cycle progression and tumorigenesis by promoting expression of Cyclin D1. E. Birkeland1,2, C. Chen1, S. Battaglioti1, M. Meerang1, M. Kirschner1, A.J. Ibanez2, I. Schmitt-Opitz2, R. Deckant1; 1Institute of Biochemistry, ETH Zurich, Zurich, Switzerland, 2PhD program for Molecular Life Sciences, Zurich, Switzerland

B249/P1243 Autophagy genes coordinate cell cycle progression and stem cell proliferation during germline development. K. Kosinski1,2, K. Ames1,2, D. Da Cunha3, A. Cadiz3, H.B. Nader4, H. Bülöv4,4, A. Melendez1,2,3; 1Biology PhD program, The Graduate Center of the City University of NY, New York, NY, 2Biology, Queens College, City University of NY, Flushing, NY, 3Biochemistry PhD Program, The Graduate Center of the City University of NY, New York, NY

B250/P1244 Cell cycle asynchrony and DNA damage at mitotic entry contribute to the evolution of polyploid karyotypes. R. Basto1, S. Gemble1, A. Simon1, V. Frasier1, V.E. Mathiens1, M. Nano1, 2Cell Biology, Institut Curie, Paris, France

B251/P1245 Histone H3.3 Ser31 phosphorylation is required to prevent chromosome instability. C.A. Day1, A.K. Langford1, S.R. Fadnys1,2, L.A. Sepanick1, J. Stumpf1, Z. Dong1, J. Robinson1, K.T. Vaughan1, E. Hinchcliffe1; 1Hormel Institute, University of Minnesota, Austin, MN, 2Biochemistry, Hamline University, St. Paul, MN, 3Department of Bioquimica, Universidade Federal de Sao Paulo, Sao Paulo, Brazil, 4Dominick P. Purpura Department of Neuroscience, Albert Einstein College of Medicine, Bronx, NY

B252/P1246 Failure to maintain cell cycle arrest following ionizing irradiation results in ATM-independent changes in p53-dynamics. M. Tsabari1,2,3, C.S. Mock1, K. Karhoko1, A. Regev1, G. Lahav1; 1Lab of Systems Pharmacology, Harvard Medical School, Boston, MA, 2Broad Institute, Cambridge, MA, 3Systems Biology, Harvard Medical School, Boston, MA

B253/P1247 Cell cycle shift from G0/G1 to S and G2/M phases is responsible for increased adhesion of calcium oxalate crystals on repairing renal tubular cells at injured site. S. Khamchun1, S. Matus1, 2Center for Molecular Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI

B254/P1248 Investigating how changes in cell cycle state affect invasion-like processes during convergent extension in D. rerio. N.J. Palmisano1, R. Morabito1, A. Jagi1, D.O. Matus1, B.L. Martin1; 1Biochemistry and Cell Biology, Stony Brook University, Stony Brook, NY

B255/P1249 The E3 ubiquitin ligase TRIP12, a new mitotic protein. D. Larrieu1,2, M. Brunet1,2, N. Hanoun1,2, L. Ligat1,2,3, L. Dagnon1,2, H. Lulka1,2, R. Pommier1,2, J. Selves1,2, B. Jady1,2,3, L. Bartholin4,5, P. Cordelier1,2,3, M. Dufresne1,2, J. Torrisiani1,2; 1University of Toulouse, Toulouse, France, 2Inserm 1037, Toulouse, France, 3University of Toulouse III Paul Sabatier, Toulouse, France, 4Inserm 1052, Lyon, France, 5University Claude Bernard Lyon 1, Lyon, France, 6CNRS UMR5099, Toulouse, France, 7Laboratoire de Biologie Moléculaire du CNRS, Toulouse, France, 8Centre de Biologie Integrative, Toulouse, France

B256/P1250 Investigating the role of CAND1 in SCF complex subunit utilization. F.Z. Nawaz1, K. Min1, E.T. Kipreos1; 1Department of Cellular Biology, University of Georgia, Athens, GA

B257/P1251 HIV-1 Vif induces a prolonged metaphase cell cycle arrest characterized bypronounced mitotic spindle defects and centrosome amplification. E.L. Evans, III1, C. Bastin2, L.L. Zimdaras1, J.T. Becker2, N.M. Sherer3; 2Oncology, University of Wisconsin-Madison, Madison, WI, 3Biochemistry, Molecular Biology Biophysics, University of Minnesota, Minneapolis, MN

B258/P1252 Cell Cycle G2/M Delay in Saccharomyces cerevisiae Related to M1-Aminopeptidases and Interacting Cell Cycle Proteins. S.R. Katz1, H.W. Caprioglio1; 1Biology, Colorado State University-Pueblo, Pueblo, CO

B259/P1253 Interplay between mechanotransduction and force generation underlies mitosis in three dimensional microenvironments. S. Nami1, V.K. Gupta1, H. Lee1, J.Y. Lee2, E.M. Flaim2, C. Davis2, O. Chaudhuri1, 2Mechanical engineering, Stanford University, Stanford, CA, 3Biophysics program, Stanford University, Stanford, CA, 4Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI

B260/P1254 Protein phosphatase 2A regulation during the proliferation-quiescence decision. A.J. Pulimanotlu1, M. Patel1, L. Butitta1; 1Molecular Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI

B261/P1255 Functional analysis of Rbm26. A. Curinha1, K. Klee1, G. Shivalingiah1, P. Aanstad2, N. Polacek3, S. Geley3; 2Section for Molecular Pathophysiology, Biocenter, Medical University of Innsbruck, Innsbruck, Austria, 3Institute of Molecular Biology, University of Innsbruck, Innsbruck, Austria, 4Department of Chemistry and Biochemistry, University of Bern, Bern, Switzerland

B262/P1256 Investigating the function of the APC/C subunit Apc5 in mitosis. M.T. Tilotta1, A. Turnell2; 1Institute of Cancer and Genomic Sciences, University of Birmingham, Birmingham, United Kingdom

B263/P1257 PDZ-RhoGEF is a novel Ubch10-interacting protein that is targeted for degradation in mitosis by the Anaphase- Promoting Complex/Cyclosome. A. Al Awadhi1, J. Foster1, A. Turnell1; 1Cancer and Genomic Science, University of Birmingham, Birmingham, United Kingdom
Tumor Invasion and Metastasis 1

B295/P1288 EMT is decoupled from invadopodia and metastasis. L. Perrin1, B. Gligorijevic2,1; 1Bioengineering, Temple University, Philadelphia, PA, 2Cancer Cell Biology, Fox Chase Cancer Center, Philadelphia, PA

B296/P1289 PI3Kbeta Regulates Beta-1 Integrin Signaling in Invadopodia Through Formation of PI(3,4)P2. Z. Erami1, A.R. Bresnick1, J.M. Backer2,1; 1Molecular Pharmacology, Albert Einstein College of Medicine, Bronx, NY, 2Biochemistry, Albert Einstein College of Medicine, Bronx, NY

B297/P1290 Invadopodia are enriched in the G1 phase of the cell cycle. B. Bayarnagmi1, L. Perrin1, K. Esmaeili Pourfarhangi1, B. Gligorijevic1,2,1; 1Bioengineering, Temple University, Philadelphia, PA, 2Cancer Biology Program, Fox Chase Cancer Center, Philadelphia, PA

B298/P1291 Attenuation of tumor cell-based matrix remodeling and invasion by a MT1-MMP binding protein. L. Qiang1, H. Cao2, J. Chen1, S.G. Weller1, L. Zhang1, G. Razidlo1,2, M.A. McNiven1,2; 1Biochemistry and Molecular Biology, Mayo Clinic, Rochester, MN, 2Center for Basic Research in Digestive Diseases, Mayo Clinic, Rochester, MN, 3Department of Laboratory Medicine, Mayo Clinic, Rochester, MN

B299/P1292 A novel interaction between Alpha-Actinin and Dynamin 2 drives tumor cell metastasis. K. M. Burton1, H. Cao1, J. Chen1, E.W. Krueger1,2, L. Qiang1, McNiven1, G. Razidlo1; 1Biochemistry and Molecular Biology, Mayo Clinic, Rochester, MN

B300/P1293 Role of T100 in MT1-MMP membrane localization at invadopodia of breast cancer cells. M. Huelsemann1, S.K. Donnelly1, S.P. Mao1, E.J. Segall1, L. Hodgson1,2; 1Department of Anatomy and Structural Biology, Albert Einstein College of Medicine, New York, NY

B301/P1294 mtORC1 inhibitors induced apoptosis by regulating alpha-tubulin acetylation. L. Qiang1, Chen1; 1Cell Systems Anatomy, University of Texas Health Science Center at San Antonio, SAN ANTONIO, TX

B302/P1295 Small leucine zipper protein (sZIP) promotes metastasis of castration-resistant prostate cancer via the expression of the matrix metalloproteinase-13. S. Kim1, J. Ko1; 1Life science, Korea university, Seoul, South Korea

B303/P1296 Ror1 promotes invasion of lung adenocarcinoma cells through small GTPase Raf-mediated filopodia formation. M. Nishita1, I. Nishikaku1, N. Ikuhara1, K. Kamizaki1, H. Shibuya1, K. Matsumoto1, Y. Minami1; 1Grad. Sch. of Med., Kobe Univ., Kobe, Japan, 2Grad. Res. Inst., Tokyo Med. and Dent. Univ., Tokyo, Japan, 3Cancer Res. Inst., Kanazawa Univ., Kanazawa, Japan

B304/P1297 MYO10 aberrant methylation and overexpression in lung cancer leader cells drives the formation of long filopodia that regulate fibroblast architecture and collective invasion. E.R. Summerbell1,2, J. Konen1, K. Kowalski1, P.M. Vertaino1, A.I. Marcus2; 1Graduate Program in Cancer Biology, Emory University, Atlanta, GA, 2Department of Hematology and Medical Oncology, Emory University, Atlanta, GA, 3Department of Thoracic/Head and Neck Medical Oncology, The University of Texas MD Anderson Cancer Center, Houston, TX, 4Department of Biostatistics and Bioinformatics, Emory University, Atlanta, GA, 5Department of Radiation Oncology, Emory University, Atlanta, GA

B305/P1298 Self-organization of brain tumors: molecular and cellular dynamics of oncostreams, and their role in tumor malignancy. A. Comba1,2, A.E. Arango1,2, P.J. Dunn1,2, D. Zamler1,2, J. Kim1,2; 1Biomedical Sciences, UCSD, San Diego, CA, 2Bioengineering, UCSD, UCSD, CA, 3Pathology, UCSD, San Diego, CA

B306/P1299 EGF-Rull contributes to glioblastoma migration by reducing cell-Matrix Adhesion. A. Banisadr1, P. Beri1, A, Fuhrmann2, F. Furnari3,1,4, A.J. Engler1,2; 1Biomedical Sciences, UCSD, San Diego, CA, 2Bioengineering, UCSD, UCSD, CA, 3Pathology, UCSD, San Diego, CA

B307/P1300 Role of gastric gland mucin-specific O-glycan glcNAc in gastric cancer development. C. Fuji1,2, A. Yuki1, S. Harumiya1, K. Yamano1,2, M. Kawakubo1, J. Nakayama1,2; 1Molecular Pathology, Shinsu University School of Medicine, Matsumoto, Japan, 2Institute of Biomedical Sciences, Interdisciplinary Cluster for Cutting Edge Research, Shinsu University, Matsumoto, Japan

B308/P1301 Integrin-mediated regulation of mitochondrial trafficking integrates avoidance of oxidative catastrophe and cancer invasion. Y. Ondera1,2, J. Nam1, M. Horikawa1, H. Shira1,2, H. Sabe1; 1Molecular Biology, Faculty of Medicine, Hokkaido University, Sapporo, Japan, 2Global Institute for Collaborative Research and Education, Hokkaido University, Sapporo, Japan, 3Radiation Medicine, Faculty of Medicine, Hokkaido University, Sapporo, Japan

B309/P1302 Adhesion strength regulates durotaxis in metastatic cancer cells. B.M. Yeoman1,2, P. Beri1, P. Katira1, A.J. Engler2; 1Mechanical Engineering, San Diego State University, San Diego, CA, 2Bioengineering, University of California San Diego, San Diego, CA

B310/P1303 Constricted migration increases DNA damage and independently represses cell cycle. C.R. Pfeiffer1,2, Y. Xia1, K. Zhu1, D. Liu1, J. Irianto1, V.M. Morales Garcia1, L.M. Santiago Millan2, B. Niese1, S.M. Harding1, D.J. Devries1, R.A. Greenberg2,3; 1Physical Sciences Oncology Center at Penn (PSOC@Penn), University of Pennsylvania, Philadelphia, PA, 2Molecular Cell Biophysics Lab, University of Pennsylvania, Philadelphia, PA, 3Graduate Group / Department of Physics Astronomy, University of Pennsylvania, Philadelphia, PA, 4Basser Center for BRCA, Abramson Family Cancer Research Institute, Perelman School of Medicine, Philadelphia, PA, 5Department of Chemical and Biological Physics, Weizmann Institute of Science, Rehovot, Israel

B311/P1304 The contribution of cell plasticity to cancer cell migration through physical constraints. G. Spennati1,2, A. Rucka1,2, M.F. Olson1, H. Yin1; 1Biomedical Engineering, University of Glasgow, Glasgow, United Kingdom, 2Department of Invasion and Metastasis, Beatson Cancer Institute, Glasgow, United Kingdom

B312/P1305 The role of lipid metabolism in anchor cell invasion in C. elegans. A. Garde1, Y. Li1, D.R. Sherwood2; 1Cell Biology Department, Duke University, Durham, NC, 2Biology Department, Duke University, Durham, NC

B313/P1306 Combined TOR and CDK4/6 blockade averts cell invasiveness in a C. elegans model of basement membrane invasion. M.A. Martinez1,2, A.Q. Kohrmann1, S.Y. Hu1, D.Q. Matus1,2,3; 1Pharmacological Sciences, Stony Brook University School of Medicine, Stony Brook, NY, 2Biochemistry and Cell Biology, Stony Brook University School of Medicine, Stony Brook, NY, 3Medical Scientist Training Program, Stony Brook University School of Medicine, Stony Brook, NY
**Cancer Therapy 1**

**B321** | **P1314** BubR1 depletion delays apoptosis and impedes DNA repair in microtubule-depolymerized cells. A. Nazz1, S. Ahad2, A. Rai1, A. Surolia3, D. Pand4, M. Larragoity5, R.J. Lake6, J. Wan1, M.E. Burkard1, B.A. Weaver7, L. Fournier8; 1Molecular and Cell Biology, University of Wisconsin-Madison, Madison, WI, 2Cell and Regenerative Biology, University of Wisconsin-Madison, Madison, WI, 3Physiology, University of Wisconsin-Madison, Madison, WI, 4Oncology, University of Wisconsin-Madison, Madison, WI, 5Department of Molecular Oncology and Immunology, the Netherlands Cancer Institute, Amsterdam, Netherlands, 6LUMICKS b.v., Amsterdam, MA

**B322** | **P1315** CDK7 inhibitor BS-181 induced the extrinsic apoptosis that can be synergized by exogenously added TRAIL or G₂-blocking agent in human Jurkat T cells. S. Park1, Y. Jo1, M. Lee1, D. Jun1, Y. Kim1; 1School of Life Science and Biotechnology, College of National Science, Kyungpook National University, Daegu, South Korea

**B323** | **P1316** Effect of Mebendazole dependent Myb inhibition in NRAS mutant AML. A. Khoroshilov1, M. Lue Antony2, K. Noble-Orcutt3, K. Sachs2, Z. Sachs3, 1Chemistry, MIT, Cambridge, MA, 2Medicine, University of Minnesota, Minneapolis, MN, 3Next Generation Analytics, Palo Alto, CA

**B324** | **P1317** Proposing a new chemotherapeutic drug combination for effective inhibition of serous ovarian and endometrial cancer cells. R.P. Gogoí1,2, V. Dasari1; 1Molecular and Functional Genomics, Geisinger Clinic, Danville, PA, 2Women, Geisinger Clinic, Danville, PA

**B325** | **P1318** The ultrapotent corticosteroid, clobetasol, promotes quiescence in the vulvar carcinoma cell line, UMSVC-4. J.E. Lewis1, C. King1; 1Biology, SUNY Geneseo, Geneseo, NY

**B326** | **P1319** Genetic features predictive of response to anti-androgen therapies in aggressive prostate cancer. S. Wilkinson1, A.G. Sowalsky2, H. Ye3, N. Carrabba1, R. Atway2, S.Y. Trostel4, S.T. Hennigan5, R. Lake1, S. Harmon1, B. Turkbye1, P.A. Pinto1, P.L. Choyke1, F. Carzai1, W.L. Dahut2, K. Kelly1, D.J. VanderWeele1,3; 1LGC, National Cancer Institute, Bethesda, MD, 2Beth Israel Deaconess Medical Center, Boston, MA

**B327** | **P1320** Alternate use of Troglitazone for the treatment of pharyngeal cancer. H. Yoo1, T. Do Thi Anh1; 1Dept. of Pharmacology and Dental Therapeutics, Chosun Univ., Gwangju, South Korea

**B328** | **P1321** Determining the mechanism and increasing the efficacy of microtubule poisons. C.M. Scirbano1, R.F. Molini1, J. Wan1, M.E. Burkard1, B.A. Weaver2,4; 1Molecular and Cellular Pharmacology, University of Wisconsin-Madison, Madison, WI, 2Cell and Regenerative Biology, University of Wisconsin-Madison, Madison, WI, 3Physiology, University of Wisconsin-Madison, Madison, WI, 4Oncology, University of Wisconsin-Madison, Madison, WI

**B329** | **P1322** Selective inhibitor of Hematopoietic Cell Kinase (HCK) in a model of acute promyeloctytic leukemia mice. F.M. Roversi1,2, C.O. Torelli1, K.V. Ferro1, F.I. Della Via1,2, A. Molinari1, M. Bott1, S.T. Saad1; 1Universidade São Francisco, Bragança Paulista, Brazil, 2Hematology and Transfusion Medicine Center-University of Campinas, Campinas, Brazil, 3Dipartimento di Biotecnologie, Chimica e Farmacia-Università degli Studi di Siena, Siena, Italy

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**Sunday Poster Session**

**B330** | **P1323** Enforcing cellular stress promotes apoptotic and immunogenic responses in melanoma. S.M. Daugnault1,2, L. Spoerri3, R.J. Ju1,2, D.S. Hill1, S.J. Strehbens1,2, R. Dalcetti1,2, N.K. Haas1,2,3; 1Diamantina Institute, University of Queensland, Brisbane, Australia, 2Translational Research Institute, Wooloongabba, Australia, 3The Centenary Institute, Newtown, Australia, 4Dermatological Sciences, Newcastele University, Newcastle upon Tyne, United Kingdom

**B331** | **P1324** Induction of apoptosis via proteasome inhibition in leukemic progenitor cells by two potent piperidones. L. Contreras1, R.I. Calderon2, A. Varela3, H. Zhang2, U. Das1, J.R. Dimmock1, R. Skouta1, R.J. Aguilera1; 1Biological Sciences, The University of Texas at El Paso, El Paso, TX, 2Hubel Key Laboratory of Agricultural Bioinformatics, College of Informatics, Huazhong Agricultural University, Wuhan, China, 3Drug Discovery and Development Research Group, College of Pharmacy and Nutrition, University of Saskatchewan, Saskatoon, Canada, 4Department of Chemistry, Border Biomedical Research Center, The University of Texas at El Paso, El Paso, TX

**B332** | **P1325** An effective antimarial drug induces potent cytotoxicity through apoptosis in human breast and hematological cancer cells. P. Villaneuva1, A. Martinez2, S.T. Baca3, R.E. DeJesus4, M. Larragoity5, A. Varela1, R.J. Aguilera1; 1Biology, University of Texas at El Paso, El Paso, TX, 2Biology, City University of New York, New York, NY

**B333** | **P1326** Characterizing the role of TIE2 and TIE2 neutralization in cancer cell dormancy and bone metastases. F.C. Drescher1, S. Duenas1, P. Juarez1, A. Licea-Navarro1, P.G. Fournier2; 1Departamento de Innovación Biomédica, Centro de Investigación Científica y de Educación Superior de Ensena, Ensenada, Mexico

**B334** | **P1327** Water-soluble methanofullerenol C60[C9H10O4(CH4)]6 downregulates mitochondrial potential in malignant tumor cells. G.R. Tarasova1, F. Oswald2, T. Schumacher1, A. Cappello1, G. Tomasello1; 1Department of Molecular and Physical Chemistry, RAS, Kazan, 2Department of Organic and Physical Chemistry, Kazan Federal University, Kazan, Russia, 3Institute of functional materials, A.E. Arbuzov Institute of Organic and Physical Chemistry, RAS, Kazan, Russia, 4University Hospital “Kazan”, Kazan Federal University, Kazan, Russia

**B335** | **P1328** A novel approach in colorectal cancer and diabetes management: Role of metformin and rapamycin. A. Geagea1, A. Rizvanov1, G.V. Cherepnev1, N.V. Kalacheva1; 1Institute of Fundamental Medicine and Biology, Kazan Federal University, Kazan, Russia, 2Laboratory of functional materials, A.E. Arbuzov Institute of Organic and Physical Chemistry, RAS, Kazan, Russia, 3University Hospital “Kazan”, Kazan Federal University, Kazan, Russia

**B336** | **P1329** A Woe1 kinase inhibitor increased cytotoxicity of oncolytic adenoviruses in p53-deficient cells. T. Morinaga1, N.T. Thao1,2, Z. Boya1,2, M. Tagawa1,2; 1Division of Pathology and Cell Therapy, Chiba Cancer Center Research Institute, Chiba, Japan, 2Department of Molecular Biology and Oncology, Graduate School of Medicine, Chiba University, Chiba, Japan

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**B314** | **P1307** Regulation of breast tumor metastasis by the dynamic interaction between the TMEM macrophage, tumor cell and endothelial cell. C.R. Surve1, A. Harnay2, X. Chen1, Y. Wang1, D. Entenberg1, E. Stanley1, M.H. Oktay1, J.S. Condeelis1; 1Anatomy and Structural Biology, Albert Einstein college of Medicine, Bronx, NY, 2Developmental Molecular Biology, Albert Einstein college of Medicine, Bronx, NY, 3Pathology, Albert Einstein college of Medicine, Bronx, NY

**B315** | **P1308** Rx7, a novel AKT-phosphorylation inhibitor, induces apoptosis, reduced proliferation and cell migration in TNBC by modulation of AKT/GSK3 signalling pathways via the ROR1 receptor. N. Fultang1, A. Illendula1, I. Mercier1, Z. Klaše1, B. Peethambaram1; 1Biological Sciences, University of the sciences, Philadelphia, PA, 2Pharmacaceutical Sciences, University of the sciences, Philadelphia, PA

**B316** | **P1309** A chaperon-like protein HYPK binds Ar4 small GTPases to modulate cell migration. M. Lin1, F.S. Lee2,3; 1Institute of Molecular Medicine, College of Medicine, National Taiwan University, Taipei, Taiwan, 2Department of Medical Research, National Taiwan University Hospital, Taipei, Taiwan, 3Center of Precision Medicine, College of Medicine, National Taiwan University, Taipei, Taiwan

**B317** | **P1310** Specific requirement for Ras interference 1 during cell migration. W. Zhang1, M.A. Barbieri2,3,4,5; 1Chemistry and Biochemistry, Florida International University, Miami, FL, 2biology, Florida International University, Miami, FL, 3Biomedical Sciences Institute, Florida International University, Miami, FL, 4International Center of Tropical Botany, Florida International University, Miami, FL, 5Botanic Garden, Fairchild Tropical Botanic Garden, Coral Gables, FL

**B318** | **P1311** FILGAP, a GAP protein for Rac1, contributes to tumor cell migration by regulating front-rear polarity. K. Saito1, N. Kambara1, Y. Ohta1; 1Department of Biosciences, Kitasato University, Sagamihara, Japan

**B319** | **P1312** Measuring T-cell avidity and enrichment using an acoustic force based technology. W. Schep1, E. Merino1, R. Braster1, G. Sitters1, F. Oswald2, T. Schumacher1, A. Candel1; 1Department of Molecular Oncology and Immunology, the Netherlands Cancer Institute, Amsterdam, Netherlands, 2LUMICKS b.v., Amsterdam, MA

**B320** | **P1313** Combining Cell Barcoding and CRISPR sgRNA Libraries with Targeted Gene Expression for Single Cell Genetic Analysis of Tumor Metastasis. A.A. Chenchik1, P. Diehl1, M. Makhonov1, C. Frangou1, C. Cella1; 1Cellecta, Inc., Mountain View, CA
Tumor Microenvironment 1

B344/P1337 Inhibition of mechanical signaling reduces malignant transformation of mammary epithelial cells on a dynamically stiffened matrix. J.K. Placone1, M.G. Ondrick2, P. Beri1, C.M. Plunkett1, B. Franzen Matte3, K. Wong1, D. Kim1, L. Fattet1, J. Yang1, A.J. Engler1,2; 1Department of Bioengineering, University of California San Diego, La Jolla, CA, 2Material Science Program, University of California San Diego, La Jolla, CA, 3Department of Oral Pathology, Federal University of Rio Grande do Sul, Porto Alegre, Brazil, 4Department of Pharmacology, University of California San Diego, La Jolla, CA

B345/P1338 Role of microenvironmental stress in increased breast cancer risk. C.C. Cosby1, S. Chittiboyina1, S.A. Leliivre1; 1Biological Sciences, Purdue University, West Lafayette, IN, 2Basic Sciences, Purdue University, West Lafayette, IN

B346/P1339 Increased Malignancy Attenuates Stiffness-Mediated Invasion in Mammary Epithelial Cells. C.M. Plunkett1, P. Beri1, J.K. Placone1, J. Yastrzobor1, Y. Hou1, D. Kim1, L. Fattet1, J. Yang1, A.J. Engler1; 1Bioengineering, University of California San Diego, La Jolla, CA, 2Molecular Biology, University of California San Diego, La Jolla, CA, 3Pharmacology, University of California San Diego, La Jolla, CA

B347/P1340 Metastatic tumor growth is accelerated along the surface of the lung. D.R. Choi1, H.Y. Kim1; 1Institute for Basic Science, Daejeon, South Korea

B348/P1341 SPIN90 Depletion and Microtubule Acetylation Regulate Stromal Fibroblast Activation in Breast Cancer Progression. E. You1, Y. Huh1, P. Ko1, J. Jeong1, S. Keum1, J. Lee1, J. Kim1, M. Rahman1, W. Song1, S. Rhee1; 1Department of Life science, Chung-Ang University, Seoul, South Korea, 2School of Life Sciences, Gwangju Institute of Science and Technology, Gwangju, South Korea

B349/P1342 Tenascin-C Induces differentiation of mammary fibroblasts into myofibroblasts with high contractility. D. Kato1, Y. Shiraki1, K. Imanaka-Yoshida1, T. Yoshida1; 1Pathology, Mie University Graduate School of Medicine, Tsu, Japan

B350/P1343 Programmed Death-Ligand 1 (PD-L1) Metabolic Modulation Provides Mechanistic and Therapeutic Insight. A. Palermo1, S. Spangenberg1, C. Guijas1, L. Lairson1, G. Szuazak1,2; 1The Scripps Center for Metabolomics and Mass Spectrometry, The Scripps Research Institute, La Jolla, CA, 2Department of Chemistry, The Scripps Research Institute, La Jolla, CA, 3Department of Molecular and Computational Biology, The Scripps Research Institute, La Jolla, CA
Genetic or Genomic Mechanisms of Disease

B359/P1351 Chromatin states in skeletal muscular dysrophy mediated by Lamin. S. Dutta1, Department of Biochemistry, University of Calcutta, Kolkata, India

B360/P1352 Phase separation potentiates the condensation of mitochondrial nucleoids in a premature aging disease. M. Feri1, T. Misteli1; National Institute of General Medical Sciences, National Institutes of Health, Bethesda, MD, 2National Cancer Institute, National Institutes of Health, Bethesda, MD

B361/P1353 NET29/Tmem1220A Directs Spatial Genome Organization in Adipogenesis and Knockout Mice Have a Lipodystrophic PhenoType. R. Czapiewski1, D.G. Battrakou2, J. de las Heras1, E.C. Schirmer1; 1Institute of Cell Biology, The University of Edinburgh, Edinburgh, United Kingdom

B362/P1354 Evaluation of MicroRNAs and their Target Genes in Obese Population of Pakistan. M.J. Khan1, S.M. Sheikh1; Department of Biosciences, COMSATS University Islamabad, ISLAMABAD, Pakistan

B363/P1355 Epilepsy in Kleefstra syndrome. R. Gamirova1, L. Lyukshina1, R. Gamirova2, K. Idrisova3; 1Department of Fundamental Basics of Clinical Medicine, Kazan Federal University, Kazan, Russia, 2Department of Pediatric Neurology, Kazan State Medical Academy, Kazan, Russia, 3Medical Center “MIDICAL”, Togliatti, Russia

B364/P1356 Infant epilepsy: the Watanabe-Vigevano syndrome. R. Gamirova1, R. Gamirova2, E. Gorobets3; 1Department of Fundamental Basics of Clinical Medicine, Kazan Federal University, Kazan, Russia, 2Department of Pediatric Neurology, Kazan State Medical Academy, Kazan, Russia, 3Laboratory of Clinical Linguistics, Kazan Federal University, Kazan, Russia

B365/P1357 A study of the relationship between hT and hMRP in human cell lines. K.A. Roche1, M. Gasparri2; 1Biological Sciences, Dixie State University, St. George, UT

B366/P1358 Homozgyosity for a mutation affecting the catalytic domain of tyrosyl-tRNA synthetase (YARS) causes multisystem disease. R.N. Jinks1, K.B. Williams1, K.W. Brigatti1, E.G. Puffenberger1, C. Gonzaga-Jauregui1, L.B. Griffin1, E.D. Martinez1, D.K. Wengen2, M. Yoder2, V.V. Kandula2, M.D. Rootswil3, M.M. Demczko2, L. Poskitt1, K.N. Furuya4, J.G. Reid2, J.D. Overton2, A. Baras2, L. Miles2, K. Radhakrishnan2, V.J. Carson1, A. Antonelli6,7, K.A. Strauss2; 1Biology, Franklin Marshall College, Lancaster, PA, 2Clinic for Special Children, Strasburg, PA, 3Waisman Center, University of Wisconsin-Madison, Madison, WI, 4Regenener Genecis Center, Regenener Pharmaceutics, Inc, Tarrytown, NY, 5Program in Cellular and Molecular Biology, University of Michigan, Ann Arbor, MI, 6Medical Scientist Training Program, University of Michigan, Ann Arbor, MI, 7Department of Pediatrics, Akron Children’s Hospital, Akron, OH, 8Department of Medical Imaging, Nemours/Alfred I. duPont Hospital for Children, Wilmington, DE, 9Department of Pediatrics, Nemours/Alfred I. duPont Hospital for Children, Wilmington, DE, 10Department of Pediatrics, Sidney Kimmel Medical College at Thomas Jefferson University, Philadelphia, PA, 11Department of Pediatrics, Mayo Clinic, Rochester, MN, 12Department of Pathology and Laboratory Medicine, Nemours/Alfred I. duPont Hospital for Children, Orlando, FL, 13Department of Gastroenterology, Children’s Hospital at Cleveland Clinic, Cleveland, OH, 14Cleveland Clinic Lerner College of Medicine, Case Western University, Cleveland, OH, 15Department of Human Genetics, University of Michigan, Ann Arbor, MI

B367/P1359 Identification of genetic variants in a human genome by means of whole-exome sequencing analysis. P. Otero-Sánchez1, B. Rodríguez-Martín1, D. García-Souto1, J.M. C. Tubío1; 1Facultad de Medicina (Programa Impuls), Univesitat de Lleida, Lleida, Spain, 2Mobile Genomes and Disease, Molecular Medicine and Chronic Diseases Center (CIMUS), Universidade de Santiago de Compostela, Santiago de Compostela, Spain

B368/P1360 Genome-wide methylyation profiling of granulosa cells reveals altered methylation and expression of genes regulating vital ovarian functions in polycystic ovary syndrome (PCOS). P. Sagarve1, M. Mukherjee1; 1Molecular Endocrinology, ICMR-National Institute for Research in Reproductive Health, Mumbai, Maharashtra, India

Post-Transcription Gene Regulation

B369/P1361 Identification of a step-wise assembly pathway for stress granules assembled in vitro. J.E. Wilhelm1, K. Begovich1; 1Department of Chemistry and Biochemistry, University of California, San Diego, San Diego, CA

B370/P1362 The human retrotransposon LINE-1 condenses with cellular phase-separated bodies. S. Sii1, E.M. Adney1, D. Gritti1, P. Mita1, J.D. Boeke1, L. Holt1; 1Institute for Systems Genetics, New York University Langone Medical Center, New York, NY

B371/P1363 Identifying functional targets reveals that inhibition of Pumilio-mediated mRNA decay increases cell resistance to DNA damage. T. Yamada1, N. Akimitsu1; 1Oncology and Molecular Virology, National Cancer Institute, National Institutes of Health, Bethesda, MD, 2Biochemistry, Max Planck Institute for Developmental Biology, Tübingen, Germany, 3European Molecular Biology Laboratories, Grenoble, France, 4Institute of Molecular Biology, Mainz, Germany

B374/P1366 Perturbing the HIV-1 Programmed Ribosomal Frameshift Site: Translational Regulation Dictates Transcript Fate and Gag-Pol Incorporation. B.E. Benner1, J.T. Becker1, P. García-Miranda2, S.E. Butcher2, N.M. Sherer1; 1Oncoogy and Molecular Virology, University of Wisconsin-Madison, Madison, WI, 2Biochemistry, University of Wisconsin-Madison, Madison, WI

B375/P1367 Determining the Structure of the HIV-1 5’ Leader Monomeric and Dimeric Structure. F.G. Ghinger1, I. Chaudi1, A. Ilyer1, M. Orellana1, G. Ramezanifoukolaei1, T. Rodríguez2, J.D. Brown, Ph.D.3, M. Summers, Ph.D.4; 1Department of Biological Sciences, University of Maryland, Baltimore County, Baltimore, MD, 2Department of Chemistry and Biochemistry, University of Maryland, Baltimore County, Baltimore City, Baltimore, MD

B376/P1368 Engineering novel combinatorial and dynamic decoders using synthetic immediate-early genes. P.T. Ravindran1, M.Z. Wilson1, J.E. Toetcher2; 1Chemical and Biological Engineering, Princeton University, Princeton, NJ, 2Molecular Biology, Princeton University, Princeton, NJ

B377/P1369 Nup98 promotes assembly of the nuclear lamina by regulating Lamin B1 expression. J.M. Kaneshiro1, A. Buchwalter2, M.W. Hetzer1; 1Molecular and Cell Biology Laboratory, Salk Institute for Biological Studies, La Jolla, CA, 2Cardiovascular Research Institute, University of California, San Francisco, San Francisco, CA

B378/P1370 Phosphorylation Regulates RNA-protein Phase Separation. T.M. Gerbich1, A. Gladfelter2; 1Biology, University of North Carolina, Chapel Hill, NC

Regulatory and Noncoding RNAs

B379/P1371 Characterizing DGR88 heme-binding mutation in vivo. B.A. Kumar1, A.C. Partin2, L. Li3, H. Zhu4, Y. Nami1; 1Children’s Research Institute, Departments of Pediatrics and Internal Medicine, Center for Regenerative Science and Medicine, University of Texas Southwestern Medical Center, Dallas, TX, 2Department of Biophysics, University of Texas Southwestern Medical Center, Dallas, TX

B380/P1372 Cellular Stress Responses in Functional Somatic Noncoding ncRNA: From Genetic to Epigenetic Codes by Modular Biocombinatorics and their Algorithms. J.H. Wissler1; 1ARCONS Institute for Applied Research Didactics, 61231 Bad Nauheim jhw@arcons-research.de, Germany

B381/P1373 The role of cancer and locus specific IncRNAs in driving chromosome fragility. G. Arunkumar1, Y. Dalal1; 1LRBGE, National Cancer Institute/NIH, Bethesda, MD
Nuclear Pore Complexes and Nucleocytoplasmic Transport

B386/P1377 Influenza Virus Uses Transportin 1 for vRNP Uncloaking During Cell Entry. Y. Yamauchi1, Y. Miyake1, J. Keusch1, L. Decamp2, H. Ho-Xuan1, H. Gut1, U. Kutay1, A. Helenius1; 1Cellular and Molecular Medicine, University of Bristol, Bristol, United Kingdom, 2Biochemistry, ETH Zurich, Zurich, Switzerland, 3Graduate School of Medicine, Nagoya University, Nagoya, Japan, 4Friedrich Miescher Institute for Biomedical Research, Basel, Switzerland

B387/P1378 mTORC1 controls glycerogen synthase kinase 3β nuclear localization and function. S.J. Bautista1, I. Boras1, A. Vissar2, N. Meica3, C.M. Yip1,2, P.K. Kim3, C.N. Antonescu1,2; 1Chemistry and Biology, Ryerson University, Toronto, ON, 2Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, 3Department of Chemical Engineering and Applied Chemistry, University of Toronto, Toronto, ON, 4Program in Cell Biology, The Hospital for Sick Children, Toronto, ON, 5Keenan Research Centre for Biomedical Science of St. Michael’s Hospital, Toronto, ON

B388/P1379 Effect of HER2 expression on NUPL2 protein in cervical cancer cells. J.J. Adler1, M. Ballou1, M. Eichholz2, T. Haight1, J. Minton1, R. Oates1; 1Biology, Brescia University, Owensboro, KY

B389/P1380 Reconstructing spatial features of nucleocytoplasmic transport using projected cargo localizations. M. Huisman1, C. Smith1, Y. Chung3, L. Tu1, D. Gruenwald2; 1RNA Therapeutics institute, Ummm Medical School, Worcester, MA

B390/P1381 Analysis of molecular transport through nuclear membranes with focused ion beam and optical nanoprobes. J. Wissler1, J. Wissler2; 1JARCONS Applied Research & Didactics, Bad Nauheim, Germany, 2TESCAN, Dortmund, Germany

B391/P1382 Exploring a possible link between altered mRNA splicing and Nuclear Envelope Budding. B. Jenkins1, S. Neuman1, Y. Kang1, A. Chang1, C. Lambo1, G. Walker-Stevenson1, S. Speese1; 1Neurology, Oregon Health and Science University - Juggers Center for Neuroscience Research, Portland, OR, 2School of Pharmacy, University of Wisconsin-Madison, Madison, WI, 3Oregon Health and Science University - Vollum Institute, Portland, OR

B392/P1383 Analysis of Gp210 function in Drosophila melanogaster. B. Jenkins1, B. Darwin1, A. Chang1, C. Lambo1, G. Walker-Stevenson1, S. Speese1; 1Neurology, Oregon Health and Science University - Juggers Center for Neuroscience Research, Portland, OR

B393/P1384 Copy number and function of individual disordered proteins in the nuclear pore complex revealed by combining auxin-inducible degron strategy and high-speed single-molecule microscopy. Y. Li1, V. Aksenenova2, J. Yu1, C. Ma1, A. Arnaoutov1, M. Dasso1, W. Yang1; 1Biology Department, Temple University, Philadelphia, PA, 2Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD

B394/P1385 Structure-function analysis of the inner ring complex of the NPC in chromatin organization and gene silencing. S. Kumar1, M.L. Neal1, I. Nudelman2, S. Li1, A.T. Navare1, T. Herricks1, F.D. Mast1, J. Fernandez-Martinez1, R.L. Moritz1, M.P. Rout1; 1Center for Global Infectious Disease Research, Seattle Children's Research Institute, Seattle, WA, 2Laboratory of Cellular and Structural Biology, The Rockefeller University, New York, NY, 3Institute for Systems Biology, Seattle, WA

B395/P1386 Nuclear pore complexes and age-induced protein aggregates are excluded from gametes during budding yeast meiosis. G.A. King1, J.S. Goodman1, D. Jorgens1, E. Unal1; 1Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, 2Electron Microscopy Lab, University of California, Berkeley, Berkeley, CA

B396/P1387 Cytoplasmic volume and limiting nucleoplasmic scale nuclear size during Xenopus laevis development. P. Chen1, M. Tomshick2, N. Nelson1, J.S. Oakey1, J.C. Gatlin1, D.L. Levy1; 1Molecular Biology, University of Wyoming, Laramie, WY, 2Chemical Engineering, University of Wyoming, Laramie, WY

B397/P1388 Increased NTF2 levels in melanoma cell lines affect nuclear size and gene expression. L.D. Vukovic1, D.L. Levy1; 1Department of Molecular Biology, University of Wyoming, Laramie, WY

B398/P1389 Mechanisms controlling nuclear growth. M. Mauro1, S. Bahmanyar2; 1Molecular, Cellular and Developmental Biology, Yale University, New Haven, CT
Endocytic Trafficking 1

B405/P1395 A new approach to reconstruct dynamic information from static super-resolution images reveals structural rearrangements of proteins during endocytosis. P. Hoes1, Y. Wu1, M. Mund1,2, J. Deschamps1, M. Kaksonen1, J. Ries1; 1Cell Biology Biophysics Unit, European Molecular Biology Laboratory, Heidelberg, Germany, 2Department of Biochemistry, University of Geneva, Geneva, Switzerland

B406/P1396 Systematic superresolution analysis of endocytosis reveals an actin nucleation nano-template that drives efficient vesicle formation. M. Mund1,2, J. Beek1, J. Deschamps1, S. Dmitrieff1, P. Hoes1, J. Monster2, A. Picco1, F.J. Nedelec2, M. Kaksonen1, J. Ries1; 1Department of Biochemistry, University of Geneva, Geneva, Switzerland, 2Cell Biology and Biophysics, European Molecular Biology Laboratory, Heidelberg, Germany.

B407/P1397 Nano-scale live-cell imaging of morphological changes of plasma membrane during clathrin-mediated endocytosis with fast-scanning atomic force microscopy. A. Yoshida1, N. Sakai1, S.H. Yoshimura1, Y. Ohba1; 1Department of Cell Physiology, Faculty of Medicine and Graduate School of Medicine, Hokkaido University, Sapporo, Japan, 2RD Group, OLYMPUS Corporation, Hachioji, Japan, 3Laboratory of Plasma membrane and Nuclear Signaling, Graduate School of Biostudies, Kyoto University, Kyoto, Japan

B408/P1398 Label free live cell membrane imaging thanks to supercritical angle scattering. M. Bardou1, A. Mai1, E. Fort2, S. Lévêque-Fort1; 1CNRS UMR 8214, Université Paris Sud, Université Paris Saclay, Institut des Sciences Moléculaires d'Orsay (ISMO), Orsay, France, 2CNRS, PSL Research University, Institut Langevin, ESPCI ParisTech, Paris, France

B409/P1399 Dual depth live cell imaging with self-interference Supercritical Angle Fluorescence. A. Mai1, M. Bardou1, N. Bourg1, E. Fort2, S. Lévêque-Fort1; 1CNRS UMR 8214, Université Paris Sud, Université Paris Saclay, Institut des Sciences Moléculaires d'Orsay (ISMO), Orsay, France, 2CNRS, PSL Research University, Institut Langevin, ESPCI ParisTech, Paris, France

B410/P1400 Mechanobiology of endocytic vesicle formation analyzed by Sla2 force sensors. M. Abe1,2, I.S. Andruck1,2, G. Malengo1,2, V. Sourjik1,2, M. Skruzny2,1; 1LOEWE Center for Synthetic Microbiology (SYNMIKO), Marburg, Germany, 2Max Planck Institute for Terrestrial Microbiology, Marburg, Germany

B411/P1401 The functional architecture of the endocytic coat analyzed by FRET. M. Skruzny1,2, E. Pohl1,2, S. Gnoth1,2, G. Malengo1,2, V. Sourjik1,2; 1LOEWE Center for Synthetic Microbiology (SYNMIKO), Marburg, Germany, 2Max Planck Institute for Terrestrial Microbiology, Marburg, Germany

B412/P1402 Unreeling Cargo Rotation at Microtubule Intersections during Intracellular Trafficking. Y. Yu1; 1Chemistry, Indiana University, Bloomington, IN

B413/P1403 Constructing the endosomal sorting network using interaction proteomics. S. Swarup1, J.A. Paul1, S.P. Gygi1, J.W. Harper2; 1Cell Biology, Harvard Medical School, Boston, MA

B414/P1404 Dissecting Hidden Mobility States of Recycling Sapnic Vescicle Mobility. M. Joensuu1,2, R. Martinez-Mármol1,3, P. Padmanabhan4,5, M. Mollazade6,7, N.R. Glass8, N. Durisic9, M. Pekelenko10,11, E. Cooper-Williams12, A.T. Bademosi2, I. Morrow13, C.B. Harper14, W. Jung15, A. Papadopoulos16,17, R. Amor18, G. Balistreri19, J.J. Cooper-White20, R.G. Parton21,22, G.J. Goodhill13,23, F.A. Meanier13; 1Queensland Brain Institute, The University of Queensland, Clem Jones Centre for Ageing Dementia Research, St Lucia, Australia, 2Biomedicum Helsinki, Minerva Institute for Medical Research, Helsinki, Finland, 3The University of Queensland, Queensland Brain Institute, St Lucia, Australia, 4The University of Queensland, Australian Institute for Bioengineering and Nanotechnology, St Lucia, Australia, 5The University of Queensland, Institute for Molecular Bioscience, St Lucia, Australia, 6The University of Queensland, Centre for Microscopy and Microanalysis, St Lucia, Australia, 7Department of Biosciences, The University of Helsinki, Division of General Microbiology, Helsinki, Finland, 8The University of Queensland, School of Chemical Engineering, St Lucia, Australia, 9CSIRO, Materials Science and Engineering Division, Clayton, Victoria, Australia, 10The University of Queensland, School of Mathematics and Physics, St Lucia, Australia

B415/P1405 A Flat BAR Protein Promotes Actin Polymerisation at the Base of Clathrin Coated Pits. L. Almeida-Souza1, R.A. Frank1, J. Garcia-Nafria1, A. Colussi1, N. Gunawardana1, C.M. Johnson1, C. Loo1,2; 1Department of Molecular Cell Biology, University of California, Berkeley, CA

B416/P1406 ERM proteins as actin linkers in clathrin-mediated endocytosis. A.S. Kvalvaag1, A.S. Kvalvaag1, J. Garcia-Nafria1, A. Colussi1, N. Gunawardana1, C.M. Johnson1, C. Loo1,2; 1Department of Molecular Cell Biology, Institute for Cancer Research, Oslo University Hospital, Oslo, Norway, 2Department of Biosciences, University of Oslo, Oslo, Norway

B417/P1407 Roles for SH3- and PRM-containing proteins in actin assembly at sites of clathrin-mediated endocytosis in mammalian cells. M. Jin1, D.G. Drubin1; 1Department of Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA

B418/P1408 The ubiquitin ligase Itch is required for EGF receptor endocytosis. R. Ayoubi1, P.S. McPherson1, A. Angers1; 1Biological Sciences, University of Montreal, Montreal, QC, 2Department of Neurology and Neurosurgery, Montreal Neurological Institute, Montreal, QC

B419/P1409 DoA4, a ubiquitin hydrolase, interacts with ESCRT-HI endosomes to regulate membrane scission. D. Buyssse1, M. West1, G. Odorizzi1; 1Molecular, Cellular, and Developmental Biology, University of Colorado at Boulder, Boulder, CO

B420/P1410 Methionine triggers endocytosis via Ppz phosphatase-mediated dephosphorylation of ubiquitin ligase adaptors. S. Lee1, H. Ho2, J.A. MacGurn1; 1Cell and Developmental Biology, Vanderbilt University School of Medicine, Nashville, TN, 2Weill Institute for Cell and Molecular Biology, Cornell University, Ithaca, NY

B421/P1411 How do Ubiquitin-Binding Adaptors Recognize Their Specific Targets among Multiple Ubiquitinated-Cargoes? A. Sen1, W. Hsieh1, C. Hanna1, R.C. Aguilar2; 1Biological Sciences, Purdue University, West Lafayette, IN

B422/P1412 CDH1 regulates ALIX-dependent GPCR lysosomal sorting by modulating the activity of the E3-Ligase WW2P. C. Kotis1, H. Singh1, P. Giannaris1, M.R. Dores1, 2Biology, Hofstra University, Hempstead, NY, 3John F. Kennedy High School, Bellmore, NY

B423/P1413 PKCδ promotes endocytosis through interaction and phosphorylation of the dual GAP/GEF protein, GAPVD1. R.K. Guillen1, J. Chen1, J.R. Beckley1, K.L. Gould1; 1Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B424/P1414 Unique and redundant roles of early endosomal Rab GTPases in VEGF receptor turnover and signaling, endothelial cell migration, and sprouting angiogenesis. I. van der Biji1, C. Furumaya1, I. De Cuyper1, A. van Stalbort1, K. Nawaz1, C. Margadant1,2; 1Sanquin Research, Amsterdam, Netherlands

B425/P1415 Rab3: a key player in microdomain-dependent plasma membrane recycling. B.B. Diaz-Rohrer1, L. Levental2, 1Integrative Biology and Pharmacology, University of Texas MD Anderson Cancer Center UTHealth, Houston, TX

ER and Golgi Transport

B426/P1416 Heparan sulfate proteoglycans mediate LPL sorting into a sphingomyelin-rich branch of the secretory pathway. E.L. Sundberg1, Y. Deng1, C.G. Burd1; 1Department of Cell Biology, Yale University School of Medicine, New Haven, CT

B427/P1417 Regulation of the Golgi SNARE chaperone S1y1 dissected in vivo and in a novel chemically-defined in vitro assay of ER-Golgi membrane fusion. A.J. Merz1,2, M. Duan1, R.L. Piemel1, T. Takenaka1; 1Physiology Biophysics, University of Washington, Seattle, WA, 2Biochemistry, University of Washington, Seattle, WA

B428/P1418 The tubular ER shaping protein Reticulon 4a enhances exocytosis independently of its effect on ER morphology. R. Mukherjee1, Z. Zhang1, D.L. Levy1; 1Molecular Biology, University of Wyoming, Laramie, WY, 2Zoology and Physiology, University of Wyoming, Laramie, WY

B429/P1419 An in vitro reconstituted vesicle formation assay to analyze COPII-mediated vesicular transport process. Y. Huang1, H. Yin1, q. wu1, Z. Yao2, Y. Guo1; 1Division of Life Science, the Hong Kong University of Science and Technology, Hong Kong, Hong Kong, 2Department of applied biology and chemical technology, The Hong Kong Polytechnic University, Hong Kong, Hong Kong
Extracellular Vesicle Assembly

B436/P1424 Mechanism of miRNA sorting into extracellular vesicles. M.M. Temoche-Diaz1, M.J. Shurtleff2, R. Nottingham1, J. Yao1, A. Lambowitz1, R.W. Schekman1; 1Plant and Microbial Biology, University of California, Berkeley, Berkeley, CA, 2Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, 3Institute for Cellular and Molecular Biology, University of Texas at Austin, Austin, TX

B437/P1425 Quantification of Extracellular Vesicles from Pancreatic Ductal Adenocarcinoma using Super Resolution Microscopy. K.M. Lennon1, D.L. Wakefield1, A.L. Maddox1, M.M. Miller1, K. Jensen1, T. Jovanovic-Talisman1; 1Molecular Medicine, Beckman Research Institute, City of Hope, Duarte, CA, 2Molecular and Cellular Biology, Beckman Research Institute, City of Hope, Duarte, CA, 3Neurogenomics Division, Translational Genomics Research Institute, Phoenix, AZ

B438/P1428 Rab11 and Retromer act antagonistically to one another to regulate neuronal extracellular vesicle cargo. R.B. Walsh1, M.A. Zunitch1, A.N. Becalska1, A. Yeh1, H. Ye1, J. Shulman1, A.A. Rodal1; 1Biology, Brandeis University, Waltham, MA, 2Neurology, Neuroscience, and Molecular and Human Genetics, Baylor College of Medicine, Houston, TX, 3Jan and Dan Duncan Neurological Research Institute, Texas Children’s Hospital, Houston, TX

B439/P1429 Palmitic acid induces the secretion of placentomal exosomes containing pro-inflammatory miRNAs. M. Acosta-Martinez1, C.R. Manuel1, S.E. Reznik2,3; 1Physiology Biophysics, Stony Brook University, Stony Brook, NY, 2Pharmacological Sciences, St. John’s University, Queens, NY, 3Pathology and Obstetrics and Gynecology and Women’s Health, Albert Einstein College of Medicine, Bronx, NY

B440/P1430 A bright, versatile reporter to track exosome secretion. B. Sung1, A.M. Weaver1; 1Cell Developmental Biology, Vanderbilt University, Nashville, TN, 2Department of Pathology, Vanderbilt University Medical Center, Nashville, TN

B441/P1431 Caffeic acid reverses multidrug resistance via P-glycoprotein inhibition. W.C. Liao1, C.C. Hung1,2; 1Department of Pharmacy, College of Pharmacy, China Medical University, Taichung, Taiwan, 2Department of Pharmacy, China Medical University Hospital, Taichung, Taiwan

Neurodegeneration

B443/P1432 ALS-linked SOD1 Mutants Induce Enhanced Outgrowth, Branching, and Filopodia Formation in Adult Motor Neurons. Z. Osking1, J. Ayers1, R. Hildebrandt1, K. Skruber1, H. Brown1, D. Ryu1, A.R. Eukovich1, T.E. Golde1, D. Borchelt1, T.A. Read1, E.A. Vitriol1; 1Anatomy and Cell Biology, University of Florida, Gainesville, FL, 2Neuroscience, University of Florida, Gainesville, FL, 3Molecular Genetics and Microbiology, University of Florida, Gainesville, FL

B444/P1433 TFEB/Mitf links impaired nuclear import to autophagosomal dysfunction in C9ORF72-mediated ALS/FTD. K.M. Cunningham1,2, K. Zhang1, H. Sung1, J.T. Pham1,2, M. Senturk1, J. Rothstein1,2,3; 1Cellular and Molecular Medicine Program, Johns Hopkins University School of Medicine, Baltimore, MD, 2Department of Neurology, Johns Hopkins University School of Medicine, Baltimore, MD, 3Brain Science Institute, Johns Hopkins University School of Medicine, Baltimore, MD, 4Program in Developmental Biology, Baylor College of Medicine, Houston, TX, 5Solomon Snyder Department of Neuroscience, Johns Hopkins University, Baltimore, MD, 6Department of Molecular and Human Genetics, Baylor College of Medicine, Houston, TX, 7Jan and Dan Duncan Neurological Research Institute, Texas Children’s Hospital, Houston, TX, 8Howard Hughes Medical Institute, Baylor College of Medicine, Houston, TX

B445/P1434 Characterizing the epigenetic landscape of amyotrophic lateral sclerosis. S.A. Bennett1,2, R. Tanaz1, S.N. Cobos1, H. Yousuf1, M. Fallah1, A. Elegendy1, M. Mirzakandova1, G. Angelakakis1, B. Salib1, M.P. Torrente1,2; 1Chemistry, Brooklyn College, Brooklyn, NY, 2Graduate Program in Biochemistry, The Graduate Center of the City University of New York, New York, NY
Neuronal Morphogenesis

B460/P1449 Inflammasome–induced pyroptosis facilitates ganglion cell loss in ocular hypertension injury. V.I. Shrestopalam1,2,3, A. Pronin1, W. An1, D.G. Pham2, Q. Jianzhong1, A.E. Reiser1, Z. Kozhekbaeva1, G. Reshetnikova1, G. Dvoriachtchi1, V.Z. Slepak1; 1Ophthalmology, University of Miami Miller School of Medicine, Miami, FL, USA, 2Miami, FL, 3Kharkevich Institute for Information Transmission Problems, Moscow, Russia, 4Cell Biology, University of Miami Miller School of Medicine, Miami, FL, 5Institute of Cytology, Moscow, Russia

B461/P1450 Role of the SIX6 transcription factor in the pathogenesis of glaucoma. L. Rocha1, E. Bozek1, J. Morarci1, D. Skowronska-Krawczyk1; 1Ophthalmology, UC San Diego, La Jolla, CA, 2Nanocellect Biomedical, Inc., San Diego, CA

B462/P1451 Investigation of the APP, BACE1 and ADAM10 dynamics on the plasma membrane by single molecule tracking experiments. C. Capitini1,2, A. Bigni1, R. Cassella1, C. Cecchi1, F.S. Pavone1,2,3, M. Calamai1,4; 1Di/11o/19o/20o/21o/22o/23o Fisiica y Astronomia, Universidad de Studi 1P/20o/21o/22o/23o Fin 1T/2o/21o/22o/23o Firenze, Firenze, Italy, 2European Laboratory for 3Non-linear Spectroscopy (LENS), University of Florence, Florence, Italy, 4Di. 5P/1o/2o/3o Biomedicale Sperimentali e Cliniche "Mario Serio", Università degli Studi di Firenze, Firenze, Italy, 6National Institute of Optics, National Research Council of Italy (CNR), Florence, Italy

B463/P1452 Drug discovery for spinocerebellar ataxia, using novel fluorescence technology targeting β-III-spectrin. A.W. Avery1, M.E. Fealey1, B. Svensson1, D.D. Thomas1, T.S. Hays1; 1Cell and Molecular Biology, Feinberg School of Medicine, Northwestern University, Chicago, IL

B464/P1453 Protein kinase Trc regulates neurite outgrowth via Pavavotti (kinesin-6). R. Norkett1, M. Winding1, U. del Castillo1, W. Lu1, V.G. Gelfand1; 1Cell and Molecular Biology, Feinberg School of Medicine, Northwestern University, Chicago, IL

B465/P1454 Overexpressed Cep170 localizes as centromeric puncta along neurites and promotes neurite outgrowth. A. Goh1, H. Huang1, E. Hwang1,2,3; 1Department of Biological Science, Technology, National Chiao Tung University, Hsinchu City, Taiwan, 2Institute of Molecular Medicine and Bioengineering, National Chiao Tung University, Hsinchu City, Taiwan, 3Institute of Bioinformatics and Systems Biology, National Chiao Tung University, Hsinchu City, Taiwan

B466/P1455 Differential Effects of Extracellular Matrix Molecules on Neurite Outgrowth in Embryonic Chick Cerebral and Tectal Neurons. M.N. Galardi1, N. Thompson2, G. Gomez1; 1Biology, University of Scranton, Scranton, PA, 2Department of Biology, University of Scranton, Scranton, PA
B486/P1475 MAG regulates pre-myelinating oligodendrocyte-axon interactions and promotes axon subtype-selective myelination. E.S. Menges1, J.T. Henke1, J.R. Gronseth2, T.A. Mallon1, J.H. Hines1; 1Biology Department, Winona State University, Winona, MN

B487/P1476 Chromatin modifying and remodeling mutants exhibit altered BMP Signaling at the Drosophila neuromuscular junction. J.A. Preston1, K.N. Lane1, F.L. Liebl1; 2Department of Biological Sciences, Southern Illinois University Edwardsville, Edwardsville, IL

B488/P1477 Neural activity regulates oligodendrocyte sampling of axons prior to myelin sheath formation. T.A. Mallon1; J.R. Gronseth1, J.T. Henke1, E.S. Menges, J.H. Hines1; 1Biology Department, Winona State University, Winona, MN

B489/P1478 Annotation and characterization of the long noncoding RNAs in central nervous system. X. Wang2, M. Gong3, Y. Jin4, X. Shi4, B. Zhang2, X. Liang2; 2School of Life Sciences, University of Science and Technology of China, 3Chinese Academy of Sciences Key Laboratory of Brain Function and Disease, Hefei, China, 4Hefei National Laboratory for Physical Sciences at the Microscale, Hefei, China

Establishing and Maintaining Organelle Structure 1

B491/P1479 The HPA Cell Atlas: Dissecting the spatiotemporal subcellular distribution of the human proteome. P.J. Thu1, L. Åkeson2, D. Mahdessian1, U. Axelsson1, A. Bäckström1, M. Hjelmare1, C. Gnann1, T. Jelinek2, R. Schutten1, C. Stadler1, D. P. Sullivan1, L. Winnes1, M. Uhlén2, E. Lundberg1; 1Cell and clinical proteomics, KTH Royal Institute of Technology, Stockholm, Sweden

B492/P1480 Multilocularizing Human Proteins. P.J. Thu1, L. Åkeson2, U. Axelsson1, A. Bäckström1, F. Danielsson1, C. Gnann1, M. Hjelmare1, R. Schutten1, D. Mahdessian2, J. Fall1, C. Stadler1, D. P. Sullivan1, C.F. Winnes1, G. Galea1, R. Pepperkok1, M. Uhlén2, E. Lundberg1; 2Dept. of Protein Science, Science for Life Laboratory, KTH - Royal Institute of Technology, Stockholm, Sweden, 3Cell Biology and Biophysics Unit, European Molecular Biology Laboratory, Heidelberg, Germany

B493/P1481 Using silent mutations to design a chemical probe for the microtubule-severing AAA+ protein staplin. T. Cupido1, R. Pisa1, M.E. Kelley1, T.M. Kapoor1; 2Laboratory of chemistry and cell biology, the Rockefeller University, New York, NY

B494/P1482 Efficient homology-directed genome editing in Drosophila cells using CRISPR/Cas9. B. Xian1, O. Kancs2, G. Amador13, J. Zirin13, S. Mohri2, H.J. Bellen1, N. Perrimon2; 1Department of Genetics, Harvard Medical School, Boston, MA, 2Baylor College of Medicine, Houston, TX, 3Drosophila RNAi Screening Center, Harvard Medical School, Boston, MA

B495/P1483 Proximity-dependent biotinylation enables probing of sarcosome structure and development in human induced pluripotent stem cell-derived cardiomyocytes. A.M. Pettinato1, K. Thakar1, F.A. Ladha1, J.T. Hinson1,2; 1The Jackson Laboratory for Genomic Medicine, Farmington, CT, 2University of Connecticut School of Medicine, Farmington, CT

B496/P1484 The Babliani Body and how it disassembles. C. Martinez-Guillamon1, E. Bolek2; 1Cell and Developmental Biology, Centre for Genomic Regulation (CRG), Barcelona, Spain, 2Universitat Pompeu Fabra (UPF), Barcelona, Spain

B497/P1485 The significance of endocytosis during secretion. K. Kamakawi1, E.D. Schejter1, B. Shilo1, O. Avinoam2; 1Department of Molecular Genetics, Weizmann Institute of Sciences, Rehovot, Israel, 2Department of Biomedical Sciences, Weizmann Institute of Sciences, Rehovot, Israel

B498/P1486 Anti-dsDNA Antibodies from Patients with Systemic Lupus Erythematosus Induce Functional and Structural Changes in Platelets. I.A. Andrianova1, A.A. Ponomareva, G. Le Minh1, A.G. Daminova, T.A. Nezvgorova, L. Rauova1, R.I. Litvinov1, J.W. Weisel1; 1Kazan Federal University, Kazan, Russia, 2The Children’s Hospital of Philadelphia, Philadelphia, PA, 3University of Pennsylvania Perelman School of Medicine, Philadelphia, PA

B499/P1487 Golgi organization is mediated by the LINC complex and the nuclear pore complex. T. Matsumoto1, M. Isobe1, S. Kametaka2, M. Hieda1; 1Ehime Prefectural University of Health Sciences, Ehime, Japan, 2Graduate School of Medicine, Nagoya University, Nagoya, Japan

B500/P1488 GRASP65-mediated control of the Golgi structure is crucial for G2/M transition. I. Ayala1, F. Mascanzoni1, A. Colanzi1; 1Institute of Protein Biochemistry, National Research Council of Italy, Naples, Italy

B501/P1489 iPSC-derived Lowe Syndrome renal cells exhibit Ciliogenesis defects and Six2 retention at the Golgi complex. W. Hsieh1, S. Ramadesikan1, R.C. Aguilar2; 1Biological Sciences, Purdue University, West Lafayette, IN

B502/P1490 Analysis of organelle size control pathway using a novel ratiometric probe. S. Ishii1, A. Matsuura1, E. Itakura1; 2Biology, Chiba University, Chiba, Japan

B503/P1491 Quantifying Changes in Vascular Morphology to Predict Degradative Function in S. cerevisiae Yeast. J.C. Sims1; 2Cell and Molecular Biology, San Francisco State University, San Francisco, CA

B504/P1492 Vacuole Inheritance and Biogenesis in Saccharomyces cerevisiae. A.K. Chemel1, Y.M. Chan1; 2Biological Sciences, San Francisco State University, San Francisco, CA

B505/P1493 Single Cell Analysis of Vascular pH and Size Using Confocal Microscopy. R.C. Segura1, J.F. Calma1, Y.M. Chan1; 2Biologic, San Francisco State University, San Francisco, CA
Mitochondria, Chloroplasts and Peroxisomes 1

BS11/P1499 Global genetic buffering mechanisms in mitochondrial dysfunction induced by short OPA1. A. Almazan1, S. Chen1, S. Ju2, Q. Zhong1; 1Department of Biological Sciences, Wright State University, Beavercreek, OH

BS12/P1500 Local GTP fuelling via nucleoside-diphosphate kinase-like protein DYNAMO1 drives division of peroxisome and mitochondrion. Y. Fujiki1, Y. Imito1, Y. Abe1, M. Honsho1, K. Okumoto1, M. Ohnума1, H. Kuroiwa1, T. Kuroiwa1; 1Division of Organelle Homeostasis, Medical Institute of Bioregulation, Kyushu University, Fukuoka, Japan, 2Department of Biology, Faculty of Sciences, Kyushu University, Fukuoka, Japan, 3Institute of Technology, Hiroshima College, Hiroshima, Japan, 4Department of Chemical and Biological Sciences, Faculty of Science, Japan Women’s University, Tokyo, Japan

BS13/P1501 Disease associated variant of Mitofusins dysregulates the coupling of mitochondrial outer membrane tethering and fusion. E.A. Engelhart1, S. Hoppins1; 1Biochemistry, University of Washington, Seattle, WA

BS14/P1502 MCL-1 non-apoptotic function modulates mitochondrial dynamics in human induced pluripotent stem cell-derived cardiomyocytes. M. Rasmussen1, N. Taneja1, L. Wang2, L. Shi1, A. Neininger1, K. Beckermann1,2; 1Department of Medicine, Division of Hematology and Oncology, Vanderbilt University Medical Center, Nashville, TN, 2Department of Cancer Biology, Vanderbilt University, Nashville, TN, 3Vanderbilt Center for Stem Cell Biology, Vanderbilt University Medical Center, Nashville, TN

BS15/P1503 Localization and Partners of Polycystin 1 at MAMs and Mitochondria. V. Padovan1, V. Rajendran1, M.J. Caplan1; 1Cellular and Molecular Physiology, Yale University, School of Medicine, New Haven, CT

BS16/P1504 ER-Mitochondria Contacts are Required for Formation of Mitochondrial-Derived Compartments. A.M. Litwiller1, M. Schuler1, J.M. Shaw1; 1Biochemistry, University of Utah, Salt Lake City, UT

BS17/P1505 Mitochondrial-Derived Compartments Promote Nutrient-Dependent Remodeling of the Mitochondrial Proteome. M. Schuler1, A.M. Litwiller1, T.J. Campbell1, T. Tedeschi1, J.M. Shaw1; 1Biochemistry, University of Utah, Salt Lake City, UT

BS18/P1506 Mitochondrial CoQ biosynthetic proteins cooperatively assemble in a substrate-dependent manner into domains spatially linked to ER-mitochondria contact sites. K. Subramanian1, A. Jochem2, S.C. Lewis3, D. Pagliarini1,2,3, J. Nunnari1; 1Department of Molecular and Cellular Biology, University of California, Davis, Davis, CA, 2Morgridge Institute for Research, Madison, WI, 3Department of Biochemistry, University of Wisconsin-Madison, Madison, WI

BS19/P1507 Mitochondrial DNA is transported and partitioned via mitochondrial dynamic tubulation at the ER-mitochondria contact sites. J. Qin1, Y. Guo1, Y. Chen1, Q. Su1, H. Hao1, S. Zhao1, L. Yu1, D. Li1, Y. Sun1; 1School of Life Sciences, Peking University, Beijing, China, 2Institute of Physics Chinese Academy of Sciences, Beijing, China, 3School of Life Sciences, Tsinghua University, Beijing, China

BS20/P1508 Understanding the mechanism of genomic stability in mitochondria: Role of double-strand break repair. S. Daha1, S.K. Tadi1, R. Sebastian1, S.C. Raghavan1; 1Department of Biochemistry, Indian Institute of Science, Bangalore, India

BS21/P1509 Nutrient-dependent mitochondrial hyperfusion requires the modified outer membrane carrier MTC2H. K. Labbé1, E.A. Engelhart2, Z. Minic1, J. Cazet1, C. Juliano1, M. Babu1, S. Hoppins2, J. Nunnari1; 1Department of Molecular and Cellular Biology, University of California Davis, Davis, CA, 2Department of Biochemistry, University of Washington, Seattle, WA, 3Department of Biochemistry, University of Regina, Regina, SK

BS22/P1510 PINK1/Parkin Influence Cell Cycle by Sequestering TBK1 to Damaged Mitochondria Inhibiting Mitosis. D.P. Sidders1, S.A. Sarraf1, N. Giagtzoglou1, M. Kankel1, A. Sen1, C. Huang2, S.C. Nussenzweig3, S.H. Worley1, S. Artavans-Taksan4, R.J. Youle1, A.M. Pickrell1; 1Surgical Neurology Branch, National Institutes of Health, Bethesda, MD, 2Pathway Discovery, Biogen Inc., Cambridge, MA, 3Neuroscience, Virginia Polytechnic Institute and State University, Blacksburg, VA, 4Department of Cell Biology, Harvard Medical School, Boston, MA

BS23/P1511 The relative effect of melanin content and type on the UVA-induced signaling in human epidermal melanocytes. S. Hafez1, E. Oancea2; 1Molecular physiology and pharmacology, Brown University, Providence, RI

BS24/P1512 Oxidative insults disrupt OA1-mediated mitochondrial dynamics in cultured mammalian cells. I. Garcia1, W. Innis-Whitehouse1, A. Lopez2, R. Gilkerson3, M.E. Kenyon1; 1Biological, University of Texas Rio Grande Valley, Edinburg, TX, 2Biomedical Sciences, The University of Texas Rio Grande Valley, Edinburg, TX, 3Clinical Laboratory Sciences, The University of Texas Rio Grande Valley, Edinburg, TX

BS25/P1513 Aberrant Drp1-mediated mitochondrial division presents in humans with variable outcomes. B.N. Whiteley1, C. Lam2, H. Cui1, K. Haude1, R. Baille1, L. Escobar1, A. Hamilton2, L. Brady1, M. Tarnopolsky3, L. Dengle1, J. Picker2, S. Lincoln1, L.L. Lacker1, I. Glass1, S. Hoppins1; 1Biochemistry, University of Washington, Seattle, WA, 2Division of Genetic Medicine, University of Washington, Seattle, WA, 3Gene Dx, Gaithersburg, MD, 4Medical Genetics and Neurodevelopment Center, Peyton Manning Children’s Hospital at St. Vincent, Indianapolis, IN, 5Pediatrics, McMaster University, Hamilton, ON, 6Medicine, McMaster University, Hamilton, ON, 7Pediatrics, University of Texas Southwestern Medical Center, Dallas, TX, 8Boston Children’s Hospital, Boston, MA, 9Molecular Biosciences, Northwestern University, Evanston, IL

BS26/P1514 Release of iron from endolysosomes is sufficient to cause reactive oxygen species production and mitochondrial dysfunction. J.D. Geiger1; 1Biomedical Sciences, University of North Dakota, Grand Forks, ND

BS27/P1515 A Mitofusin variant that impacts mitochondrial fusion and transport. S.R. Sloat1, S. Hoppins1; 1Biochemistry, University of Washington, Seattle, WA

BS28/P1516 Physiologic Oligomerization and Pathogenic Aggregation of CHCHD1 and CHCHD10. B. Wu1, X. Huang1, D.P. Narendra2; 1National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD

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Receptors, Transporters, and Channels

BS34/P1522 a7 nicotinic acetylcholine receptor (nAChR)/G protein interactions and endocytic mechanisms modulates nicotine-induced upregulation of a7 nAChRs in Xenopus oocytes. J. Panchal1, J. Farley1, K. DeBoeuf1, J.B. Anderson1, L. Mcfartridge1, M. Islam1; 1Neuroscience, Indiana University, Bloomington, IN

BS35/P1523 Mechanisms controlling inhibition of Store-Operated-Ca2+ influx during mitosis. F. Yu1, S. Hubrack1, K. Machaca1; 1Physiology & Biophysics, Weil Cornell Medicine Qatar, Doha, Qatar

BS36/P1524 Calcium Dysregulation in a Neurodegenerative Disease of Impaired Cholesterol Homeostasis. S.A. Tiscione1, O. Vivas1, S. Cologna1, D.S. Orly1, E.J. Dickson1; 1Physiology and Membrane Biology, University of California Davis, Davis, CA, 1Chemistry, University of Illinois, Chicago, IL, 1Diabetic Cardiovascular Disease Center, Washington University School of Medicine, St. Louis, MO

BS37/P1525 A bicstronic system for stable co-expression of TREM2 and DAP12. J. Ibach1, K. Gregow1, S. Theil1, J. Walter1; 1Department of Neurology, University of Bonn, Bonn, Germany

BS38/P1526 To Interact, or Not Interact, that is the Question: Potential Regulation of Glur2 Q/R isoforms by L6V Proteins. A. Lauriello1, Q. Johnson1, R. Sung1; 1History, Carleton College, Northfield, MN, 1Chemistry, Carleton College, Northfield, MN, 1Biology, Carleton College, Northfield, MN

BS39/P1527 Role of the Na+/H+ Exchanger in Modulating Resistance to Apoptosis in Pulmonary Arterial Smooth Muscle Cells from Rats with Pulmonary Hypertension. M.C. Munson1, X. Yun1, J.C. Huetsch1, L.A. Shimoda1; 1Pulmonary and Critical Care Medicine, Johns Hopkins School of Medicine, Baltimore, MD

BS40/P1528 Is the Amino-Terminal Domain all you really need? Investigating the necessity and sufficiency of the amino-terminal domain for interaction with Lty6 proteins. Q. McVeigh1, R. Sung1; 1Biology, Carleton College, Northfield, MN

BS41/P1529 Activation of melanin receptors by melanotonin-related compounds and their secretion from the rat pineal gland. B. Lee1, D. Koh1, H. De la Iglesia1, C. Hugue1, B. Hille1; 1Physiology and Biophysics, University of Washington, Seattle, WA, 1Biology, University of Washington, Seattle, WA, 1Pharmacology, University of Washington, Seattle, WA

BS42/P1530 Live imaging in liver cells to study virus-Ca2+ interactions and ER-mitochondrial Ca2+ dynamics. Y. Lin1, P. Tsai1, Y. Feng1, F. Tsai1,2; 1Department of Pharmacology, College of Medicine, National Taiwan University, Taipei, Taiwan, 1Department of Internal Medicine, National Taiwan University Hospital, Taipei, Taiwan

BS43/P1531 Astrocorty mes o and β/b, Adrenergic Receptors Regulate the Surface Expression of Monocarboxylate Transporter 1 in a Human Glialblastoma Cell Line. H.A. Arain1; 1Neuroscience, Indiana University, Bloomington, IN

BS44/P1532 The K-dependent Na-Ca2+ exchanger NCKX5 has unique cellular localization that is determined by its cytoplasmic loop. T.P. Rogasevskaja1,2, R.T. Szerencsei1, A.H. Jalloul1, F. Visser1, P.P. Schnettkamp2; 1Biology, Mount Royal University, Calgary, AB, 2Physiology and Pharmacology, Cumming School of Medicine, University of Calgary, Calgary, AB

BS45/P1533 Mitochondria, Calcium and Metabolism. M. MacEwen1, Y. Sancak1; 1Pharmacology, University of Washington, Seattle, WA

BS46/P1534 In atrial myocytes, axial tubule junction activate Ca2+ release across species. S. Brandenburg1,2, J. Pawlikowt1,2,2,2,2,2,2, K. Kohli1,2, M. Dura1,2, M. Scardigli2, L. Sacconi2, M. Gotthardt1,2, C.W. Ward1, W.J. Lederer1, S.E. Lehnhart1,2,3,4,5; 1Heart Research Center Göttingen, University Medical Center Göttingen, Göttingen, Germany, 2Department of Cardiology Pneumology, University Medical Center Göttingen, Göttingen, Germany, 3DZHK (German Centre for Cardiovascular Research) partner site Göttingen, Göttingen, Germany, 4European Laboratory for Non-Linear Spectroscopy and, National Institute of Optics (INO-CNR), Sesto Fiorentino, Italy, 5Max Delbrück Center for Molecular Medicine, Berlin, Germany, 6BioMET, The Center for Biomedical Engineering and Technology, University of Maryland School of Medicine, Baltimore, MD

BS47/P1535 LPS decreases the expression of metabolic transporters in mouse monocytes. J.D. Ochsrieter1, R. Al-Khatib1; 1Biology, University of North Florida, Jacksonville, FL

BS48/P1536 A new mechanistic insight for botulinum neurotoxins-target neuron cell recognition. L. Yin1,2, M. Dong1,2; 1Department of Urology, Boston Children’s Hospital, Harvard Medical School, Boston, MA, 2Department of Microbiology and Immunobiology and Department of Surgery, Harvard Medical School, Boston, MA

BS49/P1537 STARD3/MLN64 is not involved in mitochondrial cholesterol import for steroidogenesis. M.C. Kern1, P.P. Koganti1, A.H. Zhao1, V. Selvaraj1; 1Animal Science, Cornell University, Ithaca, NY

BS50/P1538 The intracellular Ca2+ channel TRPM13 is a novel PI3P effector that regulates early autophagosome biogenesis. S. Kim1, K. Park1, H. Kim1; 1Department of Physiology, Sungkyunkwan University School of Medicine, Suwon, South Korea, 1Wide River Institute of Immunology, Seoul National University College of Medicine, Gangwon-do, South Korea

BS51/P1539 Organic/Inorganic hybrid membrane mimics the structure and function of bacterial outer membrane protein. J. Lee1; 1Physics, Carleton College, Northfield, MN

BS52/P1540 Effects of polybrominated diphenyl ethers (PBDEs) on the developing sea urchin immune system. K.T. Nesbit1, A. Harmoud1; 1Scips Scripps Institution of Oceanography, University of California San Diego, La Jolla, CA

Signaling Receptors (RTKs and GPCRs)

BS54/P1541 Microenvironment-controlled cytoskeleton dynamics and cell motility determine the invasive potential of Medulloblastoma cells. K. Santhana Kumar1,2, D. Tripolitsioti1, A. Neve1, M.A. Groetz1, M. Baumgartner1; 1Oncoology, University Children’s Hospital Zürich, Zürich, Switzerland

BS55/P1542 The tumor suppressor PAG1 controls the localization of active SRC family kinases to late endosomes and determines cell fate decisions downstream of receptor tyrosine kinase activation. L.E. Foltz1, J. Palacios-Moreno1, M. Mayfield1, S. Kinch1, J. Syrenne1, M.L. Grimes1; 1Division of Biological Sciences, University of Montana, Missoula, MT

BS56/P1543 FGFR signaling regulated orbital tissue fibrosis and adiopogenesis in thyroid eye disease. T. Lu1, E. Yeni1, S. Shihi2, C. Shihi3, Y. Wei1, F. Tsai1,2; 1Department of Pharmacology, National Taiwan University College of Medicine, Taipei, Taiwan, 1Department of Internal Medicine, National Taiwan University College of Medicine, Taipei, Taiwan, 1Department of Internal Medicine, National Taiwan University College of Medicine, Taipei, Taiwan, 1Center of Anti-Aging and Health Consultation, National Taiwan University Hospital, Taipei, Taiwan, 1Department of Ophthalmology, Zhongxing Branch, Taipei City Hospital, Taipei, Taiwan, 1Department of Ophthalmology, National Taiwan University Hospital, Taipei, Taiwan

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The inositol phosphatase SHIP2 promotes ERK activation downstream of EGFR receptors by recruiting Src kinases to the receptor complex. B. Faffie1, L. Ballek1, M. Kunova Bosakova1,2, M. Varecha3, A. Nita2, T. Gregori2, I. Gudernova1, J. Krenova1, S. Gosh1, M. Piskacek1, L. Jonata1, N.H. Cernohorsky1, J.T. Zieba3, M. Kostas2, E.M. Haugsten1, J. Wescie1, C. Erenex1, L. Trantirek1, D. Krakowka1,2, P. Krejci1,2; 1Department of Biotechnology, Masaryk University, Faculty of Medicine, Brno, Czech Republic, 2Central European Institute of Technology, Masaryk University, Brno, Czech Republic, 3International Clinical Research Center, St. Anne’s University Hospital Brno, Czech Republic, 4Departments of Orthopaedic Surgery, David Geffen School of Medicine, University of California Los Angeles, Los Angeles, CA, 5Department of Tumor Biology, The Norwegian Radium Hospital, Institute for Cancer Research, Oslo, Norway, 6Institute of Clinical Medicine, University of Oslo, Faculty of Medicine, Oslo, Norway, 7Department of Human Genetics, David Geffen School of Medicine, University of California Los Angeles, Los Angeles, CA, 8Department of Obstetrics and Gynecology, David Geffen School of Medicine, University of California Los Angeles, Los Angeles, CA, 9Institute of Animal Physiology and Genetics, Academy of Sciences of the Czech Republic, Brno, Czech Republic

B557/P1544 Dimerization of the Trk receptors in the plasma membrane: effects of their cognate ligands. F. Ahmed1, K. Hristova2; 1Materierals Science/Bioengineering, Johns Hopkins University, Baltimore, MD

B563/P1550 EphA2 receptor signaling responses depend on the activating ligand. M. Gehring1, B.C. Lechtenberg1, M. Gomez Soler2, D.R. Singh3, E. Zapata-Mercado4, S. Riedl2, K. Hristova1, E.B. Pasquale1; 1Cancer Center, SBP Medical Discovery Institute, La Jolla, CA, 2Department of Materials Science and Engineering, Johns Hopkins University, Baltimore, MD

B564/P1551 Endothelial barrier stabilization signaling pathways induced by G protein-coupled receptors. O. Molinar-Inglis1, B. Chen1, N. Gromisz2, H. Lin1, M. Cisneros1, L.J. Coronel1, J. Trejo3; 1Pharmacology, University of California, San Diego, La Jolla, CA

B565/P1552 Thrombin-induced Ca2+ increase and subsequent calpain activation promotes Protease-Activated Receptor 1 (PAR1) internalization. A. Alvarez-Arce1, I. Lee-Rivera1, E.C. Lopez-Hernandez2, A. Hernandez Cruz1, A. Lopez-Colomé2; 1Molecular Neuropathology, Universidad Nacional Autónoma de México, Mexico, Mexico, 2Cognitive Neuroscience, Universidad Nacional Autónoma de México, Mexico, Mexico

B566/P1553 A Tyrosine Switch on NEDD4-2 E3 Ligase Transmits GPCR Inflammatory Signaling. N.J. Grimsey1,2, R.V. Narala1, C.C. Rada1, S. Metha1, B.S. Stephens1, I. Kufareva1, J.J. Lapek1, D. Gonzalez1, T.M. Handel1, J. Zhang1, J. Trejo1; 1Pharmacology, University of California San Diego, La Jolla, CA, 2Pharmaceutical and Biomedical Sciences, University of Georgia, Athens, GA, 3Pharmacology, Skaggs School of Pharmacy and Pharmaceutical Sciences, La Jolla, CA

B567/P1554 Examining the FP receptor triggered CREB activation in cell-based assays. W.C. Ho1, C. Patel1, B. Saepoo1, I. Morano2; 1Contract Services, Cayman Chemical, Ann Arbor, MI, 2Department of Engineering Science and Ocean Engineering, National Taiwan University, Taipei, Taiwan

B558/P1545 Signalling interactions between EGFR and FGFR after the migration of head and neck cancer cells. C. Chu1, L. Chang2, C. Si3, G. Kuo1, K. Chen1, F. Tsai1; 1Graduate Institute of Pharmacology, National Taiwan University, Taipei, Taiwan, 2Dept. of Engineering Science and Ocean Engineering, National Taiwan University, Taipei, Taiwan, 3Dept. of Internal Medicine, National Taiwan University Hospital, Taipei, Taiwan

B595/P1546 Deciphering EGFR and RON crosstalk at the molecular level. C. Franco Nitta1,2, E.W. Hatch1, E.D. Jhamba1, J.M. Keth1, R.M. Grattan1, M.P. Steinkamp2, B.S. Wilson1, D.S. Lidke1,2; 1Pathology, University of New Mexico Health Sciences Center, Albuquerque, NM, 2Comprehensive Cancer Center, University of New Mexico Health Sciences Center, Albuquerque, NM

B560/P1547 Unique role for LIN-10 in regulating LET-23 EGFR signalling and trafficking in C. elegans polarized epithelial cells. K. Gauthier1,2, C.E. Rocheul1,2,3; 1Anatomy and Cell Biology, McGill University, Montreal, QC, 2Metabolic Disorders and Complications program, Research institute of the McGill University Health Centre, Montreal, QC, 3Medicine, McGill University, Montreal, QC

B561/P1548 Downregulation of SCAMP3 suppresses the proliferation of inflammatory breast cancer through EGFR signaling. I.J. Suárez-Arroyo1, G. Ortiz-Soto1, M.M. Martínez-Montemayor1; 1Biochemistry, Universidad Central del Caribe, School of Medicine, Bayamon, PR

B562/P1549 Dimerization of the Trk receptors in the plasma membrane: effects of their cognate ligands. F. Ahmed1, K. Hristova2; 1Materierals Science/Bioengineering, Johns Hopkins University, Baltimore, MD

B563/P1550 EphA2 receptor signaling responses depend on the activating ligand. M. Gehring1, B.C. Lechtenberg1, M. Gomez Soler2, D.R. Singh3, E. Zapata-Mercado4, S. Riedl2, K. Hristova1, E.B. Pasquale1; 1Cancer Center, SBP Medical Discovery Institute, La Jolla, CA, 2Department of Materials Science and Engineering, Johns Hopkins University, Baltimore, MD

B564/P1551 Endothelial barrier stabilization signaling pathways induced by G protein-coupled receptors. O. Molinar-Inglis1, B. Chen1, N. Gromisz2, H. Lin1, M. Cisneros1, L.J. Coronel1, J. Trejo3; 1Pharmacology, University of California, San Diego, La Jolla, CA

B565/P1552 Thrombin-induced Ca2+ increase and subsequent calpain activation promotes Protease-Activated Receptor 1 (PAR1) internalization. A. Alvarez-Arce1, I. Lee-Rivera1, E.C. Lopez-Hernandez2, A. Hernandez Cruz1, A. Lopez-Colomé2; 1Molecular Neuropathology, Universidad Nacional Autónoma de México, Mexico, Mexico, 2Cognitive Neuroscience, Universidad Nacional Autónoma de México, Mexico, Mexico

B566/P1553 A Tyrosine Switch on NEDD4-2 E3 Ligase Transmits GPCR Inflammatory Signaling. N.J. Grimsey1,2, R.V. Narala1, C.C. Rada1, S. Metha1, B.S. Stephens1, I. Kufareva1, J.J. Lapek1, D. Gonzalez1, T.M. Handel1,3, J. Zhang1, J. Trejo1; 1Pharmacology, University of California San Diego, La Jolla, CA, 2Pharmaceutical and Biomedical Sciences, University of Georgia, Athens, GA, 3Pharmacology, Skaggs School of Pharmacy and Pharmaceutical Sciences, La Jolla, CA

B567/P1554 Examining the FP receptor triggered CREB activation in cell-based assays. W.C. Ho1, C. Patel1, B. Saepoo1, I. Morano2; 1Contract Services, Cayman Chemical, Ann Arbor, MI, 2Drug Discovery, Cayman Chemical, Ann Arbor, MI

B568/P1555 Phospholipase Cβ1 regulates Stress Granule Formation. A. Qifti1, S. Scarlata2; 1Chemistry & Biochemistry, Worcester Polytechnic Institute, Worcester, MA

B569/P1556 cAMP signaling is involved in the regulation of radiation-induced double stranded breaks repair in lung cancer cells. S. Noh1, Y. Juhn1; 1Department of Biochemistry, Seoul National University College of Medicine, Seoul, South Korea

B557/P1555 Cell size-dependent control of Wee1 by signaling at cortical clusters. C.A. Allard1, H.E. Oplasko1, J.B. Moseley1; 1Biochemistry and Cell Biology, Dartmouth College, Hanover, NH

B577/P1564 A RSKy Adventure in Myosin Phosphatase. M.C. Mendoz1a, S.C. Samson1, A. Elliott1, K.R. Carney2; 1Oncological Sciences, University of Utah, Salt Lake City, UT

B578/P1565 Membrane regulation of sperm acrosome reaction in A. cantonensis: Functional association of src family kinases (SKF) with membrane rafts. C. Priyadarshana1, R. Setiawan1, A. Tajima1, N. Ishikawa2, A. Asano2; 1Graduate School of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Ibaraki, Japan, 2Faculty of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Ibaraki, Japan

B579/P1566 Regulation of non-canonical XBP1 splicing by CNP and RtcA during ER stress. I. Unlu1, Y. Lu1, X. Wang2; 1Molecular Biosciences, Northwestern University, Evanston, IL

Kinases and Phosphatases

B576/P1563 Cell size-dependent control of Wee1 by signaling at cortical clusters. C.A. Allard1, H.E. Oplasko1, J.B. Moseley1; 1Biochemistry and Cell Biology, Dartmouth College, Hanover, NH

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B579/P1566 Regulation of non-canonical XBP1 splicing by CNP and RtcA during ER stress. I. Unlu1, Y. Lu1, X. Wang2; 1Molecular Biosciences, Northwestern University, Evanston, IL
BS8/P1567 Localization dynamics of endogenous fluorescently labeled Rab1 in EGFR-stimulated cells. S.V. Surv1, P. Myers2, S.C. Watkins1, M. Lazzara2, A. Sorkin1; 1Cell Biology, University of Pittsburgh, Pittsburgh, PA, 2Department of Chemical Engineering, University of Virginia, Charlottesville, VA, 3Department of Biomedical Engineering, University of Virginia, Charlottesville, VA

BS8/P1568 Understanding the role of calcineurin phosphatase in mammalian cytokinesis. E. Teskitsidou1, M.S. Cyert2; 1Department of Biology, Stanford University, Stanford, CA

BS8/P1569 Role of PI3K in mediating BMP7 chemotropic activity. A. Rodrigues1, N. Habeeb1, J.C. Perron1; 1Pharmaceutical Sciences, St.John’s University, Queens, NY

BS8/P1570 PtdIns(3,4,5)P3-dependent mTORC2 recruitment and AKT activation in the early endosome of cells activated with growth factors. S. Kim1, D. Kang1; 1Life Science, Ewha Womans University, Seoul, South Korea

BS8/P1571 Adverse effects of genistein on milk production ability by affecting EGFR species signaling in mammary epithelial cells. Y. Tsugai1, A. Kuma1, N. Suzuki1, T. Suzuki1, T. Nishimura1, K. Kobayashi1; 1Hokkaido University, Laboratory of Cell and Tissue Biology, Research Faculty of Agriculture, Sapporo, Japan

BS8/P1572 The inhibition of Cellular Chloride Channel 1 enhances Ca2+ and reactive oxygen species signaling in A549 human lung cancer cells. J. Lee1,2, J. Lee1, M. Hahn1, J. Kang1,2, H. Cho1,2,3; 1Department of Molecular Cell Biology, Sungkyunkwan University, Suwon, South Korea, 2Single Cell Network Research Center, Sungkyunkwan University, Suwon, South Korea, 3Department of Physiology, Sungkyunkwan University, Suwon, South Korea, 4Samsung Biomedical Research Institute, Samsung Medical Center, Seoul, South Korea

BS8/P1573 Testing the function of a VIP family inositol polyphosphate kinase in Chlamydomonas metabolic signaling through the TOR kinase pathway. Z. Perrine1, Y. Liu1, J.G. Umen1; 1Donald Danforth Plant Science Center, St. Louis, MO

BS8/P1574 Induction of TRAF2-mediated DUSP14/MKP6 ubiquitination by PRMT5-mediated arginine methylation. T. Tan1; 1Immunoology Research Centre, National Health Research Institutes, Zhunan, Taiwan

BS8/P1575 WNks are osmosensors. M.Z. Durbacz1, K. Sękulski1, A. Jercewicz1, J. Katzmann1, T. Ukai1; 1Program for Developmental Neuroscience, 2Division of Child Health and Human Development, 3Department of Biochemistry and Molecular Biology, University of Sao Paulo, Sao Paulo, Brazil, 2Universidade Federal de São Carlos, São Carlos, Brazil, 3Innovation, National Center for Advancing Translational Sciences, Rockville, MD

BS9/P1576 Optimizing immunohistochemical procedures for identifying FoxL1+ telocytes in the intestinal mesenchyme. C. Zhang1, A. Swisa1, H. Kolev1, A. Kondo1, K.H. Kaestner2; 1Department of Biology, Millsaps College, Jackson, MS, 2Department of Genetics and Center for Molecular Studies in Digestive and Liver Diseases, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

BS9/P1578 The cardioprotective effects of mesenchymal stem cell-derived exosomes after acute myocardial infarction. N. Oliveria1, C. Zogbi2, E. Neri1, M. Bozoklian1, E. Antonio1, P. Tucci1, J. Krieger2; 1University of Sao Paulo, Sao Paulo, Brazil, 2UNIFESP, Sao Paulo, Brazil

BS9/P1579 Exosomes-derived immunomodulation of macrophages recapitulates pro-regenerative effects on cardiac cells. C. Zogbi, N. Oliveria1, J. Krieger2; 1University of Sao Paulo, Sao Paulo, Brazil

BS9/P1580 Proteomic characterization of extracellular vesicles from mouse hepatic stellate cells during fibrogenic activation. R. Chen1, X. Li1, S. Kemper1, D.R. Briggstock2,3; 1Center for Clinical and Translational Research, Nationwide Children’s Hospital, Columbus, OH, 2Department of Surgery, The Ohio State University, Columbus, OH

BS9/P1581 Extracellular Vesicles Release from Fat-Laden Hepatocytes activates Kupffer Cells through MR activation. D. Cabrera1, J. Leon1, M. Freire1, A. Hernandez2, N. Solis1, J.P. Arab1, F. Barrera1, H. Moshage2, M. Arrese1; 1Department of Gastroenterology, Pontificia Universidad Católica de Chile, Santiago, Chile, 2Department de Ciencias Químicas y Biológicas, Universidad Bernardo O Higgins, Santiago, Chile, 3Department of Gastroenterology and Hepatology, University Medical Center Groningen, Groningen, Netherlands

BS9/P1582 Absolute quantification demonstrates that exosomes can be highly efficient delivery vehicles for RNA in vitro and in vivo. R. Reshke1, J.A. Taylor1,2, A. Savard1,2, M. Trung1,2, C. Campbell1,2, D. Gibbings1,2; 1Cellular and Molecular Medicine, University of Ottawa, Ottawa, ON, 2Centre for Neuromuscular Disease, University of Ottawa, Ottawa, ON

Cytoskeleton-Membrane Interactions

B605/P1591 Coordinated activities of Talin and Vinculin target actin networks to membranes in vitro. C. Kelley1, D. Dedden2, S. Schumacher1, T. Litschel1, N. Mizuno1, 2Structural Cell Biology, Max Planck Institute of Biochemistry, Martinsried, Germany

B606/P1592 Mechanical coupling of B2 integrins to the actin cytoskeleton by a mechano-sensitive molecular clutch drives complement-mediated phagocytosis. V. Jaumouillé1, A.X. Cartagena-Rivera1, R.S. Chadwick2, C.M. Waterman3; 1National Heart, Lung and Blood Institute, National Institutes of Health, Bethesda, MD, 2National Institute of Deafness and Other Communication Disorders, National Institutes of Health, Bethesda, MD
B617/P1603 PRKCH in cell migration: molecular mechanism and functional significance. H. Lin1, C. Tsai2, F. Tsai3,4; 1Graduate Institute of Immunology, College of Medicine, National Taiwan University, Taipei, Taiwan, 2, 4Graduate Institute of Integrative Sleep Medicine, University of Tsukuba, Tsukuba, Japan, 3Department of pharmacology, College of Medicine, National Taiwan University, Taipei, Taiwan, 5Department of Internal Medicine, National Taiwan University Hospital, Taipei, Taiwan

B618/P1604 Cytoskeletal dynamics of rapid morphological changes in Lycmrcyma alorb. E.M. Flaim1,2, S.M. Coyle1,2, B. Benson1,2, D. Krishnamurthy1,2, M. Prakash1,2,5, 2Graduate Program in Biophysics, Stanford University, Stanford, CA, 3Bioengineering, Stanford University, Stanford, CA, 4Applied Physics, Stanford University, Stanford, CA, 5Mechanical Engineering, Stanford University, Stanford, CA, 6Faculty Scholar, Howard Hughes Medical Institute, Stanford, CA, 7Investigator, Chan Zuckerberg Biohub, Stanford, CA

B619/P1605 Identifying a role for LIM domain proteins in apical constriction. M.M. Slabodnick1, S.C. Tintori1, A. Chen1, T. Cupp1, B. Goldstein1; 1Bioengineering, University of North Carolina at Chapel Hill, Chapel Hill, NC

B620/P1606 Effects of mechanical pressure on Schizosaccharomyces pombe. J. Lemiére1, M. Delarue1, F. Chagné1, 1Department of Cell Tissue Biology, UCSF, San Francisco, CA, 2Laboratoire d’Analyse et d’Architecture des Systemes, CNRS, Toulouse, France

B621/P1607 Enhancement of cell stiffness and disorganization of cytoskeletal architecture upon cisplatin treatment in head and neck cancer cell model. J. Guumel1, M. Raudenska1, 1, 2; 1Dept. of Pathological Physiology, Masaryk university, Faculty of Medicine, Brno, Czech Republic, 2Central European Institute of Technology, Brno University of Technology, Brno Czech Republic, 3Central European Institute of Technology, Masaryk university, Brno, Czech Republic

B622/P1608 Investigating roles of Obs11 for skeletal muscles and 3M-growth syndrome. J. Blondelle1, V. Marrococo1, M.C. Clark2, P.F. Desmond1, S. Myers1, J. Nguyeni1, M. Wright1, S.N. Brenner1, E. Fierantoszzi1, V. Sorrentino1, S. Ward1, M. Ghassemian1, S. Langel1; 1Division of Cardiology, University of California, San Diego, La Jolla, CA, 2Department of Orthopedic Surgery, University of California, San Diego, La Jolla, CA, 3Department of Molecular and Developmental Medicine, University of Siena, Siena, Italy, 4Department of Chemistry and Biochemistry, University of California, San Diego, La Jolla, CA

B623/P1609 Ultra-structural Modifications of the Mouse Uterus Following Tyramine Treatment. B. Obayomi1, S.M. Peck2, S. Henson1, D.P. Baluch1; 1School of Life Sciences, Arizona State University, Tempe, AZ

B624/P1610 Septin family proteins coordinate collective border cell migration. J.A. Mondo1, A. Gabbert1, J.P. Campanale1, D.J. Montelli1; 1Molecular Cellular and Developmental Biology, University of California Santa Barbara, Santa Barbara, CA

B625/P1611 Dramatic shape change of motile zebrafish keratocytes induced by compression. E.C. Norby1, A.S. Kennard1, J.A. Theriot1; 1Biophysics Program, Stanford University, Stanford, CA, 2Department of Biology, University of Washington, Seattle, WA

B626/P1612 Novel Tetraphymena Cytoskeletal Proteins Form Liquid Droplets and Hydrogels In Vivo and In Vitro. J.E. Honts2, 1Biology, Drake University, Des Moines, IA

B627/P1613 Dynamic hand in hand interaction between actin and spectrin during mammalian cell mehanoadaptation. A. Ghisleni1, C. Galli1, P. Monzo1, Q. Li1, G. Scita1, P. Mairi1, N.C. Gauthier1; 1IFOM Institute FIRC Molecular Oncology, Milano, Italy

B628/P1614 A novel role for very long chain fatty acids in immune cell phagocytosis. R.D. Labagita1,2, D. Vorselen1,2, J.A. Theriot1,2; 1Department of Biochemistry, Stanford University, Stanford, CA, 2Department of Biology, University of Washington, Seattle, WA

B629/P1615 Septin filament assembly regulation. B. Woods1, A.S. Gladfelter1, K. Cannon1; 1Biology, University of North Carolina, Chapel Hill, NC

Chemotaxis and Directed Cell Migration

B630/P1616 Stochastic Dynamics of Confined Cell Migration. D.B. Brückner1,2, A. Fink1,2, C. Schreiber1,2, J.O. Rädder1,2, C.P. Broeders2,3; 1Faculty of Physics, Ludwig-Maximilians-University, Munich, Germany, 2Center of NanoScience, Ludwig-Maximilians-University, Munich, Germany, 3Arnold-Sommerfeld-Center for Theoretical Physics, Ludwig-Maximilians-University, Munich, Germany

B631/P1617 Contact guidance is cell cycle-dependent. K. Esposit1,2, A. Sirghi1, E. Cardenas De La Hoz1, A.R. Cohen1, B. Gligorijevic1,2; 3Bioengineering Department, Temple University, Philadelphia, PA, 2Department of Electrical and Computer Engineering, Drexel University, Philadelphia, PA, 3Cancer Biology Program, Fox Chase Cancer Center, Philadelphia, PA

B632/P1618 Macropinocytosis overcomes directional bias due to hydraulic resistance to enhance space exploration by dendritic cells. H.D. Moreau1,2, C. Blanch-Mercader1, R. Attia1,2, M. Maurin1, Z. Alaie1, D. Sanséau1, D. Malbec1, M. Delgado1, P. Bouso1, J. Joanny1,2,4, M. Bednarska1, A. Pouzot2, V. Desmond1, S. Myers1, J. Nguyen1, M. Wright1, S.N. Brenner1, E. Fierantoszzi1, V. Sorrentino1, S. Ward1, M. Ghassemian1, S. Langel1; 1Division of Cardiology, University of California, San Diego, La Jolla, CA, 2Department of Orthopedic Surgery, University of California, San Diego, La Jolla, CA, 3Department of Molecular and Developmental Medicine, University of Siena, Siena, Italy, 4Department of Chemistry and Biochemistry, University of California, San Diego, La Jolla, CA
Cell-Cell Junctions 1

B643/P1628 SGEF, a RhôG GEF, forms a ternary complex with Scribble and DiG1 and regulates junctional architectural and apical contractility in epithelial cells. S. Awadia1, F. Hsu1, T.R. Arnold2, S.M. Goicoechea3, T. Hou1, Y. Sun1, G. Kreider-Letterman1, P. Massimi1, L. Banks4, E. Fuentes1, A.L. Miller1, R. Garcia-Mata1; 1Biological Sciences, University of Toledo, Toledo, OH, 2Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI, 3Biochemistry, University of Iowa, Iowa City, IA, 4ICGEB, Trieste, Italy

B644/P1629 Transcriptional and post-transcriptional mechanisms are involved in junctional tissue disruption by Enteropathogenic E. coli effectors EspF and Map. S. Ajaz1; 1Centre for Molecular Medicine, Jawaharlal Nehru University, New Delhi, India

B645/P1630 Scaffolding of the RhôGef Ect2 by Desmoplakin at cell junctions regulates junctional RhôA and actomyosin contractility. H. Zarkoo1, C.Y. Bacallao1, B. Humbel2; 1Biomedical Sciences, NYIT College of Osteopathic Medicine, Old Westbury, NY, 2Department of Biology, Stanford University, Stanford, CA, 3Department of Cell Biology, The Rockefeller University, New York, NY

B646/P1631 Lack of correlation between paracellular permeability to large solutes and occludin protein mobility in renal epithelia. K. Amsler1, J.A. Theriot1; 1Biophysics Program, Stanford University, Stanford, CA, 2Biology, University of Washington, Seattle, WA

B647/P1632 Asymmetric biogenesis of occluding junctions drives integration of stem cell progeny during epithelial turnover. P. Moreno-Roman1, I. Kolotueva1, B. Humbel1, L.E. O’Brien1; 1Department of Biology, Stanford University, Stanford, CA, 2Electron Microscopy Facility, Université de Lausanne, Lausanne, Switzerland, 3Department of Molecular and Cellular Physiology, Stanford University, Stanford, CA

B648/P1633 Non-Coding Genomic Regulation Identified in Cardiomyocytes. A. Kumar1, S. Thomas1, K. Wong1, V. Lo Sardo1, D. Cheah1, Y. Hou1, J.K. Placone1, K. Tenerelli1, W. Ferguson1, T. Ali2, E.J. Topol1, K.K. Baldwin1, A.J. Engler1, 2Boeing Engineering, University of California, San Diego, Los Angeles, CA, 3Department of Developmental Biology, Kimmel Center for Science and Technology, Philadelphia, PA

B649/P1634 mir-195 Regulates the cross-talk between Astrocyte and Endothelial Cells to Affect Blood Brain Barrier (BBB) Function. S.H. Joo1, C. Chen1, J. Yang1, Y. Chao1, JY. Chan1; 1Institute of New Drug Development, China Medical University, Taichung, Taiwan, 2Genome Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan, 3Translational Research Center, Chang Gung Hospital, Kaohsiung, Taiwan
B667/P1652 Role of Celsr1 extracellular adhesive interactions in coordinating planar cell polarity. S.N. Stahley1, D. Devenport1; 1Molecular Biology, Princeton University, Princeton, NJ

B668/P1653 The homophilic mechanism of trans adhesion by Protecadherin-24 varies among species. M.E. Gray1, Z.R. Johnson1, M. Sotomayor1; 1Chemistry and Biochemistry, The Ohio State University, Columbus, OH, 2Joan Edwards School of Medicine, Marshall University, Huntington, WV

B669/P1654 Molecular structure of Cadherin-23 mediated strong cell-cell adhesion. G.S. Singaraju1, S. Rakshit1, F. Ashish; 1Dept. of Chemical Sciences, Indian Institute of Science Education Research, Mohali, Mohali, India, 2Protein Science and Engineering Division, Institute of Microbial Technology, Chandigarh, India

B670/P1655 Meaningful connections: CAF-mediated homotypic cell-cell interactions in pancreatic cancer. J.C. Gardiner1, R. Francescon1, E. Cukierman1; 1Cancer Biology, Fox Chase Cancer Center, Philadelphia, PA

B671/P1656 Non-coding Genomic Variants Induce Functional Deficits in iPSC-derived Endothelial Cells. E.L. Teng1, J.K. Placone1, P. Beri1, B. Ng2, J. Fung3, K.K. Baldwin4, A.J. Engler1,2; 1Bioengineering, University of California, San Diego, La Jolla, CA, 2Biochemistry, University of California, San Diego, La Jolla, CA, 3Biological Sciences, University of California, San Diego, La Jolla, CA, 4Cell and Molecular Neuroscience, The Scripps Research Institute, La Jolla, CA, 5Scripps Research Institute, La Jolla, CA

B672/P1657 Progesterone and protease ADAMTS 1 regulating tumor cells migration and invasion. M.A. Lima1, S.V. Silva1, V.M. Freitas1; 1Department of Cell and Developmental Biology, ICB-USP, Sao Paulo, Brazil

B673/P1658 Evolutionary rate covariation analysis of the adherens junction in Dro sophila identifies Raskol as a regulator of cell adhesion and actin dynamics. Q.S. Raza1, J.Y. Choi2, Y. Li3, R.M. Owod1, S.C. Watkins1, Y. Hong1, N.L. Clark1, A.V. Kwiatkowski1; 1Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA, 2Biological Science, University of Pittsburgh School of Medicine, Pittsburgh, PA, 3BioEngineering, University of Pittsburgh School of Medicine, Pittsburgh, PA, 4School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, 5Department of Radiation Oncology, Stanford University, Stanford, CA, 6Department of Clinical Pathology, Stanford University, Stanford, CA, 7Department of Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY

B674/P1659 Ubiquitination of clustered protocadherins occurs within the variable cytoplasmic domain and is associated with intracellular trafficking. A. Ptashnik1, A. Plakshnik1, E. Schnall1, A. Mambetalieva1, Y. Nie1, S. Maisano1, S. Shapiro1, N. Lamassa1, G.R. Phillips1,2,4; 1Biology, CUNY College of Staten Island, Staten Island, NY, 2PhD Program in Biology, CUNY Graduate Center, New York, NY, 3Center for Developmental Neuroscience, CUNY College of Staten Island, Staten Island, NY, 4PhD Program in Neuroscience, CUNY Graduate Center, New York, NY

B675/P1660 Quantitative proximity proteomics defines the N-cadherin interactome in primary cardiomyocytes. Y. Li1, C.D. Merkel1, X. Zeng1, J.A. Heier1, P.S. Cantrell1, M. Sun1, D.B. Stolz1, S.C. Watkins1, N.A. Yates1, A.V. Kwiatkowski1; 1Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

B676/P1661 The N-terminus and M-region of alpha-T-catenin function together to regulate vinculin binding. J.A. Heier1, S. Pokuatta2, W.I. Weis2, A.V. Kwiatkowski1; 1Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA, 2Structural Biology, Stanford University School of Medicine, Stanford, CA
B689/P1676 Cold induced EB50 phosphorylation by PKC epsilon protects cells from apoptosis. P. Chang1, T. Jou2; 1Graduate Institute of clinical medicine, National Taiwan University, Taipei, Taiwan

B692/P1676 Glial Calcium Responses to Nearby Cell Death. V. Gomez-Godinez1, H. Li1, B. Liu1, L. Shi1, C. Wu1, M. Berns1; 1Institute of Engineering in Medicine, University of California San Diego, San Diego, CA, 2Neurosciences, University of California San Diego, San Diego, CA

B694/P1678 Regulation of NMDA-induced excitotoxicity by MST1 in primary cortical neurons. J. Lim1, R. Lee1, Y. Kim1, I. Lee1, E. Choi1; 1Department of Life Sciences, Korea University, Seoul, South Korea

B695/P1679 Lung endothelial cells isolated from male and female mice retain gender difference in response to stress. M. Zemskova1, S. Kurdyukov1, R. Rafikova1, O. Rafikova1; 1Medicine, University of Arizona, Tucson, AZ

B696/P1680 Mitochondria-resident non-releasable AIF mutant may regulate gene expressions related to cell death differentiation and proliferation. K. Kondo1, R. Kato1, K. Sakata1, K. Nakamura1; 1Biochemistry, National Institute of Health Sciences, Kawasaki, Japan

B697/P1681 Survival of apoptotic caspase activation in response to stress. G. Sun1, Y. Argaw1, D.J. Montell1; 1Molecular, Cellular and Developmental Biology, University of California Santa Barbara, Santa Barbara, CA

B698/P1682 Changes in extracellular osmolarity induces a transient stress response that protects the kidney against chemotherapy-induced damage. M.H. Hanigan1,2; 1Department of Cell Biology, University of Oklahoma Health Sciences Center, Oklahoma City, OK, 2Stephenson Cancer Center, University of Oklahoma Health Sciences Center, Oklahoma City, OK

B699/P1683 Study on gravity-dependent skeletal muscle maintenance mechanisms using Zebrafish, aquatic organisms. F. Sato1, M. Choi1, Z. Wang1, K. Imamura2, T. Horiiuchi1, W. Quan1, I. Fujita1, S. Uchida1, M. Kato1, F. Tanigaki1, A. Higashibata1, M. Muratani1, J. Kobayashi1, A. Takahashi1, S. Sugano1, F. Matsuzaki1, Y. Suzuki1, K. Kawakami1, A. Sehara-Fujisawa1; 1IFLMS, Kyoto University, Kyoto, Japan, 2Biorheology Center, University of Tokyo, Tokyo, Japan, 3Department of Biochemistry, University of Tokyo, Tokyo, Japan, 4Department of Cell Biology, University of Tokyo, Tokyo, Japan, 5Department of Medical Science, University of Tokyo, Tokyo, Japan, 6Department of Pharmacology, University of Tokyo, Tokyo, Japan

B700/P1684 Anastasia: Reversal of Cell Death Process. H. Tang1, H. Tang1; 1IBBS, Johns Hopkins University School of Medicine, Baltimore, MD, 2Neurosurgery, Johns Hopkins University School of Medicine, Baltimore, MD

B701/P1685 Stress signaling activation following ultrasound microbubble treatment impacts cancer cell viability. L. Lo1, C.N. Antonescu1, R.J. Botelho1, R. Karshafian1; 1chemistry and biology, ryersun university, toronto, ON

B702/P1686 Responses of molluscan cells to ultra-low temperature exposure. Y. Kipryushina1,2, N. Odintsova1,2, M. Maiorova1,2, K. Yakovlev1, A. Boroda2; 1Far Eastern Federal University, Vladivostok, Russia, 2National Scientific Center of Marine Biology, Far Eastern Branch of the RAS, Vladivostok, Russia

B703/P1687 Uncovering the cross-talk between the UPS and the innate immune pathways in response to double-stranded RNAs. N.L. Munizguren1, D. Acosta-Alavez2; 1Molecular, Cellular and Developmental Biology, University of California Santa Barbara, Santa Barbara, CA

B704/P1688 Characterization of the role of the nascent polypeptide-associated complex during misfolded protein stress in C. elegans. R. Ihsan1, M. Gerber1, K. Cicalesi1, T. Bless1; 1Biology, James Madison University, Harrisonburg, VA

B705/P1689 Inhibition of Bcl-2 Family Proteins Sensitizes Metaphase-arrested Hela S3 Cells to Apoptosis Induced by Mild Hyperthermia. J.R. Paulson1, S. Suydam1, R. Luedtke1, K. Paszczak1; 1Chemistry, University of Wisconsin Oshkosh, Oshkosh, WI

B706/P1690 Connexin 43 Affects Early Embryonic Developmental Competence in Pig. K. Shin1, Y. Niu1, W. Zhou1, Z. Nie1, X. Cui1; 1Animal Science, Chungbuk National University, Cheongju, South Korea

Ubiquitin and Proteasome Function

B707/P1691 Expression and protein localization of ERAD pathway targets and enzymes in C. elegans. R.L. Uhrich1, D. Hassell1, L.L. Dahlberg1; 1Biology, Western Washington University, Bellingham, WA

B708/P1692 Shutdown of ER-associated degradation pathway rescues functions of mutant iduronate 2-sulfatase linked to mucopolysaccharidosis type II. Y. Osaki1, A. Saito1, T. Masaki1, K. Orii1, T. Fukao1, S. Tomatsu1,2,3,4,5,6; 1Department of Biochemistry, Hiroshima University, Hiroshima, Japan, 2Department of Stress Physiology, Hiroshima University, Hiroshima, Japan, 3Department of Nephrology, Hiroshima University Hospital, Hiroshima, Japan, 4Department of Pediatrics, Gifu University, Gifu, Japan, 5Department of Biological Sciences, University of Delaware, Newark, DE, 6Pediatrics, Nemours/Alden J. duPont Hospital for Children, Wilmington, DE

B709/P1693 Molecular and behavioral effects in C. elegans ERAD loss-of-function mutants. A.M. Rupert1,2, M.S. Chapman1, L.L. Dahlberg1; 1Biology Department, Western Washington University, Bellingham, WA

B710/P1694 Ribosome assembly stress elicits an adaptive proteostatic response. B.W. Tye1,2, N. Commins3, M. Springer1, D. Pincus1, S. Churchman1; 1Program in Chemical Biology, Harvard University, Cambridge, MA, 2Genetics, Harvard Medical School, Boston, MA, 3Systems Biology, Harvard Medical School, Boston, MA, 4Whitehead Institute, Cambridge, MA
Synthetic Chemical Biology and Chemical Biology

B720/P1703 Synthetic condensed-phase signaling, D. Sang1, A. Rice2, M.K. Rosen2, L.J. Holt1; 1Institute for Systems Genetics, New York University, New York, NY, 2Department of Biophysics, University of Texas Southwestern, Dallas, TX

B721/P1704 A Fantastic Voyage Into the Cell: Probing the Rheological Properties of the Cell with Genetically Encoded Multimeric (GEM) Nanoparticles. G.P. Brittingham1, M. Dehlau1, S. Pilling1, S. Pfeffer1, J.V. Surortseys2, B. Engle1, L.J. Holt1; 1Institute for Systems Genetics, New York University Langone Health, New York, NY, 2Department of Molecular and Structural Biology, Max Planck Institute of Biochemistry, Martinsried, Germany, 3Department of Molecular, Cellular, and Developmental Biology, Yale University, New Haven, CT

B722/P1705 The Effect of Oxygen on the Efficacy of Ascorbic acid (AA) as an Antioxidant. C.I. Falzone1, C.F. Saladino2; 2Chemistry/Biochemistry, Misericordia University, Dallas, PA

B723/P1706 The Effect of Oxygen on the Efficacy of NADPH as an Antioxidant. C.F. Saladino1; 2Chemistry/Biochemistry, Misericordia University, Dallas, PA

B724/P1707 Exposure of human immune cells to Triclosan alters synthesis of IFNv. F.A. Ismail1, M.M. Whalen1, W.J. Wilburn1; 2Chemistry, Tennessee State University, Nashville, TN

B725/P1708 Triclosan alters the ability of human immune cells to synthesize TNF alpha. S.Z. Jamal1, M.M. Whalen1, W.J. Wilburn1; 2Chemistry, Tennessee State University, Nashville, TN

B726/P1709 Signaling Pathways Involved in Pentachlorophenol Induced Elevations of Interleukin-6 Synthesis. S. Gabure1, M.M. Whalen1, T. Martin1; 2Chemistry, Tennessee State University, Nashville, TN

B727/P1710 Sulframethoxazole retards growth and reproduction in Caenorhabditis elegans by inhibiting folate biosynthesis. H.E. Vidana Gamage1, J.M. Derham1, G.R. Periyannan1, B.P. Nathan1; 2Department of Biological Sciences, Eastern Illinois University, Charleston, IL, 3Department of Chemistry and Biochemistry, Eastern Illinois University, Charleston, IL

B728/P1711 Mapping the impulse-response function in living, primary T cells. S.T. Lownam1, J.J. Lin1, D.B. McAffee2, S. Alvarez2, S.D. Hansen1, J.T. Groves1; 2Chemistry, University of California, Berkeley, CA, 3Materials Science and Engineering, University of California, Berkeley, CA, 4Chemistry and Biochemistry, University of Oregon, Eugene, OR

B729/P1712 Modifying Bean Lectin to Improve Digestibility. J. Hernandez2, S. So1, M.B. Zavala1; 1Biological, California State University, Northridge, Northridge, CA

B730/P1713 Site Specific Labeling ofJC Polyomavirus Capsid Protein Using n-Clamp Mediated Conjugation. F. Voorhees1, J.A. Baccile1, A. Chillo1, H. Morgenstern1, F.M. Rossi1, C.D. Nelson1; 2Department of Biological Sciences, SUNY Cortland, Cortland, NY

B731/P1714 Hyperoxia-induced accumulation of angiostatic metabolite in the retina of newborn mice. G. Hoppe1, C. Singh1, A. Sharma1, W. Song1, Y. Bolok1, J.E. Sears1; 2Cole Eye Institute, Cleveland Clinic, Cleveland, OH

B732/P1715 Alpha1-antiypsin C-terminal peptide instantly stimulates hepatocyte metabolism. A.A. Maslakova1, S.A. Golyshhev2, M.A. Rubtsov3, O.V. Smirnova1, I.V. Orlovsky1; 2Department of Human and Animal Physiology, Faculty of Biology, M.V. Lomonosov Moscow State University, Moscow, Russia, 3A.N. Belozersky institute of Physical and Chemical biology, M.V. Lomonosov Moscow State University, Moscow, Russia, 4Department of Molecular Biology, Faculty of Biology, M.V. Lomonosov Moscow State University, Moscow, Russia, 5Department of Biochemistry/Institute of Translational Medicine and Biotechnology, I.M. Sechenov First Moscow State Medical University (Sechenov University), Moscow, Russia

B733/P1716 Multiplex imaging of activity-dependent changes in neuronal redox dynamics using compartment specific redox probes. S. Radhakrishnan1,2, J. Norley3, S. Norcross1, K. Trull1, M. Tantama2; 2Purdue Institute for Integrative Neuroscience, West Lafayette, IN, 3Department of Chemistry, Purdue University, West Lafayette, IN

B734/P1717 The C43W germline variant in human POLH fails to rescue cytotoxicity from UV irradiation and cisplatin in human embryonic kidney cells. J. Hong1; 2Molecular Cell Biology, Sungkyunkwan University School of Medicine, Suwon, South Korea

B735/P1718 Structure investigations of PG-4 by High Resolution NMR spectroscopy. O. Kolosova2, K. Usachev2, E. Kloxchokova2, V. Kloxkov1; 1Laboratory of Structural Biology, Institute of Fundamental Medicine and Biology, Kazan Federal University, Kazan, Russia, 2NMR Laboratory, Medical Physics Department, Kazan Federal University, Kazan, Russia

B736/P1719 Biophysical studies of molecular control in mouse oocytes and embryos. X. Yang1, T. Sanchez1, M. Venturas1, D.J. Needleman1; 2Molecular and Cellular Biology, Harvard University, Cambridge, MA

B737/P1720 Measuring protein phase equilibria in situ via quantitative phase microscopy. P.M. McCauley2,3, K. Kim1, J. Wang1, A. Pozynokovsky1, B. Diederich1, A.W. Eichler1,2,1, M. Kreyzing1, R. Heintzmann1, J. Heintzmann1, L. Lüthi1, S. Alberti1, J. Guck1; 2Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, 3Center for Systems Biology Dresden, Germany, 4Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, 5Biotechnology Center, Technische Universität Dresden, Dresden, Germany, 6Leibniz Institute of Photonic Technology, Jena, Germany, 7Institute of Physical Chemistry and Abbe Center of Photonics, Friedrich-Schiller-University Jena, Jena, Germany
Epithelia and Tissue Mechanics in Development

B731/P1730 Diffusion of DNA-binding species in the nucleus: the final transient anomalous subdiffusion model. M.J. Saxton 1; 2Biochemistry & Mol Med, University of California, Davis, CA

B741/P1723 The Cupin1 domain of plant seed storage proteins possesses amyloid-forming properties. M.V. Belousov1,2, M.E. Belousova2, O.Y. Shirk2, A.O. Kosolapova2, A.A. Nizhnikov1, J.S. Antonets1,2; 2Department of Genetics and Biotechnology, Saint Petersburg State University, Saint Petersburg, Russia, 1Laboratory for Proteomics of Supra-Organismal Systems, All-Russia Research Institute for Agricultural Microbiology, Saint Petersburg, Russia

B750/P1733 Topological changes of lipids during reversed emulsification induced by antimicrobial agents. D. Drabik1, A. Kaczorowska1, S. Kruszewski2; 2Department of Biomedical Engineering, Faculty of Fundamental Problems of Technology, Wroclaw University of Science and Technology, Wroclaw, Poland

B751/P1734 Modeling the effects of ligand binding on the phase behavior of aggregation-prone proteins. K. M. Ruff1, A. E. Posey1, R.V. Pappu1; 1Department of Biomedical Engineering, Washington University in St. Louis, St. Louis, MO

B752/P1735 Relative contributions of Calcium dependent ACs and PDEs drive the phase of Cyclic AMP and Ca2+ in -Cells. B. Tenner1,2, M. Getz1, D. Ohadi1, P. Rangamani1, J. Zhang1,4,7; 7Pharmacology, UCSD, La Jolla, CA, 1Biochemistry and Biophysical Chemistry, Johns Hopkins University School of Medicine, Baltimore, MD, 2Chemical Engineering, UCSD, La Jolla, CA, 3Mechanical and Aerospace Engineering, UCSD, La Jolla, CA, 4Bioengineering, UCSD, La Jolla, CA, 5Chemistry and Biochemistry, UCSD, La Jolla, CA, 6Moore Cancer Center, UCSD, La Jolla, CA

B753/P1736 The Signaling Pathways Project: an integrated omics knowledgebase for mammalian cellular signaling pathways. N.I. McKenna1, S.A. Ochsner1; 1Department of Molecular and Cellular Biology, Bayelor College of Medicine, Houston, TX

B754/P1737 A Saddle Point Formation during Zebrafish Gastrulation Describes the Morphogenetic Flow of Convergence and Extension and Emergence of Left-Right Chirality. J. Zhong1,2, P.T. Matsudaira1,2, A. Kabla1, D. Bhattacharya2, S. Tavakoli2; 2Department of Biological Science, National University of Singapore, Singapore, Singapore, 3Center for Bioimaging Sciences, National University of Singapore, Singapore, Singapore, 4Graduate Program in Computational and Systems Biology, National University of Singapore, Singapore, Singapore

B765/P1738 Mechanical coordinates: designing geometrical microenvironments for the control mechanical waves in model tissues. V. Petrolli1, O. Mandula1, L. Herve1, C. Allier1, P. Moreau1, M. Ballard1, G. Cappello1; 2Physics, Laboratory of Interdisciplinary Physics (CNRS), Grenoble, France, 3IETI, CEA, Grenoble, France

B775/P1739 The role of p38 in embryonic wound repair. G. Scepanovic1,2, R. Fernandez-Gonzalez2,3,4; 1Cell and Systems Biology, University of Toronto, Toronto, ON, 2Ted Rogers Centre for Heart Research, Toronto, ON, 3The Hospital for Sick Children, Toronto, ON, 4Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON

B778/P1740 Distinct modes of cell competition shape tissue morphology and function in mammalian skin. S. Ellis1, J. Levorse1, E. Frech2; 2Laboratory of Mammalian Cell Biology and Development, The Rockefeller University, New York, NY

B759/P1741 Topological transitions of epithelial surfaces. K. Ishihara1,2, E. Gromberg3, M.N. Shabsazi1, M. Zernicka-Goetz1, J. Brugués1,2, F. Jülicher1, E.M. Tanaka1; 1Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany, 2Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, 3Center for Systems Biology Dresden, Dresden, Germany, 4Research Institute of Molecular Pathology, Vienna, Austria, 5University of Cambridge, Cambridge, United Kingdom

B760/P1742 A geometry-based model is sufficient to describe lumen stability in epithelial cells. C.G. Vasquez1, V. Vachharajani2, A.R. Dunn1,2; 1Chemical Engineering, Stanford University, Stanford, CA, 2Biophysics, Stanford University, Stanford, CA

B761/P1743 A cytohesin Arf-GEF (Steppe) promotes actin protrusions for tissue morphogenesis in vivo. J.J. West1, T. Harris1; 1Cell and Systems Biology, University of Toronto, Toronto, ON

B762/P1744 Oscillatory myosin polarity and cell migration during Drosophila cardiac morphogenesis. N. Balagh1,2,3, R. Fernandez-Gonzalez2,3,4,5; 1Engineering Science, University of Toronto, Toronto, ON, 2Translational Biology and Engineering Program, University of Toronto, Toronto, ON, 3Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, 4Cell and Systems Biology, University of Toronto, Toronto, ON, 5Developmental and Stem Cell Biology, Hospital for Sick Children, Toronto, ON
Endoderm, Muscle and Neural Development

B775/P1757 nox2/cybb is required for proper axonal pathfinding in developing zebrafish nervous system. A. Terzi1, C.J. Weaver1, H. Roeder1, T.M. Gurrol1, Q. Deng1, Y. Leung1, D.M. Suter1; 1Biological Sciences, University of Denver, Denver, CO, 2Department of Biological Sciences, University of Denver, Denver, CO

B776/P1758 The Ferlin Protein Fer1L6 is Essential for the Development of Vertebrate Muscle Tissue. C.P. Johnson1, J. Bonventre1, C. Wolke1, S. Coddig1; 1Biochemistry, Oregon State University, Corvallis, OR

B777/P1759 Uncovering novel roles for Abnormal Spindle in brain development and tissue morphogenesis using high resolution micro computed tomography. T. Schoborg1, S. Smith1, C.J. Fagerstrom1, N.M. Rusani1; 1Cell and Developmental Biology Center, National Institutes of Health, National Heart, Lung and Blood Institute, Bethesda, MD

B778/P1760 An in vitro functional assay to predict and study in vivo skeletal muscle stem cell engraftment outcomes. b. Xu1,2, S. Davoudi1,2, M. Ebrahimi1,2, J. Cadavid1; 1Developmental Biology, Sloan Kettering Institute, New York, NY, 2Department of Pediatrics, University of Michigan, Ann Arbor, MI, 3Department of Pediatrics, University of California, San Francisco, San Francisco, CA

B779/P1761 Hepatocytes in a normal adult liver are derived solely from the embryonic hepatocytes. C. Gao1, W. Huang1; 1College of Animal Science, Zhejiang University, Hangzhou, China

B780/P1762 The essential roles of seipin 7 during mammalian pancreas organogenesis. I.A. Ortiz1,2, H. Shih1; 1Department of Translational Research and Cellular Therapeutics, Beckman Research Institute of the City of Hope Comprehensive Cancer Center, Duarte, CA, 2Irel and Manella Graduate School of Biomedical Sciences, Beckman Research Institute of the City of Hope Comprehensive Cancer Center, Duarte, CA

B781/P1763 Mechanism sharing between genetic and gestational hypoxia-induced cardiac anomalies. H. Kasahara1, O. Moumne1, R. Chowdhury1, C. Doll1, N. Pereira1, M. Hashimi1; 1T. Grindrod1, J. Dollar1; 1Department of Biology, Johns Hopkins University, Baltimore, MD, 2Department of Cell Dynamics, Johns Hopkins University, Baltimore, MD
Cell Division and Gene Expression in Development

B796/P1778 Cellular shape sensing mechanism regulates transition from two-dimensional to three-dimensional embryo expansion in zebrafish. L.I. Rathburn1, X. Bai2, J.N. Bembenek1, J. Amack3, H.A. Hehnly4; 1Biology, Syracuse University, Syracuse, NY, 2Biochemistry Cellular and Molecular Biology, University of Tennessee, Knoxville, TN, 3Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY

B797/P1779 Interaction between Bms1 and Rcl1, two ribosome biogenesis factors, is evolutionarily conserved in zebrasfish and human. Y. Wang1, Z. Zhu2, L. Huang3, Y. Zhu; 1College of Animal Sciences, Zhejiang University, Hangzhou, China

B798/P1780 Differentially-dimensioned furrow formation by zygotic gene expression and the MBT. Y. Xie1; 1Department of Neuroscience, University of Denver, Denver, CO

B799/P1781 Spatiotemporal Patterning of Zygotic Genome Activation in Vertebrate Embryogenesis. H. Chen1; 1, L.I. Rathbun2, 2, K.J. Wahlin3, 4, K.E. Hunsicker5; 1Department of Developmental Biology, SUNY Upstate Medical University, Syracuse, NY, 2Department of Neurobiology, Duke University Medical Center, Durham, NC, 3Department of Neurobiology, Duke University Medical Center, Durham, NC, 4Department of Cell and Developmental Biology, Duke University Medical Center, Durham, NC, 5Department of Neuroscience, Columbia University Medical Center, New-York, NY, 6Department of Cell and Developmental Biology, Duke University Medical Center, Durham, NC

Cell Division and Gene Expression in Development

B800/P1782 Compensatory Response to the Genetic Perturbation of ABCB1a Transporter Activity in Sea Urchin Embryos. H.D. Rosenblatt1, C.S. Schrankel2, K. Chen2, A. Shamini1, K. Petrecca1; 1Neurology and Visual Sciences, The Catholic University of America, Washington, DC, 2Department of Molecular Genetics, University of Tennessee, Knoxville, TN, 3Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY

B801/P1783 Deciphering the role and dynamics of chromatin contacts in embryonic development using Genome Architecture Mapping. G. Loof2, A. Kukalev1, T. Chow1,2, K. Oegema1,2; 1Cell and Developmental Biology, University of California, San Diego, San Diego, CA, 2Department of Cell and Developmental Biology, University of California, San Diego, San Diego, CA

B802/P1784 Abscission dynamics of embryonic currendal stem cells. K.C. McNeely1, N.D. Dwyer; 1Cell Biology, University of Virginia, Charlottesville, VA

B803/P1785 An automated method for analyzing 4D high content imaging data to profile the gene set controlling embryonic development. R.A. Green1,2, K. Petrecca1, T. Chow1,2, L. Gao1, K. Petrecca1, A. Shamini1, K. Oegema2; 1Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY, 2Department of Cell and Developmental Biology, Duke University Medical Center, Durham, NC

B804/P1786 Patterned expression of ABC membrane transporters during gut morphogenesis and epithelial immune responses. C.S. Schrankel2, A.M. Hamdoun1; 1Scripps Institution of Oceanography, Marine Biology Research Division, University of California, San Diego, La Jolla, CA

B805/P1787 Identifying an accessory regulator for arg-1 expression in Caenorhabditis elegans vulval muscles. A.A. Alsulaiti1, A.K. Corsi2; 1Biology, The Catholic University of America, Washington, DC

B806/P1788 Fus regulates mammary stem cells self-renewal and mammary gland development by controlling cell cycle. M. Cheng1, H. Ke2, L. Zhao3, Q. Yang3, L. Zou4, b. jiao5; 1Kumming Institute of Zoology, Kunming Institute of Zoology, Chinese Academy of Sciences, Kunming, China

B807/P1789 Utilizing CBX3 Ubiquitous Chromatin Opening Element (UCOE) to Improve Expression of Cassettes Integrated into Safe Harbor Sites During Retinal Development. A.E. Koehler1, R.A. Anderson1, A. Ogata2, F. Su3, M.K. Jones4, M. Chow5, H. Martin6, K.J. Wahlin7; 1Department of Ophthalmology, University of California, San Diego, La Jolla, CA

B808/P1790 Investigating Critical Centrosomal Proteins that Facilitate Spindle Rotation. A. Yancey1; 1Biology, San Francisco State, San Francisco, CA

Cytoskeleton and Cell Motility in Development

B809/P1791 Imaging how the pluripotent inner mass forms in the living mouse embryo. M.D. White1, J. Zener1, Y.D. Alvarez2, M. Gasnier3, H. Lim1, 4, R. Bissiere5, N. Plachta6; 1IMCB, Agency for Science, Technology and Research, A*STAR, Singapore, Singapore

B810/P1792 An Intrinsic Cell Biological Landscape Dictates Gastrolation Movements In The Developing Zebrafish Embryo. S. Nair1, T. Menon2; 1Biological Sciences, Tata Institute of Fundamental Research, Mumbai, India

B811/P1793 Nuclear layer of Drosophila syncytiotblastoderm behaves like an elastic sheet. Z. Lv1, J. Grob8ans2; 1Institut für Entwicklungsbiochemie, University of Göttingen, Göttingen, Germany

B812/P1794 Cell cycle and cytoskeleton regulation of cell migration and differentiation of C. elegans sex myoblasts and zebrafish paraxial mesoderm. R.C. Adikés1, N. Kim2, 3, B.L. Martin4, D.Q. Matus1; 1Department of Biochemistry and Cell Biology, Stony Brook University, Stony Brook, NY, 2Medical Scientist Training Program, Stony Brook University, Stony Brook, NY

B813/P1795 Localization of serendipity-a mRNA is precisely timed during Drosophila embryo cellularization. L.R. Figard1, A.M. Sokac2; 1Biochemistry and Molecular Biology, Baylor College of Medicine, Houston, TX

B814/P1796 Novel Role for KIF17 in the Developing Cerebellum. B. Waas1, B.L. Allen1; 1Cell and Developmental Biology, University of Michigan, Ann Arbor, MI

B815/P1797 Contact activation of locomotion and chemotaxis Dictyostelium and cell segregation in Dicyostelium. T. Fujimoto1, A. Nakajima1, 2, N. Shimada1, S. Sawai1,2; Dept. of Basic Science, Grad. Sch. of Arts Sci., Univ Tokyo, Tokyo, Japan, 2Res. Ctr. for Complex Syst. Biol., Univ Tokyo, Tokyo, Japan
B826/P1807 Daptomycin failure to treat S. aureus biofilms: contribution of multimodal fluorescence micro/nanoscoppy techniques. R. Boudjemaa1, C. Cabriel1, N. Bourj2, G. Dupuis2, R. Briandet2, A. Gruss1, F. Dubois-Brissonnet1, M. Fontaine-Aupart1, K. Steekesten1, S. Lévêque-Fort1, CNRS UMR 8214, Université Paris Sud, Université Paris Saclay, Institut des Sciences Moléculaires d'Orsay (ISMO), Orsay, France, 1Université Paris-Sud, CNRS, Université Paris-Saclay, Centre Laser de l’Université Paris-Sud (CLUPS/LUMAT), Orsay, France, 2AgroParisTech, Université Paris-Saclay, Micalis Institute, INRA, Jouy-en-Josas, France, 3Faculté de Médecine, UPRES EA 3826, Université de Nantes, Nantes, France.

B827/P1808 Solution NMR structure of Hibernation Promoting Factor reveals detailed interface of ribosome dimerization in Staphylococcus aureus. K. Usachev1,2, B.F. Fakhullin1,2, I.S. Khusainov1,4, A.G. Gabdulkhakov2, S.Z. Validov1, V. Klochkov3, A.V. Aganov1, B. Kieffer3, M.M. Yusupov2,3, Laboratory of Structural Biology, Institute of Fundamental Medicine and Biology, Kazan Federal University, Kazan, Russia, 1NMR Laboratory, Medical Physics Department, Institute of Physics, Kazan Federal University, Kazan, Russia, 2Institute of Protein Research, Pushchino, Russia, 3Département de Biologie et de Génomique Structurales, Institut de Génétique et de Biologie Moléculaire et Cellulaire, Strasbourg, France.

B828/P1809 Crystal structure of C-terminal domain homodimer of Hibernation Promoting Factor from Staphylococcus aureus. B.F. Fakhullin1,2, A.G. Gabdulkhakov2, N.V. Lekontsev1, S.V. Tischenko1, I.S. Khusainov1,2, S.Z. Validov1, K.S. Usachev1, M.M. Yusupov2,3, Institute of Protein Research, Pushchino, Russia, 1Institute of Fundamental Medicine and Biology, Kazan Federal University, Kazan, Russia, 2Département de Biologie et de Génomique Structurales, Institut de Génétique et de Biologie Moléculaire et Cellulaire, Strasbourg, France.

B829/P1810 Contribution of the MacAB drug efflux pump to motility of Serratia marcescens SM6. T.V. Shirshikova1, M.R. Sharipova2, L.M. Bogomolnaya1,2, 1Institute of Fundamental Medicine and Biology, Kazan (Volga river) Federal University, Kazan, Russia, 2Texas AM University Health Science Center, Bryan, TX.

B830/P1811 Antibiotic and anti-biofilm activities of acetic acid and honey. C. Archeclus1, M. Belauzaran1, S. Brit2, B. Schoffstall3, 1Department of Biology, Barry University, Miami, FL.

B831/P1812 Effect of bivalent metal ions on biofilm formation by regulatory mutants of bacilli. L.T. Dinh1, N.L. Rudakova1, G.R. Akhmetova1, M.R. Sharipova2, 1Department of fundamental medicine and biology, Kazan (Volga region) Federal University, Kazan, Russia, 2Institute of Fundamental Medicine and Biology, Kazan (Volga river) Federal University, Kazan, Russia.
**Sunday Poster Session**

**B842/P1822** MC903-induced atopic dermatitis elicits anxiety- and depressive-like behavior that is associated with neural adaptations in brain reward circuitry. M. Yeom¹, S. Ahn², D. Hahn¹, H. Park¹, J. H. Ha³;¹Acupuncture Meridian Science Research Center, College of Korean Medicine, Kyung Hee University, Seoul, South Korea, ²Department of Physiology, School of Medicine, Kyung Hee University, Seoul, South Korea, ³Department of Korean Medical Science, Graduate School, Kyung Hee University, Seoul, South Korea

**B843/P1823** 2-carba cyclic phosphatidic acid contributes to the repair of stab-wounded cerebral cortex via regulation of microglial and astrocyte cells. M. Nakashima¹, K. HASHIMOTO¹, A. Hamano¹, H. Ikeshima-Kataoka¹, M. Gotoh¹, K. Murakami-Murofushi¹, Y. Miyamoto¹;¹Human Life Innovation, Ochanomizu University, Tokyo, Japan

**B844/P1824** Ex-vivo human models for enabling translational pain research. A. Ton¹, T. Indersmit¹, Y. Miron¹, N. Nguyen¹, G. Page¹, P. Ratchada¹, K. Sweat¹, P. Miller¹, A. Ghetti¹;¹ANABIOS CORPORATION, SAN DIEGO, CA

**B845/P1825** Anti-diabetic effect of *Grifola frondosa* Ameliorating Hyperglycemia and Dyslipidemia in db/db Mice. Y. Kim¹, J. Kim¹, D. Kang¹, E. Lee¹, D. Kim¹;¹Life Science, Gachon University, Seongnam, South Korea

**B846/P1826** Stem cells to regenerate trabecular meshwork with glaucoma treatment potential. Y. Du¹, Y. Wang¹, A. Kumar¹;¹Developmental Biology, University of Pittsburgh, Pittsburgh, PA, ²Ophthalmology, University of Pittsburgh, Pittsburgh, PA

**B847/P1827** Elevated Elastase, Matrix Metalloproteinase-2, Tenascin-C, Osteopontin, and Epidermal Growth Factor are Associated with Pulmonary Hypertension in Neonates with Congenital Diaphragmatic Hernia. C.J. Hung¹, B.G. Wild², S. Langlois², K.N. Cowan¹,²,³;¹Surgery, Children’s Hospital of Eastern Ontario, Ottawa, ON, ²Molecular Biomedicine Program, Children’s Hospital of Eastern Ontario Research Institute, Ottawa, ON, ³Cellular and Molecular Medicine, University of Ottawa, Ottawa, ON

**B848/P1828** Wound healing of the mouth using *Pichia pastoris* to produce and secrete the basic Fibroblast Growth Factor (bFGF). H.M. Le¹, G.P. Lin-Cereghino¹, D. Thor¹, J. Lin-Cereghino¹;¹Research, University of the Pacific Arthur A. Dugoni School of Dentistry, San Francisco, CA, ²Biology, University of the Pacific, Stockton, CA

**B849/P1829** Substance P delayed development of diabetes by preserving pancreatic β-cells in type 1 and type 2 diabetic mice. S. CHOI¹, J. Um¹, N. Jung¹, D. Kim¹, S. Lee¹, Y. Son¹, K. Park¹,²;¹Graduate School of Biotechnology, Kyung Hee University, Yongin, South Korea, ²Kyung Hee University Hospital at Gangdong, Kyung Hee University, Seoul, South Korea, ³Department of Biomedical Science and Technology, Graduate School, Kyung Hee University, Seoul, South Korea, ⁴East-West Medical Research Institute, Kyung Hee University, Seoul, South Korea, ⁵College of Medicine, Kyung Hee University, Seoul, South Korea