Tuesday Poster Session
Learning Center, Exhibit Halls C-E

Poster Set Up	Posters Displayed	Author Presentation	Poster Tear Down
Monday 6:00–6:30 pm	Monday 6:30–8:00 pm Tuesday 7:30 am–3:00 pm	Odd Boards 12:30–1:30 pm Even Boards 1:30–3:00 pm	Tuesday 3:00–4:00 pm*

TUESDAY PRESENTERS: REMOVE ALL POSTERS BY 4:00 PM OR THEY WILL BE DISCARDED. THERE WILL BE ABSOLUTELY NO ACCESS TO THE LEARNING CENTER AFTER 4:00 PM. NO EXCEPTIONS! PLEASE REMOVE YOUR POSTER FOLLOWING YOUR POSTER SESSION IF YOU CANNOT RETURN BEFORE 4:00 PM TO PICK UP YOUR POSTER

Board Numbers	Session Titles
B1-B13	New Technologies in Single Molecule and Super-Resolution
B14-B32	New Technologies in Cell Biology: Fluoresence
B33-B53	New Technologies in Cell Biology: General
B55-B71	Actin Nucleating Proteins
B72-B81	Actomyosin and Contractility
B82-B98	Regulation of Actin Dynamics 2
B100-B115	Kinesins 2
B116-B130	Myosins 2
B132-B143	Microtubules Nucleation and Organization 2
B144-B167	Microtubules Dynamics and Its Regulation
B169-B180	Ciliary/Flagellar Motility
B181-B189	Ciliopathies
B191-B211	Cytokinesis 2
B212-B229	Kinetochore Assembly and Functions 3
B230-B246	Spindle Assembly 3
B247-B258	Centrosome Assembly and Functions 2
B260-B274	Signaling Pathways and Target Screens
B275-B297	Tumor Invasion and Metastasis 3
B298-B320	Cancer Therapy: Targeting the Tumor Microenvironment
B321-B336	Tumor Microenvironment 2
B338-B349	Gene Transcriptional Networks
B350-B359	Chromatin and DNA Repair
B360-B367	RNA Localization and Transport
B369-B387	The Nuclear Envelope and Nuclear Pore Complexes 2
B388-B402	Nuclear Bodies and Dynamics
B404-B421	Post-Golgi Trafficking
B422-B441	Endocytic Trafficking 2
B442-B458	Endosomes, Lysosomes, and Lysosome-Related Organelles 2
B460-B472	Polarity in Development
B474-B498	Neuronal Degeneration and Regeneration
B499-B519	Synaptic Cell Biology
B520-B531	Neuronal Development, Structure, Mechanics, and Motility
B533-B560	Mitochondrial Dynamics, Movement and Turnover
B561-B576	Receptors, Transporters, and Channels
B578-B591	Kinases and Phosphatases 3
B592-B607	Signaling from the PM/Cytoplasm to the Nucleus
B608-B623	Post-Translational Modifications in Signaling
B625-B644	Mechanotransduction 2
B645-B666	Signaling Networks Governing Cell Migration
B667-B682	Chemotaxis and Directed Cell Migration
B684-B694	Integrins and Cell-ECM Interactions 2
B695-B718	Cadherins and Cell-Cell Interactions
B719-B733	Bioengineering of Cell-Matrix Interactions
B735-B755	Chaperones, Protein Folding, and Quality Control 2
B756-B768	Regulation of Aging
B770-B788	Chemical Cell Biology
B790-B815	Tissue Development and Morphogenesis 3
B816-B830	Cell Fate Determination
B832-B845	Host-Pathogen/Host-Commensal Interactions 2
B847-B862	Organ/Disease Biology and Therapeutic Targets 2
B863-B883	Therapies: Design and Mechanisms for Normal and Diseased Organs 2

Poster Presentation Guidelines

- Presenters should ensure their posters are placed on the appropriate poster board for the duration of their assigned poster session and viewing. Please use the number starting with "B" for your poster board.
- Poster presenters should stand at their poster locations during the appropriate 90-minute time slot—odd board numbers, 12:00-1:30 pm or even board numbers, 1:30-3:00 pm. The specific time slot is included in the original poster notification emails sent on October 30. If presenters have to leave early, they should post a note on their boards with contact information or stating when they will be available to answer attendee questions.
- IMPORTANT! Poster presenters are solely responsible for placing and removing their poster according to the schedule provided above. If you are unable to set up your poster the evening before your session, please do so the morning of your presentation.
  Tuesday presenters must take down their posters between 3:00 pm and 4:00 pm. Posters that are not removed from their boards at the designated time or that are left in the Exhibit/Poster Hall will be discarded. No Exceptions!
- Poster presenters should not leave any items unattended at their poster board, including poster tubes, meeting bags, Programs, Poster Guides, personal items, etc. The ASCB and EMBO are not responsible for any items left in the Learning Center.
- Cameras/Photography: Cameras and all other recording devices are strictly prohibited in all session rooms, in the Learning Center, and in all poster and oral presentation sessions.

New Technologies in Single Molecule and Super-Resolution

B1/P2725 **A DNA origami platform for quantitative super-resolution microscopy.** F. Cella Zanacchi[1,2], C. Manzo[2,3], N.D. Derr[4], M. Garcia Parajo[2,5], M. Lakadamyali[2]; [1]Nanophysics Department, Italian Institute of Technology, Genova, Italy, [2]ICFO-Institut de Ciencies Fotoniques, Barcelona, Spain, [3]Universitat de Vic - Universitat Central de Catalunya, Vic, Spain, [4]Smith College, Northampton, MD, [5]ICREA, Barcelona, Spain

B2/P2726 **A New Methodology for Quantitative Measurements of Single Cell Mechanics.** G. Liu[1]; [1]Chemistry, University of California, Davis, CA

B3/P2727 **An algorithm to obtain blinking-corrected super-resolution images.** C.H. Bohrer[1], J. Xiao[1]; [1]Biophysics, Johns Hopkins, Baltimore, MD

B4/P2728 **Distinguishing Biological and Non-Biological Networks in Single Molecule Localization Super Resolution Microscopy.** I. Khater[1], Y. Liu[2], Q. Liu[3], F. Meng[2], K.C. Chou[3], I.R. Nabi[2], G. Hamarneh[1]; [1]Computing Science, Simon Fraser University, Vancouver, BC, [2]Cellular and Physiological Sciences, University of British Columbia, Vancouver, BC, [3]Chemistry, University of British Columbia, Vancouver, BC

B5/P2729 **A Cryosectioning Technique for the Observation of Intracellular Structures and Immunocytochemistry of Tissues in Atomic Force Microscopy.** E. Usukura[1], A. Yagi[2], N. Sakai[2], U. Yoshitsugu[2], Y. Imaoka[2], J. Usukura[1]; [1]Graduate school of science, Nagoya University, Nagoya, Japan, [2]Olympus, Hachioji, Japan

B6/P2730 **The Stoichiometry of AMPA Receptors Measured By Single Molecule Imaging.** C. Yu[1], M.H. Ulbrich[1,2]; [1]BIOSS Centre for Biological Signalling Studies, Freiburg, Germany, [2]Internal Medicine IV, Medical Center of the University of Freiburg, Freiburg, Germany

B7/P2731 **Visualization of transcriptional dynamics at single-cell resolution with a genetically-encoded fluorogenic RNA.** T. Ariyoshi[1], Y. Okada[1]; [1]QBiC, RIKEN, Suita, Osaka, Japan

B8/P2732 **Single-molecule Fluorescent Amplification of RNA using ClampFISH Probes.** S.H. Rouhanifard[1], A.J. Cote[1], B. Emert[1], I. Mellis[1], A. Raj[1,2]; [1]Bioengineering, University of Pennsylvania, Philadelphia, PA, [2]Genetics, University of Pennsylvania, Perelman School of Medicine, Philadelphia, PA

B9/P2733 **Optical imaging and labelling of individual biomolecules in dense clusters.** M. Dai[1,2,3], R. Jungmann[1,3,4], N. Liu[1,3], P. Yin[1,3]; [1]Department of Systems Biology, Harvard University, Boston, MA, [2]Biophysics Program, Harvard University, Boston, MA, [3]Wyss Institute for Biologically Inspired Engineering, Harvard University, Boston, MA, [4]Max Planck Institute of Biochemistry, Munich, Germany

B10/P2734 **Developing a single-molecule imaging technology for early cancer detection in blood samples.** S. Wang[1], C. Mao[2], Y. Su[2], J. Chang[2], C. Hung[2,3], T. Wu[2,3,4,5], J. Xiao[1]; [1]Biophysics and Biophysical Chemistry, Johns Hopkins School of Medicine, Baltimore, MD, [2]Pathology, Johns Hopkins School of Medicine, Baltimore, MD, [3]Oncology, Johns Hopkins School of Medicine, Baltimore, MD, [4]Obstetrics and Gynecology, Johns Hopkins School of Medicine, Baltimore, MD, [5]Molecular Microbiology and Immunology, Johns Hopkins School of Medicine, Baltimore, MD

B11/P2735 **Obtaining 3D Super-resolution Information from 2D Single-molecule Localizations through a 2D-to-3D Transformation Algorithm.** A. Ruba[1], J. Kelich[1], W. Luo[1], W. Yang[1]; [1]Department of Biology, Temple University, Philadelphia, PA

B12/P2736 **Absolute Quantification of Transient Membrane Protein Interactions in Single Living Cells Using Co-Immunoimmobilization.** S. Park[1], D. Kim[1], D. Kim[2], M. Jeong[3], J. Noh[1], Y. Kwon[1], K. Zhou[1], N. Lee[4], S. Ryu[1]; [1]Department of Life Sciences, POSTECH, Pohang, South Korea, [2]School of Interdisciplinary Bioscience and Bioengineering, POSTECH, Pohang, South Korea, [3]Division of Integrative Biosciences and Biotechnology, POSTECH, Pohang, South Korea, [4]Department of Chemistry, Seoul National University, Seoul, South Korea

B13/P2737 **High Depth, High Precision, Three-Dimensional Super-Resolution Imaging and Particle Tracking with the Double Helix SPINDLE™ Module.** K. Heiser[1], A. Agrawal[1], S. Gaumer[1], L. Kimerling[1], R. Piestun[2]; [1]Double Helix LLC, Boulder, CO, [2]Electrical, Computer, and Engineering, University of Colorado at Boulder, Boulder, CO

New Technologies in Cell Biology: Fluoresence

B14/P2738 **Imaging Minimally-Engineered mRNA and long non-coding RNA transcripts at the single-molecule level using phosphorothioate-optimized 2'-O-methyl RNA molecular beacons.** M. Chen[1,2,3], C.J. Krueger[1,4], A.K. Chen[1]; [1]Department of Biomedical Engineering, College of Engineering, Peking University, Beijing, China, [2]Peking-Tsinghua Center for Life Sciences, Peking University, Beijing, China, [3]Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China, [4]Wallace H Coulter Department of Biomedical Engineering, Georgia Institute of Technology, Atlanta, United States

B15/P2739 **Genetically Encoded Tools to Control and Reveal Cellular Dynamics in IPSC Disease Modelling and Drug Screening.** Y. Chang[1], F. Brook[1], J. Wu[2], R. Campbell[2], M. Daniels[1]; [1]Cardiovascular Medicine, Oxford University, Oxford, United Kingdom, [2]Chemistry, University of Alberta, Edmonton, Canada

B16/P2740 **Immunoprecipitation high performance liquid chromatography (IP-HPLC) analysis in the postoperative exudate of bisphosphonate related osteonecrosis of mandible.** S. Kim[1], M. Eo[1], Y. Cho[1], Y. Kim[2], S. Lee[3]; [1]School of Dentistry, Dental Research Institute, Seoul National University, Department of Oral and Maxillofacial Surgery, Seoul, South Korea, [2]Cheongju University, Department of Dental Hygiene, Cheongju, South Korea, [3]College of Dentistry, Gangneung-Wonju National University, Department of Oral Pathology, Gangneung, South Korea

B17/P2741 **Engineering the MS2 System to follow the Life Cycle of Single mRNAs.** M. Vera[1], E. Tutucci[1], J. Biswas[1], R. Parker[2], R.H. Singer[1]; [1]Anatomy and Structural Biology, Albert Einstein College of Medicine, New York, NY, [2]Chemistry and Biochemistry, University of Boulder, Boulder, CO

B18/P2742 **Microfluidic Imaging Windows: A New Method for Imaging and Controlling the Tumor Microenvironment.** L. Butt[1], L. Sfakis[1], Y. Wang[2,3,4], D. Entenberg[2,3,4], J. Castracane[1], J.S. Condeelis[2,3,4]; [1]Nanobiology Constellation, SUNY Polytechnic Institute, Albany, NY, [2]Department of Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, [3]Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, [4]Integrated Imaging Program, Albert Einstein College of Medicine, Bronx, NY

B19/P2743 **Fluorescent cell-labelling strategies live-cell analysis.** D.M. Appledorn[1], D. Trezise[2], H. Campwala[2], M. Roddy[1], J. Rauch[1], T. Dale[2], K. Wicklund[1]; [1]Essen BioScience, Ann Arbor, MI, [2]Essen BioScience, Welwyn Garden City, United Kingdom

B20/P2744 **An enclosed system for long-term brain slice culture: viral-mediated transgene expression and precisely localized repetitive cell imaging.** B.B. Fixman[1], I.W. Babcock[1], L.S. Minamide[2], A.E. Shaw[2], M.I. Oliveira da Silva[3], J.J. Field[2], J.R. Bamburg[1,2]; [1]Molecular, Cellular and Integrative Neuroscience, Colorado State University, Fort Collins, CO, [2]Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO, [3]Nerve Regeneration Group, University of Porto, Porto, Portugal

B21/P2745 **Flagella standards for quantitative fluorescence microscopy.** Y. Liu[1], P. Yang[1]; [1]Biological Sciences, Marquette University, Milwaukee, WI

B22/P2746 **Properties of Near-Infrared Fluorescent Proteins Engineered From Bacterial Photoreceptors in Mammalian Cells.** A.A. Shemetov[1,2], O.S. Oliinyk[3], V.V. Verkhusha[1,2,3]; [1]Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, [2]Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, [3]Department of Biochemistry and Developmental Biology, Faculty of Medicine, University of Helsinki, Helsinki, Finland

B23/P2747 **Light-activated protein interaction with high spatial subcellular confinement.** L. Benedetti[1,2,3,4,5], A.E. Barentine[3,6], M. Messa[1,2,3,5], H. Wheeler[1,2,3,5], J. Bewersdorf[3,5,6,7], P. De Camilli[1,2,3,4,5]; [1]Program in Cellular Neuroscience, Neurodegeneration and Repair, New Haven, CT, [2]Department of Neuroscience, Yale University School of Medicine, New Haven, CT, [3]Department of Cell Biology, Yale University School of Medicine, New Haven, CT, [4]Howard Hughes Medical Institute, New Haven, CT, [5]Kavli Institute for Neuroscience, New Haven, CT, [6]Department of Biomedical Engineering, Yale University, New Haven, CT, [7]Nanobiology Institute, Yale University, West Haven, CT

B24/P2748 **Optogenetic systems for regulation of cellular metabolism with near-infrared light.** A.A. Kaberniuk[1], A.A. Shemetov[1], T.A. Redchuk[2], V.V. Verkhusha[1,3]; [1]Department of Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, [2]Department of Biochemistry and Developmental Biology, Faculty of Medicine, University of Helsinki, Helsinki, Finland, [3]Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY

B25/P2749 **Development and application of designable RNA-binding protein for live-cell imaging and manipulation of authentic RNAs.** A. Takai[1], Y. Okada[1,2]; [1]Quantitative Biology Center, RIKEN, Suita, Japan, [2]Graduate School of Science, The University of Tokyo, Tokyo, Japan

B26/P2750 **An improved methodology for determining migration defects after in utero electroporation by utilizing an internal randomized control.** R. Taylor[1], K. Taylor[1], J. Carrington[1], E.W. Dent[1,2]; [1]Neuroscience Training Program, University of Wisconsin, Madison, WI, [2]Neuroscience, University of Wisconsin, Madison, WI

B27/P2751 **Intravital imaging of the Tumor Microenvironment using Endogenous Fluorescence.** J. Szulczewski[1,2], D.R. Inman[2], D. Entenberg[3], J. Aguirre-Ghiso[4], J. Castracane[5], J.S. Condeelis[3], S.M. Ponik[2], K.W. Eliceiri[6], P.J. Keely[2]; [1] Molecular and Cellular Pharmacology Graduate Program, University of Wisconsin-Madison, Madison, WI, [2]Cellular and Regenerative Biology, University of Wisconsin-Madison, Madison, WI, [3]Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, [4]Dept. of Medicine, Mount Sinai School of Medicine, New York, NY, [5]College of Nanoscale Science and Engineering, SUNY Polytechnic Institute, Albany, NY, [6]Laboratory for Optical and Computational Instrumentation, University of Wisconsin-Madison, Madison, WI

B28/P2752 **Single-cell fluorescence thermometry visualizing intracellular events associated with heat production in brown adipocytes.** M. Suzuki[1]; [1]PRESTO, Japan Science and Technology Agency (JST), Saitama, Japan

B29/P2753 **Mechanisms of milk-lipid secretion in live mice unraveled by intravital subcellular microscopy (ISMic).** A. Masedunskas[1], Y. Chen[1,2], R. Weigert[1], I.H. Mather[1,3]; [1]National Cancer Institute, Bethesda, MD, [2]Mechanical Engineering, Johns Hopkins University, Baltimore, MD, [3]Animal and Avian Sciences, University of Maryland, College Park, MD

B30/P2754 **Live-cell and single-molecule imaging reveal contrasting localization and kinetics of Tet proteins in naive mouse embryonic stem cells.** J. Ryan[1], C.B. Mulholland[1], S. Bultmann[1], H. Leonhardt[1]; [1]Biocenter, LMU Munich, Munich, Germany

B31/P2755 **Development of BiFC system based on a bright and photo-stable fluorescent protein for detecting a limited number of protein-protein interactions.** S. Okada[1], S. Nakagawa[1], S. Kamino[2], T. Ito[1]; [1]Department of Biochemistry, Kyushu University Graduate School of Medical Sciences, Fukuoka, Japan, [2]Department of Medicine, Kyushu University School of Medicine, Fukuoka, Japan

B32/P2756 **Dissecting molecular determinants of signaling dynamics via optogenetic control of innate immunity.** H.R. Clark[1,2], M. DeFelice[3], S. Regot[2], M. Covert[3]; [1]Biochemistry Cellular and Molecular Biology Graduate Program, Johns Hopkins, Baltimore, MD, [2]Molecular Biology and Genetics, Johns Hopkins, Baltimore, MD, [3]Bioengineering, Stanford University, Palo Alto, CA

New Technologies in Cell Biology: General

B33/P2757 **EXPLORING THE POSSIBILITY OF CO-CULTIVATING THE GREEN MOSS PHYSCOMITRELLA PATENS WITH HUMAN FIBROBLASTS.** I. Chastukhina[1], E. Zakirova[1], L. Valeeva[1], A. Palotas[2], A. Rizvanov[1], E. Shakirov[1,3]; [1]Institute of Fundamental Medicine and Biology, Kazan (Volga region) Federal University, Kazan, Russia, [2]Asklepios-Med (Private Medical Practice and Research Center), Szeged, Hungary, [3]Department of Integrative Biology, University of Texas at Austin, Austin, TX

B34/P2758 **Homoharringtonine enhances transdermal absorption in the skin by regulating epidermal tight junction barriers.** K. Yagi[1], A. Watari[1], K. Fujiwara[1], N. Suzuki[1], M. Kondoh[1]; [1]Graduate School of Pharmaceutical Sciences, Osaka University, Suita, Japan

B35/P2759 **Development of a stretchable device for live-cell imaging.** N.A. Al-Maslamani[1], H. Horn[1]; [1]College of Science and Engineering- Life Science Division, Hamad bin Khalifa University, Doha, Qatar

B36/P2760 **Functional characterization of an *in vitro* generated 3-D nerve bundle using capillary alginate gel on a microelectrode array.** D.S. George[1], W.A. Anderson[1], A.J. Bosak[2], A.R. Willenberg[2], F. Sommerhage[3], B.J. Willenberg[2], S. Lambert[4]; [1]Burnett School of Biomedical Sciences, University of Central Florida, Orlando, FL, [2]Department of Internal Medicine, University of Central Florida, Orlando, FL, [3]NanoScience Technology Center, University of Central Florida, Orlando, FL, [4]College of Medical Education, University of Central Florida, Orlando, FL

B37/P2761 **Properties of Compressed Melanin Sheets.** C.H. Hou[1], Z. Trinh[1], J. Boligitz[2], K. Wilson[1], A. Bhandari[1], Y. Zhu[1], S. Assari[2], K. Darvish[2], J.B. Sheffield[2], M.F. Kiani[2], S.A. Baranowitz[3]; [1]Drexel University, Philadelphia, PA, [2]College of Engineering, Temple University, Philadelphia, PA, [3]Epismart, Philadelphia, PA

B38/P2762 **Cell culture confluency estimation using embedded application on the InCellis® Smart Cell Imaging System.** O. Varet[1], S. DUBACQ[1], L. Antanaviciute[1]; [1]Bertin Instruments, Rockville, MD

B39/P2763 **Efficient microscopy image visualization and cell tracking analysis of multi-gigabyte datasets.** M. Jones[1], H. Lai[1], V.T. Chou[2], J.B. Long[2], M. Arnes[3], K. Obbad[2], S.V. Alworth[4], C. Huang[1], L.A. Lucas[1], D. Van Vactor[2], J.S. Lee[1]; [1]DRVision Technologies LLC, Bellevue, WA, [2]Cell Biology, Harvard Medical School, Boston, MA, [3]Columbia University, New York, NY, [4]AcuraStem Inc, Los Angeles, CA

B40/P2764 **High-throughput open source analysis of 3D structures using CellProfiler.** A. Goodman[1], C. McQuin[1], S. Singh[1], A.E. Carpenter[1]; [1]Imaging Platform, Broad Institute of MIT and Harvard, Cambridge, MA

B41/P2765 **Assessing autophagic flux in 2D and 3D cell culture models with a novel plate-based assay.** D.F. Lazar[1], A.A. Gillette[2], B.L. Butler[1], C.T. Effers[1], B.F. Binkowski[1], G. Vidugiris[1], M.R. Slater[1], D. Ma[1], T. Riss[1], J.J. Cali[1]; [1]Promega Corporation, Madison, WI, [2]University of Wisconsin, Madison, WI

B42/P2766 **Combining impedence-based viability measurements and flow cytometric analyte quantitation to evaluate effector cell killing of T lymphocytes.** L. Jachimowicz[1], G. Guenther[1], W. Tang[1], P. Ye[1], M. Lei[1], F. Cerignoli[1], B. Xi[1], L. Zhao[1], Y. Abassi[1]; [1]Acea Biosciences, San Diego, CA

B43/P2767 **Expansion and Optimization of DIVA DNA Sequence Validation Services.** A.L. Large[1], N. Kaplan[2], J. Chiniquy[3], G. Goyal[2], N. Hillson[2,3,4]; [1]University of Tennessee, Knoxville, TN, [2]DOE Joint BioEnergy Institute, Emeryville, CA, [3]DOE Agile BioFoundry, Emeryville, CA, [4]DOE Joint Genome Institute, Walnut Creek, CA

B44/P2768 **Efficient Selection of Single-Domain Antibodies from a Naïve Synthetic Library Using Phage Display and Yeast Two-Hybrid Screening.** P. Tafelmeyer[1], S. Moutel[2], S. Djender[2,3], A. Arrial[3], V. Battaglia[3], C. Reverdy[3], A. Olichon[4], F. Perez[5], J. Rain[3]; [1]Hybrigenics

TUESDAY

Corp., Cambridge, MA, [2]Translational Research Department, Institut Curie, Paris, France, [3]Hybrigenics Services SAS, Paris, France, [4]CRCT, INSERM, Toulouse, France, [5]UMR144, Institut Curie, CNRS, Paris, France

B45/P2769 **Engineering Vero Cell Line to Enhance Vaccine Production.** A. Sicam[1], J. Pickens[2], L. Jones[2], S. Bell[1], R. Tripp[2]; [1]Proventus Bio, Athens, GA, [2]Department of Infectious Diseases, University of Georgia, Athens, GA

B46/P2770 **A novel rapid cell ablation model for eliminating one or two maker-labelled cell populations in mice—a model for studying the pathogenesis of human diseases.** F. Liu[1], S. Dai[1], D. Feng[2], A. Kearns[1], X. Peng[1], B. Gao[2], X. Qin[1]; [1]Neuroscience, Temple University School of Medicine, Philadelphia, PA, [2]Laboratory of Liver Diseases, National Institute on Alcohol Abuse and Alcoholism, Bethesda, MD

B47/P2771 **Nourseothricin and its resistance gene *Sat2*, a novel antibiotic selection marker for *C.elegans* gene transfer.** H. Obinata[1], S. Niwa[1]; [1]Life Science, Tohoku University, Sendai, Japan

B48/P2772 **SUMO-TARGETING OF A STRESS-TOLERANT SUMO PROTEASE.** R. Yin[1], J.L. Peek[1], D. Gray[1], C. Harvey[1], R. Levy-Myers[1], D. Rosenberg[1], L. Kolla[1], J. McMurry[2], O. Kerscher[1]; [1]Biology, The College of William Mary, Williamsburg, VA, [2]Biochemistry, Kennesaw State University, Kennesaw, GA

B49/P2773 **Development and functional analysis of novel PEI-based mammalian cell transfection regents.** T. Suk-in[1], A. Tan[1], B. Franca[2], A. Gemma[2], S. Granados-Focil[1], R. Bellin[2]; [1]Chemistry, Clark University, Worcester, MA, [2]Biology, College of the Holy Cross, Worcester, MA

B50/P2774 **Matching refractive index of mounting media improves axial resolution and image quality in 3D biological samples.** O. Golub[1], M. Wickman[1], A. York[1], D. Cash[1]; [1]Molecular Probes Labeling & Detection, Thermo Fisher Scientific, Eugene, OR

B51/P2775 **Engineered Cell Penetrating Peptides for Molecular Delivery.** N. Chada[1], W. Ma[1], W.H. Suh[1]; [1]Department of Bioengineering, Temple University, Philadelphia, PA

B52/P2776 **POST-STIM1 interactions modulate Ca^{2+} oscillation frequency via modulation of PMCA4 function.** T. Cangoz[1], C.K. Go[1], J. Soboloff[1]; [1]Fels Institute for Cancer Research and Molecular Biology, Temple University, Philadelphia, PA

B53/P2777 **A Novel Approach for Characterizing the Cell-Implant Adhesion.** J.Y. Chen[1], Y. Pan[2], L.S. Penn[1], N. Xi[3], J. Xi[1]; [1]Department of Chemistry, Drexel University, Philadelphia, PA, [2]Department of Biology, Drexel University, Philadelphia, PA, [3]Department of Industrial and Manufacturing System Engineering, The University of Hong Kong, Pok Fu Lam, Hong Kong

Actin Nucleating Proteins

B55/P2778 **Arp2/3 complex- and formin-mediated actin networks tune actin-binding protein sorting in fission yeast.** K.E. Homa[1], C. Suarez[1], D.R. Kovar[1,2]; [1]Molecular Genetics and Cell Biology, The University of Chicago, Chicago, IL, [2]Biochemistry and Molecular Biology, The University of Chicago, Chicago, IL

B56/P2779 **Arp2 /3 complex and the nucleation promoting factor Wash are involved in the formation of MTOC-TMA during Xenopus oocyte maturation.** Y. Yamagishi[1], H. Abe[1]; [1]Dept. of Nanobio., Grad. Sch. of Advanced Integration Sci., Chiba Univ, Chiba, Japan

B57/P2780 **Abp1 stimulates Arp2/3 complex nucleation of actin filament branches and protects them from debranching by GMF.** S. Guo[1], O.S. Sokolova[2], J. Chung[3], S. Padrick[4], J. Gelles[3], B.L. Goode[1]; [1]Department of Biology, Brandeis University, Waltham, MA, [2]Department of Biology, Moscow State University, Waltham, MA, [3]Department of Biochemistry, Brandeis University, Waltham, MA, [4]Department of Biochemistry and Molecular Biology, Drexel University, Philadelphia, PA

B58/P2781 **Arp2 Phosphorylation is Not Essential for Arp2/3 Complex Activity in Fission Yeast.** A. Epstein[1], S. Espinoza[2], T.D. Pollard[1,2]; [1]Molecular, Cellular and Developmental Biology, Yale University, New Haven, CT, [2]Molecular Biophysics and Biochemistry, Yale University, New Haven, CT

B59/P2782 **Multiscale Model of the Formin Homology 1 Domain Illustrates its Role in Regulation of Actin Polymerization.** B.G. Horan[1], G. Zerze[2], G.L. Dignon[2], Y.C. Kim[3], D. Vavylonis[1], J. Mittal[2]; [1]Physics, Lehigh University, Bethlehem, PA, [2]Chemical and Biomolecular Engineering, Lehigh University, Bethlehem, PA, [3]Naval Research Laboratory, Center for Materials Physics and Technology, Washington, DC

B60/P2783 **Force dependence of filopodia adhesion: involvement of myosin II and formins.** N.O. Alieva[1], A.K. Efremov[1,2], M. Natarajan[1], S. Hu[1], D. Oh[1], Z. Chen[1], H. Ong[1], A. Jégou[3], G. Romet-Lemonne[3], J.T. Groves[4], M.P. Sheetz[1,5], J. Yan[1,2,6], A.D. Bershadsky[1,7]; [1]National University of Singapore, Mechanobiology Institute, Singapore, Singapore, [2]National University of Singapore, Center for BioImaging Sciences, Singapore, Singapore, [3]Institut Jacques Monod, Paris, France, [4]University of California, Department of Chemistry, Berkeley, CA, [5]Columbia University, Department of Biological Sciences, New York, NY, [6]National University of Singapore, Department of Physics, Singapore, Singapore, [7]7Weizmann Institute of Science, Rehovot, Israel

B61/P2784 **The interaction of FHOD1 with nesprin-2G activates a cryptic actin binding site and stimulates potent actin bundling activity: implications for nuclear movement.** S. Antoku[1], G.G. Gundersen[1]; [1]Pathology & Cell Biology, Columbia University, New York, NY

B62/P2785 **Understanding muscle cell size regulation by the *Caenorhabditis elegans* formin FHOD-1.** C.V. Yingling[1], D. Pruyne[1]; [1]Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY

B63/P2786 **The *Drosophila* Formin Fhod Nucleates Actin Filaments.** A.A. Patel[1], Z.A. Oztug Durer[2,3], A.P. van Loon[1], M.E. Quinlan[2,4]; [1]Molecular Biology Interdepartmental Doctoral Program, University of California, Los Angeles, Los Angeles, CA, [2]Department of Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles, CA, [3]Department of Biophysics, Acibadem University School of Medicine, Istanbul, Turkey, [4]Molecular Biology Institute, University of California, Los Angeles, Los Angeles, CA

B64/P2787 **Intracellular zinc regulates actin nucleation during mouse oocyte maturation and fertilization via Spire.** Y. Jo[1], N. Kim[1], S. Namgoong[1]; [1]Animal Science, Chungbuk National University, Cheongju, Korea, South

B65/P2788 **Epidermal specific knock out of N-WASP expression caused atopic dermatitis like inflammation in mice.** P. Kalailingam[1], H. Tan[1], N. Jain[1], S. Keat[1], J. Chan[1], T. Soon[1], T. Thanabalu[1]; [1]School of Biological Sciences, Nanyang Technological University, Singapore, Singapore

B66/P2789 **Identifying Functions of a *Chlamydomonas* Formin in Flagellar Assembly.** G.L. Witter[1,2], B. Jack[3], T. Kersten[4], S. Dutta[3], P. Avasthi[3,5]; [1]Chemistry, Spring Hill College, Mobile, AL, [2]K-INBRE Summer Scholar Program, Kansas City, KS, [3]Anatomy and Cell Biology, University of Kansas Medical Center, Kansas City, KS, [4]Biology, Rockhurst University, Kansas, MO, [5]Opthalmology, University of Kansas Medical Center, Kansas City, KS

B67/P2790 **Screening for function-altering INF2 mutants using a live-cell actin polymerization assay.** T. Fung[1], R. CHAKRABARTI[1], H.N. Higgs[1]; [1]Department of Biochemistry & Cell Biology, Geisel School of Medicine at Dartmouth, Hanover, NH

B68/P2791 **Actin nucleation factors that control autophagy are important for zebrafish organ development.** A. Mathiowetz[1], K.G. Campellone[1], D. Daggett[1]; [1]Molecular and Cell Biology, University of Connecticut, Storrs, CT

B69/P2792 **Actin filament elongation factors formin and Ena/VASP trigger the transition from lamellipodia- to filopodia-like networks.** C. Suarez[1], J.D. Winkelman[1], A. Harker[2], P.M. McCall[3,4], A.N. Morganthaler[1], M.L. Gardel[3,4,5], D.R. Kovar[1,2]; [1]Department of Molecular Genetics and Cell Biology, The University of Chicago, Chicago, IL, [2]Department of Biochemistry and Molecular Biology, The University of Chicago, Chicago, IL, [3]Department of Physics, The University of Chicago, Chicago, IL, [4]James Franck Institute, The University of Chicago, Chicago, IL, [5]Institute for Biophysical Dynamics, The University of Chicago, Chicago, IL

B70/P2793 **Characterization of Formin-2 Functions using in vitro Approaches.** P. Dutta[1], S. Maiti[2], A. Ghose[1]; [1]Department of Biology, Indian Institute of Science Education and Research Pune, Pune, India, [2]Biological Sciences, Indian Institute of Science Education and Research Kolkata, Kolkata, India

B71/P2794 **Adenomatous polyposis coli (APC) nucleates actin assembly to drive cell migration and microtubule-induced focal adhesion turnover.** M.A. Juanes[1], H. Bouguenina[2], J.A. Eskin[1], R. Jaiswal[1], A. Badache[2], B.L. Goode[1]; [1]Department of Biology, Brandeis University, Waltham, MA, [2]Institut Paoli-Calmettes, CRCM, Inserm, Institut Paoli-Calmettes, CNRS, Marseille, France

Actomyosin and Contractility

B72/P2795 **A novel interaction between NMIIB and Survivin is essential for proper cell division.** A. Babkoff[1], E. Cohen-Kfir[1], D. Ronen[1], S. Ravid[1]; [1]Biochemistry molecular biology, The Hebrew University of Jerusalem, Jerusalem, Israel

B73/P2796 **Graded activation of ROCK and MLCK tunes regional stress fiber formation and mechanics via preferential myosin light chain phosphorylation.** E. Kassianidou[1,2], J.H. Hughes[1,2], S. Kumar[1,3]; [1]Bioengineering, University of California, Berkeley, Berkeley, CA, [2]UC Berkeley - UCSF Graduate Program in Bioengineering, Berkeley, CA, [3]Chemical and Biomolecular Engineering, University of Berkeley, Berkeley, CA

B74/P2797 **Cdc42 GEF Gef1 coordinates actomyosin ring constriction and septum ingression during cytokinesis.** B. Wei[1], P. Mlynarczyk[2], U. Onwubiko[1], J. Habiyaremye[1], A. Clack[1], S. Abel[2], M. Das[1]; [1]Biochemistry Cellular and Molecular Biology, University of Tennessee, Knoxville, TN, [2]Chemical and Biomolecular Engineering, University of Tennessee, Knoxville, TN

B75/P2798 **Compartmentalized regulation of myosin light chain phosphatase and myosin light chain kinase during cell spreading.** N.E. Snell[1], M. Markwardt[1], K. Seckinger[1], M. Rizzo[1]; [1]Physiology, University of Maryland Baltimore, Baltimore, MD

B76/P2799 **Actomyosin contractility maintains the integrity of the Drosophila testis niche during gonadogenesis.** J. Sui[1], L. Wingert [1], S. DiNardo[1,2]; [1]Cell and Developmental Biology, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA, [2]Institute for Regenerative Medicine, University of Pennsylvania, Philadelphia, PA

B77/P2800 **Profilin Directly Enhances Microtubule Growth Through Residues Mutated in Amyotrophic Lateral Sclerosis.** J.L. Henty-Ridilla[1], M.A. Juanes[2], B.L. Goode[2]; [1]Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY, [2]Cell Biology, Brandeis University, Waltham, MA

B78/P2801 **Composition of LAT clusters regulates their movement within actomyosin networks.** J.A. Ditlev[1,2], A.R. Vega[3], D.V. Koester[2,4], X. Su[2,5], R.D. Vale[2,5], S. Mayor[2,4], K. Jaqaman[3], M.K. Rosen[1,2]; [1]Department of Biophysics and Howard Hughes Medical Institute, UT Southwestern Medical Center, Dallas, TX, [2]Howard Hughes Medical Institute Summer Institute, Marine Biological Laboratory, Woods Hole, MA, [3]Department of Biophysics, UT Southwestern Medical Center, Dallas, TX, [4]National Centre for Biological Sciences, Bangalore, India, [5]Department of Cellular and Molecular Pharmacology and Howard Hughes Medical Institute, University of California San Francisco, San Francisco, CA

B79/P2802 **Optimal adhesion stability is required for proper sarcomere assembly in cardiomyocytes.** A.C. Neininger[1], N. Taneja[1], D.T. Burnette[1]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B80/P2803 **How is apical constriction triggered? Possible roles for afadin and zyxin.** M.M. Slabodnick[1], T.D. Cupp[1], A. Chen[1], S. Tintori[1], B. Goldstein[1]; [1]Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC

B81/P2804 **The pre-metazoan origin of animal cell contractility.** T. Brunet[1], N. King[1]; [1]Molecular and Cell Biology, University of California Berkeley/HHMI, Berkeley, CA

Regulation of Actin Dynamics 2

B82/P2805 **Septins as modifiers of actin dynamics.** T. Kogan[1], K. Nakos[2], E. Spiliotis[2], S.B. Padrick[1]; [1]Biochemistry, Drexel University, Philadelphia, PA, [2]Biology, Drexel University, Philadelphia, PA

B83/P2806 **BMW is an exceptionally potent actin assembly factor from a human parasite.** M. Winterhoff[1], S. Brühmann[1], M. Kollmar[2], R. Schnabel[3], U. Curth[1], J. Faix[1]; [1]Institut of Biophysical Chemistry, Hannover Medical School, Hannover, Germany, [2]Department of NMR-based Structural Biology, Max-Planck-Institute for Biophysical Chemistry, Göttingen, Germany, [3]Institute for Genetics, Technical University Braunschweig, Braunschweig, Germany

B84/P2807 **Effect of altering sialylation levels on cytoskeletal organization of the cell.** S.S. Devi[1], R. Arya[1]; [1]School of Biotechnology, Jawaharlal Nehru University, New Delhi, India

B85/P2808 **The scaffold protein RACK1 influences F-actin dynamics and degranulation in mast cells.** E.G. Freitas Filho[1,2], I.S. Ambudkar[1], C. Oliver[2], M.C. Jamur[2]; [1]Secretory Physiology Section, Molecular Physiology and and Therapeutics Branch, National Institute of Dental and Craniofacial Research, National Institutes of Health, Bethesda, MD, [2]Department of Cell and Molecular Biology and Pathogenic Bioagents, Ribeirão Preto Medical School, University of São Paulo, Ribeirão Preto, Brazil

B86/P2809 **Morphodynamics of cell edge protrusion in Lamellipodin (Lpd) knockout cells.** G. Dimchev[1,2], B. Amiri[3], M. Schaks[1,2], V. Dimchev[1,2], T.E. Stradal[2], M. Krause[4], M. Falcke[3], K. Rottner[1,2]; [1]Division of Molecular Cell Biology, Technische Universität Braunschweig, Braunschweig, Germany, [2]Department of Cell Biology, Helmholtz Centre for Infection Research, Braunschweig, Germany, [3]Department of Physics, Max-Delbrück-Centrum für Molekulare Medizin, Berlin, Germany, [4]Randall Division of Cell and Molecular Biophysics, King's College London, London, United Kingdom

B87/P2810 **Characterization of cell lines lacking ubiquitous WAVE complex.** K. Rottner[1,2], F. Kage[1], M. Schaks[1,2], F. Grüner[1,2], A. Steffen[1], T.E. Stradal[1]; [1]Department of Cell Biology, Helmholtz Centre for Infection Research, Braunschweig, Germany, [2]Division of Molecular Cell Biology, Technische Universität Braunschweig, Braunschweig, Germany

B88/P2811 **Building and burning bridges: Adaptor protein Bbc1 regulates endocytic actin patch assembly by disrupting interactions of Wsp1/Vrp1 with Myo1.** C.D. MacQuarrie[1], R.T. Carroll[1], M. Mangione[2], K.L. Gould[2], V. Sirotkin[1]; [1]Department of Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY, [2]Department of Cell and Developmental Biology, Vanderbilt University School of Medicine, Nashville, TN

B89/P2812 **Viable mice and primary cells in the absence of beta-actin protein.** X. Patrinostro[1], C.G. Starker[2], D.F. Voytas[2], B.J. Perrin[3], J.M. Ervasti[1,2]; [1]Department of Biochemistry, Molecular Biology, and Biophysics, University of Minnesota, Minneapolis, MN, [2]Deparment of Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN, [3]Department of Biology, Indiana University - Purdue University Indianapolis, Indianapolis, IN

B90/P2813 **Vav2-RhoG–mediated cytoskeleton and nuclear skeleton remodeling.** I. Prabakaran[1], G. Koo[1], S. Xu[1], M.A. Guvakova[1]; [1]Surgery, University of Pennsylvania, Philadelphia, PA

TUESDAY

B91/P2814 **WITHDRAWN**

B92/P2815 **MRTF/SRF transcription promotes cell-in-cell invasion for entosis through Ezrin-dependent bleb-dynamics.** L. Soto Hinojosa[1], M. Holst[1], C. Baarlink[1], R. Grosse[1]; [1]Institute of Pharmacology, University of Marburg, Marburg, Germany

B93/P2816 **The Role of Actin Trails in Mediating Bulk Axonal Actin Transport.** N. Chakrabarty[1], P. Dubey[2], A. Ganguly[3], Y. Tang[4], K. Ladt[5], P. Jung[1,6], S. Roy[2,7]; [1]Department of Physics and Astronomy, Ohio University, Athens, OH, [2]Department of Pathology and Laboratory Medicine, University of Wisconsin-Madison, Madison, WI, [3]Department of Pathology, University of California, San Diego, La Jolla, CA, [4]Department of Molecular and Cellular Physiology, Stanford University, School of Medicine, Stanford, CA, [5]Department of Neurosciences, University of California, San Diego, La Jolla, CA, [6]Quantitative Biology Institute, Ohio University, Athens, OH, [7]Department of Neuroscience, University of Wisconsin-Madison, Madison, WI

B94/P2817 **Nanotopography biases cell migration, cytoskeletal dynamics, and focal adhesion distribution.** W. Losert[1]; [1]Physics, University of Maryland, College Park, MD

B95/P2818 **Exploring actin dynamics of thin filaments in *Caenorhabditis elegans* striated muscle.** S. Sundaramurthy[1], S. Ono[2], D. Pruyne[1]; [1]Department of Cell and Developmental Biology, Upstate Medical University, Syracuse, NY, [2]Department of Pathology and Department of Cell Biology, Emory University, Atlanta, GA

B96/P2819 **Characterization of the cytoskeleton of *Porphyra umbilicalis* and comparison to other red algae based on analysis of the completed *Porphyra* genome.** H.V. Goodson[1], S.H. Brawley[2]; [1]Chemistry Biochemistry and Biological Sciences, University of Notre Dame, Notre Dame, IN, [2]School of Marine Sciences, University of Maine, Orono, ME

B97/P2820 **Mechanosensory role of alpha-actinin 4 in pancreatic cancer cell migration.** D.G. Thomas[1], N. Good[1], E.S. Schiffhauer[1], A. Surcel[1], Q. Zhu[2], D.N. Robinson[1]; [1]Cell Biology, Johns Hopkins School of Medicine, Baltimore, MD, [2]Pathology, Johns Hopkins School of Medicine, Baltimore, MD

B98/P2821 **Determining Concentration-Dependent Effects of Thymosin β4 in Living Cells through Quantitative Protein Delivery.** K. Skruber[1], E.A. Vitriol[1]; [1]Anatomy and Cell Biology, University of Florida, Gainesville, FL

Kinesins 2

B100/P2822 **Inhibitable kinesin motors to study intracellular trafficking.** M.F. Engelke[1], B. Waas[1], B.L. Allen[1], K.J. Verhey[1]; [1]Cell & Developmental Biology, University of Michigan Medical School, Ann Arbor, MI

B101/P2823 **Regulated autoinhibition of kinesin-1 is essential to polarized dendritic transport.** M.T. Kelliher[1], Y. Yue[2], A. Ng[1], D. Kamiyama[3], B. Huang[4], K.J. Verhey[2], J. Wildonger[1]; [1]Biochemistry, University of Wisconsin - Madison, Madison, WI, [2]Cell and Developmental Biology, University of Michigan, Ann Arbor, MI, [3]Cellular Biology, University of Georgia, Athens, GA, [4]Department of Pharmaceutical Chemistry, University of California - San Francisco, San Francisco, CA

B102/P2824 **Phospho-regulation of a Mitotic Kinesin-5 motor Probed by Synthetic-Evolution Approach.** A. Goldstein[1], D. Goldman[1], E. Valk[2], M. Loog[2], L.J. Holt[3], L. Gheber[1]; [1]Department of chemistry and Ilse Katz Institute for Nanoscale Science and Technology, Ben-Gurion University of the Negev, Beer Sheva, Israel, [2]Institute of Technology, University of Tartu, Tartu, Estonia, [3]Molecular Pharmacology Institute for Systems Genetics, New York University, New York, NY

B103/P2825 **Macromolecular crowding modulates intracellular transport by teams of kinesin-1 motors.** G. Nettesheim[1], G. Jaffe[1], S.J. King[2], G.T. Shubeita[1,3]; [1]Physics, The University of Texas at Austin, Austin, TX, [2]Burnett School of Biomedical Sciences, University of Central Florida, Orlando, FL, [3]Physics, New York University Abu Dhabi, Abu Dhabi, United Arab Emirates

B104/P2826 **Aplip1 (Drosophila JIP1) regulates myonuclear positioning and muscle stability.** A.L. Auld[1], S.A. Roberts[1], C.B. Murphy[1], J.M. Camuglia[1], E.S. Folker[1]; [1]Biology, Boston College, Chestnut Hill, MA

B105/P2827 **BORC regulates the axonal transport of synaptic vesicle precursors by activating ARL-8.** S. Niwa[1], L. Tao[2], S.Y. Lu[2], G. Liew[3], W. Feng[4], M.V. Nachury[3], K. Shen[2]; [1]Frontier Research Institute for Interdisciplinary Sciences and Graduate School of Life Sciences, Tohoku University, Sendai, Japan, [2]Department of Biology, Stanford University, Stanford, CA, [3]Department of Molecular and Cellular Physiology, Stanford University, Stanford, CA, [4] Chinese Academy of Sciences, Institute of Biophysics, Beijing, China

B106/P2828 **Motility and kinetic properties of the kinesin-4 members KIF27 and KIF7.** Y. Yue[1], T.L. Blasius[1], S. Zhang[2], S. Jariwala[3], B. Walker[2], B.J. Grant[3], J.C. Cochran[2], K.J. Verhey[1]; [1]Department of Cell and Developmental Biology, University of Michigan, Ann Arbor, MI, [2]Department of Molecular and Cellular Biochemistry, Indiana University, Bloomington, IN, [3]Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor, MI

B107/P2829 **Analysis of plus end directed motor proteins Cin8 and Kip3 reveals their unique role in maintaining the integrity of the chromosome specifically during meiosis.** P. Mittal[1], S.K. Ghosh[1]; [1]Department of Bioscience and Bioengineering, Indian Institute of Technology, Bombay, Mumbai, India

B108/P2830 **VLDL Secretion from Hepatocytes is Controlled by Phosphatidic Acid.** M. Kumar[1], P. Rai[1], P. Barak[1,2], S.S. Kamat[3], R. Mallik[1]; [1]Department of Biological Sciences, Tata Institute of Fundamental Research, Mumbai, India, [2]Department of Physiology, Anatomy and Genetics, Oxford University, Oxford, United Kingdom, [3]Departments of Biology Chemistry, Indian Institute of Science Education and Research, Pune, India

B109/P2831 **The unique N-terminal extension of the oncogenic KIF14 kinesin motor domain is an F-actin bundler elongater, and nucleator.** J. Hellinga[1], I. Kalhari[2], B.H. Kwok[2], J. Allingham[1]; [1]Graduate Studies, Queen's University, Kingston, ON, [2]CHEMICAL BIOLOGY OF CELL DIVISION, Research for Immunology and Cancer, University of Montreal, Montreal, QC

B110/P2832 **Geometry Matters for Cargos Navigating 3D Microtubule Intersections.** M.J. Bovyn[1,2], J. Bergman[3], F. Doval[4], M. Gudheti[3], S.P. Gross[1,2,5], J.F. Allard[1,2,6], M. Vershinin[3,4,7]; [1]Physics and Astronomy, University of California - Irvine, Irvine, CA, [2]Center for Complex Biological Systems, University of California - Irvine, Irvine, CA, [3]Biology, University of Utah, Salt Lake City, UT, [4]Physics and Astronomy, University of Utah, Salt Lake City, UT, [5]Developmental and Cell Biology, University of California - Irvine, Irvine, CA, [6]Mathematics, University of California - Irvine, Irvine, CA, [7]Center for Cell and Genome Science, University of Utah, Salt Lake City, UT

B111/P2833 **Target-Based Screen to Identify Small Molecule Inhibitors of the Mitotic Kinesin Kif15.** M. Dumas[1], N. Kendrick[1], A. Waterson[2], G. Sulikowski[2], R. Ohi[3]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN, [2]Department of Chemistry, Vanderbilt University, Nashville, TN, [3]Cell and Developmental Biology, University of Michigan, Ann Arbor, MI

B112/P2834 **Effects of post-translational modification on the mitotic kinesin Eg5.** A.F. Thompson[1], J.M. Muretta[2], B. Narayanareddy[3], G. Scarabelli[4], S. Jariwala[4], J. Major[5], M. Venere[6], J.N. Rich[5], B. Willard[5], D.D. Thomas[2], B.J. Grant[4], S.P. Gross[3], J. Stumpff[1], S.S. Rosenfeld[7]; [1]Molecular Physiology and Biophysics, University of Vermont, Burlington, VT, [2]Biochemistry, Molecular Biology, and Biophysics, University of Minnesota, Minneapolis, MN, [3]Developmental and Cell Biology and Physics, University of California, Irvine, CA, [4]Computational Medicine and Bioinformatics, University of Michigan, Ann

Arbor, MI, [5]Lerner Research Institute of the Cleveland Clinic Foundation, Cleveland, OH, [6]Radiation Oncology, Ohio State University, Columbus, OH, [7]Medical Oncology and Neurology, Mayo Clinic, Jacksonville, FL

B113/P2835 **Membrane-mediated Motor Reorganization in Microtubule-based Transport.** R. Jiang[1], S. Park[2], G. Chen[2], S. Majd[3], W.O. Hancock[1,2]; [1]Intercollege Program in Physiology, The Pennsylvania State University, University Park, PA, [2]Department of Biomedical Engineering, The Pennsylvania State University, University Park, PA, [3]Department of Biomedical Engineering, University of Houston, Houston, TX

B114/P2836 **Understanding the roles of kinesin-1 during axon degeneration.** Y. LIEW[1], A. Prokop[1]; [1]Faculty of Biology, Medicine and Health, University of Manchester, Manchester, United Kingdom

B115/P2837 **Transport Properties of Molecular Motor Ensemble with Bi-Directional Motors: A Computational Approach.** R. Srivastava[1], S. Bhaban[1], J. Melborne[1], S. Rajaganapathy[1], M.V. Salapaka[1]; [1]Electrical Engineering, University of Minnesota, Twin Cities, Minneapolis, MN

Myosins 2

B116/P2838 **Myosin 18A-alpha targets the Rac GEF Beta-PIX to the dendritic spines of cerebellar Purkinje neurons and is required for normal spine morphology.** C.J. Alexander[1], M. Barzik[2], J.A. Hammer III[1]; [1]National Heart Lung and Blood Institute, National Institutes of Health, Bethesda, MD, [2]National Institute on Deafness and Communication Disorders, National Institutes of Health, Bethesda, MD

B117/P2839 **Genomic knockout of Myosin-X in mouse results in semi-lethality and decreased filopodia.** E.G. Heimsath, Jr.[1], R.E. Cheney[1], Y. Yim[2], J.A. Hammer III[2], M. Mustapha[3]; [1]Cell Biology and Physiology, UNC School of Medicine, Chapel Hill, NC, [2]Cell Biology and Physiology Center, National Institutes of Health - NHLBI, Bethesda, MD, [3]Otollaryngology, Stanford University, Stanford, CA

B118/P2840 **The proteolysis of Myo10, by Calpain, under low calcium conditions is activated by its FERM domain Acyl-CoA Binding Protein Motif.** M.M. Tovar[1], K. Gousset[1]; [1]Biology, California State University, Fresno, Fresno, CA

B119/P2841 **Mitochondria distribution to filopodia by the actin-based motor Myo19.** B.I. Shneyer[1], M. Usaj[1], N. Wiesel-Motiuk[1], R. Regev[1], A. Henn[1]; [1]Biology, Technion-Israel Institute of Technology, Haifa, Israel

B120/P2842 **Uncovering a Myosin XI-Mediated Transport Mechanism Conserved between Physcomitrella patens and Arabidopsis thaliana.** R. Orr[1], F. Furt[1], M. Munson[2], L. Vidali[1]; [1]Biology and Biotechnology, Worcester Polytechnic Institute, Worcester, MA, [2]Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School, Worcester, MA

B121/P2843 **Drosophila myosin 7a in Phagocytosis and Eye Development.** A.S. Hong[1], J.R. Sellers[1]; [1]NHLBI, National Institutes of Health, Bethesda, MD

B122/P2844 **The mechanome of asymmetric cell division.** T.T. Pham[1,2], J. Helenius[3], N. Lee[2], E. Lund[2], D. Mueller[3], C. Cabernard[2]; [1]Biozentrum, University of Basel, Basel, Switzerland, [2]Department of Biology, University of Washington, Seattle, WA, [3]D-BSSE, ETH Zürich, Basel, Switzerland

B123/P2845 **The cytokinetic localization of Sid2p and Mob1p of the fission yeast Hippo like pathway requires both formin and type V myosin.** Z.J. Morris[1]; [1]Department of Biological Sciences, University of Toledo, Toledo, OH

B124/P2846 **Dissecting the Molecular and Cellular Basis of Familial Cardiomyopathies.** S.R. Clippinger[1], P.E. Cloonan[1], L. Greenberg[1], V. Rogers[1], M.J. Greenberg[1]; [1]Biochemistry and Molecular Biophysics, Washington University School of Medicine, St. Louis, MO

B125/P2847 **HSPB1 protein increases actomyosin ATPase activity of myofibrils fraction.** Y. Kato[1], K. Yoshito[1], K. Yoshino[2], A. Takeuchi[3], M. Yamanoue[1], Y. Shirai[1], S. Ueda[1]; [1]Department of Agrobioscience, Kobe University, Kobe, Japan, [2]Biosignal Research Center, Kobe University, Kobe, Japan, [3]3. Analytical Laboratory, Kobe Pharmaceutical University, Kobe, Japan

B126/P2848 **Normal cardiac physiology of mice with one allele of mouse α-cardiac myosin replaced with human β-cardiac myosin.** F. Haque[1,2], M. Sarikhani[3], S. Mukherjee[1], L.A. Leinwand[4], N.R. Sundaresan[3], J.A. Spudich[5], J.A. Mercer[1]; [1]Centre for Cardiac Biology and Disease, Institute for Stem Cell Biology and Regenerative Medicine, Bangalore, India, [2]National Centre for Biological Sciences, TIFR, Bangalore, India, [3]Department of Microbiology and Cell Biology, Indian Institute of Science, Bangalore, India, [4]Molecular, Cellular and Developmental Biology, University of Colorado, Boulder, CO, [5]Biochemistry, Stanford University, Stanford, CA

B127/P2849 ***Dictyostelium* Myosin Heavy Chain Kinase D Phosphorylates Myosin II and Localizes to Leading Edge Structures.** E. Lehman[1], R. Muthukkumar [1], P. Steimle[1]; [1]Biology, University of North Carolina at Greensboro, Greensboro, NC

B128/P2850 **Actin and microtubule crosstalk mediates persistent polarized growth.** S. Wu[1], M. Bezanilla[1]; [1]Biological Science, Dartmouth College, Hanover, NH

B129/P2851 **Functional relationship of MyTH-FERM myosin and VASP during filopodia initiation.** A.L. Arthur[1], K.J. Petersen[2], G. Luxton[1], A. Houdusse[3], M.A. Titus[1]; [1]Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN, [2]Biochemistry, Molecular Biology, and Biophysics, University of Minnesota, Minneapolis, MN, [3]Structural Motility, Institut Curie, Paris, France, France

B130/P2852 **UNC-45A oligomerizes at the neck.** K.Z. Chen[1], M. Bazzaro[2], A. Mooneyham[2]; [1]Biology, University of Maryland, Baltimore County, Baltimore, MD, [2]OBGYN, University of Minnesota, Twin Cities, Minneapolis, MN

Microtubules Nucleation and Organization 2

B132/P2853 **XMAP215 is a microtubule nucleation factor that functions synergistically with the gamma-tubulin ring complex.** A. Thawani[1], R.S. Kadzik[2], S. Petry[1,2]; [1]Department of Chemical and Biological Engineering, Princeton University, Princeton, NJ, [2]Department of Molecular Biology, Princeton University, Princeton, NJ

B133/P2854 **Characterization of a plant-specific microtubule-nucleating protein MACET.** S. Schmidt[1], A. Smertenko[1]; [1]Institute of Biological Chemistry, Washington State University, Pullman, WA

B134/P2855 **Spectraplakin Shot anchors a perinuclear MTOC in Drosophila polyploid cells.** T. Sun[1], Y. Song[1], X. Liang[1], J.C. Pastor-Pareja[1]; [1]School of Life Sciences, Tsinghua University, Beijing, China

B135/P2856 **Adapting proximity labeling techniques to identify novel non-centrosomal MTOC proteins in *C. elegans*.** A.D. Sanchez[1], T. Branon[2], A. Ting[1,2], J.L. Feldman[1]; [1]Biology, Stanford University, Stanford, CA, [2]Chemistry, Massachusetts Institute of Technology, Cambridge, MA

B136/P2857 **Non-random γ-TuNA-dependent spatial patterning of microtubule nucleation at the Golgi.** A.A. Sanders[1], K. Chang[1], X. Zhu[1], R.J. Thoppil[1], W.R. Holmes[2], I. Kaverina[1]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN, [2]Physics and Astronomy, Vanderbilt University, Nashville, TN

B137/P2858 **Non-centrosomal microtubules and not the centrosome control endothelial cell polarity and sprouting angiogenesis.** M. Martin[1], A. Veloso[2], J. Wu[1], F. Dequiedt[2], E. Katrukha[1], A. Akhmanova[1]; [1]Cell Biology, Utrecht University, Utrecht, Netherlands, [2]GIGA-Molecular Biology in Diseases, University of Liège, Liege, Belgium

TUESDAY

B138/P2859 **Stability and function of a putative microtubule organizing center in the human parasite *Toxoplasma gondii*.** J.M. Leung[1], Y. He[1], F. Zhang[2], Y. Hwang[3], E. Nagayasu[4], J. Liu[1], J.M. Murray[1], K. Hu[1]; [1]Biology, Indiana University, Bloomington, IN, [2]Molecular and Cellular Pharmacology, University of Miami, Miami, FL, [3]Nikon Instruments Inc., Melville, NY, [4]Infectious Diseases, University of Miyazaki, Miyazaki, Japan

B139/P2860 **A novel perinuclear non-centrosomal MTOC in *Drosophila* fat body cells maintains nuclear positioning through pericentriolar material proteins and the LINC complex.** Y. Zheng[1], R.A. Buchwalter[1], T.L. Megraw[1], J.V. Chen[1], L. Kao[1]; [1]Department of Biomedical Sciences, Florida State University, Tallahassee, FL

B140/P2861 **Nesprin-1α-dependent microtubule nucleation from the nuclear envelope via Akap450 is necessary for nuclear positioning in muscle cells.** P. Gimpel[1], Y. Lee[2], R.M. Sobota[3], K. Mamchaoui[1], F. Nedelec[4], S. Shackleton[5], J. Schmoranzer[6], B. Burke[2], E.R. Gomes[7], B. Cadot[1]; [1]Center for Research in Myology, Sorbonne Universités UPMC Univ Paris 06, INSERM U974, CNRS FRE3617, PARIS, France, [2]Institute of Medical Biology, Agency for Science, Technology and Research (A*STAR), SINGAPORE, Singapore, [3]Institute of Molecular and Cell Biology, Agency for Science, Technology and Research (A*STAR), SINGAPORE, Singapore, [4]Cell Biology and Biophysics Unit, European Molecular Biology Laboratory, HEIDELBERG, Germany, [5]Department of Molecular and Cell Biology; University of Leicester, LEICESTER, United Kingdom, [6]Charité, Charité-Universitätsmedizin, BERLIN, Germany, [7]Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, LISBON, Portugal

B141/P2862 **Distinct roles of pericentriolar proteins in acentriolar MTOC of mouse meiotic spindle formation.** I. Lee[1], Y. Jo[1], S. Namgoong[1], N. Kim[1]; [1]Animal Science, Chungbuk National University, Cheongju, Korea, South

B142/P2863 **Golgi-derived microtubules in pancreatic β-cells are regulated by glucose through cAMP and EPAC2.** K.P. Trogden[1], G. Gu[1], I. Kaverina[1]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B143/P2864 **Comparison of migration rates and microtubule nucleation in MDA-MB-231 and MCF-7 breast cancer cells.** B. Bell[1], L. Zahn[1], C. Grady[1], S. Lundin-Schiller[1]; [1]Biology, Austin Peay State University, Clarksville, TN

Microtubules Dynamics and Its Regulation

B144/P2865 **Septin-microtubule interplay enables initiation of branching morphogenesis.** D.K. Bogorodskaya[1], J.P. Wiegartner[1], L. Ligon[1]; [1]Biological Sciences, Rensselaer Polytechnic Institute, Troy, NY

B145/P2866 **Effects of Microtubule Stabilizers in Neurodevelopment and Injury.** Y. Song[1,2], J.J. Pineda[1], T.J. Mitchison[1,2]; [1]Systems Biology, Harvard Medical School, Boston, MA, [2]Harvard Program in Therapeutic Science, Harvard Medical School, Boston, MA

B146/P2867 **The microtubule plus-end-tracking protein TACC3 promotes persistent axon outgrowth and mediates responses to axon guidance signals during development.** B. Erdogan[1], G. Cammarata[1], E. Lee[1], B. Pratt[1], L.A. Lowery[1]; [1]Biology, Boston College, Chestnut Hill, MA

B147/P2868 **Trim9 participates in a microtubule quality control pathway that ensures local nucleation in dendrites does not disrupt uniform polarity.** C. Feng[1], M.M. Rolls[1]; [1]BMMB, Penn State University, University Park, PA

B148/P2869 **TACC3, a microtubule plus-end tracking protein, regulates neural crest cell motility in vitro and in vivo.** E.A. Bearce[1], E.L. Rutherford[1], L. Carandang[1], B. Pratt[1], L.A. Lowery[1]; [1]Biology, Boston College, Chestnut Hill, MA

B149/P2870 **EB1 and EB3 regulate microtubule minus end organization and Golgi morphology.** C. Yang[1], J. Wu[1], C. Heus [2], I. Grigoriev[1], N. Liv[2], Y. Yao[3], I. Smal[3], E. Meijering[3], J. Klumperman[2], .Z. Qi[4], A. Akhmanova[1]; [1]Cell Biology, Department of Biology, Utrecht University, Utrecht, Netherlands, [2]Department of Cell Biology, University Medical Center Utrecht, Utrecht, Netherlands, [3]Departments of Medical Informatics and Radiology, Erasmus University Medical Center, Rotterdam, Netherlands, [4]Division of Life Science, The Hong Kong University of Science and Technology, Hong Kong, China

B150/P2871 **Rac1 promotes septin-mediated guidance of CAMSAP-associated microtubules to focal adhesions.** D.G. Merenich[1], S. Donovan[1], A. Jacobs[1], K.A. Myers[1]; [1]Biological Sciences, University of the Sciences in Philadelphia, Philadelphia, PA

B151/P2872 **The Golgi Outpost Protein TPPP Mediates Uniform Microtubule Polarity and Branching in Oligodendrocytes.** M. Fu[1], J.A. Oses-Prieto[2], C. Lee[1], N.L. Saw[3], R. Shi[1], M. Nori[1], M. Shamloo[3], A. Burlingame[2], B.A. Barres[1]; [1]Neurobiology, Stanford University, Stanford, CA, [2]Pharmaceutical Chemistry, University of California, San Francisco, San Francisco, CA, [3]Neurosurgery, Stanford University, Stanford, CA

B152/P2873 **Mechanism of Catalytic Microtubule Depolymerization via KIF2-tubulin Transitional Conformation.** T. Ogawa[1], S. Saijo[2], N. Shimizu[2], X. Jiang[1], N. Hirokawa[1]; [1]Department of Cell Biology and Anatomy, Graduate School of Medicine, University of Tokyo, Tokyo, Japan, [2]High Energy Accelerator Research Organization, Photon Factory, Institute of Materials Structure Science, Tsukuba, Japan

B153/P2874 **Cytoplasm Density and Cytoskeleton Dynamics.** A.T. Molines[1], B. Knapp[2], F. Chang[1]; [1]Cell and Tissue Biology, UCSF, San Francisco, CA, [2]Biophysics PhD program, Stanford, Stanford, CA

B154/P2875 **Distinct regions of the yeast kinesin-8, Kip3, tail regulate the stability of astral microtubules spatially and the spindle midzone temporally.** S. Dave[1], S. Anderson[1], P.S. Roy[1], E. Nsamba[1], A. Bunning[1], M. Gupta[1]; [1]Genetics Development and Cell Biology, Iowa State University, Ames, IA

B155/P2876 **Investigating the Structure and Functional Role of the C-Terminal Domain of the *Drosophila* XMAP215 Protein Family Member Minispindles.** Z. Xue[1], R.C. Adikes[1], B.F. Saway[1], A.N. Gwyn[1], K.C. Slep[1]; [1]Department of Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC

B156/P2877 **Structure, biochemistry, and activity of a CLASP family TOG.** S. Majumdar[1], L.M. Rice[1]; [1]Biophysics, UT Southwestern Medical Center, Dallas, TX

B157/P2878 **Reconstitution of Microtubule Dynamics from Budding Yeast Lysate.** Z.J. Bergman[1], J. Wong[1], D.G. Drubin[1], G. Barnes[1]; [1]Molecular and Cell Biology, University of California-Berkeley, Berkeley, CA

B158/P2879 **Behaviors of Microtubules and other Steady-State Polymers Depend on Multiple Critical Concentrations.** E.M. Jonasson[1], E.C. Norby[1], A.J. Mauro[2], S.M. Mahserejian[2], M.S. Alber[2], H.V. Goodson[1]; [1]Chemistry and Biochemistry, University of Notre Dame, Notre Dame, IN, [2]Applied & Computational Mathematics Statistics, University of Notre Dame, Notre Dame, IN

B159/P2880 **Site-occupancy calibration of taxane pharmacology.** J.J. Pineda[1], M.A. Miller[2], R. Weissleder[2], T.J. Mitchison[1]; [1]Dept. Systems Biology, Harvard Medical School, Boston, MA, [2]Center for Systems Biology, Mass General Hospital, Boston, MA

B160/P2881 **Mechanisms to localize and regulate katanin activity.** G.M. Burkart[1], R.V. Dixit[1]; [1]Biology, Washington University in St. Louis, St. Louis, MO

B161/P2882 **Aurora B kinase modulates an extended conformation of lattice-bound Kinesin-13 MCAK.** T. McHugh[1], J. Zou[1], J. Rappsilber[1], A. Bertin[2], J.P. Welburn[1]; [1]Wellcome Trust Centre for Cell Biology, University of Edinburgh, Edinburgh, United Kingdom, [2]Institut Curie, Paris, France

B162/P2883 **Monte Carlo simulations of the dynamic microtubule cytoskeleton: The critical roles of the cell boundary and rescue transitions in shaping the array.** J.C. Leung[1], L. Cassimeris[1], D.J. Odde[2]; [1]Biological Sciences, Lehigh University, Bethlehem, PA, [2]Biomedical Engineering, University of Minnesota, Minneapolis, MN

B163/P2884 **Investigating the role of the GTP hydrolysis rate in regulation of microtubule stability.** V. Farmer[1], A. Rahman[2], M. Zanic[1,2]; [1]Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN, [2]Department of Chemical and Biomolecular Engineering, Vanderbilt University, Nashville, TN

B164/P2885 **H^+- and Na^+- elicited rapid changes of the microtubule cytoskeleton in the biflagellated green alga *Chlamydomonas*.** Y. Liu[1], P. Yang[1]; [1]Biological Sciences, Marquette University, Milwaukee, WI

B165/P2886 **A chemical synthetic lethality screen identifies a new pharmacological agent that sensitizes cells to paclitaxel.** L. Peronne[1], E. Denarier[2], P. Suzanne[3], A. Vernet[1], A. Martinez[1], C. Boscheron[2], M. Billaud[4], P. Dallemagne[3], R. Prudent[5], A. Andrieux[2], L. Lafanechère[1]; [1]38, Institute for advanced biosciences, Grenoble, France, [2]38, Grenoble Institut des Neurosciences, Grenoble, France, [3]14, Centre d'Etudes et de Recherche sur le Médicament de Normandie, Caen, France, [4]69, Centre de recherches en Cancérologie de Lyon, Lyon, France, [5]38, Cellipse, Grenoble, France

B166/P2887 **Regulation of MT assembly dynamics is sensitive to extracellular matrix density, controls MMP14 trafficking, and is associated with MMP14 activity at focal adhesions.** A. Braun[1], K.A. Myers[1]; [1]Biological Sciences, University of the Sciences in Philadelphia, Philadelphia, PA

B167/P2888 **Analysis of Cytoskeletal Filament Bending via Curvature.** P. Wisanpitayakorn[1], K.J. Mickolajczyk[2], W.O. Hancock[2], L. Vidali[3], E. Tuzel[1]; [1]Physics, Worcester Polytechnic Institute, Worcester, MA, [2]Biomedical Engineering, Pennsylvania State University, University Park, PA, [3]Biology and Biotechnology, Worcester Polytechnic Institute, Worcester, MA

Ciliary/Flagellar Motility

B169/P2889 **Multiple Functions of the Striated Rootlet Proteins of the Paramecium Basal Body.** M. Nabi[1], M.S. Valentine[1], J. Yano[1], J. Van Houten[1]; [1]Biology, University of Vermont, Burlington, VT

B170/P2890 **The generation and sensation of fluid flow by cells: roles in development and disease.** D.T. Grimes[1], R.D. Burdine[1]; [1]Molecular Biology, Princeton University, Princeton, NJ

B171/P2891 **Biophysical interactions between cilia and mucus underlie directed fluid transport in the ventral epithelium of the planaria Schmidtea mediterranea.** G.R. Ramirez-SanJuan[1,2], W.F. Marshall[2], M. Prakash[1]; [1]Bioengineering, Stanford University, Stanford, CA, [2]Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA

B172/P2892 **FBB18, a homologue of C21orf59, regulates cytoplasmic preassembly of outer and inner dynein arms in Chlamydomonas.** L. Wang[1], G. Liu[1], J. Pan[1,2]; [1]MOE Key Laboratory of Protein Sciences, Tsinghua-Peking Center for Life Sciences, School of Life Sciences, Tsinghua University, Beijing, China, [2]Laboratory for Marine Biology and Biotechnology, Qingdao National Laboratory for Marine Science and Technology, Qingdao, China

B173/P2893 **Repetitive buckling of microtubules driven by axonemal dynein arrays reconstituted on a microtubule.** M. Shiraga[1], Y. Matsuda[1], J. Kirima[1], K. Oiwa[1,2]; [1]Graduate School of Life Science, University of Hyogo, Harima, Japan, [2]Advanced ICT Research Institute, National Institute of Information and Communications Technology, Kobe, Japan

B174/P2894 **Conserved complexes regulating ciliary motility and waveform asymmetry.** K.R. Augspurger[1], J. Sakizadeh[1], J.T. Reck[1], R. Bower[1], D. Tritschler[1], G. Fu[2], D. Nicastro[2], M.E. Porter[1]; [1]Genetics, Cell Biology, and Development, University of Minnesota Medical School, Minneapolis, MN, [2]Cell Biology and Biophysics, University of Texas Southwestern Medical Center, Dallas, TX

B175/P2895 **Comparative proteomics reveals candidates for novel ciliary central apparatus components.** L. Zhao[1], Y. Hou[1], T. Picariello[1], B. Craige[1], G.B. Witman[1]; [1]Division of Cell Biology and Imaging, Department of Radiology, University of Massachusetts Medical School, Worcester, MA

B176/P2896 **Antioxidant treatment prevents alcohol-induced ciliary dysfunction in Chlamydomonas reinhardtii.** C. Scarbrough[1], M. Wirschell[1]; [1]Biochemistry, University of Mississippi Medical Center, Jackson, MS

B177/P2897 **EFHC1 and EFHC2 are necessary for motile cilia function and A-tubule MIP recruitment.** B.A. Bayless[1], D. Stoddard[2,3], Y. Zhao[4], J. Gaertig[5], D. Nicastro[2,3], M. Winey[1]; [1]Molecular and Cellular Biology, University of California, Davis, Davis, CA, [2]Cell Biology and Biophysics, University of Texas Southwestern Medical Center, Dallas, TX, [3]Biology, Brandeis University, Waltham, MA, [4]Molecular, Cellular and Developmental Biology, University of Colorado, Boulder, CO, [5]Cellular Biology, University of Georgia, Athens, GA

B178/P2898 **FMG-1B glycoprotein is necessary for expression of force at the *Chlamydomonas* flagellar surface.** R.D. Sloboda[1], M. Sa-eed[1], R.A. Bloodgood[2]; [1]Biological Sciences, Dartmouth College, Hanover, NH, [2]Cell Biology, University of Virginia School of Medicine, Charlottesville, VA

B179/P2899 **Exploring the role of FoxJ1 transcription factor in a new species of planarian "Dugesia guanajuatiensis".** C. Guerrero-Hernández[1], E.M. Duncan[1], S.H. Nowotarski[1], V. Doddihal[1], L. Guo[1], E. Ross[1], A. Sánchez Alvarado[1,2]; [1]Stowers Institute for Medical Research, Kansas City, MO, [2]Howard Hughes Medical Institute, Kansas City, MO

B180/P2900 **A phase separated organelle for dynein arm assembly in ciliated cells.** R.L. Huizar[1], C. Lee[1], J.B. Wallingford[1]; [1]Department of Molecular Biosciences, University of Texas at Austin, Austin, TX

Ciliopathies

B181/P2901 **Altered centrosomal trafficking disrupts cilia assembly and signal transduction in Down syndrome.** D.F. Galati[1,2], A.T. Pham[1,2], K.D. Sullivan[1,3], J. Espinosa[1,3], C.G. Pearson[1,2]; [1]Linda Crnic Institute for Down Syndrome, University of Colorado-Anschutz Medical Campus, Aurora, CO, [2]Cell and Developmental Biology, University of Colorado-Anschutz Medical Campus, Aurora, CO, [3]Pharmacology, University of Colorado-Anschutz Medical Campus, Aurora, CO

B182/P2902 **Cardiac valve abnormalities in PKD are due to defects in ciliogenesis, and ciliogenic programs involving the exocyst are conserved across organs.** D.B. Fulmer[1,2], B. Fogelgren[3], K.A. Toomer[2], L. Guo[1,2], R.A. Norris[2], J.H. Lipschutz[1,4]; [1]Department of Medicine, Medical University of South Carolina, Charleston, SC, [2]Department of Regenerative Medicine and Cell Biology, Medical University of South Carolina, Charleston, SC, [3]Department of Anatomy, Biochemistry, and Physiology, University of Hawaii at Manoa, Honolulu, HI, [4]Ralph H. Johnson VAMC, Charleston, SC

B183/P2903 **Two-Color STORM Reveals that Disruption of Ciliary Transition Zone Architecture Causes Joubert Syndrome.** X. Shi[1], G. Garcia[2,3], J.F. Reiter[2,3], B. Huang[1,2]; [1]Pharmaceutical Chemistry, University of California - San Francisco, San Francisco, CA, [2]Biochemistry and Biophysics, University of California - San Francisco, San Francisco, CA, [3]Cardiovascular Research Institute, University of California - San Francisco, San Francisco, CA

B184/P2904 **Primary Ciliary Deficits in the Dentate Gyrus of the Fragile X Syndrome Mouse Model.** B. Lee[1], H. Lee[1]; [1]Physiology, UTHSCSA, San Antonio, TX

B185/P2905 **A Comprehensive Portrait of Cilia and Ciliopathies from a CRISPR-based Screen for Hedgehog Signaling.** D.K. Breslow[1,2], S. Hoogendoorn[3], A.R. Kopp[2], D.W. Morgens[4], M.C. Bassik[4], J.K. Chen[3,5], M.V. Nachury[2,6]; [1]Molecular, Cellular Developmental Biology, Yale University, New Haven, CT, [2]Molecular Cellular Physiology, Stanford University, Stanford, CA, [3]Chemical Systems Biology, Stanford University, Stanford, CA, [4]Genetics, Stanford University, Stanford, CA, [5]Developmental Biology, Stanford University, Stanford, CA, [6]Ophthalmology, University of California, San Francisco, San Francisco, CA

B186/P2906 **Loss of Lebercilin causes a severe alteration of RPE maturation and ciliary function in cellular and animal experimental models for LCA5.** L. Leo[1], J. Vasquez[1], J. Pham[1], I. Shpylchak[1], J. Bennett[1], J. Mills[1]; [1]Ophthalmology, University of Pennsylvania, Philadelphia, PA

B187/P2907 **High temporal and spatial resolution of the mammalian axonemal dynein assembly pathways in vivo.** D.O. Dodd[1], P. Mill[1], G. Mali[1,2,3], A. Jarman[2], P. Zur Lage[2], A. Von Kriegsheim[1], M. Keighren[1]; [1]Human Genetics Unit, Institute of Genetics and Molecular Medicine, Edinburgh, United Kingdom, [2]Centre for Integrative Physiology, University of Edinburgh, Edinburgh, United Kingdom, [3]Structural Studies, MRC Laboratory of Molecular Biology, Cambridge, United Kingdom

B188/P2908 **New insight on the TTBK2-dependent Sonic hedgehog activation from a CRISPR-based screen.** A. Loukil[1], S. Goetz[1]; [1]Department of Pharmacology and Cancer Biology, Duke University, Durham, NC

B189/P2909 **Identifying activity of targeted cancer therapies in regulation of ciliary dynamics.** A.S. Nikonova[1], A.Y. Deneka[1], V.A. Korobeynikov[2], A.A. Kiseleva[1], E.A. Golemis[1]; [1]Molecular Therapeutics, Fox Chase Cancer Center, Philadelphia, PA, [2]Pathology and Cell Biology, Columbia University, New York, NY

Cytokinesis 2

B191/P2910 **Rab14 is a Midbody-Associated Rab that is Required for Completion of Cytokinesis.** P. Gibieža[1], I. Antanaviciute[1], A. Skeberdis[1], M. Valius[2], R. Prekeris[3]; [1]Lithuanian Health Sciences University, Kaunas, Lithuania, [2]Vilnius University Institute of Biotechnology, Vilnius, Lithuania, [3]Cell and Developmental Biology, University of Colorado Anschutz Medical Campus, Aurora, CO

B192/P2911 **Oxidoreduction of F-actin controls the timing of cytokinetic abscission.** S. Frémont[1], J. Bai[1], H. Hammich[1], G. Romet-Lemonne[1], O. Pylypenko[1], A. Houdusse[1], A.F. Echard[1]; [1]Cell Biology and Infection, Institut PASTEUR, Membrane Traffic and Cell Division Lab, Paris, France

B193/P2912 **Actin isoform-specific array organization during cytokinesis is differentially controlled by the formins DIAPH1 and DIAPH3.** A. CHEN[1], A.R. Wilde[1,2]; [1]Biochemistry, University of Toronto, Toronto, ON, [2]Molecular Genetics, University of Toronto, Toronto, ON

B194/P2913 **Hold Me Tight! PIP2 and Sktl Are Required for Association of Plasma Membrane with the Contractile Ring During Cytokinesis.** L.L. Fabian[1], S. Yildirim[1], R. Wong[2], H. Wei[1], G. Polevoy[1], J.A. Brill[1,2,3]; [1]Cell Biology, Hospital for Sick Children, Toronto, ON, [2]Institute of Medical Science, University of Toronto, Toronto, ON, [3]Molecular Genetics, University of Toronto, Toronto, ON

B195/P2914 **The Aurora kinase A activator TPXL-1 mediates aster-based clearing of contractile ring proteins from the cell poles during cytokinesis.** S. Mangal[1], T. Kim[2], K. Oegema[2], E. Zanin[1]; [1]Department Biology II, Ludwig-Maximilians University, Planegg-Martinsried, Germany, [2]Department of Cellular and Molecular Medicine, Ludwig Institute for Cancer Research, La Jolla, CA

B196/P2915 **Phosphorylation of a linker region masks Cdc15's F-BAR domain to regulate its membrane and protein binding capacity, oligomerization, and contractile ring localization.** M. Mangione[1], N.A. McDonald[1], K.L. Gould[1]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B197/P2916 **CCDC11 is Essential for Cytokinesis and Cell-cell Adhesion via Regulation of RhoA Protein Stability.** S.S. Kulkarni[1], R.E. Stephenson[2], E. Betleja[3], J. Moresco[4], J. Yates iii[4], M.R. Mahjoub[3], A.L. Miller[2], M.K. Khokha[1]; [1]Department of Pediatrics and Genetics, Yale School of Medicine, New Haven, CT, [2]Department of Molecular, Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI, [3]Department of Medicine (Nephrology),, Washington University in St. Louis, St. Louis, MO, [4]Department of Chemical Biology, Scripps Research Institute, La jolla, CA

B198/P2917 **The F-BAR domain of Cdc15 simultaneously scaffolds protein partners and binds membrane to promote cytokinesis.** C.E. Snider[1], N.A. McDonald[1], A.H. Willet[1], S.E. Collier[1], M.D. Ohi[1], K.L. Gould[1]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B199/P2918 **Modeling contractile ring dynamics in the Caenorhabditis elegans zygote.** D.B. Cortes[1], S. Ryan[1], F. Nedelec[2], A.S. Maddox[1]; [1]Biology, University of North Carolina Chapel Hill, Chapel Hill, NC, [2]Cell Biology and Biophysics, EMBL Heidelberg, Heidelberg, Germany

B200/P2919 **Regulation of Abscission by Class 1 Rab11-Family-Interacting-Proteins.** N.V. Iannantuono[1], C. Laflamme[2], G. Emery[3]; [1]Biologie Moléculaire, Université de Montréal, Montréal, QC, [2]Biochemistry and Molecular Biology, McGill University, Montréal, QC, [3]Pathologie et Biologie Cellulaire, Université de Montréal, Montréal, QC

B201/P2920 **The recruitment and organization of ESCRT-III abscission machinery is spatiotemporally regulated by septins.** E.P. Karasmanis[1], D. Hwang[1], J.R. Bowen[1], K. Nakos[1], E.T. Spiliotis[1]; [1]Biology, Drexel University, Philadelphia, PA

B202/P2921 **Adaptor proteins are essential for Septin-mediated cytokinesis.** D. Safavian[1,2], K. Fung[2], W.S. Trimble[1,2]; [1]Cell Biology program, The Hospital for Sick Children, Toronto, ON, [2]Department of Biochemistry, University of Toronto, Toronto, ON

B203/P2922 **Direct visualization and characterization of branching microtubule nucleation during cytokinesis.** V. Verma[1], T.J. Maresca[1]; [1]Biology, University of Massachusetts, Amherst, MA

B204/P2923 **Role of Arp2/3 actin networks in symmetric and atypical cleavages during early development.** L. Toledo[1], A. Ellis[1], A. Wilson[1], T. Salgado[1], J.H. Henson[2], C.B. Shuster[1]; [1]Biology, New Mexico State University, Las Cruces, NM, [2]Biology, Dickinson College, Carlisle, PA

B205/P2924 **Cytokinesis in plants involves exquisitely choreographed intracellular transport.** C. Triplet van Oostende[1], D. Guillet[2], T. Triplet[3], E. Pandzic[4], P.W. Wiseman[2], A. Geitmann[1,5]; [1]Department of Biological Sciences, Université de Montréal, Montreal, QC, [2]Department of Chemistry, McGill University, Montreal, QC, [3]Computer Research Institute of Montreal, Montreal, QC, [4]University of New South Wales, Sydney, Australia, [5]Department of Plant Science, McGill University, Ste-Anne-de-Bellevue, QC

B206/P2925 **Precise tuning of cortical contractility regulates mechanical equilibrium during cell division.** N. Taneja[1], M.R. Bersi[2], A.M. Fenix[1], J.C. Snider[2], J.A. Cooper[1], R. Ohi[1], V. Gama[1], W.D. Merryman[2], D.T. Burnette[1]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN, [2]Biomedical Engineering, Vanderbilt University, Nashville, TN

B207/P2926 **An optogenetic tool for studying asymmetric cell division.** A. Monnard[1,2], C. Cabernard[1]; [1]Department of Biology, University of Washington, Seattle, WA, [2]Biozentrum, University of Basel, Basel, Switzerland

B208/P2927 **Study of cisplatin induced ROS using *C. elegans* as a post-mitotic cell model.** D. Raj[1], J. Warzecha[1], G. Kao[1], P. Naredi[1]; [1]Sahlgrenska Cancer Center, Gothenburg University, Gothenburg, Sweden

B209/P2928 **CedA mediated mechanism of cell division in *E. coli* under chromosomal over replication condition.** P. SHARMA[1], B. Kundu[1]; [1]KUSUMA SCHOOL OF BIOLOGICAL SCIENCES, INDIAN INSTITUTE OF TECHNOLOGY DELHI, NEW DELHI, India

B210/P2929 **The regulation of Z ring dynamics in bacterial cytokinesis.** G.R. Squyres[1], S.R. Barger[2], B.R. Pennycook[3], J. Ryan[4], A.W. Bisson-Filho[1], E.C. Garner[1]; [1]Department of Molecular and Cellular Biology, Harvard University, Cambridge, MA, [2]Department of Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY, [3]MRC Laboratory for Molecular Cell Biology, University College London, London, United Kingdom, [4]Department of Biology II and Center for Integrated Protein Science Munich, Ludwig Maximilian University of Munich, Munich, Germany

B211/P2930 **Screening gene deletion collection of Cryptococcus neoformans to elucidate the role of septin proteins in cytokinesis.** J.M. Zielinski[1], P. Stempinski[1], E. Huey[1], E. McCormack[1], A. Rubin[1], S. Chandrasekaran[2], L. Kozubowski[1]; [1]Genetics and Biochemistry, Clemson University, Clemson, SC, [2]Biology, Furman University, Greenville, SC

Kinetochore Assembly and Functions 3

B212/P2931 **Molecular delineation of CENP-T deposition in mammalian cell division cycle.** M. Ding[1,2], F. Zheng[1], Q. Wang[1], J. Jiang[1], F. Yang[1], J. Fang[1], X. Liu[1,2], C. Fu[1], X. Yao[1,2]; [1]Anhui Key Laboratory for Cellular Dynamics Chemical Biology, University of Science and Technology of China, Hefei, China, [2]Physiology, Morehouse School of Medicine Keck Center for Molecular Imaging, Atlanta, United States

B213/P2932 **Microtubule sliding in the bridging fiber pushes kinetochore fibers apart to segregate chromosomes in human cells.** P. Risteski[1], K. Vukušić[1], R. Buđa[1], A. Bosilj[2], A. Milas[1], N. Pavin[2], I.M. Tolić[1]; [1]Division of Molecular Biology, Ruđer Bošković Institute, Zagreb, Croatia, [2]Department of Physics, Faculty of Science, University of Zagreb, Zagreb, Croatia

B214/P2933 **Multimerization of NDC80 kinetochore complexes is essential for efficient microtubule force-coupling.** V.A. Volkov[1], P.J. Huis in 't Veld[2], M. Dogterom[1], A. Musacchio[2]; [1]Department of Bionanoscience, Delft University of Technology, Delft, Netherlands, [2]Department of Mechanistic Cell Biology, Max Planck Institute of Molecular Physiology, Dortmund, Germany

B215/P2934 **Characterizing the role of BuGZ in mitosis.** H.K. Shirnekhi[1], R.P. Hughes[1], J.G. DeLuca[1]; [1]Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO

B216/P2935 **Distinct surfaces of the microtubule-binding domain of the Ska1 kinetochore complex facilitate microtubule tip-tracking.** E.V. Tarasovetc[1], I. Whitney[2], J. Monda[2,3], E.M. Wilson-Kubalek[4], R.A. Milligan[4], E.L. Grishchuk[1], I.M. Cheeseman[2,3]; [1]Physiology Department, University of Pennsylvania, Philadelphia, PA, [2]Whitehead Institute for Biomedical Research, Cambridge, MA, [3]Department of Biology, Massachusetts Institute of Technology, Cambridge, MA, [4]Department of Cell Biology, The Scripps Research Institute, La Jolla, CA

B217/P2936 **A role of Kinesin-5 in controlling Ndc80 functions at kinetochore.** A. Suzuki[1], A. Gupta[2], S. Biggins[2,3], K.S. Bloom[1], E.D. Salmon[1]; [1]Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Basic Science, Fred Hutchinson Cancer Research Center, Seattle, WA, [3]Howard Hughes Medical Institute, Seattle, WA

B218/P2937 **Centromeric Protein Dynamics Change in Response to Physiological Changes of Early Embryogenesis in *C. elegans*.** L. Smith[1], C. Barnhardt[2], P.S. Maddox[2]; [1]Genetics and Molecular Biology, University of North Carolina, Chapel Hill, NC, [2]Biology, University of North Carolina, Chapel Hill, NC

B219/P2938 **Mad1 promotes tumor progression through destabilization of p53.** J. Wan[1], B.A. Weaver[1]; [1]Cell and Regenerative Biology, University of Wisconsin-Madison, MADISON, WI

B220/P2939 **Identification of drivers of Chromosome Instability in Breast Tumors.** K. Pfister[1], J.L. Pipka[1], C. Chiang[2], R. Clark[1], M.J. Guertin[1], I. Hall[2], T. Stukenberg[1]; [1]Biochemistry and Molecular Genetics, University of Virginia, School of Medicine, Charlottesville, VA, [2]McDonnell Genome Institute, Washington University, St. Louis, St Louis, MO

B221/P2940 **Spatial architecture of the biochemical pathways that recruit the Ndc80 complex in human kinetochores.** A.A. Kukreja[1], A.P. Joglekar[1,2,3], S. Kavuri[2]; [1]Biophysics, University of Michigan, Ann Arbor, MI, [2]Cell Developmental Biology, University of Michigan, Ann Arbor, MI, [3]Biomedical Engineering, University of Michigan, Ann Arbor, MI

B222/P2941 **HPV oncoproteins cause specific types of chromosomal instability in head and neck cancer.** L.C. Funk[1,2,3], D.L. Lee[3], P.F. Lambert[3,4], R.J. Kimple[4,5], B.A. Weaver[1,2,3]; [1]Cell and Regenerative Biology, University of Wisconsin-Madison, Madison, WI, [2]Molecular and Cellular Pharmacology, University of Wisconsin-Madison, Madison, WI, [3]Oncology, University of Wisconsin-Madison, Madison, WI, [4]Carbone Cancer Center, University of Wisconsin-Madison, Madison, WI, [5]Human Oncology, University of Wisconsin-Madison, Madison, WI

B223/P2942 **Ndc80 complex as an intrinsic regulator of molecular friction at mitotic kinetochores.** V.M. Demidov[1], S.K. Tripathy[1], F.I. Ataullakhanov[2], E.L. Grishchuk[1]; [1]Physiology, University of Pennsylvania, Perelman School of Medicine, Philadelphia, PA, [2]Center for Theoretical Problems of Physicochemical Pharmacology, Moscow, Russia

B224/P2943 **Investigating in vivo variation in the strength of the spindle assembly checkpoint.** A.R. Gerhold[1], J. Labbé[1], P.S. Maddox[2]; [1]Institute for Research in Immunology and Cancer, University of Montreal, Montreal, QC, [2]Department of Biology, University of North Carolina, Chapel Hill, Chapel Hill, NC

B225/P2944 **Spatiotemporal delay of chromosome alignment causes chromosomal instability.** K. Kuniyasu[1], K. Iemura[1], K. Tanaka[1]; [1]Department of Molecular Oncology, Institute of Development, Aging and Cancer, Tohoku University, Sendai, Japan

B226/P2945 **Mechanisms of quantitative transmission of CENP-A nucleosomes through the germline.** A. Das[1,2], V. Fu[2], A. Iwata-Otsubo[3], B.E. Black[1], M.A. Lampson[2]; [1]Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA, [2]Biology, University of Pennsylvania, Philadelphia, PA, [3]Genetics, Children's Hospital of Philadelphia, Philadelphia, PA

B227/P2946 **The kinetochore-dependent and -independent formation of the CDC20-MAD2 complex and its functions in HeLa cells.** J. Li[1], N. Dang[1], D. wood[2], J. Huang[1]; [1] Newcastle University, institute for Cell and Molecular Biosciences, Newcastle, United Kingdom, [2]Newcastle University, Northern Institute for Cancer Research, Newcastle Upon Tyne, United Kingdom

B228/P2947 **Spindle assembly checkpoint function in the mouse preimplantation embryo.** C. Vázquez-Diez[1], G. FitzHarris[1,2]; [1]Centre de Recherche du Centre Hospitalier de l'Université de Montréal, Montréal, QC, [2]Département d'Obstétrique et Gynécologie, Université de Montréal, Montréal, QC

B229/P2948 **Quantitative analysis of the biochemical cascade that generates the Mitotic Checkpoint Complex.** C. Chen[1], A. Fontan[2], I.M. Cheeseman[3,4], A.P. Joglekar[1,2]; [1]Department of Biophysics, University of Michigan, Ann Arbor, MI, [2]Cell Developmental Biology, University of Michigan, Ann Arbor, MI, [3]Whitehead Institute for Biomedical Research, Massachusetts Institute of Technology, Cambridge, MA, [4]Department of Biology, Massachusetts Institute of Technology, Cambridge, MA

Spindle Assembly 3

B230/P2949 **KIF18B is regulated by distinct interactions with EB1 and importin α through its tail domain.** S. Shrestha[1], A.L. Yount[1], S.C. Ems-McClung[1], C.E. Walczak[1]; [1]Medical Science Program, Indiana University, Bloomington, IN

B231/P2950 **Chromosome velocities in the absence of microtubules in *Mesostoma ehrenbergii* spermatocytes are affected by drugs that alter myosin.** E. Fegaras[1], A. Forer[1]; [1]Biology, York University, Toronto, ON

TUESDAY

B232/P2951 **Elastic tethers extend between the telomeres of separating anaphase chromosomes in a broad range of animal cells.** E. Fegaras[1], M.L. Duquette[2], L.V. Paliulis[3], M. Ono[2], D. Preece[2], M.W. Berns[2,4], A. Forer[1]; [1]Biology, York University, Toronto, ON, [2]Bioengineering and Institute for Engineering in Medicine, University of California San Diego, San Diego, CA, [3]Biology, Bucknell University, Lewisburg, PA, [4]Beckman Laser Institute and Department of Bioengineering Medicine, University of California, Irvine, CA

B233/P2952 **Dual spindle formation around zygotic pro-nuclei explains parental genome separation.** J. Reichmann[1], B. Nijmeijer[1], J.M. Hossain[1], M. Eguren[1], I. Schneider[1], A.Z. Politi[1], L. Hufnagel[1], T. Hiiragi[2], J. Ellenberg[1]; [1]Cell Biology and Biophysics, The European Molecular Biology Laboratory (EMBL), Heidelberg, Germany, [2]Developmental Biology, The European Molecular Biology Laboratory (EMBL), Heidelberg, Germany

B234/P2953 **GTSE1 REGULATES SPINDLE MICROTUBULE DYNAMICS TO CONTROL AURORA B KINASE AND KIF4A CHROMOKINESIN ON CHROMOSOME ARMS.** A.R. Tipton[1], J.D. Wren[2], J.R. Daum[1], J.C. Siefert[1,3], G.J. Gorbsky[1]; [1]Cell Cycle and Cancer Biology, Oklahoma Medical Research Foundation, Oklahoma City, OK, [2]Arthritis and Clinical Immunology, Oklahoma Medical Research Foundation, Oklahoma City, OK, [3]Department of Cell Biology, University of Oklahoma Health Sciences Center, Oklahoma City, OK

B235/P2954 **Interplay between microtubule bundling and sorting factors ensures acentriolar spindle stability during *C. elegans* oocyte meiosis.** T.J. Mullen[1], S.M. Wignall[1]; [1]Molecular Biosciences, Northwestern University, Evanston, IL

B236/P2955 **Chromokinesin Kif4 is required for faithful chromosome segregation in mammalian oocytes.** C.M. Heath[1], S.M. Wignall[1]; [1]Molecular Biosciences, Northwestern University, Evanston, IL

B237/P2956 **Proper rotation of the mitotic spindle requires an equatorial spindle centering mechanism in human cells.** I. Zulkipli[1,2], R.L. Shrestha[1,3], J. Clark[1], V.M. Draviam[4]; [1]Department of Genetics, University of Cambridge, Cambridge, United Kingdom, [2]Universiti Brunei Darussalam, Brunei, Brunei Darussalam, [3]National Institutes of Health, Bethesda, United States, [4]Cell and Molecular Biology, Queen Mary University of London, London, United Kingdom

B238/P2957 **Rapid degradation of gamma-TuRC component GCP2 causes spindle collapse in mitosis.** E.A. Turcotte[1], S.G. Regmi[1], V. Aksenova[1], A. Arnaoutov[1], M. Dasso[1]; [1]Division of Molecular and Cellular Biology, National Institute of Child Health and Human Development, Bethesda, MD

B239/P2958 **Cortical Pulling Drives Pronuclear Migration and Rotation, and Spindle Positioning and Oscillation.** H. Wu[1,2], E. Nazockdast[3], C. Yu[2,4], R. Farhadifar[2,3,5], H. Chang[6], M. Shelley[3,7], D.J. Needleman[2,4,5]; [1]Department of Physics, Harvard University, Cambridge, MA, [2]FAS Center for Systems Biology, Harvard University, Cambridge, MA, [3]Center for Computational Biology, Simons Foundation, New York, NY, [4]John A. Paulson School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, [5]Department of Molecular and Cellular Biology, Harvard University, Cambridge, MA, [6]Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan, [7]Courant Institute of Mathematical Sciences, New York University, New York, NY

B240/P2959 **Colorectal cancer cells require glycogen synthase kinase-3 for sustaining mitosis via translocated promotor region (Tpr)-dynein interaction.** F. Dewi[1], T. Domoto[2], M. Hazawa[3], A. Kobayashi[1], T. Douwaki[1], T. Minamoto[2], R. Wong[1,3,4]; [1]Faculty of Natural System, Institute of Natural Science and Technology, Kanazawa University, Kanazawa, Japan, [2]Division of Translational and Clinical Oncology, Cancer Research Institute, Kanazawa University, Kanazawa, Japan, [3]Cell-Bionomics Research Unit, Innovative Integrated Bio-Research Core, Institute for Frontier Science Initiative, Kanazawa University, Kanazawa, Japan, [4]Bio-AFM Frontier Research Center, Kanazawa University, Kanazawa, Japan

B241/P2960 **Ectopic JNK activity during aging increases symmetric divisions by altering spindle pole orientation.** D.J. Hu[1], H. Jasper[1,2]; [1]Buck Institute for Research on Aging, Novato, CA, [2]Immunology Discovery, Genentech, San Francisco, CA

B242/P2961 **Activated Ezrin controls cortical MISP levels to ensure correct NuMA localization and spindle orientation.** I.M. Hoffmann[1], Y.T. Schlosser[1]; [1]F045, Cell Cycle Control and Carcinogenesis, German Cancer Research Center, DKFZ, Heidelberg, Germany

B243/P2962 **Importin alpha/beta regulates XCTK2 localization within the spindle and promotes parallel microtubule cross-linking and sliding.** S.C. Ems-McClung[1], L.N. Weaver[2], C.E. Walczak[1]; [1]Medical Science Program, Indiana University, Bloomington, IN, [2]Biology, Indiana University, Bloomington, IN

B244/P2963 ***Xenopus borealis* egg extracts: a new system to investigate spindle variation.** M. Kitaoka[1], R. Gibeaux[1], R. Heald[1]; [1]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA

B245/P2964 **CENP-E-PRC1 interaction provides a temporal cue for central spindle assembly.** Y. Liu[1,2], W. Wang[1,2], P. Yao[1], D. Li[2], X. Wang[1,2], H. Wang[2], X. Liu[1,2], X. Yao[1,2]; [1]Physiology, Morehouse school of Medicine, Atlanta, GA, [2]Anhui Key Laboratory for Cellular Dynamics Chemical Biology, University of Science and technology of China, Hefei, China

B246/P2965 **She1 Preferentially Crosslinks Parallel Microtubules to Ensure Spindle Stability for Spindle Positioning.** Y. Zhu[1], A. Tomaszewski[1], P.K. Hepler[1], W. Lee[2]; [1]Biology Department, UMass Amherst, Amherst, MA, [2]Department of Biological Sciences, Dartmouth College, Hanover, NH

Centrosome Assembly and Functions 2

B247/P2966 **Vesicular trafficking plays a role in centriole disengagement and duplication.** S. Xie[1], J. Reinecke[2], K. Bahl[1], N. Naslavsky[1], G.C. Rogers[3,4], S. Caplan[1]; [1]Biochemistry and Molecular Biology, University of Nebraska Medical Center, Omaha, NE, [2]Steady Family Department of Pediatrics, University of Iowa Stead Family Children's Hospital, Iowa City, IA, [3]University of Arizona, The Department of Cellular and Molecular Medicine, Tucson, AZ, [4]University of Arizona, University of Arizona Cancer Center, Tucson, AZ

B248/P2967 **The *small ovary* (*sov*) gene is essential for centrosome function and cell cycle progression during embryogenesis.** E.A. Castro[1], D.A. Lerit[1]; [1]Cell Biology, Emory University School of Medicine, Atlanta, GA

B249/P2968 **Proximity labeling to define the nucleoporin-interactome at centrioles.** N. Vishnoi[1], K. Dhanasekaran[1], M.K. Khokha[2], P. Lusk[1]; [1]Department of Cell Biology, Yale School of Medicine, New Haven, CT, [2]Department of Genetics and Pediatrics, Yale School of Medicine, New Haven, CT

B250/P2969 **Activation of the centrosome's microtubule-assembly activity by the Zika virus (ZIKV).** R.A. Buchwalter[1], J.V. Chen[1], C. Hammack[2], S.C. Ogden[2], H. Tang[2], T.L. Megraw[1]; [1]Department of Biomedical Sciences, Florida State University, Tallahassee, FL, [2]Department of Biological Sciences, Florida State University, Tallahassee, FL

B251/P2970 **Identification of novel regulators of centriole duplication in *Caenorhabditis elegans*.** J. Iyer[1], N. Peel[2], Y. Liu[1], K.F. O'Connell[1]; [1]NIDDK, NIH, Bethesda, MD, [2]Department of Biology, The College of New Jersey, Ewing, NJ

B252/P2971 **Using Genome Wide CRISPR/Cas9 Screens to Elucidate How Cells Arrest Following Centrosome Amplification.** L.T. Evans[1], T. Anglen[1], A.J. Holland[1]; [1]Molecular Biology and Genetics, Johns Hopkins, Baltimore, MD

B253/P2972 **Structural and functional analyses of the *C. elegans* Spindle-Defective Protein 2 ASH domain.** M. Murph[1], S.M. Singh[1], M. Schvarzstein[1]; [1]Biology, Brooklyn College, City University of New York, Brooklyn, NY

B254/P2973 **Pericentrin reduction is essential for efficient spermatogenesis.** B.J. Galletta[1], J.M. Ortega[1], R. Varadarajan[1], K. Plevock Haase[1], C.J. Fagerstrom[1], N.M. Rusan[1]; [1]Cell Biology and Physiology Center, NHLBI, Bethesda, MD

B255/P2974 **Unravelling the structural aspects of core Centriole proteins using various biophysical techniques.** P. Sankaralingam[1], K.F. O'Connell[1]; [1]National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Bethesda, MD

B256/P2975 **A centrosome-localized PLK1 scaffold ensures mitotic fidelity.** E.G. Colicino[1], A. Garrastegui[1], J. Freshour[1], P. Santra[1], D. Post[2,3], L. Kotula[2,3], H. Hehnly[1]; [1]Cell and Developmental Biology, State University of New York Upstate Medical University, Syracuse, NY, [2]Urology, State University of New York Upstate Medical University, Syracuse, NY, [3]Biochemistry and Molecular Biology, State University of New York Upstate Medical University, Syracuse, NY

B257/P2976 **Genetic Analysis of a *sas-6* Mutant Suggests an Instructive Role for the Mother Centriole in Centriole Assembly.** N. DeVaul[1], G. Fabig[2], T. Müller-Reichert[2], K.F. O'Connell[1]; [1]Laboratory of Biochemistry and Genetics, National Institute of Diabetes & Digestive & Kidney Diseases, Bethesda, MD, [2]Experimental Center, Technische Universität Dresden, Dresden, Germany

B258/P2977 **Genetic screen for *centrosomin* synthetic lethality reveals novel proteins required for acentrosomal cell division.** M.M. Tillery[1], B.A. Dietrick[2], C. Zheng[1], C.N. Blake-Hedges[1], R.A. Buchwalter[1], L. Kao[1], Y. Zheng[1], W.M. Khalid[1], K.E. Huetteman[1], B.J. Whitehead[3], T.L. Megraw[1]; [1]Biomedical Sciences, Florida State University, Tallahassee, FL, [2]Johns Hopkins, Baltimore, MD, [3]Fisk University, Nashville, TN

Signaling Pathways and Target Screens

B260/P2978 **Characterization of aPKC-Related Signalling Pathways in Normal and Oncogene-Transformed Cells.** L. Wang[1], L. McCaffrey[1]; [1]Experimetal Medicine, McGill University, Montreal, QC

B261/P2979 **The lateral mobility of membrane-tethered KRAS4b revealed spatiotemporal complexity of signaling.** D. Goswami[1,2,3,4], D. Chen[1,2,3,4], J. Columbus[1,2,3,4], T.J. Turbyville[1,2,3,4]; [1]Frederick National Laboratory for Cancer Research, Frederick, MD, [2]National Cancer Institute, Frederick, MD, [3]Cancer Research Technology Program, Frederick, MD, [4]Leidos Biomedical Research, Inc, Frederick, MD

B262/P2980 **Oncogenic role of R-Ras in melanoma tumorigenesis.** K.S. Hill[1], X. Wang[1], E.R. Roberts[1], Y. Kim[2], J. Messina[3], M. Kim[1]; [1]Molecular Oncology, Moffitt Cancer Center, Tampa, FL, [2]Biostatistics and Bioinformatics, Moffitt Cancer Center, Tampa, FL, [3]Anatomic Pathology, Moffitt Cancer Center, Tampa, FL

B263/P2981 **To identify the subcellular EGFR interactome in NSCLC cells by quantitative proteomics.** C. Chen[1,2], C. Wu[3], T. Wang[1,2], Y. Lin[1], T.V. Wang[4]; [1]Graduate Institute of Health Industry Technology and Research Center for Industry of Human Ecology, Chang Gung University of Science and Technology, Taoyuan City, Taiwan, [2]Tissue Bank, Chang Gung Memorial Hospital, Taoyuan City, Taiwan, [3]Department of Medical Biotechnology and Laboratory Science, Chang Gung University, Taoyuan City, Taiwan, [4]Department of Molecular and Cellular Biology, Chang Gung University, Taoyuan City, Taiwan

B264/P2982 **Quantitative analysis of calcium signaling to identify specific pathways that promote drug resistance in neuroblastoma.** I.A. Espinoza-Fuenzalida[1], I. Lange[1], D.L. Koomoa[1]; [1]The Daniel K Inouye School of Pharmacy, University of Hawaii at Hilo, Hilo, HI

B265/P2983 **HBx-induced Ca^{2+} aberrancy in hepatocellular carcinoma.** Y. Lin[1], P. Tsai[1], F. Tsai[1,2]; [1]Department of Pharmacology, College of Medicine, Taipei, Taiwan, [2]Department of Internal Medicine, National Taiwan University Hospital, Taipei, Taiwan

B266/P2984 **Long noncoding RNA HOTAIR and miR-203 regulate tumorigenesis in renal cell carcinoma by targeting the epithelial-to-mesenchymal transition pathway.** P. Dasgupta[1], P. Kulkarni[1], S. Majid[1], V. Shahryari[1], Y. Hashimoto[1], N.S. Bhat[1], M. Shiina[1], G. Deng[1], S. Saini[1], S. Yamamura[1], Y. Tanaka[1], R. Dahiya[1]; [1]Urology, University of California San Francisco and VA Medical Center, San Francisco, CA

B267/P2985 **Influence of breast cancer drivers on mammary gland architecture.** V. Srivastava[1], C. van der Putten[1], J. Garbe[1,2], J.L. Hu[1], M.A. LaBarge[3], Z.J. Gartner[1]; [1]Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA, [2]Life Science Division, Lawrence Berkeley National Laboratories, Berkeley, CA, [3]Population Sciences, City of Hope National Medical Center, Duarte, CA

B268/P2986 **MiR-133a function in the pathogenesis of dedifferentiated liposarcoma.** P.Y. Yu[1], J. Fenger[2], G. Lopez[3,4], A.M. Strohecker[3,4], O.H. Iwenofu[4,5], R.E. Pollock[3,4], D.C. Guttridge[4,6]; [1]Medicine, Ohio State University, Columbus, OH, [2]Veterinary Clinical Sciences, Ohio State University, Columbus, OH, [3]Surgical Oncology, Ohio State University, Columbus, OH, [4]Arthur G. James Comprehensive Cancer Center, Columbus, OH, [5]Pathology and Laboratory Services, Ohio State University, Columbus, OH, [6]Cancer Biology and Genetics, Ohio State University, Columbus, OH

B269/P2987 **BRCA1 regulation of miRNA expression in breast cancer.** L. Delgado-Cruzata[1], L. Duran[1]; [1]Sciences, John Jay College, City University of New York, New York, NY

B270/P2988 **A Genome-Wide miRNA Screen to Identify Regulators of Tetraploid Proliferation.** M.A. Vittoria[1], E. Shenk[1], K.P. O'Rourke[2], A.F. Bolgioni[1], S. Lim[1], V. Kacprzak[1], R.J. Quinton[1], N.J. Ganem[1,3]; [1]Department of Pharmacology Experimental Therapeutics, Boston University School of Medicine, Boston, MA, [2]Department of Cancer Biology & Genetics, Memorial Sloan Kettering Cancer Center, New York, NY, [3]Department of Medicine, Division of Hematology, Boston University School of Medicine, Boston, MA

B271/P2989 **Evolution of genetic instability through single-hit mutations.** M.C. Coelho[1], A.W. Murray[1]; [1]MCB, Harvard University, Cambridge, MA

B272/P2990 **Stereotyped p53 binding tuned by chromatin accessibility.** J. Stewart-Ornstein[1], A. Hafner[1], G. Lahav[1]; [1]Systems Biology, Harvard Medical School, Boston, MA

B273/P2991 **E6 Proteins from Diverse High-Risk HPV Types Differ in their Target Specificities.** M. Thomas[1], M.P. Myers[2], P. Massimi[1], C. Guarnaccia[3], L. Banks[1]; [1]Tumour Virology, ICGEB, Trieste, Italy, [2]Protein Networks, ICGEB, Trieste, Italy, [3]Biotechnology Development, ICGEB, Trieste, Italy

B274/P2992 **IDENTIFICATION OF CANDIDATE GENES ASSOCIATED WITH TRIPLE NEGATIVE BREAST CANCER.** A. Player[1], N. Abraham[1], K. Burrell[1], L. Nunez[1], A. Williams[1], T. Williams[1], S. Kwende[1], W. Walls[1]; [1]Biology, Texas Southern University, Houston, TX

Tumor Invasion and Metastasis 3

B275/P2993 **TGF-beta determines the pro-migratory potential of bFGF signaling in medulloblastoma.** K. Santhana Kumar[1], A. Neve[1], A. Guerreiro Stucklin[2,3,4], C.M. Kuzan-Fischer[2,4], J. Rushing[5], M.D. Taylor[2,3,4], D. Tripolitsioti[1], L. Behrmann[1], D. Kirschenbaum[5], M.A. Grotzer[1], M. Baumgartner[1]; [1]Oncology, University Children's Hospital Zürich, Zürich, Switzerland, [2]Department of Laboratory Medicine and Pathobiology, The Hospital for Sick Children, Toronto, Canada, [3]The Division of Haematology/Oncology, The Hospital for Sick Children, Toronto, Canada, [4]Department of Surgery, The Hospital for Sick Children, Toronto, Canada, [5] Institute of Neuropathology, University Hospital Zürich, Zürich, Switzerland

B276/P2994 **Illuminating the role of neurogenic regulator REST in Medulloblastoma dissemination.** K. Callegari[1], T.H. Dobson[1], J.B. Bravo[1], S. Shaik[1], V. Gopalakrishnan[1]; [1]Experimental Pediatrics, UTHealth Sciences Center/MD Anderson, Houston, TX

TUESDAY

B277/P2995 **Optimized Isolation of Plasma Extracellular Vesicles for Use as Potential Biomarkers in Patients with Glioblastoma.** L.M. Cumba Garcia[1], T.E. Peterson[2], A.J. Johnson[3], I.F. Parney[4]; [1]Immunology, Mayo Clinic Graduate School of Biomedical Sciences, Rochester, MN, [2]Neurologic Surgery, Mayo Clinic, Rochester, MN, [3]Immunology/ Neurology, Mayo Clinic, Rochester, MN, [4]Neurologic Surgery/ Immunology, Mayo Clinic, Rochester, MN

B278/P2996 **Emerging role of a sulfhydryl oxidase in glioma cell behavior.** R. Dutt[1], C. Thorpe[1], D.S. Galileo[2]; [1]Department of Chemistry and Biochemistry, University of Delaware, Newark, DE, [2]Department of Biological Sciences, University of Delaware, Newark, DE

B279/P2997 **Self-organization of brain tumors: oncostreams determine growth, invasion, and malignity of brain tumors.** P.R. Lowenstein[1,2], A. Comba[1], D. Zamler[1], A. Argento[1], F. Nunez-Aguilera[1], S. Motsch[3], M.G. Castro[1,2]; [1]Neurosurgery, University of Michigan, Ann Arbor, MI, [2]Cell and Developmental Biology, University of Michigan, Ann Arbor, MI, [3]Mathematical and Statistical Sciences, Arizona State University, Tempe, AZ

B280/P2998 **Mechanisms Involved in Microglia Stimulation of Glioblastoma Invasion.** S.J. Coniglio[1], M. Patel[1], D. Patel[1], D. Habib[1], J. Merritt[1], J.E. Segall[2], U. Rath[2]; [1]NJCSTM, Kean University, UNION, NJ, [2]Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY

B281/P2999 **Downregulation of ASCT2 (alanine/serine/cysteine transporter 2 / SLC1A5) in human cancer.** A. Oliveira[1], P. Soares-da-Silva[1,2]; [1]Phyzat Biopharmaceuticals, Porto, Portugal, [2]Center for Drug Discovery and Innovative Medicines, MedInUP, Porto, Portugal

B282/P3000 **Over-Expression of the βII Isotype of Tubulin and Especially Its Localization in Cell Nuclei Correlates with Poorer Outcomes in Colorectal Cancer.** K. Ruksha[1], A. Mezheyeuski[2], A. Nerovnya[3], T. Bich[3], G. Tur[4], J. Gorgun[5], R.F. Luduena[6], A. Portyanko[1,2]; [1]N.N. Alexandrov National Cancer Centre of Belarus, Minsk, Belarus, [2]Immunology, Genetics and Pathology, Uppsala University, Uppsala, Sweden, [3]Pathology, Belarusian State Medical University, Minsk, Belarus, [4]Minsk City Clinical Oncologic Dispensary, Minsk, Belarus, [5]Gastroenterology and Nutrition, Belarusian Medical Academy of Post-Graduate Education, Minsk, Belarus, [6]Biochemistry, University of Texas Health San Antonio, San Antonio, TX

B283/P3001 **Association of cell stiffness and migratory potential of head and neck and prostate cancer cells exposed to cytostatics.** J. Gumulec[1], M. Raudenska[2,3], M. Kratochvilova[2,3], J. Pribyl[4], B. Peltanova[1,3], T. Vicar[5], M. Masarik[2,3]; [1]Faculty of Medicine, Dept. of Pathological Physiology, Masaryk University, Brno, Czech Republic, [2]Central European institute of Technology, Brno University of Technology, Brno, Czech Republic, [3]Faculty of Medicine, Dept. of Physiology, Masaryk University, Brno, Czech Republic, [4]Central European Institute of Technology, Masaryk University, Brno, Czech Republic, [5]Faculty of electrical engineering and communication - Department of Biomedical Engineering, Brno University of Technology, Brno, Czech Republic

B284/P3002 **Oncosomes as a Biomarker for Quantifying Metastatic Cancer Dynamics in Real-Time.** H.S. Leong[1,2], K. Deng[2], Y. Kim[1,2]; [1]Urology, Mayo Clinic, Rochester, MN, [2]Surgery, Western University, London, ON

B285/P3003 **Single CTC isolation and Analysis of PCa CTCs Using Celsee™ PREP SingleCell system.** A. Ahmed[1], V.P. Sharma[2], W. Chow[2], P. Gogoi[2], K. Handique[2], E. Keller[1]; [1]University of Michigan, Department of Urology, Ann Arbor, MI, [2]Applications Research and Development, Celsee Diagnostics, Plymouth, MI

B286/P3004 **Overexpression of VRK1 promotes mammary epithelial cell proliferation in three-dimensional culture, slows cell migration and induces a partial mesenchymal to epithelial transition (MET) phenotype.** A.M. Mon[1], P. Traktman[1]; [1]Department of Biochemistry, Medical University of South Carolina, Charleston, SC

B287/P3005 **The effects of bisphenol (BPA) and BPA structural analogs on metastasis of the MCF-7 breast cancer cell line.** J. Lachowicz[1], S. Parikh[1], C. Leahy[2], A. Kopera[2], E. Frees[2], J. Saunders[2], A. Goldstein[1], R. Roberts[1,2]; [1]Biochemistry Molecular Biology Program, Ursinus College, Collegeville, PA, [2]Biology Department, Ursinus College, Collegeville, PA

B288/P3006 **Role of mDia2 at Adherens Junctions in Epithelial Ovarian Cancer.** Y. Zhang[1], K.M. Eisenmann[1]; [1]Biochemistry and Cancer Biology, University of Toledo, Toledo, OH

B289/P3007 **Melanoma cell malignancy does not correlate with migratory rates in three different highly metastatic cell lines.** A.M. Pasapera-Limon[1], T. Amos[2], C.M. Waterman[1], M.A. Baird[1]; [1]Cell Biology, NHLBI-NIH, Bethesda, MD, [2]Chantilly High School, Chantilly, VA

B290/P3008 **Role of AMPK isoforms during breast cancer cell migration.** C.D. Williams[1], M.M. Fox[1]; [1]Biology, Wingate University, Wingate, NC

B291/P3009 **Expression and roles of lectin galactoside-binding soluble 3 binding protein (LGALS3BP) in cholangiocarcinoma cell lines.** W. Panvongsa[1,2], K. Suksen[3], S. Borwornpinyo[2,4], A. Chairoungdua[1,2,3]; [1]Toxicology Graduate Program, Faculty of Science, Mahidol University, Bangkok, Thailand, [2]Excellent Center for Drug Discovery (ECDD), Faculty of Science, Mahidol University, Bangkok, Thailand, [3]Physiology, Faculty of Science, Mahidol University, Bangkok, Thailand, [4]Biotechnology, Faculty of Science, Mahidol University, Bangkok, Thailand

B292/P3010 **Thy-1/CD90 induces metastatic breast cancer cell migration.** M. Brenet[1], S. Martinez[1], A.F. Quest[1], L. Leyton[1]; [1]Cellular Communication Laboratory, Advanced Center for Chronic Diseases (ACCDiS), Center for Molecular Studies of the Cell (CEMC), Institute of Biomedical Sciences, Faculty of Medicine, University of Chile, Santiago, Chile

B293/P3011 **CX_3CR1 chemokine receptor antagonism inhibits migration and contact-independent growth in pancreatic cancer epithelial cells.** M.C. Stout[1], S. Narayan[1], E.S. Pillet[1], C. Qian[1], J.A. Sawicki[2], J.M. Salvino[3], A. Fatatis[1], P.M. Campbell[1]; [1]Pharmacology Physiology, Drexel University, Philadelphia, PA, [2]Lankenau Institute for Medical Research, Wynnewood, PA, [3]The Wistar Cancer Center Molecular Screening, Wistar Institute, Philadelphia, PA

B294/P3012 **Differential Expression of miRNAs and EMT-Related Targets in Cutaneous Squamous Cell Carcinoma Tissues.** C.S. Pulford[1,2], M.R. Montgomery[1,3], C.K. Uppalapati[2], A.S. Pascual[1], E.E. Hull[1], K.J. Leyva[2]; [1]Biomedical Sciences Program, Midwestern University, Glendale, AZ, [2]Department of Microbiology Immunology, AZCOM, Midwestern University, Glendale, AZ, [3]Department of Nutritional Sciences, Oklahoma State University, Stillwater, OK

B295/P3013 **DDR1 regulates tumor dormancy by balancing p38/ ERK signaling.** J.S. Di Martino[1], C. Mondal[1], J. Aguirre-Ghiso[1], J.J. Bravo-Cordero[1]; [1]Hematology Oncology, Icahn school of medicine at Mount Sinai, New York, NY

B296/P3014 **The role of srGAP1 in regulating cancer cell motility and invasion.** C. Mondal[1], J.S. Di Martino[1], J.J. Bravo-Cordero[1]; [1]Medicine, Icahn School of Medicine at Mount Sinai, New York, New York, United States

B297/P3015 **Properties of Lipid Rafts in Two Epigenetically Distinct Subtypes of the Oncogenic Cell Line SW13.** L. Espejo[1], E.E. Hull[1]; [1]Biomedical Sciences, Midwestern University, Glendale, AZ

Cancer Therapy: Targeting the Tumor Microenvironment

B298/P3016 **SIRPA-inhibited, marrow-derived macrophages engorge, accumulate, and differentiate in antibody-targeted regression of solid tumors.** C. Alvey[1], D.E. Discher[1]; [1]Pharmacology, University of Pennsylvania, Philadelphia, PA

B299/P3017 **Extracellular matrix-binding peptide conjugation to immune checkpoint blockades enhances anti-tumor efficacy and reduces adverse events.** J. Ishihara[1,2], K. Fukunaga[3], A. Ishihara[1], H.M. Larsson[2], L. Potin[1,2], P. Hosseinchi[1], M. Swartz[1], J.A. Hubbell[1,2]; [1]Institute for Molecular Engineering, The university of Chicago, Chicago, IL, [2]Institute of Bioengineering, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, [3]Department of Bioengineering, Tokyo Institute of Technology, Kanagawa, Japan

B300/P3018 **Extracellular matrix-binding form of anti-CD40 agonistic antibody reduces systemic damages and increases anti-tumor efficacy.** A. Ishihara[1], J. Ishihara[1], K. Fukunaga[1,2], J.A. Hubbell[1]; [1]Institute for Molecular Engineering, University of Chicago, Chicago, IL, [2]Department of Bioengineering, Tokyo Institute of Technology, Yokohama, Japan

B301/P3019 **NMK-057, a novel triazole derived γ-secretase inhibitor attenuates Notch mediated-EMT and stemness in triple negative breast cancer cells by inducing autophagic cell death.** A. Das[1,2], P. Mukherjee[3], N.M. Kumar[4], A. Ganguli[2], D. Ghoshdastidar[2], B. Basu[5], U. Chatterji[3], S. Banerjee[6], D. Kumar[4], G. Chakrabarti[2]; [1]Biotechnology, National Institute of Technology, Sikkim, Ravangla, India, [2]Biotechnology, Calcutta University, Kolkata, India, [3]Zoology, Calcutta University, Kolkata, India, [4]Chemistry, Birla Institute of Technology and Science, Pilani, Rajasthan, India, [5]Amity Institute of Biotechnology, Amity University, Noida, UP, India, [6]Cancer Research Unit, VA Medical Center, Kansas City, MO

B302/P3020 **Hematopoietic cell kinase (HCK) inhibitor as a potent antiproliferative compound for the development of novel acute myeloid leukemia treatment.** F.M. Roversi[1,2], A.K. Calgarotto[2], C.O. Torello[2], K.V. Ferro[2], F.I. Della Via[2], F.V. Pericole[2], G.P. Santos[2], A.d. Duarte[2], A. Longhini[2], A. Molinari[3], M. Botta[3], S.T. Saad[2]; [1]Universidade São Francisco, Bragança Paulista, Brazil, [2]Hematology and Hemotherapy Center-University of Campinas, Campinas, Brazil, [3]Dipartimento di Biotecnologie, Chimica e Farmacia, Università degli Studi di Siena, Siena, Italy

B303/P3021 **Programmed death ligand 1 (PD-L1), Immune-Checkpoint Blockade with Combination Therapy in Syngeneic Colon Carcinoma Model.** W.H. Ka[1]; [1]WJ RD Center, WOOJUNGBSC, Suwon, South Korea

B304/P3022 **HDAC6/DHPS signaling drives hypusination and nuclear export of eIF5A to promote TGFbeta-induced EMT and associates with a novel SOX2 signature to predict decreased breast cancer patient survival.** L. Kutscher[1], Y. Adamian[1], K. Meade[1], K. Bhakta[1], R. Gueth[1], J.A. Kelber[1]; [1]Biology, California State University Northridge, Northridge, CA

B305/P3023 **Cordycepin induces human lung cancer cell apoptosis by inhibiting nitric oxide mediated ERK/Slug signaling pathway.** S. Kang[1], I. Jang[1]; [1]Division of Bioconvergence, Korea Basic Science Institute, Daejeon, South Korea

B306/P3024 **Expressional assessment of mouse embryonic stem cell, lung cancer and somatic fibroblast cell lines on the basis of EMT, MAPK and Inflammation.** F. Oltulu[1], B. Ozdil[1,2], C. Gürel[1,3], E. Açıkgöz[1,4], D. Calik Kocaturk[1], Y. Adalı[1], A. Uysal[1], A. Yavasoglu[1], G. Oktem[1], G. Gursel Mukhtarova[5], H. Aktug[1]; [1]Faculty of Medicine Histology and Embryology Department, Ege University, İzmir, Turkey, [2]Faculty of Medicine Histology and Embryology Department, Süleyman Demirel University, Isparta, Turkey, [3]Faculty of Medicine Histology and Embryology Department, Harran University, Harran, Turkey, [4]Faculty of Medicine Histology and Embryology Department, Yüzüncü Yıl University, Van, Turkey, [5]Faculty of Medicine Stem Cell Department, Ege University, İzmir, Turkey

B307/P3025 **Tubulin Acetylation and Anti-cancer Drug Resistance in Breast Cancer Cells during Matrix Stiffening.** P. Ko[1], E. You[1], J. Jeong[1], S. Keum[1], J. Lee[1], J. Kim[1], S. Rhee[1]; [1]Life Science, Chung-Ang University, Seoul, South Korea

B308/P3026 **Therapeutic Effect of FCH domain only 1 shRNA in K-ras^{LA1} Mice.** S. Park[1], A. Lee[2], K. Cho[3], Q. Tran[1], H. Lee[1], Y. Hong[1], H. Cho[1], M. Kim[1], J. Park[1], K. Kim[4], M. Cho[2], J. Park[1]; [1]Department of Pharmacology and Medical Science, Chungnam National University, Daejeon, Korea, South, [2]Research Institute for Veterinary Science and College of Veterinary Medicine, Seoul National University, Seoul, Korea, South, [3]Department of Pathology, Johns Hopkins University, Baltimore, MD, [4]Department of Applied Chemistry, Kyung Hee University, Yongin, Korea, South

B309/P3027 **A New Targeting Agent that Specifically Binds to Breast Cancer Cells?** E.A. Pattie[1], N.A. Omar[1], T.C. Anderson[1], C. Donahue[1], H.F. Schmitthenner[2], I.M. Evans[1]; [1]GSOLS, Rochester Institute of Technology, Rochester, NY, [2]Chemistry and Materials Science, Rochester Institute of Technology, Rochester, NY

B310/P3028 **GLE regulates stemness properties in Inflammatory Breast Cancer cells via STAT3 regulation.** M.M. Martinez-Montemayor[1], P. Lopez[2], V. Rivera-Amill[2], Y. Yamamura[2], T.J. Rios[1]; [1]Department of Biochemistry, Universidad Central del Caribe School of Medicine, Bayamon, PR, [2]Basic Sciences, Ponce Health Sciences University, Ponce, PR

B311/P3029 **CTLA-4 in cancer cells transmits high forces via the bond to CD80.** S. Park[1], Y. Shi[2], Y. Joo[1], L. Lin[3], B. Kim[4], D. Reich[2], T. Ha[4], L. Lu[3], Y. Chen[1]; [1]Department of Mechanical Engineering, Johns Hopkins University, Baltimore, MD, [2]Henry A. Rowland Department of Physics and Astronomy, Johns Hopkins University, Baltimore, MD, [3]Division of Biological Sciences, University of California San Diego, San Diego, CA, [4]Thomas C. Jenkins Department of Biophysics, Johns Hopkins University, Baltimore, MD

B312/P3030 **Therapeutic strategies for osteosarcoma stem cells by regulating adipocyte differentiation based on actin dynamics.** H. Nobusue[1], N. Takahashi[1], H. Kunitomi[1], E. Sugihara[1], T. Shimizu[2], N. Onishi[1], S. Iwai-Yamaguchi[1], H. Saya[1]; [1]Division of Gene Regulation, Institute for Advanced Medical Research, Keio University School of Medicine, Tokyo, Japan, [2]School of Pharmacy and Pharmaceutical Sciences, Hoshi University, Tokyo, Japan

B313/P3031 **Inhibition of IL-8 uptake by breast cancer cells suppresses vasculogenic mimicry.** A.R. Aikins[1,2], M. Kim[2], B. Raymundo [2], C.W. KIm[2]; [1]Biochemistry, Cell and Molecular Biology, University of Ghana, Accra, United States, [2]Biotechnology, Korea University, Seoul, United States

B314/P3032 **Investigating mitotic kinesins as therapeutic targets for triple negative breast cancer.** F. Cindy[1], C. Marquis[1], L. Wood[1], C.J. Anker[2], A.K. Howe[3], J.E. Clayton[4], J. Stumpff[1]; [1]Molecular Physiology and Biophysics, University of Vermont, Burlington, VT, [2]Division of Radiation Oncology, University of Vermont, Burlington, VT, [3]Pharmacology, University of Vermont, Burlington, VT, [4]BioTek Instruments, Inc., Winooski, VT

B315/P3033 **Telomerase inhibitors TMPyP4 and Thymoquinone decreased cell proliferation and induced cell death in NSCLC cell line LC-HK2, modifying the pattern of focal adhesion.** A.M. Garnique[1], P. Rezende-Teixeira[1], G.M. Machado-Santelli[1]; [1]Cell and Development Biology, University of Sao Paulo, Sao Paulo, Brazil

B316/P3034 **A "Trojan Horse" strategy to target lysosomes in cancer mediated by acidotropic nanomedicine.** Z. Yang[1], X. Zhang[1], M. Feng[1], C. Wang[1]; [1]School of Pharmaceutical Sciences, Sun Yat-sen University, Guangzhou, China

B317/P3035 **Pharmacological effect of three tryptophan analogues with HDAC inhibitory activity in MDA-MB-231 triple negative breast cancer cells.** E. Mera-Jiménez[1], C.R. Trejo-Muñóz[1], G. Gutiérrez-Iglesias[1], T. Mancilla-Percino[1,2]; [1]POSGRADO, INSTITUTO POLITECNICO NACIONAL. ESCUELA SUPERIOR DE MEDICINA, MEXICO, Mexico, [2]QUIMICA, CENTRO DE ESTUDIOS AVANZADOS DEL IPN, MEXICO, Mexico

B318/P3036 **Experimental therapeutics of orthotopic colon cancer models.** J. Lopez[1], G. Fracia[1], P. Valenzuela[1], K. Parra[1]; [1]Biology, University of Texas at El Paso, El Paso, TX

B319/P3037 **Protein geranylgeranylation modulates progression in models of prostate cancer.** J. Weissenrieder[1,2], J. Reilly[3], J. Neighbors [1,2], R. Hohl[1,2]; [1]Medicine, Penn State College of Medicine, Hershey, PA, [2]Pharmacology, Penn State College of Medicine, Hershey, PA, [3]Pharmacology, University of Iowa, Iowa City, IA

B320/P3038 **In vitro antitumor activity of new quaternary hydroxypyridine-based phosphonium salts.** A. Iksanova[1], R.R. Gabbasova[1], T. Kupriyanova[1], A. Akhunzyanov[1], M. Pugachev[1], N. Shtyrlin[1], K. Balakin[1], Y. Shtyrlin[1]; [1]Scientific and Educational Center of Pharmaceutics, Kazan (Volga region) Federal University, Kazan, Russia

Tumor Microenvironment 2

B321/P3039 **Tunneling Nanotubes, a Novel Mode of Tumor Cell-Macrophage Communication in Tumor Cell Invasion.** S.J. Hanna[1], K. McCoy-Simandle[1], E. Leung [1], J.S. Condeelis[1], D. Cox[1]; [1]Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY

B322/P3040 **Substratum stiffness and tumor dormancy.** A.A. Anlas[1], C.M. Nelson[1,2]; [1]Chemical and Biological Engineering, Princeton University, Princeton, NJ, [2]Molecular Biology, Princeton University, Princeton, NJ

B323/P3041 **Interplay between mechanotransduction and force generation underlies mitosis in three-dimensional microenvironments.** S. Nam[1], V.K. Gupta[1], H. Lee[1], C. Davis[2], O. Chaudhuri[1]; [1]Mechanical Engineering, Stanford University, Stanford, CA, [2]Mechanical Engineering, University of Maryland, College Park, WA

B324/P3042 **Early stage breast cancer spheroids mechanically remodel the microenvironment more significantly compared to their normal and metastatic counterparts.** N. Yam[1], D. Maity[1], Y. Chen[1]; [1]Mechanical Engineering, Johns Hopkins University, Baltimore, MD

B325/P3043 **Meaningful connections: Homotypic cell-cell interactions in pancreatic ductal adenocarcinoma's desmoplastic stroma.** J.C. Gardiner[1], R. Francescone[1], J. Franco-Barraza[1], E. Cukierman[1]; [1]Cancer Biology, Fox Chase Cancer Center, Philadelphia, PA

B326/P3044 **Age-related gene expression and cancer susceptibility in luminal epithelial cells is driven by a microenvironment made from myoepithelial cells.** M. Miyano[1], R. Sayaman[1], M.A. LaBarge[1,2]; [1]Population Sciences, City of Hope, Duarte, CA, [2]Biological Systems and Engineering, Lawrence Berkeley National Laboratory, Berkeley, CA

B327/P3045 **Targeting the alliance between tumor cell sub-populations.** J. Davis[1], C. Duong[1], M. Ahmad[1], J. Pfannenstein[1], Y. Mojarad[1], L. Colarossi[1], V. Espina[1], L. Liotta, MD[1], C. Mueller[1]; [1]Center for Applied Proteomics and Molecular Medicine, George Mason University, Manassas, VA

B328/P3046 **Desmoplasia meets nerves in pancreatic cancer progression.** D. Barbosa Vendramini Costa[1], R.A. Francescone[1], N. Shah[1], T. Luong[1], C. Matullo[2], G. Rall[2], K. Campbell[2], E. Cukierman[1]; [1]Cancer Biology, Fox Chase Cancer Center, Philadelphia, PA, [2]Blood Cell and Development, Fox Chase Cancer Center, Philadelphia, PA

B329/P3047 **Desmoplastic expression of NetrinG1 fuels pancreatic cancer growth and promotes metastasis through nutritional supply and immunosuppression.** R.A. Francescone[1], J. Wagner[2], D. Barbosa Vendramini Costa[1], J. Franco-Barraza[1], L. Gabitova[2], D. Rollins[1], T. Luong[1], N. Shah[1], S. Gupta[1], R. Thapa[3], D. Restifo[2], S. Balachandran[3], W. Kruger[1], W.S. El-Diery[2], I. Astsaturov[2], E. Cukierman[1]; [1]Cancer Biology, Fox Chase Cancer Center, Philadelphia, PA, [2]Molecular Therapeutics Program, Fox Chase Cancer Center, Philadelphia, PA, [3]Blood Cell Development and Function, Fox Chase Cancer Center, Philadelphia, PA

B330/P3048 **Secretory IgM exacerbates tumor progression by inducing accumulations of MDSCs in mice.** C.A. Tang[1], S. Chang[1], A. Hashimoto[1], Y. Chen[1], C. Kang[2], A.R. Mato[3], J.R. Del Valle[2], D.I. Gabrilovich[1], C.A. Hu[1]; [1]Translational Tumor Immunology, The Wistar institute, Philadelphia, PA, [2]Chemistry, University of South Florida, Tampa, FL, [3]Center for CLL, University of Pennsylvania, Philadelphia, United States

B331/P3049 **A Systems Model of Human Metastatic Melanoma from Invasion to Colonization Identifies Tenascin-C as a Driver of Resistance and Emergence.** A. Bradshaw[1,2], J. Grahovac[3], A. Clark[1], L.G. Griffith[4], A. Wells[1,2]; [1]Cellular and Molecular Pathology, University of Pittsburgh, Pittsburgh, PA, [2]Veterans Administration, Pittsburgh VA Health System, Pittsburgh, PA, [3]National Cancer Institute, Belgrade, Serbia, [4]Biological Engineering, Massachusetts Institute of Technology, Boston, MA

B332/P3050 **Collagen Increases Proliferation and Drug Resistance of Papillary Thyroid Cancer Cells Harboring BRAFV600E Mutations.** L.J. MacDonald[1], A. Sharabura[1], J. Jenkins[1], B. Anderson[1], B. LeBoeuf[1]; [1]Department of Biology, Hendrix College, Conway, AR

B333/P3051 **Evaluating the overexpression of mitotic checkpoint silencing protein TRIP13 in human breast cancer cell lines in 2D and 3D cell culture models.** M. Moenk[1], s. liu[1]; [1]Biological Sciences, University of Toledo, Toledo, OH

B334/P3052 **Mechanical control of nuclear blebbing and micronuclei in hepatocellular carcinoma cells.** K. Mandal[1], R.G. Wells[2], P.A. Janmey[1]; [1]Institute for Medicine and Engineering, University of Pennsylvania, Philadelphia, PA, [2]Departments of Medicine, Bioengineering, and Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, PA

B335/P3053 **Extracellular Matrix Stiffness Alters Crosstalk Between Tumor-Derived Pancreatic Stellate Cells and Pancreatic Tumor Cells.** S. Liu[1], S. Mumenthaler[1]; [1]Lawrence J. Ellison Institute for Transformative Medicine, University of Southern California, Los Angeles, CA

B336/P3054 **Hypoxia measurements in live and fixed cells using fluorescence microscopy and high content imaging.** B.S. Mandavilli[1], A. Chen[1], Y. Hu[1]; [1]Cellular Imaging and Analysis, Thermo Fisher Scientific, Eugene, OR

Gene Transcriptional Networks

B338/P3055 **Binding Dynamics of nFGFR1 in Chromatin Architecture and Promoter Machinery.** B. Decker[1], C. Handelmann[1], S.T. Narla[1], C. Terranova[1], M.K. Stachowiak[1]; [1]Pathology and Anatomical Sciences, State University of New York at Buffalo, Buffalo, NY

B339/P3056 **The Influence of Nato3 on LMX1 Gene Expression.** M.M. Frantzeskakis[1], D. Martinez[1], M. Taylor[1]; [1]Biomedical Sciences, Grand Valley State University, Allendale, MI

B340/P3057 **Evidence based theory for integrated genome regulation of ontogeny – an unprecedented role of Nuclear FGFR1 signaling.** M.K. Stachowiak[1], E.K. Stachowiak[1]; [1]Pathology and Anatomical Sciencess, State University of New York at Buffalo, Buffalo, NY

B341/P3058 **Dissecting the cell-type specific regulatory landscape of a Nuclear Hormone Receptor in C. elegans.** D.M. Thurtle-Schmidt[1,2], M. Asahina[2], J.D. Ward[3], K. Yamamoto[2]; [1]Biology, Davidson College, Davidson, NC, [2]Cellular and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA, [3]Molecular, Cell Developmental Biology, University of California, Santa Cruz, Santa Cruz, CA

B342/P3059 **Repression of *CDON* expression by Nuclear Factor One.** B. Kutay[1], C. Lektemur[1], A. Kumbasar[1]; [1]Department of Molecular Biology and Genetics, Istanbul Technical University, Istanbul, Turkey

B343/P3060 **Lipoprotein Lipase regulates ATP-Binding Cassette A1 transcription through Peroxisome Proliferator-Activated Receptors.** B.A. Christian[1], A.J. Kim[1], J. Medh[1]; [1]Chemistry and Biochemistry, California State University Northridge, Northridge, CA

B344/P3061 **The lower expression of ABCA1 in LPL-expressing THP-1 macrophages may be mediated by fatty acid products of lipolysis.** A.J. Kim[1], B.A. Christian[1], J. Medh[1]; [1]Chemistry and Biochemistry, California State University Northridge, Northridge, CA

B345/P3062 **Regulation of anterior lineage genes in *C. elegans* embryogenesis.** J.D. Rumley[1], A. Zacharias[1], J.I. Murray[1]; [1]Genetics, University of Pennsylvania, Philadelphia, PA

B346/P3063 **Age-dependent regulation of the FOXO transcription factor DAF-16 by SMK-1 in the roundworm Caenorhabditis elegans.** M.J. Youngman[1], K. Carrasco[1], J. Morris[1]; [1]Biology, Villanova University, Villanova, PA

B347/P3064 **cAMP Reduces Non-Specific DNA-Protein Interactions During Transcription Regulation in *Mycobacterium Tuberculosis*.** F. Garate[1], C. Canavan[1], M. Lanfranco[1], I. Wang[1], R.A. Maillard[1]; [1]Chemistry, Georgetown University, Washington, DC

B348/P3065 **Glandular cell-specific DNA demethylation in a carnivorous plant *Drosera adelae*.** N. Arai[1], Y. Hamaji[1], T. Ohyama[1]; [1]Biology, Waseda University, Tokyo, Japan

B349/P3066 **Yeast Hsf1 drives a dynamic gene restructuring program in response to heat shock.** L.S. Rubio[1], S. Chowdhary[1], A.S. Kainth[1], D.S. Gross[1]; [1]Biochemistry and Molecular Biology, Louisiana State University Health Sciences Center, Shreveport, LA

Chromatin and DNA Repair

B350/P3067 **Chromosome analysis of Glyptotendipes glaucus and Glyptotendipes paripes (Chironomidae, Diptera) from reservoirs of the Kaliningrad city, Russia.** A.Y. Sharton[1], T.A. Chervotkina[1], N.G. Litvina[1], N.G. Kolesnik[1], V.A. Kasymov[1]; [1]School of Life Science, Immanuel Kant Baltic Federal University, Kaliningrad, Russia

B351/P3068 **Analysis of irradiation resistance mechanism in *S. cerevisiae*.** K. Kamata[1], H. Maeda[2], M. Tanaka[1], M. Hatashita[3], H. Uchida[1], M. Oki[1]; [1]University of Fukui, Fukui, Japan, [2]Fukui senior high school, Fukui, Japan, [3]Wakasa Wan Energy Research Center, Fukui, Japan

B352/P3069 **Determining the role of chromatin context on repair of DNA double-breaks formed by a Cas9-linked camptothecin mimic.** T. Rodriguez Cintora[1], R. James[1], R.C. Burgess[1]; [1]Biology, Stevenson University, Owings Mills, MD

B353/P3070 **The Optimization of CRISPR Systems for Double Strand Break Induction in *S. cerevisiae*.** R.C. James[1], E.C. Wills[1], R. Reimer[1], P.J. Horn[1], T. Rodriguez Cintora[1], R.C. Burgess[1]; [1]Department of Biological Sciences, Stevenson University, Owings Mills, MD

B354/P3071 **Characterizing the interaction between Rad54 and PCNA.** A. Gannon[1], R.C. Burgess[1], L. Krejci[2,3], B. Stefanovie[2,3]; [1]Department of Biological Sciences, Stevenson University, Owings Mills, MD, [2]2National Centre for Biomolecular Research, Masaryk University, Brno, Czech Republic, [3]International Clinical Research Center, St. Anne's University Hospital, Brno, Czech Republic

B355/P3072 **Signaling via DNA breaks and RUVB proteins activates the germline genome.** M. Wong[1], W.M. Michael[1]; [1]Biological Sciences, University of Southern California, Los Angeles, CA

B356/P3073 **The co-repressor complex mSin3A/HDAC1 is involved in the down-regulation of CRTC2 target genes during B cell differentiation.** Y.V. Arancibia[1], A.H. Zambrano[1], C. Cárcamo[1]; [1]Instituto de Bioquímica y Microbiología, Universidad Austral de Chile, Valdivia, NJ

B357/P3074 **Histone dynamics during oocyte meiosis in *C. elegans*.** S. Rosu[1], P. Thepmankorn[1], O. Cohen-Fix[1]; [1]LCMB, NIH-NIDDK, Bethesda, MD

B358/P3075 **Oligo-conjugated antibodies and massively parallel single-cell sequencing reveal the high-parameter correlation of protein and mRNA expression in individual immune cells.** D. Jensen[1], C. Chang[1], E.Y. Shum[1], J.C. Martin[2], J. Ghadiali[2], J. Hu[1], D. Rosenfeld[1], H.C. Fan[1]; [1]BD Genomics, Menlo Park, CA, [2]BD Biosciences, San Diego, CA

B359/P3076 **The Role of Mps3 and Htz1 in Telomere Cohesion and Telomere Position Effect.** L.M. Antoniacci[1], C.M. Breymeier[1]; [1]Science, Marywood University, Scranton, PA

RNA Localization and Transport

B360/P3077 **Muscleblind-like RNA binding proteins form RNA transport granules associated with Kif1b.** G.J. Bassell[1], K.R. Moss[1], L. Dences[2], L. Knudson[1], E.T. Wang[2]; [1]Cell Biology, Emory University, Atlanta, GA, [2]Center for Neurogenetics, University of Florida, Gainesville, FL

B361/P3078 **Localizing mRNAs in skeletal muscle cells.** M.R. Pimentel[1], H. Pinheiro[1], G. Leal[1], E.R. Gomes[1]; [1]Instituto de Medicina Molecular, Faculdade de Medicina da Universidade de Lisboa, Lisboa, Portugal

B362/P3079 **Certain types of inverted repeat sequences can organize local chromatin infrastructure in *Saccharomyces cerevisiae*.** O. Miura[1], T. Ohyama[1]; [1]Biology, Waseda University, Tokyo, Japan

B363/P3080 **Spatial and temporal control of the *Neurospora crassa* molecular clock.** B.M. Bartholomai[1], J.C. Dunlap[1], J.J. Loros[2], A.S. Gladfelter[3]; [1]Department of Molecular and Systems Biology, Geisel School of Medicine at Dartmouth, Hanover, NH, [2]Department of Biochemistry and Cell Biology, Geisel School of Medicine at Dartmouth, Hanover, NH, [3]Department of Biology, University of North Carolina, Chapel Hill, NC

B364/P3081 **Transcription factor-mediated targeting of genes to the nuclear pore complex is the major pathway controlling peripheral localization of genes in budding yeast.** D.G. Brickner[1], M. LeBrun[1], C.R. Hinchliff[1], J.H. Brickner[1]; [1]Molecular Biosciences, Northwestern University, Evanston, IL

B365/P3082 **Asymmetric Distribution of Hexose Transporter mRNA Provides a Growth Advantage.** T. Stahl[1], S. Hümmer[1], A. Spang[1]; [1]Biozentrum, University of Basel, Basel, Switzerland

B366/P3083 **Functional map of the DEAD-box ATPase Dbp5 at single amino acid resolution.** A. Lari[1], B.P. Young[2], C.J. Loewen[2], B. Montpetit[1,3]; [1]Cell Biology, University of Alberta, Edmonton, AB, [2]Cellular and Physiological Sciences, University of British Columbia, Vancouver, BC, [3]Viticulture and Enology, University of California, Davis, Davis, CA

B367/P3084 **Schawman-Diamond Syndrome: inside the structure of EFL1, SBDS proteins and their complex.** D. Siliqi[1], B. Dida[2], D. Altamura[1], A. Gijsbers[3], A. Méndez-Godoy[4], C. Giannini[1], M. Saviano[1], T. Sibillano[1], N.S. Puig[4]; [1]Institute of Crystallography - CNR, Bari, Italy, [2]Faculty of Mathematical Engineering and Physical Engineering, Polytechnic University of Tirana, Tirana, Albania, [3]3M4I, Nanoscopy Division, Maastricht University, Maastricht, Netherlands, [4] Departamento de Química de Biomacromoléculas, Instituto de Química - Universidad Nacional Autónoma de México, Mexico City, Mexico

The Nuclear Envelope and Nuclear Pore Complexes 2

B369/P3085 **The SUMO-Specific Isopeptidase SENP2 is Targeted to Intracellular Membranes via a Predicted N-Terminal Amphipathic α-Helix.** H.M. Odeh[1], É. Coyaud[2], B. Raught[2], M.J. Matunis[1]; [1]Biochemistry and Molecular Biology, Johns Hopkins School of Public Health, Baltimore, MD, [2]Department of Medical Biophysics, University of Toronto, Toronto, ON

B370/P3086 **The VAP family member Scs2 functions to organize chromatin at the yeast inner nuclear membrane through recruitment of the SUMO E3 ligase Siz2 and telomeres.** N.O. Saik[1], C. Ptak[1], B. Montpetit[1,2], J.D. Aitchison[1,3], R. Wozniak[1]; [1]Cell Biology, University of Alberta, Edmonton, AB, [2]Viticulture and Enology, University of California, Davis, CA, [3]CIDR, Seattle, WA

B371/P3087 **Metazoan Nuclear Pores provide a scaffold for poised genes and stabilized induced Enhancer-Promoter contacts.** P. Pascual-Garcia[1], S.C. Little[1], Y. Lan[1], M. Capelson[1]; [1]Department of Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B372/P3088 **Chromatin-bound nuclear pore proteins recruit chromatin remodeling complexes to induce DNA decondensation in Metazoan cells.** T. Kuhn[1], S.C. Little[1], M. Capelson[1]; [1]Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B373/P3089 **Uncovering a role for nucleoporin Megator in a novel nuclear scaffold structure.** J. Aleman[1], M. Capelson[1]; [1]Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B374/P3090 **Mapping Nucleoporins in the D. Melanogaster Genome.** A. Gozalo[1,2], Y. Lan[2], M. Capelson[2]; [1]Biochemistry and Molecular Biophysics, University of Pennsylvania, Philadelphia, PA, [2]Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B375/P3091 **Epigenetic modifications and DNA replication in striated muscles rely on LINC-mediated mechanotransduction coupling.** T. Volk[1], S. Wang[1], U. C. P.[1], E. Stoops[1], B. Markus[2], A. Reuveny[1]; [1]Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel, [2]G-INCPM/Mantoux Institute for bioinformatics, Weizmann Institute of Science, Rehovot, Israel

B376/P3092 **Macronuclear positioning in the giant ciliate, *Stentor coeruleus*.** R.M. McGillivary[1], P. Sood[1], W.F. Marshall[1]; [1]Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

B377/P3093 **Characterizing LINC complex assembly in budding yeast meiosis.** J. Fan[1], H. Jin[1], H. Yu[1]; [1] Cellular and Molecular Biology, Florida State University, Tallahassee, FL

B378/P3094 **Molecular insights into the mechanisms of SUN1 oligomerization in the nuclear envelope.** Z. Jahed[1], D. Fadavi[1], U.T. Vu[1], E. Asgari[1], J. Hennen[2], J.D. Mueller[2], G. Luxton[2], M. Mofrad[1]; [1]University of California Berkeley, Berkeley, CA, [2]2University of Minnesota, Minneapolis, MN

B379/P3095 **Regulating interactions between SUN and KASH proteins to mediate nuclear migration and anchorage.** N. Cain[1], Z. Jahed[2], H. Hao[1], M. Mofrad[2], G. Luxton[3], D.A. Starr[1]; [1]Molecular and Cellular Biology, University of California, Davis, Davis, CA, [2]Bioengineering and Mechanical Engineering, University of California, Berkeley, Berkeley, CA, [3]Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN

B380/P3096 **The LINC complex contributes to epithelial cell homeostasis.** V. Narayanan[1], P.T. Arsenovic[1], C. Mayer[1], G. Luxton[2], D.E. Conway[1]; [1]Biomedical Engineering, Virginia Commonwealth University, Richmond, VA, [2]Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN

B381/P3097 **Identification and characterization of *Medicago truncatula* LINC complex components with potential functions in root symbioses.** A.H. Newman-Griffis[1,2], I. Meier[1,2]; [1]Molecular Genetics, The Ohio State University, Columbus, OH, [2]Center for RNA Biology, The Ohio State University, Columbus, OH

B382/P3098 **Nesprin-2G, a key player in regulating nuclear mechanics.** H. Shams[1], G. Luxton[2], M. Mofrad[1]; [1]Bioengineering, University of California Berkeley, Berkeley, CA, [2]Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN

B383/P3099 **Nesprin-1alpha□2 mediates MTOC and motor protein recruitment to the nuclear envelope during myogenesis to control myonuclear positioning.** C. Shak[1], V. Koullourou[1], A. Haworth[1], D. Shah[1], S. Shackleton[1]; [1]Department of Molecular and Cell Biology, University of Leicester, Leicester, United Kingdom

B384/P3100 **MULTIPLE ISOFORMS OF NESPRIN1 ARE INTEGRAL COMPONENTS OF CILIARY ROOTLETS.** C. Potter[1], W. Zhu[1], D. Razafsky[1], P. Ruzycki[1], A.V. Kolesnikov[1], V.J. Kefalov[1], T. Doggett[1], E. Betleja[2], M.R. Mahjoub[2], D. Hodzic[1]; [1]Ophthalmology, Washington University School of Medicine, St Louis, MO, [2]Medicine, Washington University School of Medicine, St Louis, MO

B385/P3101 **Dissecting the role of LINC complex in meiotic chromosome pairing and synapsis.** C. Liu[1], A.F. Dernburg[1]; [1]Molecular and Cell Biology, HHMI/UC Berkeley, Berkeley, CA

B386/P3102 **Novel human mutation in KASH5 transmembrane domain causes protein mislocalization and male infertility.** S.A. Bentebbal[1], A. Salter[2,3], K. Fakhro[4,5], V. . Allan[2], B. Burke[3], H. Horn[1]; [1]Life Sciences Division, Hamad Bin Khalifa University, Doha, Qatar, [2]Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom, [3]Laboratory of Nuclear Dynamics and Architecture, Institute of Medical Biology, Singapore, Singapore, [4]Human Genetics Division, Sidra Medical and Research Center, Doha, Qatar, [5]Department of Genetic Medicine, Weill Cornell Medical College in Qatar, Doha, Qatar

B387/P3103 **SUN2 regulates mitotic duration in response to extracellular matrix rigidity.** N. Bélaadi[1], L. Pernet[2], J. Aureille[2], L. NGuyen[3], M. Rio[1], G. Louarn[1], G. Loirand[1], C. Guilluy[2]; [1]Inserm, Nantes, France, [2]Institute for Advanced Biosciences, Inserm, Grenoble, France, [3]IMN, CNRS, Nantes, France

Nuclear Bodies and Dynamics

B388/P3104 **DNA Damage Causes Rapid Accumulation of Nuclear Phosphoinositides for ATR Signaling.** Y. Wang[1], A. Hariharan[1], G. Bastianello[2,3], G. Shivashankar[1,2,4], M. Foiani[2,3], M.P. Sheetz[1,5]; [1]Mechanobiology Institute, National University of Singapore, Singapore, Singapore, [2]IFOM, The FIRC Institute of Molecular Oncology, Milan, Italy, [3]Dipartimento di Bioscienze, Università degli Studi di Milano, Milan, Italy, [4]Department of Biological Sciences, National University of Singapore, Singapore, Singapore, [5]Department of Biological Sciences, Columbia University, New York, NY

B389/P3105 **Direct visualization and quantitative classification of interphase hetero- and euchromatin using two-color, 3D super-resolution microscopy.** J.J. Otterstrom[1], A. Castells Garcia[2], J. Borbely[1,3], M. Ricci[1,2], M. Cosma[2], M. Lakadamyali[1,4]; [1]AFIB, The Institute of Photonic Sciences (ICFO), Castelldefels (Barcelona), Spain, [2]Reprogramming and Regeneration, Center for Genomic Regulation (CRG), Barcelona, Spain, [3]Measurement and Standards Laboratory of New Zealand, Lower Hutt, New Zealand, [4]Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

B390/P3106 **Canonical, Alternative and Multistranded DNA, and Cell Death.** C.E. Gagna[1,2,3], W. Lambert[2,3], P. Lambert[1], M. Rabbani[1], A. Pillay[1], U. Mughal[1]; [1]Life Sciences, New York Institute of Technology, Old Westbury, NY, [2]Pathology Laboratory Medicine, Rutgers - New Jersey Medical School, Newark, NJ, [3]Medicine (Dermatology), Rutgers - New Jersey Medical School, Newark, NJ

B391/P3107 **Dengue virus NS5 protein targets PML nuclear bodies involved in intrinsic immunity.** F. Giovannnoni[1], P. Hemmerich[2], C.C. García[1]; [1]Biochemistry, School of Sciences, University of Buenos Aires, Buenos Aires, Argentina, [2]Leibniz Institute for Age Research, Fritz Lipmann Institute, Jena, Germany

B392/P3108 **Optogenetic control of nuclear body assembly.** H. Zhang[1], C. Aonbangkhen[2], M. Liu[1], R. Dilley[3], R.A. Greenberg[3], D.M. Chenoweth[2], M.A. Lampson[1]; [1]Biology, University of Pennsylvania, Philadelphia, PA, [2]Chemistry, University of Pennsylvania, Philadelphia, PA, [3]Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

B393/P3109 **RICC-seq: Variable chromatin structure revealed by in situ spatially correlated DNA cleavage mapping.** V.I. Risca[1], S.K. Denny[2], A.F. Straight[3,4], W.J. Greenleaf[1]; [1]Genetics, Stanford University School of Medicine, Stanford, CA, [2]Biophysics, Stanford University, Stanford, CA, [3]Biochemistry, Stanford University School of Medicine, Stanford, CA, [4]Chemical and Systems Biology, Stanford University School of Medicine, Stanford, CA

B394/P3110 **Phase transitions in the nucleolus: modulating material properties and protein dynamics using optogenetics.** L. Zhu[1], T. Richardson[2], C.P. Brangwynne[1]; [1]Chemical and Biological Engineering, Princeton University, Princeton, NJ, [2]Molecular Biology, Princeton University, Princeton, NJ

B395/P3111 **Nuclear speckle biology as revealed by HIV-1 infection.** H. Yu[1], K. Lee[1], X. Wu[2], S.H. Hughes[3], V.N. KewalRamani[1]; [1]Basic Research Laboratory, National Cancer Institute, Frederick, MD, [2]Laboratory of Molecular Technology, Leidos Biomedical Research Inc., Frederick, MD, [3]HIV Dynamics and Replication Program, National Cancer Institute, Frederick, MD

B396/P3112 **Loss of capsid protein at the nuclear membrane is a pre-requisite for translocation of HIV-1 pre-integration complexes into the nucleus.** G.B. Melikian[1,2], A.C. Francis[1]; [1]Pediatrics, Emory University, Atlanta, GA, [2]Children's Healthcare of Atlanta, Atlanta, GA

B397/P3113 **Defining the Genetic Context of the *D. Melanogaster* Histone Locus Body.** J.L. Gross[1], L.E. Rieder[1], E.N. Larschan[1]; [1]Molecular and Cell Biology and Biochemistry (MCB), Brown University, Providence, RI

B398/P3114 **Molecular Dissection of Zc3h8 Localization to Nuclear Bodies.** J.A. Schmidt[1], T. Doan[1], E. Harris[1], E.R. Duffner[1], K.G. Danielson[1], J.E. Knepper[1]; [1]Biology, Villanova University, Villanova, PA

B399/P3115 **Nuclei spin prior to mitosis in epithelial tissues.** M.J. Siedlik[1], M. Pang[1], C.M. Nelson[1,2]; [1]Chemical and Biological Engineering, Princeton University, Princeton, NJ, [2]Molecular Biology, Princeton University, Princeton, NJ

B400/P3116 **Genetically Encoded Multimeric nanoparticles (GEMs) to visualize the biophysical properties of the nucleus.** S. Pinglay[1], G. Brittingham[1], M. Delarue[1], K.J. Kennedy[2], G. Poterewicz[1], L.J. Holt[1]; [1]Institute for Systems Genetics, NYU School of Medicine, New York City, NY, [2]Plant and Microbial Biology, University of California, Berkeley, Berkeley, CA

B401/P3117 **Nuclear envelope rupture under confinement triggers TREX1-dependent DNA damage and cell senescence.** G. Nader[1], M. Gentili[2], M. Maurin[2], Y. Liu[1], O. Shi[1], N. Manel[2], M. Piel[1]; [1]Subcellular Structures and Cellular Dynamics, Institut Curie, Paris, France, [2]Immunity and Cancer, Institut Curie, Paris, France

B402/P3118 **A potential link between DNA damage-induced nuclear actin filaments and the cell cycle.** T. Lee[1], J. Salat[1], R.D. Mullins[1]; [1]Biochemistry, UC San Francisco, San Francisco, CA

Post-Golgi Trafficking

B404/P3119 **Golgi Fragmentation in Alzheimer's Disease.** M.E. Bekier[1], X. Wang[1], D. Rector[1], J. Yang[1], Y. Wang[1]; [1]MCDB, University of Michigan, Ann Arbor, MI

B405/P3120 **The ESCRT-III protein Chmp1a mediates secretion of Sonic Hedgehog on extracellular vesicles.** M.E. Coulter[1], C. Dorobantu[2], G.A. Lodewijk[3], F. Delalande[4], S. Cianferani[4], E. Lim[5,6,7,8], V. Ganesh[1], H. Lidov[9], M. Calicchio[9], E. Yang[5,6], D. Gonzalez[5,6,7,8], T. Schlaeger[10], G. Mochida[5,6,11,12], W. Allen Lee[13], M. Lehtinen[9], T. Kirchhausen[14], D.M. Haussler[15], F.M. Jacobs[3], R. Gaudin[2], C.A. Walsh[5,6,7,8,12]; [1]Program in Neuroscience and Harvard/MIT MD-PHD Program, Harvard Medical School, Boston, United States, [2]Institute of Viral and Liver Disease, INSERM U1110 - University of Strasbourg, Strasbourg, France, [3]Swammerdam Institute for Life Sciences, University of Amsterdam, Amsterdam, Netherlands, [4]LSMBO, Strasbourg University, Strasbourg, France, [5]Manton Center for Orphan Disease Research, Boston Children's Hospital, Boston, United States, [6]Division of Genetics and Genomics, Boston Children's Hospital, Boston, United States, [7]Department of Neurology, Harvard Medical School, Boston, United States, [8]Howard Hughes Medical Institute (HHMI), Boston, United States, [9]Department of Pathology, Boston Children's Hospital, Boston, United States, [10]Division of Hematology and Oncology, Department of Medicine, Boston Children's Hospital, Boston, United States, [11]Pediatric Neurology Unit, Department of Neurology, Massachusetts General Hospital, Boston, United States, [12]Department of Pediatrics, Harvard Medical School, Boston, MA, [13]Department of Neurobiology, Harvard Medical School, Boston, United States, [14]Program in Cellular and Molecular Medicine, Boston Children's Hospital, Boston, United States, [15]Center for Biomolecular Science and Engineering, University of California, Santa Cruz, United States

B406/P3121 **GMAP-210 protein controls traffic of signaling vesicles at the immune synapse and T lymphocyte activation.** A.E. Zucchetti[1], L. Bataille[1], J. Carpier[1], S. Dogniaux[1], M. Maurin[1], M. Jouve[1], M.W. Stuck[2], G.J. Pazour[2], C. Hivroz[1]; [1]INSERM, Unité 932, Immunité et Cancer, Institute Curie, Paris, France, [2], University of Massachusetts Medical School, Program in Molecular Medicine, Worcester, MA, United States

B407/P3122 **The Arl3 and Arl1 GTPases cooperate with Cog8 to regulate selective autophagy via Atg9 trafficking.** F.S. Lee[1], I. Wang[1], J. Hsu[1], Y. Chen[1]; [1]Molecular Medicine, National Taiwan University, Taipei, Taiwan

B408/P3123 **Mechanism of action of GTPase-activating protein Gcs1 in modulating GTP hydrolysis of Arl1.** W. Chiu[1], J. Hsu[1], Z. Chen[1], Y. Liu[1], F.S. Lee[1,2]; [1]Institute of Molecular Medicine, National Taiwan University, Taipei, Taiwan, [2]Department of Medical Research, National Taiwan University Hospital, Taipei, Taiwan

B409/P3124 **AKAP12-mediated PKA phosphorylation of NKD2 S223 facilitated TGF-α cell surface delivery and EGFR transactivation.** Z.J. Cao[1], B. Singh[1], C. Li[1], R.J. Coffey[1]; [1]Epithelial Biology Center, Vanderbilt University, Nashville, TN

B410/P3125 **Iterative Sorting of Apical and Basolateral Cargo in Mardin-Darby Canine Kidney Cells.** A. Treyer[1], M. Pujato[2,3], X. Pechuan[2], A. Muesch[1]; [1]Developmental and Molecular Biology, Albert Einstein College of Medicine, Bronx, NY, [2]Department of Systems and Computational Biology, Albert Einstein College of Medicine, Bronx, NY, [3]Center for Autoimmune Genomics and Etiology, Cincinnati Children's Hospital Medical Center, Cincinnati, OH

B411/P3126 **A kinesin-3 motor transports newly synthesized basement membrane proteins specifically to a basal subregion of the lateral plasma membrane in epithelial cells.** A.L. Zajac[1], A.J. Isabella[1,2], K.E. Sy[1], S. Horne-Badovinac[1]; [1]Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL, [2]Division of Basic Sciences, Fred Hutchinson Cancer Research Center, Seattle, WA

B412/P3127 **Microtubule-interaction with apical transport vesicles is mediated by the large GTPase Mx1.** K. Ringer[1], J. Riehl[1], M. Müller[1], F. Hoff[1], R. Jacob[1]; [1]Cell Biology, Philipps Universität Marburg, Marburg, Germany

B413/P3128 **The biogenesis and structure of a unique class of large pleomorphic transport intermediates arising from the Golgi apparatus is intricately tied to its cisternal architecture.** R. Sengupta[1], E.M. Mihelc[1], R.J. Kuhn[1], J.K. Lanman[1]; [1]Biology, Purdue University, West Lafayette, IN

B414/P3129 **Multiple PLA_2 Enzymes Contribute to Membrane-Tubule Mediated Export from the TGN.** J. Roscoe[1], J.M. Beckinghausen[1], W.J. Brown[1]; [1]Molecular Biology and Genetics, Cornell University, Ithaca, NY

B415/P3130 **Manganese-induced trafficking and turnover of GPP130 is mediated by sortilin.** S. Venkat[1], A.D. Linstedt[1]; [1]Biological Sciences, Carnegie Mellon University, Pittsburgh, PA

TUESDAY

B416/P3131 **Characterization of vacuolar membrane trafficking pathways in fission yeast.** M. Hissam[1], J. Whitaker[1], R. Bryant[1], M. Kimbell[1], A. Rossi[1], S. Waldrep[1], A. Young[1], A. Rains[1], S. Nichols[1], D. Franks[1], H. Taunton[1], M.L. Styers[1]; [1]Biology, Birmingham-Southern College, Birmingham, AL

B417/P3132 **AP-1 mediated trafficking of the lysosomal vitamin B12 transporter ABCD4.** E. Sauvageau[1], A. Castonguay[1], S. Lefrancois[1,2]; [1]Centre INRS-Institut Armand-Frappier, Laval, QC, [2]Department of anatomy and cell biology, McGill University, Montreal, QC

B418/P3133 **Analysis of Myosin 5A recruitment to endothelial Weibel Palade bodies.** V. Llombart[1], S. Le Trionnaire[1], N. Hellen[2], R. Bierings[3], M. Hannah[4], T. Carter[1]; [1]St George's University of London, London, United Kingdom, [2]Imperial College, London, United Kingdom, [3]Sanquin Research, Amsterdam, Netherlands, [4]Public Health England, London, United Kingdom

B419/P3134 **Select alpha-arrestins control surface abundance of the mammalian Kir2.1 potassium channel in a yeast model.** N.A. Hager[1], C. Krasowski[1], P.G. Needham[2], T. Mackie[2], D. Bain[3], M.P. Bruchez[4], C. Szent-Gyorgyi[4], A.V. Kwiatkowski[5], A.F. ODonnell[1], J.L. Brodsky[2]; [1]Dept. of Biological Sciences, Duquesne University, Pittsburgh, PA, [2]Dept. of Biological Sciences, University of Pittsburgh, Pittsburgh, PA, [3]Dept. of Geology and Environmental Sciences, University of Pittsburgh, Pittsburgh, PA, [4]Molecular Biosensor and Imaging Center, Carnegie Mellon University, Pittsburgh, PA, [5]Dept. of Cell Biology, University of Pittsburgh, Pittsburgh, PA

B420/P3135 **The Role of PKC-ε in Focal Exocytosis.** A.E. D'Amico[1], C.M. Hanes[1], .C. Wong[1], M.R. Lennartz[1]; [1]Regenerative and Cancer Cell Biology, Albany Medical College, Albany, NY

B421/P3136 **Identification of a barrier to soluble dendritic secretory cargo in the proximal axon of chemosensory neurons in *Caenorhabditis elegans*.** L. Klabonski[1], T. Gidalevitz[1]; [1]Department of Biology, Drexel University, Philadelphia, PA

Endocytic Trafficking 2

B422/P3137 **Imaging the molecular architecture of the protein network that regulates clathrin-mediated endocytosis.** K.A. Sochacki[1], A.M. Dickey[1], M. Strub[1], J.W. Taraska[1]; [1]National Heart Lung and Blood Institute, National Institutes of Health, Bethesda, MD

B423/P3138 **Unique cargo-specific response landscapes underpin the complex and nuanced role of galectin-glycan interactions on clathrin-independent endocytosis of MHCI and CD59.** M.P. Mathew[1], J. Donaldson[1]; [1]Cell Biology and Physiology, National Heart Lung and Blood Institute, Bethesda, MD

B424/P3139 **Assessing the function of adaptor-clathrin and adaptor-cargo interaction in endocytic progression.** S.M. Di Pietro[1], T.O. Tolsma[1], L.M. Cuevas[1]; [1]Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO

B425/P3140 **A membrane trafficking screen to identify Clathrin-independent endocytosis machinery: A role for ROCK2 and Cofilin in CIE.** J.L. Wayt[1], D. Dutta[1], J. Donaldson[1]; [1]NHLBI, National Institutes of Health, Bethesda, MD

B426/P3141 **Membrane tension regulates the recruitment of membrane bending protein epsin in clathrin-mediated endocytosis.** J.G. Joseph[1], A.P. Liu[1]; [1]Mechanical Engineering, University of Michigan, Ann Arbor, MI

B427/P3142 **The role of membrane curvature in topography-induced cellular signaling.** B. Cui[1], W. Zhao[1], H. Lou[1], F. Santoro[1]; [1]Department of Chemistry, Stanford University, Stanford, CA

B428/P3143 **Dynamin independent endocytosis responds to and regulates membrane tension via a negative feedback loop.** J.J. Thottacherry[1], A. Kosmalska[2,3], A. Elosegui[2,3], S. Pradhan[4], S. Sharma[5], P.P. Singh[5], M. Guadamillas[6], N. Chaudhary[7,8], R. Vishwakarma[5], X. Trepat[2,3], M.D. Pozo[6], R.G. Parton[7], P. Pullarkat[4], P. Roca-Cusachs[2,3], S. Mayor[1]; [1]Cellular organization and signalling, National Centre for Biological Sciences, Bengaluru, India, [2]Cellular and molecular mechanobiology, Institute for Bioengineering of Catalonia (IBEC), Barcelona, Spain, [3]Faculty of medicine, University of Barcelona, Barcelona, Spain, [4]Soft condensed matter, Raman Research Institute, Bengaluru, India, [5]Medicinal chemistry division, Indian Institute of Integrative Medicine, Jammu, India, [6]Cell Biology Physiology Program, Centro Nacional de Investigaciones Cardiovasculares Carlos III (CNIC), Madrid, Spain, [7]Cell Biology and Molecular Medicine Division, Institute for Molecular Bioscience and Centre for Microscopy and Microanalysis, Queensland, Australia, [8]Department of Biochemistry, Weill Cornell Medical College, New York, NY

B429/P3144 **CD13 is a critical regulator of beta1 Integrin recycling, cell migration and focal adhesion turnover.** M. Ghosh[1], C. Devarakonda[1], S. Thangada[1], R. Lo[1], L.H. Shapiro[1]; [1]Center for Vascular Biology, UCONN Health Center, Farmington, CT

B430/P3145 **Clathrin-independent endocytosis coordinated with filopodial formation in the growth cone, revealed by superresolution microscopy.** M. Igarashi[1], M. Nozumi[1]; [1]Dept Neurochem & Mol Cell Biol, Niigata Univ Grad Sch Med Dent Sci, Niigata, 951-8510, Japan

B431/P3146 **Actin control of endosomal sorting in neurons: impact on Alzheimer's disease.** C. Guimas Almeida[1], L. Salavessa[1], L. Oliveira[1]; [1]CEDOC - Chronic Diseases Research Center, NOVA Medical School, Lisboa, Portugal

B432/P3147 **Parkinson Sac Domain Mutation in Synaptojanin 1 Impairs Clathrin Uncoating at Synapses and Triggers Dystrophic Changes in Dopaminergic Axons.** M. Cao[1], Y. Wu[1], A. McCartney[1], G. Ashrafi[2], H. Wheeler[1], E. Bushong[3], D. Boassa[3], M. Ellisman[3,4], T. Ryan[2], P. De Camilli[1]; [1]Departments of Neuroscience and Cell Biology, Howard Hughes Medical Institute, Program in Cellular Neuroscience, Neurodegeneration and Repair, Kavli Institute for Neuroscience, Yale University School of Medicine, New haven, CT, [2]Department of Biochemistry, Weill Cornell Medical College, New York, NY, [3]Center for Research in Biological Systems and the National Center for Microscopy and Imaging Research, University of California, San Diego, La Jolla, CA, [4]Department of Neurosciences, University of California, San Diego, La Jolla, CA

B433/P3148 **Cell repulsion driven by EphB2 is regulated by Eps15R-mediated endocytosis.** E. Evergren[1,2], H.T. McMahon[2]; [1]Centre for Cancer Research and Cell Biology, Queen's University Belfast, Belfast, United Kingdom, [2]Neurobiology Division, MRC Laboratory of Molecular Biology, Cambridge, United Kingdom

B434/P3149 **Tetraspanins TSP-12 and TSP-14 function redundantly to regulate the trafficking of the type II BMP receptor in Caenorhabditis elegans.** Z. Liu[1], H. Shi[1], J. Liu[1]; [1]Department of Molecular Biology and Genetics, Cornell University, Ithaca, NY

B435/P3150 **The Tail Waves the Dog: Differential Regulation of Expression of the Long and Short BMPRII Isoforms by Translation and Endocytosis.** Y.I. Henis[1], A.R. Amsalem[1], B. Marom[1], K.E. Shapira[1], T. Hirschhorn[2], L. Preisler[1], P. Paarmann[3], P. Knaus[3], M. Ehrlich[2]; [1]Department of Neurobiology, Tel Aviv University, Tel Aviv, Israel, [2]Department of Cell Research and Immunology, Tel Aviv University, Tel Aviv, Israel, [3]Institute for Chemistry and Biochemistry, Freie Universitaet Berlin, Berlin, Germany

B436/P3151 **Mutations of the N-terminal TIR domain tyrosine result in loss of TLR9 function by directing autophagic elimination of the mutant protein.** C. Biswas[1], S. Rao [1], D. Dersh[1], P.W. Zoltick[1], Y. Argon[1], M.S. Marks[1], E.M. Behrens[1]; [1]Pediatrics/Rheumatology, Children's Hospital of Philadelphia, Philadelphia, PA

B437/P3152 **Catalytic activation cycle of β-arrestins by GPCRs.** K. Eichel[1], D. Jullié[1], N. Latorraca[2,3,4], M. Masureel[4], B. Barsi-Rhyne[1], J. Sibarita[5], R. Dror[2,3,4], M. von Zastrow[1]; [1]Psychiatry, UCSF, San Francisco, CA, [2]Institute for Computational and Mathematical Engineering, Stanford University, Stanford, CA, [3]Computer Science, Stanford University, Stanford, CA, [4]Molecular and Cellular Physiology, Stanford University, Stanford, CA, [5]Interdisciplinary Institute for Neuroscience, University of Bordeaux, Bordeaux, France

B438/P3153 **WITHDRAWN**

B439/P3154 **Molecular mechanisms and of microdomain-dependent protein trafficking.** B.B. Diaz-Rohrer[1], J.H. Lorent[1], K.R. Levental[1], I. Levental[1]; [1]Integrative Biology and Pharmacology, UT Health Science Center, Houston, TX

B440/P3155 **Endocytosed PAM, MPR and EGF traverse a dynamic multivesicular body network together.** N. . Back[1], K. Kanerva[1], K. Vishwanatha[2], A. Yanik[2], E. Ikonen[1], R.E. Mains[2], B.A. Eipper[2]; [1]Department of Anatomy, University of Helsinki, Helsinki, Finland, [2]Department of Neuroscience, University of Connecticut Health Center, Farmington, CT

B441/P3156 **Proteomics reveals novel protein associations with early endosomes in an EGF-dependent manner.** J.A. Gosney[1], M.L. Merchant[2], D.W. Wilkey[2], B.P. Ceresa[1]; [1]Pharmacology Toxicology, University of Louisville, Louisville, KY, [2]Medicine, University of Louisville, Louisville, KY

Endosomes, Lysosomes, and Lysosome-Related Organelles 2

B442/P3157 **A molecular mechanism to recruit galectin-3 into multivesicular bodies for polarized exosomal secretion.** S. Bänfer[1], D. Schneider[1], J. Dewes[1], M.T. Strauss[2,3], S.A. Freibert[1], H. Elsässer[1], R. Jungmann[2,3], R. Jacob[1]; [1]Department of Cell Biology and Cell Pathology, Philipps University Marburg, Marburg, Germany, [2]Department of Physics and Center for Nanoscience, Ludwig Maximilian University, Munich, Germany, [3]Max Planck Institute of Biochemistry, Martinsried, Germany

B443/P3158 **Ist1 regulates ESCRT-III assembly and function during multivesicular endosome biogenesis.** E. Frankel[1], A. Audhya[1]; [1]Biomolecular Chemistry, University of Wisconsin-Madison, Madison, WI

B444/P3159 **Renitence vacuoles facilitate protection against phagolysosomal damage in activated macrophages.** A.O. Wong[1,2], M. Marthi[3], B. Gregorka[3], M.S. Swanson[3], J.A. Swanson[1,3]; [1]Immunology Graduate Program, University of Michigan, Ann Arbor, MI, [2]Medical Scientist Training Program, University of Michigan, Ann Arbor, MI, [3]Department of Microbiology and Immunology, University of Michigan, Ann Arbor, MI

B445/P3160 **Phagocytic functions of human macrophages is impaired by infection with rhinoviruses.** J. Jubrail[1], K. Africano Gomez[1], F. Herit[1], P. Burgel[2], G. Mayer[3], N. Kurian[3], F. Niedergang[1]; [1]Inserm U1016, CNRS UMR8104, Université Paris Descartes, Institut Cochin (Inserm U1016), Paris, France, [2]Department of Pneumology, Cochin Hospital, Paris, France, [3]Respiratory, Inflammation Autoimmunity iMed, AstraZeneca, Mölndal, Sweden

B446/P3161 **LC3B lipidation is required for macropinosome biogenesis.** O. Shtanko[1], X. Meng[2], A.N. Reyes[1], Y. Xiang[2], W.T. Jackson[3], R.A. Davey[1]; [1]Virology and Immunology, Texas Biomedical Research Institute, San Antonio, TX, [2]Microbiology, The University of Texas Health Science Center at San Antonio, San Antonio, TX, [3]Microbiology and Immunology, University of Maryland School of Medicine, Baltimore, MD

B447/P3162 **Elucidation of mechanisms controlling phagolysosome resolution.** C.E. Lancaster[1,2], R.M. Dayam[3,4], A. Somerville[4], R.J. Botelho[3,4], M.R. Terebiznik[1,2]; [1]Biological Sciences, University of Toronto at Scarborough, Toronto, ON, [2]Cell Systems Biology, University of Toronto at Scarborough, Toronto, ON, [3]Molecular Science Graduate Program, Ryerson University, Toronto, ON, [4]Chemistry and Biology, Ryerson University, Toronto, ON

B448/P3163 **Dissecting Atg27 Function in Budding Yeast Autophagy and Membrane Traffic.** M.C. Penton[1], V.A. Segarra[1]; [1]Biology, High Point University, High Point, NC

B449/P3164 **GRASP55 senses energy deprivation through O-GlcNAcylation to promote autophagosome-lysosome fusion.** X. Zhang[1], Y. Wang[1]; [1]Department of Molecular, Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI

B450/P3165 **A switch in the specificity of an endosomal CORVET tether underlies formation of regulated secretory vesicles in the ciliate *Tetrahymena thermophila*.** D. Sparvoli[1], H. Osakada[2], X. Lan[3,4], M. Iwamoto[2], G.R. Bowman[1,5], C. Kontur[1,6], J.K. Pritchard[3,4,7], T. Haraguchi[2,8], A.P. Turkewitz[1]; [1]Department of Molecular Genetics and Cell Biology, The University of Chicago, Chicago, IL, [2]Advanced ICT Research Institute, National Institute of Information and Communications Technology (NICT), Kobe, Japan, [3]Department of Genetics, Stanford University, Stanford, CA, [4]Howard Hughes Medical Institute, Stanford University, Stanford, CA, [5]Department of Molecular Biology, University of Wyoming, Laramie, WY, [6]Department of Genetics, Yale University School of Medicine, New Haven, CT, [7]Department of Biology, Stanford University, Stanford, CA, [8]Graduate School of Frontier Biosciences, Osaka University, Suita, Japan

B451/P3166 **The effect of endomembrane transport inhibitors on octanoic acid resistance in *Drosophila*.** Z.A. Drum[1], J.D. Coolon[1]; [1]Department of Biology, Wesleyan University, Middletown, CT

B452/P3167 **Major Facilitator Superfamily Domain-Containing 12 (MFSD12) regulates melanin synthesis from lysosomes.** S.L. Bowersox[1,2], S.A. Tishkoff[3], M.S. Marks[1,2]; [1]Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, PA, [2]Pathology and Laboratory Medicine, Children's Hospital of Philadelphia, Philadelphia, PA, [3]Genetics, University of Pennsylvania, Philadelphia, PA

B453/P3168 **Studying human ATG4 homologs using ATG4 quadruple knockout (QKO) cells.** S. Yu[1], K. Kauffman[1], J. Jin[1], N. Nguyen[1], A. Lystad[1], T.J. Melia[1]; [1]Department of Cell Biology, Yale University, New Haven, CT

B454/P3169 **Delipidation of mammalian LC3 proteins by each of the four Atg4 proteases.** K. Kauffman[1], S. Yu[1], B. Mugo[1], A. O'Brien[1], S. Nag[1], T.J. Melia[1]; [1]Cell Biology, Yale University, New Haven, CT

B455/P3170 **Temperature-dependent sorting of fluorescent protein-tagged tyrosinases to the melanosome.** S.M. Joseph[1], A.C. Theos[1]; [1]Human Science, Georgetown University, Washington, DC

B456/P3171 **The role of canonical and non-canonical autophagy in bone resorption by osteoclasts.** A.N. Tran[1], S. Segeletz[2], E. McDermott[1], J.J. Rochford[3], M.H. Helfrich[1]; [1]Institute of Medical Sciences, University of Aberdeen, Aberdeen, United Kingdom, [2]Biotechnologisches Zentrum (BIOTEC), Technische Universität Dresden, Dresden, Germany, [3] Rowett Institute of Nutrition and Health, University of Aberdeen, Aberdeen, United Kingdom

B457/P3172 **Host cells degrade the *H. pylori* pore-forming toxin, VacA, to resist cell death.** N.J. Foegeding[1], K. Raghunathan[2], T.L. Cover[3,4,5], M.D. Ohi[6]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN, [2]Pediatrics, Children's Hospital of Pittsburgh. University of Pittsburgh Medical Center, Pittsburgh, PA, [3]Medicine, Vanderbilt University School of Medicine, Nashville, TN, [4]Pathology, Microbiology, Immunology, Vanderbilt University School of Medicine, Nashville, TN, [5]Veteran Affairs Tennessee Valley Healthcare System, Nashville, TN, [6]Cell and Developmental Biology, University of Michigan Ann Arbor, Nashville, TN

B458/P3173 **Single Cell Analysis of Vacuolar pH Using Confocal Microscopy.** J.D. Campos[1], R.C. Segura[1], Y.M. Chan[1]; [1]Biology, San Francisco State University, San Francisco, CA

Polarity in Development

B460/P3174 **Rab11/Fip5 regulates formation of the terminal web and is necessary for microvilli stabilization during zebrafish intestinal development.** C.E. Jewett[1], B. Appel[2], R. Prekeris[1]; [1]Department of Cell and Developmental Biology, University of Colorado Anschutz Medical Campus, Aurora, CO, [2]Department of Pediatrics, University of Colorado Anschutz Medical Campus, Aurora, CO

B461/P3175 **Vangl1/2 function in neural tube convergence and extension.** M. De Oliveira Melo[1], A.E. Sutherland[1]; [1]Department of Cell Biology, University of Virginia, Charlottesville, VA

B462/P3176 **Perturbations of intracellular flows explain and invert the transport-dependent PAR polarization of *C. elegans* zygotes.** M. Mittasch[1,2], P. Gross[3], M. Nestler[4], A.W. Fritsch[1,2], A. Voigt[2,4], S.W. Grill[2,3], M. Kreysing[1,2]; [1]Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany, [2]Center for Systems Biology Dresden, Dresden, Germany, [3]Biotechnology Center, Technische Universität Dresden, Dresden, Germany, [4]Department of Mathematics, Technische Universität Dresden, Dresden, Germany

B463/P3177 **Counter-rotational cell flows drive morphological and cell fate asymmetries in mammalian hair follicles.** M. Cetera[1], L. Leybova[1], B. Joyce[1], D. Devenport[1]; [1]Molecular Biology, Princeton University, Princeton, NJ

B464/P3178 **The ciliary GTPase Arl3 maintains tissue architecture by directing Planar Cell Polarity (PCP) dependent mitotic spindle orientation during epidermal morphogenesis.** S. Bhattarai[1], S. Begum[1], E.J. Ezratty[1]; [1]Pathology and Cell Biology, Columbia University, New York, NY

B465/P3179 **TRANSCRIPTIONAL DYNAMICS OF SINGLE-CELL REGENERATION IN THE CILIATE STENTOR COERULEUS.** P. Sood[1], R.M. McGillivary[1], W.F. Marshall[1]; [1]Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

B466/P3180 **The DEP domain protein LET-99 regulates spindle positioning downstream of multiple polarity cues in *C. elegans*.** M.J. Liro[1,2], K.L. Price[1,2], L.S. Rose[1,2]; [1]Molecular and Cellular Biology, University of California, Davis, Davis, CA, [2]BMCDB Graduate Program, University of California, Davis, Davis, CA

B467/P3181 **Par3 interacts with Prickle3 to maintain planar cell polarity (PCP) in the vertebrate neural plate.** I. Chuykin[1], O. Ossipova[1], S. Sokol[1]; [1]Cell Developmental and Regenerative Biology, Icahn School of Medicine at Mount Sinai, New York, NY

B468/P3182 **Protein palmitoylation as a mechanism of asymmetric protein localization during cell division.** E. Stypulkowski[1], E. Witze[1]; [1]Cancer Biology, University of Pennsylvania, Philadelphia, PA

B469/P3183 **Rapid diffusion state switching underlies stable cytoplasmic gradients in the *C. elegans* zygote.** Y. Wu[1], B. Han[1], E.E. Griffin[1]; [1]Biological Sciences, Dartmouth College, Hanover, NH

B470/P3184 **Basal cell shape influences division orientation in the mammalian epidermis.** K. Box[1], B. Joyce[1], D. Devenport[1]; [1]Molecular Biology, Princeton University, Princeton, NJ

B471/P3185 **Oligomerization mediates self-stabilizing cortical asymmetry of the keystone polarity protein PAR-3.** C.F. Lang[1], A. Anneken[2], E.M. Munro[1,2]; [1]Committee on Genetics, Genomics, and Systems Biology, University of Chicago, Chicago, IL, [2]Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL

B472/P3186 **Lamination of the outer-retina, but not inner-retina, requires cell non-autonomous activity of the polarity protein Par3 in retinal progenitor cells.** M. Housset[1], C. Jolicoeur[1], M. Cayouette[1]; [1]Neurodevelopment, Institut de recherches cliniques de Montréal, Montreal, QC

Neuronal Degeneration and Regeneration

B474/P3187 **Peripheral nervous system changes during senescence in MDX mice.** T.M. Augusto[1], A.D. Assis[2], N.P. Biscola[2], A.L. Oliveira[2], G.F. Simoes[2]; [1]Morphology and Basic Pathology, Faculty of Medicine of Jundiai - FMJ, Jundiaí, Brazil, [2] Structural and Functional Biology, University of Campinas, Campinas, Brazil

B475/P3188 **Protective effects of pregabalin in the spinal cord microenvironment in MDX mice submitted to sciatic nerve axotomy.** A.D. Assis[1], F.D. Oliveira[1], T.M. Augusto[2], A.L. Oliveira[1], G.F. Simoes[1]; [1] Structural and Functional Biology, University of Campinas, Campinas, Brazil, [2]Morphology and Basic Pathology, Faculty of Medicine of Jundiai - FMJ, Jundiaí, Brazil

B476/P3189 **The effects of PrP^C glycosylation and cofactor molecules on species-specific prion strain susceptibility in the bank vole.** C.M. Burke[1], D.J. Walsh[1], M. Di Bari[2], U. Agrimi[2], S. Supattapone[1,3]; [1]Biochemistry and Cell Biology, Dartmouth College, Hanover, NH, [2]Department of Veterinary Public Health and Food Safety, Istituto Superiore di Sanità, Rome, Italy, [3]Medicine, Dartmouth College, Hanover, NH

B477/P3190 **Development of a novel combination of Huperzine A (CogniUpTM), standardized Convolvulus pluricaulis and Celastrus paniculatus seed extracts to boost neurovascular well-being and cognitive health.** A. Swaroop[1], I.S. Ahmad[2], D. Bagchi[3]; [1]RD, Cepham, Inc., Piscataway, MD, [2]RD, Cepham Life Sciences, Inc., Linthicum Heights, MD, [3]Pharmacological Pharmaceutical Sciences, University of Houston College of Pharmacy, Houston, TX

B478/P3191 **RARβ agonist induces endodermal differentiation by inhibiting *Hoxa1* in differentiating mouse ES cells.** A. Shrestha[1], E.M. Ceballos[1]; [1]BIOLOGY, Southern University, Baton Rouge, LA

B479/P3192 **HSV-1 triggers paracrine fibroblast growth factor 4 secretion from astrocytes: potential role for astrocyte reactivity and repair in herpes simplex encephalitis.** V. Raker[1,2,3], N. Hensel[2,3], B. Förthmann[2,3], A. Buch[3,4,5], J. Spanier[3,6], V. Gudi[7], M. Stangel[1,3,7], A. Beineke[1,8], U. Kalinke[3,6], B. Sodeik[1,3,4,5], P. Claus[1,2,3]; [1]Center for Systems Neuroscience (ZSN), Hannover, Germany, [2]Institute of Neuroanatomy and Cell Biology, Hannover Medical School, Hannover, Germany, [3]Niedersachsen-Research Network on Neuroinfectiology (N-RENNT), Hannover, Germany, [4]Institute of Virology, Hannover Medical School, Hannover, Germany, [5]German Center for Infection Research (DZIF), Hannover-Braunschweig, Germany, [6]TWINCORE, Institute for Experimental Infection Research, Hannover, Germany, [7]Clinical Neuroimmunology and Neurochemistry, Department of Neurology, Hannover Medical School, Hannover, Germany, [8]Department of Pathology, University of Veterinary Medicine Hannover, Hannover, Germany

B480/P3193 **Mutation of the *Drosophila* RNA-binding protein Muscleblind, causes accumulation of rhodopsin, ER stress and retinal degeneration.** I. Tekin[1,2], J.D. Ni[1,2], A. Gurav[1,2], D. Acosta-Alvear[2], C. Montell[1,2]; [1]Neuroscience Research Institute, University of California, Santa Barbara, Santa Barbara, CA, [2]Department of Molecular, Cellular and Developmental Biology, University of California, Santa Barbara, Santa Barbara, CA

B481/P3194 **Neurons survive and regenerate after simultaneous injury to axons and dendrites.** M. Shorey[1], J. Mandel[1], M.M. Rolls[1]; [1]BMMB, Penn State, University Park, PA

B482/P3195 **Microglia activation in animal model of post-traumatic stress disorder.** M. Sidorova[1], O. Tuchina[1], I. Vakolyuk[1]; [1]School of Life Sciences, Immanuel Kant Baltic Federal University, Kaliningrad, Russia

B483/P3196 **Novel Single nucleotide polymorphism in the exon 3 of MYOC gene enhance the risk of Glaucoma.** S. Nazir[1], M. Mukhtar[1], M. Shahnawaz[1], S. Farooqi[2], N. Fatima[1], R. Mehmood[1], N. Sheikh[1]; [1]Deaprtment of Zoology, University of the Punjab, Lahore, Pakistan, [2]Department of Biomedical Engineering Center, Kalashahkaku Campus, University of Engineering and Technology,, Lahore, Pakistan

B484/P3197 **The fusogen EFF-1 drives phagosome sealing during cell process clearance.** P. Ghose[1], A. Rashid[1], P. Insley[1], M. Trivedi[1], P. Shah[2], A. Singhal[1], Y. Lu[1], Z. Bao[2], S. Shaham[1]; [1]Developmental Genetics, The Rockefeller University, New York, NY, [2]Developmental Biology, Sloane Kettering Institute, New York, NY

B485/P3198 **Cell biology of functional axon regeneration.** C. Ding[1,2], M. Hammarlund[1,2]; [1]Neuroscience, Yale School of Medicine, New Haven, CT, [2]Genetics, Yale School of Medicine, New Haven, CT

B486/P3199 **Pharmacologically increasing microtubule acetylation corrects stress-exacerbated effects of organophosphates on neurons.** A. Patil[1], A.N. Rao[1], Z.D. Brodnik[1], L. Qiang[1], R.A. Espana[1], K.A. Sullivan[2], M.M. Black[3], P.W. Baas[1]; [1]Neurobiology and Anatomy, Drexel University College of Medicine, Philadelphia, PA, [2]Environmental Health, Boston University School of Public Health, Boston, MA, [3]Anatomy and Cell Biology, Temple University, Philadelphia, PA

B487/P3200 **TRPV4 mediated neuronal hyperexcitability and disrupted mitochondrial axonal transport in a *Drosophila* model of inherited neuropathy.** B.M. Woolums[1], M. Tabuchi[1], H. Sung[1], J.M. Sullivan[1], B.A. McCray[1], M.N. Wu[1], C.J. Sumner[1], T.E. Lloyd[1]; [1]Neurology, Johns Hopkins University, Baltimore, MD

B488/P3201 **Nanoparticle delivery of fidgetin siRNA as a microtubule-based therapy to augment nerve regeneration.** T.O. Austin[1], A.J. Matamoros[1], J.M. Friedman[2], A.J. Friedman[3], P. Nacharaju[2], W. Yu[1], D.J. Sharp[2], P.W. Baas[1]; [1]Neurobiology and Anatomy, Drexel University College of Medicine, Philadelphia, PA, [2]Physiology and Biophysics, Albert Einstein College of Medicine, New York City, NY, [3]Dermatology, George Washington School of Medicine and Health Sciences, Washington DC, DC

B489/P3202 **Differential effects of oxidative stress on neurons cultured from different regions of the embryonic chick brain.** E. Beyrent[1], M. Galardi[1], G. Gomez[1]; [1]Biology, University of Scranton, Scranton, PA

B490/P3203 **A new microtubule-based approach for augmenting nerve regeneration.** A.J. Matamoros[1], D. Wu[1], L.A. Baker[2], D.J. Sharp[2], V.J. Tom[1], P.W. Baas[1]; [1]Neurobiology Anatomy, Drexel University College of Medicine, Philadelphia, PA, [2]Physiology Biophysics, Einstein College of Medicine, New York, NY

B491/P3204 **HIV-1 Nef induced inflammation, astrogliosis, and chromatolysis can be reversed by inhibiting TGFβ.** N. Martinez-Orengo[1], M.L. Cruz[1], R.J. Noel[1]; [1]Basic Sciences, Ponce Health Sciences University, Ponce, PR

B492/P3205 **Investigating the neuroprotective functions of TLDc proteins.** D.M. Svistunova[1], M.J. Finelli[1], P.L. Oliver[1], K.E. Davies[1]; [1]Department of Physiology, Anatomy and Genetics, The University of Oxford, Oxford, United Kingdom

B493/P3206 **The NINDS Repository: Publicly available DNA and Cell Lines sampled from individuals diagnosed with neurological disorders.** L. Scheinfeldt[1], S. Heil[1], A. Green[1], J. Santana[1], A. Amberson[1], A.M. Resch[1], R. Zhang[2]; [1]Coriell Institute for Medical Research, Camden, NJ, [2]National Institute for Neurological Disorders and Stroke-NIH, Bethesda, MD

B494/P3207 **Hyperglycemia upregulates calpains expression and promotes sodium channels proteolysis in rat brain.** A.V. Vega[1,2], L.M. Arratia-Cortés[3], M. Calderón-Torres[2]; [1]Carrera de Médico Cirujano, FES Iztacala UNAM, Los Reyes Iztacala, Tlanepantla, Mexico, [2]UBIMED, FES Iztacala UNAM, Los Reyes Iztacala, Tlalnepantla, Mexico, [3]Posgrado en Ciencias Quimicobiológicas, ENCB-IPN, Mexico City, Mexico

B495/P3208 **Investigating a role of TOR-2 in controlling ER export of AMPA receptors to regulate synaptic excitability in C. elegans.** C. Xu[1], B. Parker[1], K.A. Caldwell[1], G.A. Caldwell[1]; [1]Biological Sciences, University of Alabama, Tuscaloosa, AL

B496/P3209 **Expression and distribution pattern of Pnn in ischemic cerebral cortex and cultured neural cells exposed to oxygen–glucose deprivation.** S. Mukda[1], S. Leu[2]; [1]Research Center for Neuroscience, Institute of Molecular Biosciences, Mahidol University, Nakornpathom, Thailand, [2]Institute for Translational Research in Biomedicine, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan

B497/P3210 **Human tryptophan hydroxylase-2 expression in *S. cerevisiae* results in cytotoxicity.** F.A. Mohamed[1], M.P. Torrente[1]; [1]Department of Chemistry, Brooklyn College, the City University of New York (CUNY), Brooklyn, New York, NY

B498/P3211 **Disruption of Tuba1a leads to neurodegeneration that can be rescued by Mg++.** G. Buscaglia[1], J.E. Aiken[1], J.K. Moore[2], E.A. Bates[1]; [1]Pediatrics, University of Colorado School of Medicine, Aurora, CO, [2]Cell and Developmental Biology, University of Colorado School of Medicine, Aurora, CO

Synaptic Cell Biology

B499/P3212 **Multi-color STORM in neurons reveals molecular organization of the LGI1 synaptic complex.** L. Laparra Cuervo[1], L. Ladépêche[1,2], J. Planagumà[1,2], J.S. Borbely[3], Á. Sandoval[1], J. Dalmau[2,4,5], M. Lakadamyali[1,6]; [1]Advanced Fluorescence Imaging and Biophysics, ICFO-Institut de Ciències Fotòniques, BIST, Castelldefels (Barcelona), Spain, [2]Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Barcelona, Spain, [3]Measurement Standards Laboratory, Lower Hutt, New Zealand, [4]Neurology, University of Pennsylvania, Philadelphia, PA, [5]Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain, [6]Physiology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

B500/P3213 **Nanoscale redistribution of NMDA receptors subunits in anti-NMDA receptor autoimmune encephalitis.** L. Ladépêche[1,2], J. Planagumà[1,2], S. Thakur[1,3], I. Suárez[1], J. Borbely[1], A. Sandoval[1], L. Laparra Cuervo[1], J. Dalmau[2,4], M. Lakadamyali[1,3]; [1]Advanced Fluorescence Imaging and Biophysics, ICFO-Institut de Ciències Fotòniques, Castelldefels, Spain, [2]Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Barcelona, Spain, [3]Department of Physiology, University of Pennsylvania, Philadelphia, PA, [4]Department of Neurology, University of Pennsylvania, Philadelphia, PA

B501/P3214 **Cytoskeletal Regulation of Neurodevelopment in a Human iPSC-derived Autism Model.** T. Rudisill[1], B. Kirk[1], C. Johnson[1], A. Orbita[1], P. Pakala[1], H. Dar[1], S. Davis[1], A.R. Horwitz[2], M.J. McConnell[3], K.A. Litwa[1,2]; [1]Anatomy and Cell Biology, East Carolina University Brody School of Medicine, Greenville, NC, [2]Cell Biology, University of Virginia, Charlottesville, VA, [3]Biochemistry and Molecular Genetics, University of Virginia, Charlottesville, VA

B502/P3215 **Remodeling of the postsynaptic plasma membrane during neural development.** K. Tulodziecka[1], B.B. Diaz-Rohrer[1], N.M. Waxham[1], I. Levental[1]; [1]Integrative Biology and Pharmacology, University of Texas Health Science Center at Houston, Houston, TX

B503/P3216 **Competition in the postsynaptic density for PDZ domains of PSD-95.** T. Mastro[1], A. Preza[1], P. Kind[2], M.B. Kennedy[1]; [1]Biology and Biological Engineering, Caltech, Pasadena, CA, [2]Centre for Integrative Physiology, The University of Edinburgh, Edinburgh, United Kingdom

B504/P3217 **Nuclear Factor One (NFI)-Dependent Developmental Program Directs the Timing of Gene Expression in Maturing Neurons.** B. Ding[1,2], P. Dobner[2], D. Kilpatrick[2]; [1]Dept. of Molecular Biology, University of Texas Southwestern Medical Center, Dallas, TX, [2]Dept. of Microbiology and Physiological Systems and Program in Neuroscience, University of Massachusetts Medical School, Worcester, MA

B505/P3218 **Determining the molecular basis of ultrafast endocytosis.** Y. Imoto[1], Q. Gan[1], L. Mamer[2], S. Markert[3], I. Milosevic[4], P. De Camilli[5], C. Rosenmund[2], E. Jorgensen[6], S. Watanabe[1]; [1]Department of Cell Biology, John Hopkins University School of Medicine, Baltimore, MD, [2]Institute of Neurophysiology, Charité Universitätsmedizin Berlin, Berlin, Germany, [3]Division of Electron Microscopy, University of Würzburg, Würzburg, Germany, [4]European Neuroscience Institute, Goettingen, Germany, [5]Departments of Neuroscience and Cell Biology, Program in Cellular Neuroscience, Neurodegeneration and Repair, Kavli Institute for Neuroscience, Howard Hughes Medical Institute, Yale University School of Medicine, New Haven, CT, [6]Department of Biology, University of Utah, Salt Lake City, UT

B506/P3219 **Long-term adaptation of G-protein signalling in the brain is facilitated by active G-proteins' feedback control of the amount of RGS proteins.** M.E. Fina[1], S.R. Tummala[2], N. Vardi[3], A. Kashina[1], D.W. Dong[1,3,4]; [1]Biomedical Sciences, University of Pennsylvania, Philadelphia, PA, [2]Department of Bioengineering, University of Pennsylvania, Philadelphia, PA, [3]Department of Neuroscience, University of Pennsylvania, Philadelphia, PA, [4]Institute for Biomedical Informatics, University of Pennsylvania, Philadelphia, PA

B507/P3220 **The role of the sub-complex α-syntrophin and α-dystrobrevin on the stability of postsynaptic AChR dynamics at the NMJ.** I. Martinez-Pena[1], P. Chen[1], M. Akaaboune[1,2]; [1]Molecular Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI, [2]College of Sciences and Engineering, Life Science Division, Hamad Bin Khalifa University, Doha, Qatar

B508/P3221 **Spontaneous rhythmic electrical activity of the tentacular apparatus of *Mnemiopsis leidyi*.** G. Dong[1], A.G. Moss[1]; [1]Biological Sciences, Auburn University, Auburn, AL

B509/P3222 **Noktochor is a required in glia and neurons for Drosophila night sleep.** L.B. Crowe[1], S. Senguypta[1], F.R. Jackson[1]; [1]Neuroscience, Tufts University, Boston, MA

B510/P3223 **The fine structure of the tentacular apparatus of *Mnemiopsis leidyi*.** D.G. Mitchell[1], G. Dong[1], Z. Turturro [1], A.G. Moss[1]; [1]Biological Sciences, Auburn University, Auburn, AL

B511/P3224 **The role of DNA repair factors in developing and maintaining proper neurotransmission in *Caenorhabditis elegans*.** B. Mares[1], J. Trujillo[1], T. Ii[2], H. Ando[2], M. Ii[1,2]; [1]Biology, New Mexico Highlands University, Las Vegas, NM, [2]Biological Sciences, University of Alaska Anchorage, Anchorage, AK

B512/P3225 **Investigation of the FSHR-1 Receptor as a Potential Substrate of the Anaphase-Promoting Complex at the *C. elegans* Neuromuscular Junction.** D. Emch[1], K.L. Cherry[1], A. Godfrey[1], A. Munneke[1], E. Damler[1], J.R. Kowalski[1]; [1]Biological Sciences, Butler University, Indianapolis, IN

B513/P3226 **RhoA activity regulates spine morphology and memory associated behavior.** K. Kuroda[1], X. Zhang[1], K. Oda[1], Y. Nakanose[1], M. Yoshikawa[1], T. Nagai[2], K. Kaibuchi[1]; [1]Cell Pharmacology, Nagoya University Graduate School of Medicine, Nagoya, Japan, [2]Clinical Pharmacy, Nagoya University Graduate School of Medicine, Nagoya, Japan

B514/P3227 **A molecular mechanism underlying retinogeniculate convergence in mouse visual thalamus.** A. Monavarfeshani[1,2], G. Stanton[1], J. Su[1], K. Su[1], J. Van Name[1], M.A. Fox[1,2]; [1]Virginia Tech Carilion Research Institute, Virginia Tech, Roanoke, VA, [2]Biological Sciences, Virginia Tech, Blacksburg, VA

B515/P3228 **VER/VEGF receptor-related proteins regulate GLR-1/GluR1 surface levels and control behavior.** E.S. Luth[1], C. Riccio[1], J. Hofer[1], K. Markoja[1], P. Juo[1]; [1]DMCB, Tufts University School of Medicine, Boston, MA

B516/P3229 **Calcium and Calcineurin-Dependent Regulation of CaMKII Targeting to Inhibitory Synapses.** M. Malkowski[1], M. Fauzan[1], Z. Minas[1], A. Pittar[1], R.C. Carroll[1,2]; [1]Biology Department, New Jersey City University, Jersey City, NJ, [2]Department of Neuroscience, Albert Einstein College of Medicine, Bronx, NY

B517/P3230 **Tenectin recruits integrin to stabilize boutons and regulate vesicle release at the *Drosophila* neuromuscular junction.** Q. Wang[1], T. Han[1], L. Friend[1], P. Nguyen[1], M. Serpe[1]; [1]NIH/NICHD, Bethesda, MD

B518/P3231 **Neto - the obligatory subunit of glutamate receptors, functions in both pre- and post-synaptic compartments to enable synapse development and homeostasis at the *Drosophila* neuromuscular junction.** T. Han[1], C.I. Ramos[1,2], R. Vicidomini[1], Q. Wang[1], M. Jarnik[1], M. Serpe[1]; [1]NICHD, NIH, Bethesda, MD, [2]Institut de Genomique Fonctionnelle de Lyon, Lyon, France

B519/P3232 **Vesicular transporters heterogeneity regulates vesicle dynamics, localization and synaptic transmission in mouse central synapses.** L. Guillaud[1], E. Abdelmoneim[1], D. Dimitrov[1], T. Takahashi[1]; [1]Cellular and Molecular Synaptic Function Unit, Okinawa Institute of Science and Technology, Onna-son, Japan

Neuronal Development, Structure, Mechanics, and Motility

B520/P3233 **A role for the calcium-activated protease calpain in the regulation of netrin-1/DCC-mediated cortical axon outgrowth.** P.M. Duquette[1], D. Im[2], D. Park[2], N. Lamarche-Vane[1]; [1]Anatomy and Cell Biology, Research Institute of the MUHC, Montreal, QC, [2]Cellular and Molecular Medicine, University of Ottawa, Ottawa, ON

B521/P3234 **Calcineurin substrate protein supports reproduction and neurite caliber development by acting like the KSP domain of human neurofilament medium subunit (NEFM) in Caenorhabditis elegans.** H. Jung[1,2,3], S. Durnaoglu[1,2,3], Y. Hahn[4], J. Ahnn[1,2,3], S. Lee[1,2,3]; [1]Department of Life Science, Hanyang University, Seoul, South Korea, [2]Research Institute for Natural Science, Hanyang University, Seoul, South Korea, [3]BK PLUS Life Science for BDR Team, Hanyang University, Seoul, South Korea, [4]Department of Life Science, Chung-Ang University, Seoul, South Korea

B522/P3235 **Neurofilament transport impairment precedes microtubule-neurofilament segregation in axons treated with 3,3'-iminodipropionitrile (IDPN).** J. Fenn[1,2], P.C. Monsma[2], A. Brown[2]; [1]Medical Scientist Training Program, Ohio State University, Columbus, OH, [2]Department of Neuroscience, Ohio State University, Columbus, OH

B523/P3236 **Chemical and mechanical signals interact to direct axon guidance.** S.K. Foster[1], K. Franze[1]; [1]Department of Physiology, Development and Neuroscience, University of Cambridge, Cambridge, United Kingdom

B524/P3237 **ALS-linked mutations increase the viscosity of liquid-like axonal TDP-43 RNP granules in neurons.** P.P. Gopal[1,2], J.J. Nirschl[2], E. Klinman[2], E.L. Holzbaur[2]; [1]Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, PA, [2]Physiology, University of Pennsylvania, Philadelphia, PA

B525/P3238 **Nox2 is involved in retinotectal connections in developing zebrafish embryos.** A. Terzi[1], C.J. Weaver[1], H.S. Roeder[1], T.M. Gurol[1], Q. Deng[1], Y. Leung[1], D.M. Suter[1]; [1]Biological Sciences, Purdue University, West Lafayette, IN

B526/P3239 **TRIMming neurons: TRIM9 and TRIM67 modulate neuronal morphogenesis.** S. Menon[1], B. Major[1], S.L. Gupton[1]; [1]Cell Biology and Physiology, University of North Carolina at Chapel Hill, Chapel Hill, NC

B527/P3240 **Investigation of the Roles of Novel Endogenous Ligand of Aryl Hydrocarbon Receptor in Neural Development.** P. Chuang[1], Y. Chan[1], P. Wu[2], P. Chen[3], H. Lee[1]; [1]Department of Life Science, National Taiwan University, Taipei City, Taiwan, [2]Institute of Cellular and Organismic Biology, Academia Sinica, Taipei City, Taiwan, [3]Department of Agricultural Chemistry, National Taiwan University, Taipei City, Taiwan

B528/P3241 **Responses of cultured mouse cerebral cortical axons to netrin-1 depending on developmental stages: outgrowth and collateral branching starting with filopodial protrusion.** H. Matsumoto[1], M. Nagashima[1]; [1]Department of Anatomy, Saitama Medical University, Saitama, Japan

B529/P3242 **Unraveling the role of microenvironment topography on cortical interneuron migration using microfabricated substrates.** C. Leclech[1,2], C. Villard[1], C. Métin[2]; [1]UMR168 Institut Curie, Institut Pierre-Gilles de Gennes, Paris, France, [2]INSERM U839 Institut du Fer à Moulin, Paris, France

B530/P3243 **HDAC6 inhibition puts the brake on axon growth and microtubule invasion into peripheral growth cone.** N. Riexinger[1], E. Gorney[1], D. Kaur[1], A. Altman[1], E.W. Hogan[1]; [1]Biology, Canisius College, Buffalo, NY

B531/P3244 **Activity-Dependent Modulation of Neuronal Proliferation and Differentiation in Cultured Chick Olfactory Neurons.** A.I. Kennedy[1], G. Gomez[1]; [1]Biology Department, The University of Scranton, Scranton, PA

Mitochondrial Dynamics, Movement, and Turnover

B533/P3245 **The mitochondrial Rho-GTPase, Miro, is resident at peroxisomes and regulates peroxisomal trafficking.** C. Covill-Cooke[1], G. López-Doménech[1], J.T. Kittler[1]; [1]Neuroscience, Physiology and Pharmacology, UCL, London, United Kingdom

B534/P3246 **Cycling clouds of actin filaments regulate mitochondria size and distribution in mitotic cells.** A.S. Moore[1], J.J. Nirschl[1], C.L. Simpson[1,2], E.L. Holzbaur[1]; [1]Department of Physiology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, [2]Department of Dermatology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

B535/P3247 **Understanding the enhanced mitochondrial fusion capabilities of a Mitofusin 2 mutant allele.** N.B. Samanas[1], S.C. Hoppins[1]; [1]Biochemistry, University of Washington, Seattle, WA

B536/P3248 **Mitofusin-2 mediated mitophagy and mitochondrial networking dynamics regulate the mesodermal differentiation of human pluripotent stem cells.** S. Krantz[1], L. Wang[1], P. Toth[1], G. Marsboom[1], J. Rehman[1]; [1]Pharmacology, University of Illinois at Chicago, Chicago, IL

B537/P3249 **Role of Septin 9 in mitochondrial fission.** Y. Balachandran[1], C. Froese[1], E. Branchard[1], M. Kim[1], P.K. Kim[1], W.S. Trimble[1]; [1]Cell Biology, The Hospital for Sick Children, Toronto, ON

B538/P3250 **Mutational analysis of Mitofusin1 and Mitofusin2 reveal distinctive functional properties required for mitochondrial outer membrane fusion.** E.A. Engelhart[1], S.C. Hoppins[1]; [1]Biochemistry, University of Washington, Seattle, WA

B539/P3251 **A close-up view of mitophagy using mt-keima and super-resolution microscopy.** D. Malide[1], N. Sun[2], T. Finkel[2]; [1]Light Microscopy Core, NHLBI/NIH, Bethesda, MD, [2]Center for Molecular Medicine, NHLBI/NIH, Bethesda, MD

B540/P3252 **A novel role for RalA during PINK1-Parkin mitophagy.** S.R. Pollock[1], D.F. Kashatus [1]; [1]Department of Microbiology, Immunology and Cancer Biology, The University of Virginia School of Medicine, Charlottesville, VA

B541/P3253 **Nerve Growth Factor Induces Mitochondrial Fission Which is Required for Axon Branching.** L. Armijo Weingart[1], A. Ketschek[1], R. Sainath[1], A. Pacheco[1], G. Gallo[1]; [1]Shriners Hospitals Pediatric Research Center, Temple University, Philadelphia, PA

B542/P3254 **Cells compartmentalize their mitochondrial population to serve different metabolic purposes.** P. CHANDRIS[1], C. GIANNOULI[2,3], H. SHROF[1], G. PANAYOTOU[3], J. LONCAREK[4], D. Kong[4]; [1]NIBIB, National Institutes of Health, Bethesda, MD, [2]NIDDK, National Institutes of Health, Bethesda, MD, [3]Molecular Oncology, BSRC Al. Fleming, Athina, Greece, [4]NCI, National Institutes of Health, Frederick, MD

B543/P3255 **Mitochondrial-driven assembly of a cortical anchor for mitochondria and dynein.** L.M. Kraft[1], L.L. Lackner[1]; [1]Molecular Biosciences, Northwestern University, Evanston, IL

B544/P3256 **Investigating the molecular basis and regulation of the Mmr1-mitochondria association.** W. Chen[1], H.A. Ping[1], L.L. Lackner[1]; [1]Molecular Biosciences, Northwestern University, Evanston, IL

B545/P3257 **Mitochondria-lysosome contacts regulate mitochondrial fission via Rab7 hydrolysis.** Y.C. Wong[1], D. Krainc[1]; [1]Neurology, Northwestern University, Chicago, IL

B546/P3258 **Direct Detection of ER-Mitochondrial Contacts with Fully Quantified Fluorescence Microscopy.** C.R. King[1], J. Lippincott-Schwartz[1]; [1]Janelia Research Campus, Ashburn, VA

B547/P3259 **The polycystins are modulated by cellular oxygen sensing pathways and regulate mitochondrial function.** V. Padovano[1], I.Y. Kuo[2], L.K. Stavola[1], H.R. Aerni[1], B.J. Flaherty[1], H.C. Chapin[1], M. Ma[3], S. Somlo[3], A. Boletta[4], B.E. Ehrlich[2], J. Rinehart[1], M.J. Caplan[1]; [1]Cellular and Molecular Physiology, Yale University School of Medicine, New Haven, CT, [2]Pharmacology, Yale University School of Medicine, New Haven, CT, [3]Internal Medicine, Yale University School of Medicine, New Haven, CT, [4]Genetics and Cell Biology, San Raffaele Scientific Institute, Milan, Italy

B548/P3260 **Control of mitochondrial homeostasis by endocytic regulatory proteins.** T.M. Farmer[1], J.B. Reinecke[1], S. Xie[1], K. Bahl[1], N. Naslavsky[1], S. Caplan[1]; [1]Biochemistry and Molecular Biology, University of Nebraska Medical Center, Omaha, NE

B549/P3261 **Modulating mitochondria dynamics is a potential therapeutic strategy for MED13L syndrome.** K. Chang[1], J. Jezek[1], H. Lee[2], P.M. van Hasselt [3], W. Kruger[2], R. Strich[1]; [1]Department of Molecular Biology, RowanSOM, Stratford, NJ, [2]Fox Chase Cancer Center, Philadelphia, PA, [3]Department of Metabolic and Endocrine Disease, University Medical Center Utrecht, Utrecht, Netherlands

B550/P3262 **Carbon black nanoparticles disrupt mitochondrial dynamics in human lung cells.** E.C. Stenz[1], J.D. Duff[1], C. Jones[1], S. Alvarado[1], P.M. Mcclatchey[2], J.L. Brewster[1]; [1]Natural Science Division, Pepperdine University, Malibu, CA, [2]Deptartment of Pharmacology, University of Colorado, Denver, CO

B551/P3263 **Inhibition of mitochondrial fission and disruption of swimming behavior following Mdivi-1 treatment of *Paramecium tetraurelia*.** W.E. Bell[1], O.A. Emery[1], J.D. Hatgas[1]; [1]Biology, Virginia Military Institute, Lexington, VA

B552/P3264 **Translocation of cyclin C during oxidative stress is regulated by interactions with multiple trafficking proteins.** D.G. Smethurst[1], K.F. Cooper[1], R. Strich[1]; [1] School of Osteopathic Medicine, Rowan University, Stratford, NJ

B553/P3265 **The single mitochondrion of *C. fasciculata* is a dynamic network.** J.C. DiMaio[1], G. Ruthel[2], J.J. Cannon[3], M.F. Malfara[1], M.L. Povelones[1]; [1]Science Division, Penn State University Brandywine, Media, PA, [2]Department of Pathobiology, University of Pennsylvania School of Veterinary Medicine, Philadelphia, PA, [3]Department of Medical Laboratory Sciences and Biotechnology, Thomas Jefferson University, Philadelphia, PA

B554/P3266 **CoQ biosynthethic components form a supracomplex localized to ER-mitochondria contact sites.** K. Subramanian[1], S.C. Lewis[1], J. Nunnari[1]; [1]MCB, University of California, Davis, Davis, CA

B555/P3267 **A HIGH-CONTENT LIVE IMAGING MITOPHAGY ASSAY TO EVALUATE SMALL MOLECULE MITOPHAGY ENHANCERS.** M. Dovlatyan[1], J. Hu[2], R. Manoukian[3], J. Butler[4], J. St. Martin[1], S. Schneider[1], P. Andrews[1], V. Yu[1], S. Miller[1]; [1]Neuroscience, Amgen, Cambridge, MA, [2]Clinical Biomarkers, Amgen, Cambridge, MA, [3]Therapeutic Discovery, Amgen, Cambridge, MA, [4]Medicinal Chemistry, Amgen, Cambridge, MA

B556/P3268 **A novel pharmacological tool blocks physiological mitochondrial fission through specifically inhibiting the Mff-Drp1 protein-protein interaction.** O.S. Kornfeld[1], N. Qvit[1], M. Monbureau[2], M. Halpain[2], M. Shamloo[2], D. Mochly-Rosen[1]; [1]Department of Chemical and Systems Biology, Stanford University School of Medicine, Stanford, CA, [2]Department of Neurosurgery, Stanford University School of Medicine, Stanford, CA

B557/P3269 **The size of the fission complex based on the FCS calibrated imaging of GFP-Drp1 protein in the HeLa cell line.** B. Michalska[1], J. Szymanski[1], J. Duszynski[1]; [1]Biochemistry, Nencki Institute of Experimental Biology Polish Academy of Sciences, Warsaw, Poland

B558/P3270 **An optical method for detecting associations between the endoplasmic reticulum and mitochondria, and their relevance to motor neuron disease.** M. Harmon[1], M. Jackson[1], P. Skehel[1]; [1]Centre for Integrative Physiology, The University of Edinburgh, Edinburgh, United Kingdom

TUESDAY

B559/P3271 **A STANDARDIZED METHOD TO QUANTIFY ER-MITOCHONDRIAL INTERFACES IN ELECTRON MIRCOGRAPHS.** D. Weaver[1], A. Bartok[1], G. Csordas[1], G. Hajnoczky[1]; [1]MitoCare Center, Dept. of Pathology, Anatomy and Cell Biology, Thomas Jefferson University, Philadelphia, PA

B560/P3272 **Mechanistic insights into the regulation of mitochondrial fission by cyclin C.** V. Ganesan[1], K.F. Cooper[1], R. Strich[1]; [1]Molecular Biology, Rowan University, Stratford, NJ

Receptors, Transporters, and Channels

B561/P3273 **The Role of Golgi Apparatus in Phagocytosis: Ca2+-Dependent Focal Exocytosis of Golgi-derived Vesicles Helps Uptake in Macrophages.** N. Vashi[1], S. Andrabi[1], S. Ghanwat[1], M. Suar[2], D. Kumar[1]; [1]Cellular Immunology Group, International Centre for Genetic Engineering and Biotechnology, New Delhi, India, [2]School of Biotechnology, KIIT University, Bhubaneshwar, India

B562/P3274 **TRPM7 Ion Channel Regulates Magnesium Reabsorption in the Renal Proximal Tubule.** L. Lou[1,2], L.W. Runnels[2]; [1]Graduate School of Biomedical Sciences, Rutgers Biomedical and Health Sciences, Piscataway, NJ, [2]Department of Pharmacology, Rutgers-Robert Wood Johnson Medical School, Piscataway, NJ

B563/P3275 **STIM1-Induced Conformational Transition of Orai1 Leads to Channel Activation.** Z. Haydari[1], H. Shams[1], M. Mofrad[1]; [1]BioEngineering, University of California, Berkeley, CA

B564/P3276 **Lysosomal calcium signaling through channel TRPML1 is impaired by lipofuscin accumulation in RPE cells.** C. Mitchell[1], N.M. Gomez[1]; [1]Anatomy and Cell Biology, University of Pennsylvania, Philadelphia, PA

B565/P3277 **High Throughput Functional Characterization of the SLC-Transporters PEPT1 and OCT2 in Real Time.** M. Barthmes[1], A. Bazzone[1], C.T. Bot[2], R. Haedo[2], N. Fertig[1], M. George[1], A. Brüggemann[1]; [1]Nanion Technologies GmbH, Munich, Germany, [2]Nanion Technologies Inc., Livingston, NJ

B566/P3278 **Identifying Proteins that Interact with the Yeast Multidrug Transporter Pdr5 Through Genetic Suppression.** H. Rahman[1], S.P. Joly[1], J. Carneglia[1], M. Robertello[1], J. Golin[1]; [1]Biology, The Catholic University of America, Washington, DC

B567/P3279 **Heparan Sulfate restricts BMP signaling and BMPR dynamics and interactions, mechanisms possibly altered in Hereditary Multiple Exostoses.** C. Mundy[1], P.C. Billings[1], H. Takano[2], M. Pacifici[1]; [1]Orthopaedics, Children's Hospital of Philadelphia, Philadelphia, PA, [2]Neurology, Children's Hospital of Philadelphia, Philadelphia, PA

B568/P3280 **Genetic improvement of iron content in Arabidopsis seeds through double Overexpression of IRP1 (Iron Responsive Protein 1) and VTL (Vacuolar Iron Transporter-Like) genes.** Z. Ghalamkari[1], T.J. Buckhout[1]; [1]Applied Botany, Biology Institute, Humboldt Universität Berlin, Berlin, Germany

B569/P3281 **POST-STIM1 interactions differentially regulate PMCA4 splice variant function during T cell activation.** C.K. Go[1,2], R. Hooper[1,2], T. Cangoz[1], M. Madesh[2], J. Soboloff[1,2]; [1]Fels Institute for Cancer Research and Molecular Biology, Temple University, Philadelphia, PA, [2]Medical Genetics and Molecular Biochemistry, Temple University, Philadelphia, PA

B570/P3282 **Super resolution localization and live-tracking analyzed by pair correlation and a novel power-spectral method reveal short-term cAMP regulation of the water channel aquaporin-3.** E.C. Arnspang[1,2,3], P. Sengupta[2,4], H.H. Jensen[5], U. Hahn[6], E.B. Jensen[6], . Mortensen[7], J. Lippincott-Schwartz[2,4], L.N. Nejsum[1]; [1]Department of Clinical Medicine and Interdisciplinary Nanoscience Center (iNANO), Aarhus University, Aarhus, Denmark, [2]The Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, NIH, Bethesda, MD, [3]Department of Chemical Engineering, Biotechnology and Environmental Technology, University of Southern Denmark, Odense, Denmark, [4]Janelia Research Campus, Ashburn, VA, [5]Department of Molecular Biology and Genetics and Interdisciplinary Nanoscience Center (iNANO), Aarhus University, Aarhus, Denmark, [6]Department of Mathematics, Aarhus University, Aarhus, Denmark, [7]Department of Micro- and Nanotechnology, Technical University of Denmark, Lyngby, Denmark

B571/P3283 **Characterization of the membrane progesterone receptor betta (mPRβ) using the Xenopus laevis oocyte model.** N. Nader[1], M. Dib[1], R. Hodeify[2], K. Machaca[1]; [1]Research, Weill Cornell Medicine-Qatar, Doha, Qatar, [2]Research, American University of Ras Al Khaimah, Dubai, United Arab Emirates

B572/P3284 **CYSTEINE-LESS ISOFORMS OF GLUT1 AND GLUT2 ARE FUNCTIONAL AND SUITABLE FOR BIOCHEMICAL AND PHYSICOCHEMICAL STUDIES.** M. Vargas-Uribe[1], A. Cuevas[1], C. Elgueta[1], A. Perez[1], L. Ojeda[1], A.M. Reyes[1]; [1]Instituto de Bioquimica y Microbiologia, Universidad Austral de Chile, Valdivia, Chile

B573/P3285 **A novel inactivation mechanism of STIM1 involving the interplay of multiple cytosolic domains in a resting state.** S. Lee[1], S. Jeong[1], K. Kim[1], Y. Kweon[1], A. Lee[1], Y. Lee[1], C. Park[1]; [1]Department of Biological Sciences, UNIST, Ulsan, Korea, South

B574/P3286 **K^+ Channel Tetramerization Domain 5 (KCTD5) protein is a novel TRPM4-associated protein that regulates channel activity and cell migration.** I. Silva[1], J. Rivas[1], J. Canales[1], A. Álvarez[1], C. Blanco[1], H. Calderón[1], N. Díaz[1], D. Ibarra[1], G. Flores[1], D. Maureira[1], D. Morales[2], D. Riquelme[3], E. Leiva[3], D. Varela[2,4], M. Cáceres[1,4], O. Cerda[1,4]; [1]Molecular and Cellular Biology Program, Faculty of Medicine, Universidad de Chile, Santiago, Chile, [2]Pathophysiology Program, Faculty of Medicine, Universidad de Chile, Santiago, Chile, [3]Department of Biology, Faculty of Chemistry and Biology, Universidad de Santiago de Chile, Santiago, Chile, [4]Millennium Nucleus of Ion Channels-Associated Diseases (MiNICAD), Santiago, Chile

B575/P3287 **Tunneling of Ca^{2+} downstream of SOCE specifically signals to downstream effectors and subcellular domains.** K. Machaca[1], R. Courjaret[1]; [1]Physiology and Biophysics, Weill Cornell Medicine Qatar, Doha, Qatar

B576/P3288 **The yeast H+-ATPase Pma1 promotes Rag/Gtr-dependent TORC1 activation in response to H+-coupled nutrient uptake.** E. Saliba[1], F. Corillon[1], I. Georis[1], B. Andre[1]; [1]Molecular Physiology of the Cell, Free University of Brussels (ULB), Gosselies, Belgium

Kinases and Phosphatases 3

B578/P3289 **The inhibitory effects of haptoglobin on osteoclast differentiation through TLR4 signaling.** J. Kim[1], Z.H. Lee[2]; [1]Pediatric Dentistry, Seoul National University School of Dentistry, Seoul, Korea, South, [2]Cell and Developmental Biology, Seoul National University School of Dentistry, Seoul, Korea, South

B579/P3290 **Mitotic phosphorylation of Hsp72 uncouples ATP binding from substrate release and clusters amplified centrosomes in cancer cells.** M. Mukherjee[1], J. Sampson[2], S. Sabir[1], L. O'Regan[2], M.W. Richards[1], N. Huguenin-Dezot[3], M.J. Dyer[4], J.W. Chin[3], A. Zhuravleva[1], A.M. Fry[2], R. Bayliss[1]; [1]School of Molecular and Cellular Biology, University of Leeds, Leeds, United Kingdom, [2]Department of Molecular and Cell Biology, University of Leicester, Leicester, United Kingdom, [3]MRC Laboratory of Molecular Biology, Cambridge, United Kingdom, [4]Ernest and Helen Scott Haematological Research Institute, University of Leicester, Leicester, United Kingdom

B580/P3291 **Cell size-dependent regulation of Wee1 localization bursts by Cdr2 cortical nodes.** C.A. Allard[1], H.E. Opalko[1], K. Liu[1], U. Medoh[1], J.B. Moseley[1]; [1]Biochemistry and Cell Biology, The Geisel School of Medicine at Dartmouth College, Hanover, NH

B581/P3292 **Ubiquitin- dependent maturation of the PP1 phosphatase that opposes yeast Aurora B during mitosis.** R. Ravindran[1], L.C. Robinson[1], K. Tatchell[1]; [1]Biochemistry & Molecular Biology, Louisiana State University Health Sciences Center, Shreveport, LA

B582/P3293 **Cell-type-specific isolation of 14-3-3 associated phosphoprotein from complex brain tissues.** M. Yoshikawa[1], K. Kuroda[1], T. Nagai[2], K. Kaibuchi[1]; [1]Department of Cell Pharmacology, Nagoya University Graduate School of Medicine, Nagoya, Japan, [2]Department of Clinical Pharmacology, Nagoya University Graduate School of Medicine, Nagoya, Japan

B583/P3294 **Low molecular-weight gel fraction of Aloe vera exhibits protective effects by inhibition of matrix metalloproteinase-9 activity.** C. Yoo[1], C. Park[1], H. Son[1], S. Lee[1]; [1]Food Science and Biotechnology, Kyungpook National University, Daegu, South Korea

B584/P3295 **The with no lysine [K] kinase pathway regulates the localization of inward rectifier potassium channels.** S. Gallolu Kankanamalage[1], C.A. Taylor[1], S. An[2], S. Stippec[1], S. Earnest[1], C. Huang[2], M.H. Cobb[1]; [1]Pharmacology, The University of Texas Southwestern Medical Center, Dallas, TX, [2]Internal Medicine, University of Iowa Carver College of Medicine, Iowa city, IA

B585/P3296 **The Role of Glycolytic ATP Generation for the Maintenance and Restoration of Vascular Endothelial Barrier Function.** P. Gajwani[1], L. Wang[1], P. Chaturvedi [1], W. Sinclair[2], S. Krantz[1], D.E. Leckband[2], A.B. Malik[1], A.V. Karginov[1], J. Rehman[1]; [1]Department of Molecular and Cellular Pharmacology, University of Illinois at Chicago, Chicago, IL, [2]Department of Chemical Engineering, University of Illinois at Urbana Champaign, Urbana, IL

B586/P3297 **Regulatory roles of weak encounters between proteins.** S. Kale[1], M. Strickland[2], A. Peterkofsky[3], N. Tjandra[2], J. Liu[1]; [1]Theoretical Cellular Physics, National Heart, Lung and Blood Institute, National Institutes of Health, Bethesda, MD, [2]Laboratory of Molecular Biophysics, National Heart, Lung and Blood Institute, National Institutes of Health, Bethesda, MD, [3]Cell Biology and Physiology Center, National Heart, Lung and Blood Institute, National Institutes of Health, Bethesda, MD

B587/P3298 **The glycolytic enzyme phosphofructokinase-1 assembles into filaments.** B.A. Webb[1,2], A. Dosey[3], T. Wittmann[2], J.M. Kollman[3], D.L. Barber[2]; [1]Biochemistry, West Virginia University School of Medicine, Morgantown, WV, [2]Cell and Tissue Biology, University of California, San Francisco, San Francisco, CA, [3]Biochemistry, University of Washington, Seattle, WA

B588/P3299 **Proliferation of Immortalized Schwann Cells and Cyclic AMP Levels in Response to Forskolin.** A. Williams[1], A.L. Asirvatham[1]; [1]Biology, Misericordia University, Dallas, PA

B589/P3300 **Protein kinase CK2 regulates skeletal muscle differentiation.** V. Salizzato[1], S. Zanin[2], C. Borgo [2], E. Lidron [2], R. Rizzuto[2], G. Pallafacchina[1], A. Donella-Deana[2]; [1]Department of Biomedical Sciences and CNR Neuroscience Institute, University of Padova, Padova, Italy, [2]Department of Biomedical Sciences, University of Padova, Padova, Italy

B590/P3301 **Protein tyrosine phosphatase alpha positively regulates invadopodia-mediated cancer cell motility.** L.R. Decotret[1,2], C.J. Pallen[1,2,3]; [1]BC Children's Hospital Research Institute, Vancouver, BC, [2]Pathology and Laboratory Medicine, University of British Columbia, Vancouver, BC, [3]Pediatrics, University of British Columbia, Vancouver, BC

B591/P3302 **Regulation of Renal Proximal Tubule Na,K-ATPase by Creb Regulated Transcriptional Coactivators and Salt Inducible Kinase 1.** M.L. Taub[1], D. Kim[1], S. Krovi[1], T. Rajkhowa[1], F. Cutuli[1]; [1]Biochemistry, University at Buffalo, Buffalo, NY

Signaling from the PM/ Cytoplasm to the Nucleus

B592/P3303 **Stat3 Regulates Primary Embryonic Erythroid Cell Maturation and is Activated Independently of Erythropoietin Signaling.** Z.C. Murphy[1], P.D. Kingsley[2], K.E. McGrath[2], A. Koniski[2], J. Palis[2]; [1]Cell Biology of Disease, University of Rochester, Rochester, NY, [2]Center for Pediatric Biomedical Research, University of Rochester, Rochester, NY

B593/P3304 **The Semaphorin receptors, Neuropilins and Plexins, promote Hedgehog signaling through distinct cytoplasmic mechanisms.** J.M. Pinskey[1], N.E. Franks[1], R.J. Giger[1], B.L. Allen[1]; [1]Cell and Developmental Biology, University of Michigan, Ann Arbor, MI

B594/P3305 **Novel hypomorphic *Smoothened* allele causes skeletal and craniofacial defects.** E. Gigante[1], A. Bushey Long[1], J. Ben-Ami[1], T. Caspary[1]; [1]Human Genetics, Emory University, Atlanta, GA

B595/P3306 **Single-molecule tracking study of β-catenin nucleocytoplasmic translocation and regulation thereof by Custos.** S.J. Schnell[1], C. Magura[1], W. Luo[1], R. Habas[1], W. Yang[1]; [1]Biology, Temple University, Philadelphia, PA

B596/P3307 **Comparison of YAP translocation in primary and immortalized cells.** J.T. Morgan[1], C.J. Murphy[2,3], P. Russell[3]; [1]Bioengineering, University of California, Riverside, Riverside, CA, [2]Department of Ophthalmology Vision Science, University of California, Davis, School of Medicine, Davis, CA, [3]Surgical and Radiological Sciences, University of California, Davis, School of Veterinary Medicine, Davis, CA

B597/P3308 **Osthole and nitric oxide attenuate advanced glycation end products-induced NF-kB and MAPK activation in renal tubular cells.** J. Huang[1]; [1]Biomedicine and Healthcare, Chung Hwa University of Medical Technology, Tainan, Taiwan

B598/P3309 **DETECTION OF NUCLEAR AND CYTOPLASMIC PROTEIN-PROTEIN INTERACTIONS OF THE CD44-INTRACYTOPLASMIC DOMAIN WITH RUNX2 BY PROXIMITY LIGATION ASSAY.** H. Miller[1], K. Miletti-Gonzalez[1]; [1]Biological Sciences, Delaware State University, Dover, DE

B599/P3310 **Particulate matter and its effect on the aryl hydrocarbon receptor (AhR)/ CYP1A1 pathway in adherent THP-1 cells.** E. Garcia[1], J. Serrano-Lomelin[1], A. Osornio-Vargas[1]; [1]Pediatrics, University of Alberta, Edmonton, AB

B600/P3311 **Diverse patterns of phosphatase activation and localization: unique implications for the control of interferon-gamma signaling in CNS neurons.** L. Jolley[1], A. Broome[1], C. Stotesbury[1], K. Sweeney[1], C. Matullo[2], G. Rall[2], W. Rose[1]; [1]Department of Biology, Arcadia University, Glenside, PA, [2]Blood Cell Development and Function, Fox Chase Cancer Center, Philadelphia, PA

B601/P3312 **Changes in corticotrope gene expression upon increased expression of peptidylglycine alpha-amidating monooxygenase, an evolutionarily conserved secretory pathway enzyme.** R.E. Mains[1], C.E. Blaby-Haas[2], T.P. La Rese[1], B.A. Rheaume[1], B.A. Eipper[1,3]; [1]Neuroscience, University of Connecticut Health Center, Farmington, CT, [2]Biology, Brookhaven National Laboratory, Upton, NY, [3]Molecular Biology Biophysics, University of Connecticut Health Center, Farmington, CT

B602/P3313 **WNT5A Isoforms A and B are differentially regulated during osteogenesis and early mouse development.** D. Bhandari[1], K.S. Katula[1]; [1]Biology, The University of North Carolina at Greensboro, Greensboro, NC

B603/P3314 **WNT5A isoforms A and B display differential protein function and promoter activity.** A. Elshaarrawi[1], K.S. Katula[1]; [1]Biology, The University of North Carolina at Greensboro, Greensboro, NC

TUESDAY

B604/P3315 **Size-Dependent Protein Segregation Triggers Macrophage Activation and Phagocytosis.** A.M. Joffe[1], M.H. Bakalar[1], E.M. Schmid[1], M. Podolski[1], D.A. Fletcher[1]; [1]Bioengineering, UC Berkeley, Berkeley, CA

B605/P3316 **Heparin-induced BMP6 expression and localization changes in vascular smooth muscle cells.** R. Mathiesen[1], M. Garland[1], J. Restauro[1], E. Jacobson[1], L.J. Lowe-Krentz[2], J.B. Slee[1]; [1]Department of Natural Science, DeSales University, Center Valley, PA, [2]Department of Biological Sciences, Lehigh University, Bethlehem, PA

B606/P3317 **Signal-Regulated Nuclear Transport and Accumulation of Smad Proteins studied by High-Speed Single-Molecule Microscopy.** Y. Li[1], W. Luo[1], W. Yang[1]; [1]Department of Biology, Temple university, Philadelphia, PA

B607/P3318 **Elucidation of crosstalk between stress-activated and mitogen-activated protein kinase cascades by light-activated protein kinase kinase MKK6.** S. Rahman[1], W. Zhou[2], A. Deiters[2], J.M. Haugh[1]; [1]Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC, [2]Department of Chemistry, University of Pittsburgh, Pittsburgh, PA

Post-Translational Modifications in Signaling

B608/P3319 **Integration of Post-Translational Modification Spaces in Lung Cancer Signaling Pathways.** M.L. Grimes[1], B. Hall[2], K. . Rikova[2], E. Smirnova[3], N. Clark[4], P. Hornbeck[2], A. Ma'ayan[4], M.J. Comb[2]; [1]Division of Biological Sciences, University of Montana, Missoula, MT, [2]Cell Signaling Technology, Danvers, MA, [3]Department of Mathematical Sciences, University of Montana, Missoula, MT, [4]Systems Biology Center, Icahn School of Medicine at Mount Sinai, New York, NY

B609/P3320 **Phosphorylation of the DNA helicase RECQ1 by MAPKAP kinase 2 promotes chemotherapeutic resistance in breast cancer.** K. Maslar[1], A. Couillard[1], T.I. Strochlic[1]; [1]Department of Biochemistry and Molecular Biology, Drexel University College of Medicine, Philadelphia, PA

B610/P3321 **Understanding Gαq/11 localization and trafficking in uveal melanoma.** C.E. Randolph[1], P.B. Wedegaertner[1]; [1]Biochemistry and Molecular Biology, Thomas Jefferson University, Philadelphia, PA

B611/P3322 **O-GlcNAc Transferase Regulates Glioblastoma Acetate Metabolism via Regulation of CDK5-dependent ACSS2 phosphorylation.** Z. Bacigalupa[1], M.D. Smith[1], C.M. Ferrer[1], L. D'Agostino[2], S. Trefely[3,4], N. Snyder[4], C.D. Katsetos[2], M.J. Reginato[1]; [1]Biochemistry, Drexel University, Philadelphia, PA, [2]Pathology, Drexel University, Philadelphia, PA, [3]Cancer Biology, University of Pennsylvania, Philadelphia, PA, [4]A.J. Drexel Autism Institute, Drexel University, Philadelphia, PA

B612/P3323 **N-terminal protein modifications regulate the activity of Myosin Regulatory Light Chain 9 in colorectal carcinoma cells.** C.D. Nevitt[1], J.G. Tooley[2], C.E. Schaner Tooley[2]; [1]Biochemistry and Molecular Genetics, University of Louisville, Louisville, KY, [2]Biochemistry, University at Buffalo, Buffalo, NY

B613/P3324 **BCAR3, a cell migration-associated protein, is regulated by the E3 ligase Cullin 5-SOCS6.** E.M. Steenkiste[1,2], C. Pilling[1,2], J.A. Cooper[1,2]; [1]Division of Basic Sciences, Fred Hutchinson Cancer Research Center, Seattle, WA, [2]Molecular and Cellular Biology Program, University of Washington, Seattle, WA

B614/P3325 **Inhibition of deacetylases attenuates lipid accumulation and caspase 3 activation in pancreatic beta cells under the duress of glucolipotoxicity: Potential roles for CD36 activity.** S. Khan[1], A. Kowluru[1]; [1]ß-Cell Biochemistry Laboratory, John D. Dingell VA Medical Center, and Department of Pharmaceutical Sciences, Wayne State University, Detroit, MI

B615/P3326 **The function of Metabolic Syndrome Complex 1 (MSC1) in myogenesis by modulating YY1 transcriptional activity.** H. Lee[1], Y. Hong[1], M. Kim[1], Q. Tran[1], H. Cho[1], S. Park[1], J. Park[1], J. Park[1]; [1]Department of Pharmacology and Medical Science, Research Institute for medical sciences, Chungnam National University, Daejeon, South Korea

B616/P3327 **The SMYD methyltransferase Set6 interacts with the GimC/prefoldin complex to regulate cell growth and stress response pathways.** D. Jaiswal[1], J. Lum[1], J. Moresco[2], J. Yates iii[2], E.M. Green[1]; [1]Biological Sciences, University Of Maryland Baltimore County, Baltimore, MD, [2]Department of Chemical Physiology, The Scripps Research Institute, La Jolla, CA

B617/P3328 **Poldip2 is an oxygen-sensitive mitochondrial protein that controls Oxidative/glycolytic metabolism balance and Proteasome activity.** F.I. Paredes[1], M. Tejos[1], H. Williams[1], G. Benavides[2], V. Darley-Usmar[2], A. San Martin[1]; [1]Department of Medicine, Division of Cardiology, Emory University, Atlanta, GA, [2]Department of Pathology, University of Alabama at Birmingham, Birmingham, AL

B618/P3329 **Prolyl dihydroxylation of extra-ribosomal Rps23/uS12 regulates hypoxic adaptation in fission yeast.** S.J. Clasen[1], W. Shao[1], H. Gu[1], P.J. Espenshade[1]; [1]Department of Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD

B619/P3330 **Antiproliferative Activity of Natural Compounds Isolated from Artemisia species.** V. Godieva[1], M.A. Barbieri[1], M.L. Veisaga[1], S. Soriano[1]; [1]Biological Sciences, Florida International University, Miami, FL

B620/P3331 **Trim13 E3 ligase regulates stability of orphan nuclear receptor Nur77 via casein kinase 2.** B. Huang[1], H. Pei[1], S. . Baek[1]; [1]Biochemistry & Molecular Biology, Yeungnam University, College of Medicine, Daegu, South Korea

B621/P3332 **Phosphorylation of the HPV E6 oncoprotein by DNA damage response kinases links the E6 interaction with 14-3-3 proteins and p53.** J.V. THATTE[1], P. Massimi[1], L. Banks[1]; [1]Tumour Virology, International Centre for Genetic Engineering and Biotechnology (ICGEB), TRIESTE, Italy

B622/P3333 **Investigating the function and mechanism of Gpa2 phosphorylation.** S. Huang[1], Y. Wang[1], R. Green[1]; [1]Biology, Saint Louis University, SAINT LOUIS, MO

B623/P3334 **Investigating Gpa2 Phosphorylation in *Saccharomyces cerevisiae*.** R. Green[1], S. Huang[1], Y. Wang[1]; [1]Department of Biology, Saint Louis University, Saint Louis, MO

Mechanotransduction 2

B625/P3335 **Visualizing Direct Interactions in the Mechanobiome.** P. Kothari[1], V. Srivastava[2], V. Aggarwal[3], I. Tchernyshyov[4], J. Van Eyk[4], T. Ha[3], D.N. Robinson[1]; [1]Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD, [2]Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA, [3]Biomedical Engineering, Johns Hopkins School of Medicine, Baltimore, MD, [4]Cedars-Sinai Medical Center, Los Angeles, CA

B626/P3336 **Force generation via β-muscle myosin, titin, and α-actinin drives cardiac sarcomere assembly from focal adhesions.** A. Chopra[1], M.L. Kutys[1,2], K. Zhang[1,2], W.J. Polacheck[1,2], J. Seidman[3], C. Seidman[3,4], J.T. Hinson[5], C.S. Chen[1,2]; [1]Biomedical Engineering, Boston University, Boston, MA, [2]Harvard University, Wyss Institute for Biologically Inspired Engineering, Boston, MA, [3]Harvard Medical School, Department of Genetics, Boston, MA, [4]Harvard Hughes Medical Institute, Chevy Chase, TX, [5]The Jackson Laboratory for Genomic Medicine, Framington, CT

B627/P3337 **Development and implementation of a Förster Resonance Energy Transfer based biosensor for measuring intracellular tension and force.** R.G. Hart[1], D. Kota[2], L. Brunmaier[2], J. Liu[2], I. Chandrasekar[1]; [1]Sanford Childrens Health Research Center, Sanford Research, Sioux Falls, SD, [2]Department of Nanoscience and Nanoengineering, South Dakota School of Mines and Technology, Rapid City, SD

B628/P3338 **Improved and tunable molecular tension sensors reveal extension-based control of vinculin loading.** A.S. LaCroix[1], A.D. Lynch[1], M.E. Berginski[1], B.D. Hoffman[1]; [1]Biomedical Engineering, Duke University, Durham, NC

B629/P3339 **Detecting Vinculin Load-Dependent Protein Recruitment to Focal Adhesions.** A.S. LaCroix[1], K. Xu[1], S.S. Neibart[1], B.D. Hoffman[1], K.E. Rothenberg[1]; [1]Biomedical Engineering, Duke University, Durham, NC

B630/P3340 **Tissue geometry directs patterns of bioelectricity and growth.** B.B. Silver[1], C.M. Nelson[1,2]; [1]Molecular Biology, Princeton University, Princeton, NJ, [2]Chemical Biological Engineering, Princeton University, Princeton, NJ

B631/P3341 **Traction force microscopy using embedded marker arrays with an implied zero-displacement state.** O.A. Banda[1], J.H. Slater[1]; [1]Biomedical Engineering, University of Delaware, Newark, DE

B632/P3342 **Actomyosin bundles detect extracellular matrix curvature to regulate cell polarization during contact guidance.** R.S. Fischer[1], X. Sun[2], W. Losert[3], J.T. Fourkas[2], C.M. Waterman[1]; [1]Cell Physiology, NHLBI, Bethesda, MD, [2]Chemistry Biochemistry, University of Maryland, College Park, MD, [3]Physics, University of Maryland, College Park, MD

B633/P3343 **Mechanotransduction properties of the PECAM-1 cytoplasmic tail.** E. McBeath*[1], J. Snyder*[2], T. Thomas[1], Y. Chiu[3], R. Clark[4], K. Fujiwara[1]; [1]Cardiology, University of Texas MD Anderson Cancer Center, Houston, TX, [2]Biomedical Engineering, University of Rochester, Rochester, NY, [3]Research and Development, Chris Cam Mirror, Yungkang, Taiwan, [4]Mechanical Engineering, University of Rochester, Rochester, NY

B634/P3344 **Cyclic Strain-Induced Reduction of Nanoparticle Uptake by Vascular Smooth Muscle Cells.** C. Huang[1], Y. Lu[2], Y. Ma[2], L. Pai[3]; [1]Graduate Institute of Biomedical Sciences, College of Medicine, Chang Gung University, Tao-Yuan, Taiwan, [2]Department of Physiology & Pharmacology, College of Medicine, Chang Gung University, Tao-Yuan, Taiwan, [3]Department of Biochemistry Molecular Biology, College of Medicine, Chang Gung University, Tao-Yuan, Taiwan

B635/P3345 **The SMuSh pathway is essential for survival during growth-induced compressive mechanical stress.** M. Delarue[1,2,3], G. Poterewicz[2], J. Kayser[1], O. Hallatschek[1], L.J. Holt[2]; [1]Department of Physics and Integrative Biology, University of California Berkeley, Berkeley, CA, [2]Institute for Systems Genetics, New York University School of Medicine, New York, NY, [3]Mile Team, Laboratoire d'analyse et d'architecture des systèmes, Toulouse, France

B636/P3346 **A novel role for the small heat shock protein, HspB1, in the response of cells to mechanical stress.** L.M. Hoffman[1], C.C. Jensen[1], M.C. Beckerle[1]; [1]Huntsman Cancer Institute, University of Utah, Salt Lake City, UT

B637/P3347 **Effects of Mechanical Stress on Remodeling of Periodontal Ligament.** A. Fujita[1], M. Morimatsu[1], M. Nishiyama[2], S. Takashiba[1], K. Naruse[1]; [1]Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Okayama City, Japan, [2]Graduate School of Medicine, Kyoto University, Kyoto City, Japan

B638/P3348 **Direct observation of cell mechanics under high hydrostatic pressure.** M. Morimatsu[1], K. Aya[1], A. Fujita[1], M. Nishiyama[2], K. Naruse[1]; [1]Graduate School of Medicine, Dentistry, and Pharmaceutical Sciences, Okayama University, Okayama, Japan, [2] Graduate School of Medicine, Kyoto University, Kyoto, Japan

B639/P3349 **Water Pumping performance of human polycystic kidney disease epithelial cells.** M. Choudhury[1], S.X. Sun[1]; [1]Mechanical Engineering, Johns Hopkins University, Baltimore, MD

B640/P3350 **Forces and dynamics in three-dimensional epithelia of controlled size and shape.** E. Latorre[1,2], L. Casares[1], S. Kale[2], M. Gomez-Gonzalez[1], M. Uroz[1], L. Valon[1], M. Arroyo[1,2], X. Trepat[1,3,4,5]; [1]Institute for Bioengineering of Catalonia, Barcelona, Spain, [2]Universitat Politècnica de Catalunya-BarcelonaTech, Barcelona, Spain, [3]University of Barcelona, Barcelona, Spain, [4]Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain, [5]Centro de Investigación Biomédica en Red en Bioingeniería, Biomat. y Nanomed., Madrid, Spain

B641/P3351 **Ca2+-calmodulin dependent kinase kinase II regulates mechanosensitive actin stress fiber assembly.** S. Tojkander[1], K. Ciuba[2], P. Lappalainen[2]; [1]Section of Pathology, Department of Veterinary Biosciences, University of Helsinki, Helsinki, Finland, [2]Institute of Biotechnology, University of Helsinki, Helsinki, Finland

B642/P3352 **Spatiotemporally varying wall shear stress modulates lymphatic endothelial cell alignment and transcriptional regulation.** E. Michalaki[1], V.N. Surya[1], G.G. Fuller[1], A.R. Dunn[1]; [1]Chemical Engineering, Stanford University, Stanford, CA

B643/P3353 **Investigating calcium dynamics in lymphatic endothelial cells subjected to flow-induced wall shear stress.** V.N. Surya[1], E. Michalaki[1], G.G. Fuller[1], A.R. Dunn[1]; [1]Chemical Engineering, Stanford University, Stanford, CA

B644/P3354 **Functional analysis of larval chordotonal organ mechanics in *Drosophila*.** C. Guan[1], M.C. Goepfert[2], C.F. Schmidt[1]; [1]Third Institute of Physics–Biophysics, University of Goettingen, Goettingen, Germany, [2]Department of Cellular Neurobiology, Schwann-Schleiden-Centre for Molecular Cell Biology, University of Goettingen, Goettingen, Germany

Signaling Networks Governing Cell Migration

B645/P3355 **Regulation of RhoA by STAT3 Coordinates Glial Scar Formation.** F. Renault-Mihara[1], M. Mukaino[2], M. Shinozaki[1], H. Kumamaru[3], S. Kawase[1], M. Baudoux[1], S. Kawabata[2], Y. Nishiyama[2], K. Sugai[2], K. Yasutake[2], S. Okada[3], M. Nakamura[2], H. Okano[1]; [1]Physiology, Keio University School of Medicine, Tokyo, Japan, [2]Orthopedic Surgery, Keio University School of Medicine, Tokyo, Japan, [3]Department of Advanced Medical Initiatives, Kyushu University, Fukuoka, Japan

B646/P3356 **Novel biosensor reveals the regulation and coordination of GEF-H1 with protrusion machinery.** M.L. Azoitei[1], J. Noh[2], M.J. Sandi[3], P. Roudot[2], R.K. Rottapel[3], G. Danuser[2], K.M. Hahn[1]; [1]Pharmacology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Cell Biology, University of Texas Southwestern, Dallas, TX, [3]Immunology, University of Toronto, Toronto, ON

B647/P3357 ***Ganoderma lucidum* extract reduces cell migration and invasion in triple-negative metastatic breast cancer.** A. Acevedo-Díaz[1,2], G. Ortiz-Soto[3], T.J. Rios[3], I. Suarrez Arroyo[3], M.M. Martinez-Montemayor[3]; [1]University Gardens High School, San Juan, PR, [2]Biology Department, University of Puerto Rico Bayamon, Bayamon, PR, [3]Department of Biochemistry, Universidad Central del Caribe School of Medicine, Bayamon, PR

B648/P3358 **Long-range intercellular communication in collective cell migration.** A. Zaritsky[1,2,3], Y. Tseng[4], M. Rabadán[4], S. Krishna[4], M. Overholtzer[4], A. Hall[4], G. Danuser[1,3]; [1]Cell Biology, UT Southwestern Medical Center, Dallas, TX, [2]Molecular Cell Biology, Weizmann Institute of Science, Rehovot, Israel, [3]Bioinformatics, UT Southwestern Medical Center, Dallas, TX, [4]Cell Biology, Memorial Sloan-Kettering Cancer Center, New York, NY

B649/P3359 **The ArfGAP Drongo regulates Myosin-II mediated contractility during the migration of *Drosophila* border cells.** C. Zeledon[1], X. Sun[1], C. Plutoni[1], G. Emery[1]; [1]IRIC, University of Montreal, Montreal, QC

B650/P3360 **Alternative Polyadenylation of RECK Regulates Cell Migration and Invasion.** H. Lee[1], M. Mitra[2,3], O. Bosompra[2], N. Rashed[4], H.A. Coller[1,2,3]; [1]Molecular Biology Interdepartmental Doctoral Program, University of California, Los Angeles, Los Angeles, CA, [2]Department of Molecular, Cell and Developmental Biology, University of California, Los Angeles, Los Angeles, CA, [3]Department of Biological Chemistry, David Geffen School of Medicine, University of California, Los Angeles, Los Angeles, CA, [4]Department of Microbiology, Immunology, Molecular Genetics, University of California, Los Angeles, Los Angeles, CA

TUESDAY

B651/P3361 **Giα2 protein modulates the migratory capability of prostate cancer cell lines downstream or independently of PI3K and RAC1 activation.** S. Caggia[1], H. Chunduri[1], A.C. Millena[1], J.N. Perkins[1], S. Venugopal[1], M.C. Ordonio[1], B.T. Vo[1,2], C. Li[2], S.A. Khan[1]; [1]Center for Cancer Research and Therapeutic Development, Clark Atlanta University, Atlanta, GA, [2]Department of Tumor Cell Biology, St. Jude Children's Research Hospital, Memphis, TN

B652/P3362 **Differential effect of Mammalian Target of Rapamycin Complexes 1 (mTORC1) and 2 (mTORC2) in the migration of Prostate Cancer cells.** S. Venugopal[1], S. Caggia[1], S.A. Khan[1]; [1]Center for Cancer Research and Therapeutic Development, Clark Atlanta University, Atlanta, GA

B653/P3363 **Phosphoinositides regulate cytoskeletal reorganization and extracellular matrix adhesion.** B.J. Patel[1], C. Janetopoulos[1], K.A. Myers[1]; [1]biological sciences, university of sciences, Philadelphia, PA

B654/P3364 **Plasma Membrane PI(4,5) P2 Threshold Regulates Cell Migration Speed and Morphology.** M. Beshay[1], N. Bawazir[1], J. Notino[1], C. Janetopoulos[1]; [1]Biological Sciences, University of the sciences in Philadelphia, Philadelphia, PA

B655/P3365 **Location-Dependent Responses to Epithelial Cell-Cell Contact – Tail Following Complements Contact Inhibition to Facilitate Collective Migration.** D. Li[1], Y. Wang[1]; [1]Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA

B656/P3366 **The *Drosophila* TNFα ortholog, Eiger, decreases tension and facilitates deformation in a neighboring tissue to expedite macrophage invasion.** A. Ratheesh[1], J. Biebl[1], A.M. Casano[1], J. Vesela[1], M. Smutny[1], E. Papusheva[1], D.E. Siekhaus[1], A. Gyoergy[1]; [1]Institute of Science and Technology Austria, Klosterneuburg, Austria

B657/P3367 **Regulation of traction force mediated by the calpain small subunit and Galectin-3.** I. Jang[1], S. Menon[1], K.A. Beningo[1]; [1]Biological Sciences, Wayne State University, Detroit, MI

B658/P3368 **Serine Threonine Kinase-40 (STK40) and Cell Migration: Interaction with Mitogen-Activated Protein Kinase (MAPK).** L. Yu[1], F. Tsai[1]; [1]Department of Pharmacology, National Taiwan University College of Medicine, Taipei, Taiwan

B659/P3369 **Cellular externalization control of actin-binding protein profilin-1 is a novel mechanism for MKL-dependent regulation of cell migration.** D. Gau[1], M. Joy[1], R. Prywes[2], P. Roy[1]; [1]Bioengineering, University of Pittsburgh, Pittsburgh, PA, [2]Biology, Columbia University, New York, NY

B660/P3370 **A polymorphism of BLT2 leads to an enhanced ligand sensitivity.** J. JANG[1], J. Kim[1]; [1]Department of Biotechnology, College of Life Sciences and Biotechnology, Korea University, Seoul, Korea, South

B661/P3371 **The NDR kinase Tricornered regulates membrane handling and collective cell migration in the Drosophila egg chamber epithelium.** A.M. Williams[1], S. Horne-Badovinac[1], M.V. Yow[2]; [1]Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL, [2]Florida International University, Miami, FL

B662/P3372 **Effect of PI3 Kinase Inhibition on Human Dermal Fibroblast and Human Epidermal Keratinocyte Wound Healing.** K.M. Chambers[1], Z. Spivey[1], B.S. Mandavilli[1]; [1]Thermo Fisher Scientific, Eugene, OR

B663/P3373 **Immunohistochemical Analysis of Singed Protein in Wild-Type and CASK Knockout Fly Lines.** S. VanHorn[1], A. Farthing[1], M. Kaschalk[1], K. Robinson[1], D. Mohn[1], J.S. Sanford[1]; [1]Biological and Allied Health Sciences, Ohio Northern University, Ada, OH

B664/P3374 **Validation of CASK gene expression in *Drosophila* ovaries.** C. Wirth[1], M. Guthrie[1], H. Dyer[1], J.S. Sanford[1]; [1]Biological and Allied Health Sciences, Ohio Northern University, Ada, OH

B665/P3375 **Generation of UAS-CASK*RA-GFP and UAS-CASK*B-GFP Transgenic Constructs.** J. Sanner[1], K. Robinson[1], E. Olah[1], J.S. Sanford[1]; [1]Biological and Allied Health Sciences, Ohio Northern University, Ada, OH

B666/P3376 **PI(3,4)P2 -Directed Negative Feedback Control of Ras Activity in *Dictyostelium*.** M. Edwards[1], X. Li[1], P.N. Devreotes[1]; [1]Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD

Chemotaxis and Directed Cell Migration

B667/P3377 **Proper actin network architecture enforces polarization during cell migration.** B.R. Graziano[1], A. Diz-Muñoz[2], O.D. Weiner[1]; [1]Cardiovascular Research Institute, UCSF, San Francisco, CA, [2]Cell Biology and Biophysics, EMBL, Heidelberg, Germany

B668/P3378 **ARF1 recruits RAC1 with mutually dependent regulatory circuits in neutrophil chemotaxis.** Y. Mazaki[1], Y. Onodera[2], T. Higashi[1], T. Horinouchi[1], T. Oikawa[2], H. Sabe[2]; [1]Department of Cellular Pharmacology, Graduate School of Medicine, Hokkaido University, Sapporo, Japan, [2]Department of Molecular Biology, Graduate School of Medicine, Hokkaido University, Sapporo, Japan

B669/P3379 **CCR7 homo-dimerization regulates CCR7 ligand-dependent cell migration and signaling.** H. Hayasaka[1], D. Kobayashi[1,2], M. Endo[1], H. Hojo[3], M. Miyasaka[4,5,6]; [1]Department of Life Science, Kindai University, Faculty of Science and Engineering, Higashiosaka, Japan, [2]Department of Pharmacology, Wakayama Medical University, Wakayama, Japan, [3]Institute for Protein Research, Osaka University, Suita, Japan, [4]Institute for Academic Initiatives, Osaka University, Suita, Japan, [5]WPI Immunology Frontier Research Center, Osaka University, Suita, Japan, [6]MediCity Research Laboratory, University of Turku, Turku, Finland

B670/P3380 **The involvement of SAMSN1 in mast cell dynamics.** A.C. Santana[1], M.F. Cândido[1], D.A. Souza-Junior[1], C. Oliver[1], M.C. Jamur[1]; [1]Department of Cell and Molecular Biology and Pathogenic Bioagents, Ribeirão Preto Medical School, University of São Paulo, Ribeirão Preto, Brazil

B671/P3381 **MAL2 overexpression induces cell membrane protrusion formation, and decreases cell migration via its FPAP motif in liver-derived cancer cells.** A. López-Coral[1], P.L. Tuma[1]; [1]Biology, The Catholic University of America, Washington, DC

B672/P3382 **Cxcl12a/Cxcr4b and the transcription factor Myca orchestrate cell migration during zebrafish pronephros repair.** T. Yakulov[1], A. Todkar[1], K. Slanchev[1], A. Bona[1,2,3], L. Baur[1], J. Hochrein[4], M. Boerries[4,5], G. Walz[1,6]; [1]Renal Division, University Freiburg Medical Center, Faculty of Medicine, University of Freiburg, Freiburg, Germany, [2]Spemann Graduate School of Biology and Medicine (SGBM), University of Freiburg, Freiburg, Germany, [3]University of Freiburg, Faculty of Biology, Freiburg, Germany, [4]Institute of Molecular Medicine and Cell Research, Faculty of Medicine, University of Freiburg, Freiburg, Germany, [5]German Cancer Consortium, Freiburg and German Cancer Research Center (DKFZ), Heidelberg, Germany, [6]BIOSS Center for Biological Signalling Studies, University of Freiburg, Freiburg, Germany

B673/P3383 **Collective dynamics over long time scales and large length scales reveals distinct cell migration phenotypes.** R.M. Lee[1,2], H. Yue[3], C.H. Stuelten[4], W. Rappel[3], C.A. Parent[4], W. Losert[2,5]; [1]School of Medicine, University of Maryland, Baltimore, MD, [2]Institute for Physical Science and Technology, University of Maryland, College Park, MD, [3]Department of Physics, University of California, San Diego, CA, [4]Laboratory of Cellular and Molecular Biology, Center for Cancer Research, National Cancer Institute, National Institutes of Health, Bethesda, MD, [5]Department of Physics, University of Maryland, College Park, MD

B674/P3384 **Cytoskeletal dynamics during wound reepithelialization *in vivo*.** A.S. Kennard[1], J.A. Theriot[1,2,3]; [1]Biophysics Program, Stanford University, Stanford, CA, [2]Howard Hughes Medical Institute, Stanford University, Stanford, CA, [3]Biochemistry, Stanford University, Stanford, CA

B675/P3385 **Electric Fields Coalesce Lipid Raft and Caveolin to Direct Cell Migration.** B. Lin[1], S. Tsao[1], A. Chen[2], S. Hu[2], L. Chao[2], P. Chao[1]; [1]Institute of Biomedical Engineering, National Taiwan University, Taipei, Taiwan, [2]Chemical Engineering, National Taiwan University, Taipei, Taiwan

B676/P3386 **Directed Schwann cell migration can be guided by extracellular mechanical gradients.** E.B. Evans[1], S.W. Brady[1], A. Tripathi[1,2], D. Hoffman-Kim[1]; [1]Department of Molecular Pharmacology, Physiology, Biotechnology, Brown University, Providence, RI, [2]Center for Biomedical Engineering, Brown University, Pr, RI

B677/P3387 **Plasma membrane PI(4,5)P2 levels regulate chemotactic signaling pathways and actin networks in *Dictyostelium*.** N.S. Bawazir[1], M. Beshay[1], A. Ring[1], C. Janetopoulos[1]; [1]Biological Sciences, University of the Sciences, Philadelphia, PA

B678/P3388 **Inter-species repression of light-dependent photoresponses in diatoms.** S.A. Cohn[1], M. Lynam[1]; [1]Biological Sciences, DePaul University, Chicago, IL

B679/P3389 **Stability on the edge: probing the biophysical mechanisms of polarity maintenance in motile cells.** R.M. Garner[1], E. Koslover[2], A.J. Spakowitz[1,3,4,5], J.A. Theriot[1,6,7,8]; [1]Biophysics Program, Stanford University, Stanford, CA, [2]Department of Physics, University of California San Diego, San Diego, CA, [3]Department of Chemical Engineering, Stanford University, Stanford, CA, [4]Department of Applied Physics, Stanford University, Stanford, CA, [5]Department of Materials Science and Engineering, Stanford University, Stanford, CA, [6]Department of Biochemistry, Stanford University, Stanford, CA, [7]Department of Microbiology and Immunology, Stanford University, Stanford, CA, [8]Howard Hughes Medical Institute, Stanford University, Stanford, CA

B680/P3390 **Cellular decision-making in symmetric directional dilemmas.** A. Hadjitheodorou[1,2,3], J. Jorgensen[4], F. Ellett[4], D. Irimia[4], J.A. Theriot[1,3]; [1]Howard Hughes Medical Institute, Stanford, CA, [2]Bioengineering, Stanford University, School of Medicine, Stanford, CA, [3]Biochemistry, Stanford University, School of Medicine, Stanford, CA, [4]Surgery, BioMEMS Resource Center, Massachusetts General Hospital, Harvard Medical School, Boston, MA

B681/P3391 **Regulation of Haptotaxis via Dynamic Lamellipodia.** S.J. King[1], S.L. Craig[1], S.B. Asokan[1], S.P. Zimmerman[1], J.D. Rotty[1], B.M. Stramer[2], M. Parsons[2], J.E. Bear[1]; [1]Lineberger Comprehensive Cancer Center, The University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Randall Division of Cell and Molecular Biophysics, King's College London, London, United Kingdom

B682/P3392 **PI(3,4)P2, a new player in chemotaxis?** X. Li[1], P.N. Devreotes[1]; [1]Department of Cell Biology, The Johns Hopkins University School of Medicine, Baltimore, MD

Integrins and Cell-ECM Interactions 2

B684/P3393 **The Role of Integrin-dependent Paracrine Signaling from Keratinocytes in Regulating Myofibroblast Differentiation.** R. Zheng[1], W.M. Longmate[1], J. Kenney[1], C.M. DiPersio[1], L. Van De Water[1]; [1]Regenerative & Cancer Cell Biology, Albany Medical College, Albany, NY

B685/P3394 **Interplay between cell-cell and cell-extracellular matrix forces regulate myocardial proliferation in the heart.** C. Zhang[1], G.L. Radice[1], S. Emms[1,2]; [1]Center for Translational Medicine, Thomas Jefferson University, Philadelphia, PA, [2]Biology Department, Haverford College, Haverford, PA

B686/P3395 **Laminin 521 Enhances the Expansion and Engraftment of Mouse Satellite Cell-Derived Myoblasts.** P.R. August[1], C. Penton[1], M.J. Pincus[1]; [1]Discovery Biology, ICAGEN, Tucson, AZ

B687/P3396 **The role of αvβ5 integrin in axon specification of cerebellar granule cell precursors.** A. Abe[1,2], K. Hashimoto[1,2,3], A. Akiyama[2], Y. Miyamoto[1,2], Y. Hayashi[4]; [1]Human Life Innovation, Ochanomizu University University, Tokyo, Japan, [2]Humanities and LifeSciences, Ochanomizu University, Tokyo, Japan, [3]Research Fellow DC-2, JSPS, Tokyo, Japan, [4]Life Science, Asahikawa Medical University, Hokkaido, Japan

B688/P3397 **The planar cell polarity protein Vangl2 regulates cell-extracellular matrix interactions underlying proper membrane protrusive activity.** T.N. Jessen[1], A. Love[1], J.R. Jessen[1]; [1]Biology, Middle Tennessee State University, Murfreesboro, TN

B689/P3398 **Integrin αvβ3 and α6β1 cross-talk of dermal fibroblasts on integurin specific peptide polysaccharide matrix.** K. Hozumi[1], S. Enomoto[1], Y. Teranishi[1], F. Katagiri[1], Y. Kikkawa[1], M. Nomizu[1]; [1]Sch Medicine, Tokyo Univ Pharm Life Sci, Hachioji, Japan

B690/P3399 **DDesmoplastic-ECM induces aberrant active α5β1 integrin endocytosis to sustain a pro-pancreatic cancer desmoplastic stroma phenotype.** J. Franco-Barraza[1], T. Luong[1], N. Shah[1], E. Cukierman[1]; [1]Cancer Biology, Fox Chase Cancer Center, Philadelphia, PA

B691/P3400 **Fine mapping of fibrinogen central domain responsible for the binding to I domain of αXβ2 integrin.** S. Nham[1], O. Oh[1]; [1]Div. Sci. Edu., Kangwon National University, Chuncheon, Korea, South

B692/P3401 **Signaling through Glutamate receptors has a costimulatory effect on T cells.** M. Prudente De Aquino[1], T. Hodo[1], A. Shanker[1,2]; [1]Biochemistry and Cancer Biology, Meharry Medical College, Nashville, TN, [2]Vanderbilt-Ingram Comprehensive Cancer Center, Vanderbilt University, Nashville, TN

B693/P3402 **Genetic dissection of Cell-ECM adhesion in vivo using CRISPR/Cas9-mediated genome engineering of the Talin locus.** D. Camp[1], V. solyanova[1], A.Q. Xu[1], B. Goult[2], G. Tanentzapf[1]; [1]Cellular Physiological Sciences, University of British Columbia, Vancouver, BC, [2]School of Biosciences,, University of Kent, Canterbury, United Kingdom

B694/P3403 **Mechanical and Signaling Roles for Keratin Intermediate Filaments in the Assembly and Morphogenesis of Mesendoderm Tissue at Gastrulation.** P.R. Sonavane[1], C. Wang[2], B. Dzamba[1], G.F. Weber[3], A. Periasamy[4], D.W. DeSimone[1]; [1]Department of Cell Biology, University of Virginia, Charlottesville, VA, [2]Physics Department, Central College, Pella, IA, [3]Department of Biological Sciences, Rutgers University-Newark, Newark, NJ, [4]Keck Center for Cellular Imaging, Department of Biology, University of Virginia, Charlottesville, VA

Cadherins and Cell-Cell Interactions

B695/P3404 **Mechanosensitive cadherin adhesion and its regulation.** R. Koirala[1], A. Priest[1], C. Yen[1], S. Sivasankar[1]; [1]Physics and Astronomy, Iowa State University, Ames, IA

B696/P3405 **Mutations disrupting planar cell polarity alter Celsr1-mediated cell adhesion and dynamics.** S.N. Stahley[1], D. Devenport[1]; [1]Molecular Biology, Princeton University, Princeton, NJ

B697/P3406 **Organization of E-cadherin on the cell surface of A431 cells.** J. Choi[1], C. Chen[1], I. Indra[1], R. Troyanovsky[1], S.M. Troyanovsky[1]; [1]Dermatology, Northwestern University, Feinberg School of Medicine, Chicago, IL

B698/P3407 **The role of cadherin compensation during adherens junction assembly and maintenance in MDCK cells.** B.G. Ayee[1], A.J. Rodriguez[1]; [1]Biological Sciences, Rutgers University Newark, Newark, NJ

B699/P3408 **Branched actin networks at endothelial adherens junctions push against each other to maintain cadherin transinteraction.** N. Efimova[1], T.M. Svitkina[1]; [1]Biology, University of Pennsylvania, Philadelphia, PA

TUESDAY

B700/P3409 **Essential Role of Obscurin Kinase Domain-1 in Cardiac Cell Adhesion and Communication by Regulating the Phosphorylation of N-Cadherin.** L. Wang[1], L.R. Hu[1], C. Yankaskas[2], K. Konstantopoulos[2], A. Kontrogianni-Konstantopoulos[1]; [1]Biochemistry and Molecular Biology, University of Maryland School of Medicine, Baltimore, MD, [2]Chemical and Biomolecular Engineering, Johns Hopkins University, Baltimore, MD

B701/P3410 **Barrier enhancing function of Src and VE cadherin phosphorylation in endothelial cells revealed by synthetic biology approach.** J. Klomp[1], R. Rebiai[1], V. Huyot[1], K.B. Collins[1], A.B. Malik[1], A.V. Karginov[1]; [1]Department of Pharmacology, University of Illinois at Chicago, Chicago, IL

B702/P3411 **E-cadherin is recruited by the pathogen Enteropathogenic Escherichia coli and binds the Tir:intimin complex.** F.H. Login[1], H.H. Jensen[1,2], G.A. Pedersen[1], M.R. Amieva[3], L.N. Nejsum[1,4]; [1]Department of Clinical Medicine,, Aarhus University, Aarhus, Denmark, [2]Department of Molecular Biology and Genetics, Aarhus University, Aarhus, Denmark, [3] Department of Microbiology and Immunology Department of Pediatrics, Stanford University, Stanford, United States, [4]Interdisciplinary Nanoscience Center,, Aarhus University, Aarhus, Denmark

B703/P3412 **Anillin dependent stabilization of Rho signaling at adherens junctions influences cell extrusion and collective cell migration.** S. Budnar[1], G. Gomez[2], M. Naghibosidat[3], K. Wee[1], S. Gupta[1], H. Kambe[1], S. Verma[1], N. Hamilton[1], Z. Neufeld[4], A.S. Yap[1]; [1]Cell Biology and Molecular Medicine, Institute of Molecular Bioscience, The University of Queensland, Brisbane, Australia, [2]Center for Cancer Biology, The University of South Australia, Adelaide, Australia, [3]Department of Pathology and Laboratory Medicine, Western University, Ontario, Canada, [4]School of Mathematics and Physics, The University of Queensland, Brisbane, Australia

B704/P3413 **A non-canonical Notch signaling complex regulates adherens junctions and endothelial barrier function.** M.L. Kutys[1,2], W.J. Polacheck[1,2], J. Yang[1], J. Eyckmans[1,2], Y. Wu[3], K.K. Hirschi[3], C.S. Chen[1,2]; [1]Biomedical Engineering, Boston University, Boston, MA, [2]Wyss Institute for Biologically Inspired Engineering, Harvard University, Boston, MA, [3]Cardiovascular Research Center, Yale University, New Haven, CT

B705/P3414 **Dissecting the function of classical cadherins in stratified epithelial morphogenesis.** C. Patino Descovich[1], K.J. Lough[2], D. Spitzer[2], M. Mac[2], S.E. Williams[2]; [1]Cell Biology and Physiology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Pathology Laboratory Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC

B706/P3415 **Adherens Junction Components Regulate Mitotic Spindle Orientation in Embryonic Epidermis.** K.J. Lough[1], K.M. Byrd[2], C. Patino-Descovich[3], D.C. Spitzer[4], A.J. Bergman[4], S.E. Williams[4]; [1]Genetics and Molecular Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Oral Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [3]Cell Biology and Physiology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [4]Pathology and Lab Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC

B707/P3416 **Cardiomyocytes Assemble Force-Resilient Adherens Junctions through Vinculin and Afadin.** C.D. Merkel[1], Y. Li[1], Q.S. Raza[1], R.M. O'Dowd[1], A.V. Kwiatkowski[1]; [1]Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

B708/P3417 **Talin is related to cadherin-mediated cell-cell adhesions through its direct-binding domains to catenins.** D.M. Patel[1], W.M. Morgan[1], F. Zhang[1]; [1]Molecular & Cellular Pharmacology, University of Miami, Miami, FL

B709/P3418 **E-cadherin mediated homotypic cell–cell interaction confers cytokine independence in human erythroleukemia.** S. Chakapalli[1], M.C. Morris[1], Z. Barati[1], V. Cheriyath[1]; [1]Biological and Environmental Sciences, Texas AM University–Commerce, Commerce, TX

B710/P3419 **Analysis of biological networks with biomimetic microsystem platforms.** M.Y. Sun[1], K.J. Kruse[1], J. Klomp[1], F. Huang[1], P.N. Kanabar[2], M. Maienschein-Cline [2], Y.A. Komarova[1]; [1]Pharmacology, University of Illinois at Chicago College of Medicine, Chicago, IL, [2]Research Resources Center, University of Illinois at Chicago, Chicago, IL

B711/P3420 **Differential Recruitment of Afadin and EPLIN to E-cadherin Adhesions.** V. Maruthamuthu[1], S. Chatterji[1]; [1]Mechanical & Aerospace Engineering, Old Dominion University, Norfolk, VA

B712/P3421 **Septins regulate VE-cadherin – mediated junctional integrity of human endothelial monolayers.** J. Kim[1], J. Cooper[1]; [1]Biochemistry and Molecular Biophysics, Washington University St. Louis, St. Louis, MO

B713/P3422 **The interplay of WAVE-dependent branched actin and Cadherin junction components promotes Cadherin trafficking and junctional maturation.** S. Sasidharan[1], S. Borinskaya[1], M. Soto[1]; [1]Department of Pathology, RWJMS-Rutgers University, Piscataway Township, NJ

B714/P3423 **VE-PTP Scaffold Function in Adherens Junction Stabilization.** V. Juettner[1], Y. Komarova[1], D.E. Leckband[2], A. Dan[2]; [1]Pharmacology, University of Illinois at Chicago, Chicago, IL, [2]Chemistry, University of Illinois at Urbana-Champaign, Urbana, IL

B715/P3424 **TRIP6 inhibits the Hippo signaling pathway in response to tension at adherens junctions.** S. Dutta[1], S. Mana-Capelli[1], I. Dasgupta[1], D. McCollum[1]; [1]Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School, Worcester, MA

B716/P3425 **Alpha-T-catenin N-terminus functions with the M-region to regulate vinculin binding.** J.A. Heier[1], S. Pokutta[2], B. Weis[2], A.V. Kwiatkowski[1]; [1]Dept. of Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA, [2]Dept. of Structural Biology, Stanford University, Stanford, CA

B717/P3426 **Evolutionary Rate Covariance (ERC) analysis identifies regulators of intercellular adhesion in Drosophila.** Q.S. Raza[1], R. O'Dowd[1], Y. Hong[1], N.L. Clark[2], A.V. Kwiatkowski[1]; [1]Dept. of Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA, [2]Dept. of Computational Systems Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

B718/P3427 **Identification of cardiomyocyte adhesion complexes by proximity proteomics.** Y. Li[1], C.D. Merkel[1], X. Zeng[1], N. Yates[1], A.V. Kwiatkowski[1]; [1]Dept. of Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

Bioengineering of Cell-Matrix Interactions

B719/P3428 **Three-dimensional modeling of metastatic breast cancer dormancy using tunable PEG-based hydrogels.** S. Pradhan[1], J.H. Slater[1]; [1]Department of Biomedical Engineering, University of Delaware, Newark, DE

B720/P3429 **Matrix malleability regulates cancer cell migration through confining microenvironments.** K.M. Wisdom[1], K. Adebowale[2], R. Desai[3], L. Hodgson[4], O. Chaudhuri[1]; [1]Mechanical Engineering, Stanford University, Stanford, CA, [2]Chemical Engineering, Stanford University, Stanford, CA, [3]School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, [4]Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY

B721/P3430 **Synergistic regulation of skeletal muscle maturation with sphingosine-1-phosphate and biomimetic matrix nanotopography.** J.H. Tsui[1], K. Janebodin[1,2,3], N. Ieronimakis[1,3,4], D.M. Yama[1], H.S. Yang[1,5], R. Chavanachat[1], H. Lee[6], M. Reyes[3,7], D.H. Kim[1]; [1]Bioengineering, University of Washington, Seattle, WA, [2]Anatomy, Mahidol University, Bangkok, Thailand, [3]Pathology, University of Washington, Seattle, WA, [4]Clinical Investigation, Madigan Army Medical Center, Tacoma, WA, [5]Nanobiomedical Science, Dankook University, Cheonan, Korea, [6]Chemistry, KAIST, Daejeon, Korea, [7]Pathology, Albert Einstein College of Medicine, Bronx, NY

B722/P3431 **A contractile hoop stress aids in balancing sudden hydrostatic pressure perturbation in a tubular epithelium.** D. Maity[1], S.X. Sun[1,2], Y. Chen[2]; [1]Chemical and Biomolecular Engineering, Johns Hopkins University, Baltimore, MD, [2]Mechanical Engineering, Johns Hopkins University, Baltimore, MD

B723/P3432 **T is for Tension: Micropatterns, Machine Learning, and the Role of the Microenvironment in Mesoderm Induction.** N.D. Rochman[1], Q. Smith[1], A.M. Carmo[1], D.K. Vig[1], S.X. Sun[1], S. Gerecht[1]; [1]Chemical and Biomolecular Engineering, The Johns Hopkins University, Baltimore, MD

B724/P3433 **Plasticity in cell migratory modes on orthotropic fiber architectures.** A. Jana[1], J. Singh[2], L. Singh[1], A. Franco[3], B. Behkam[1], A.S. Nain[1]; [1]Department of Mechanical Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA, [2]Department of Biomedical Engineering and Mechanics, Virginia Polytechnic Institute and State University, Blacksburg, VA, [3] Department of Physiology and Biophysics, University of Arkansas for Medical Sciences, Little Rock, AR

B725/P3434 **Penetrability of Prostate Tumor Cells Grown in 3D Culture by Prostate Targeting Agents.** T.C. Anderson[1], E.A. Pattie[1], N.A. Omar[1], N.M. Rasid[1], J. Fung[1], R.L. Walden[1], F. Griessel[1], I.M. Evans[1]; [1]GSOLS, Rochester Institute of Technology, Rochester, NY

B726/P3435 **Cell-cell adhesion and myosin activity controls the curvature-dependent cortical actin assembly in mammary gland epithelium.** W. Jung[1], K. Elawad[1], S.H. Kang[1], Y. Chen[1]; [1]Mechanical Engineering, Johns Hopkins University, Baltimore, MD

B727/P3436 **Maskless Quantitative Multi-protein Photopatterning to orchestrate cellular microenvironment.** L. Bonnemay[1], M. Opitz[1], J. Ruaudel[1], N. Ziane[1], P. Strale[1]; [1]ALVEOLE, Paris, France

B728/P3437 **New approach to forming embryoid bodies of ES cells by using Low Adhesive Scaffold Collagen.** S. Kunii[1], Y. Ohnuki[2], K. Morimoto[1]; [1]Genetic Engineering, Kindai University, Kinokawa, Japan, [2]Biotechnology, University of Yamanashi, Kofu, Japan

B729/P3438 **Active wetting of epithelial tissues.** C. Pérez-González[1,2], R. Alert[1], C. Blanch-Mercader[1], M. Gomez-Gonzalez[2], T. Kolodziej[3], E. Bazellierres[2], J. Casademunt[1], X. Trepat[1,2,4,5]; [1]University of Barcelona, Barcelona, Spain, [2]Institute for Bioengineering of Catalonia, Barcelona, Spain, [3]Jagiellonian University, Krakow, Poland, [4]Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain, [5]Investigación Biomédica en Red en Bioingeniería, Biomateriales y Nanomedicina, Madrid, Spain

B730/P3439 **Developing Tunable Bioink for Versatile 3D Bioprinting.** K. Elawad[1], W. Jung[2], S.H. Kang[2], Y. Chen[2]; [1]Materials Science and Engineering, Johns Hopkins University, Baltimore, MD, [2]Mechanical Engineering, Johns Hopkins University, Baltimore, MD

B731/P3440 **Extracellular matrix dimensionality reduces cellular cortical tension to stimulate Arf6/Rac/p38 pro-survival signaling in mammary epithelial cells.** F. Kai[1], G. Ou[1,2], J. Friedland[1], C. Frantz[1], R. Tourdot[3], W. Guo[3], C.S. Chen[4], R. Radhakrishnan[5,6], A. Long[7], S. Dumont[7], V.M. Weaver[1,2,8,9,10]; [1]Department of Surgery, University of California, San Francisco, San Francisco, CA, [2]Bioengineering, University of California, Berkeley, Berkeley, CA, [3]Biology, University of Pennsylvania, Philadelphia, PA, [4]Biomedical Engineering, Boston University, Boston, MA, [5]Bioengineering, University of Pennsylvania, Philadelphia, PA, [6]Chemical and Biomolecular Engineering, University of Pennsylvania, Philadelphia, PA, [7]Department of Cellular and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA, [8]Anatomy and Bioengineering and Therapeutic Sciences, University of California, San Francisco, San Francisco, CA, [9]Helen Diller Comprehensive Cancer Center, University of California, San Francisco, San Francisco, CA, [10]Eli and Edythe Broad Center of Regeneration Medicine and Stem Cell Research, University of California, San Francisco, San Francisco, CA

B732/P3441 **PC3 cells deterministic immobilization on biochemically-patterned slides by micro-contact printing - Effect of the patterns shapes, size and pitch -.** M. Schneider[1], J. Chevrier[1], j. Cau[2], A. Lagraulet[2], E. Trévisiol[3], M. Blatche[3], C. Vieu[4,5,6]; [1]INNOPSYS Inc., Chicago, IL, [2]INNOPSYS, Carbonne, France, [3]LAAS, CNRS, Toulouse, France, [4]Université de Toulouse, Toulouse, France, [5]INSA, Toulouse, France, [6]LAAS, Biosoft-CNRS, Toulouse, France

B733/P3442 **Programmable viscoelastic matrices from artificial proteins.** L.J. Dooling[1], D.A. Tirrell[1]; [1]Division of Chemistry and Chemical Engineering, California Institute of Technology, Pasadena, CA

Chaperones, Protein Folding, and Quality Control 2

B735/P3443 **Subcellular localization, uptake and dynamics of inorganic polyphosphate in mammalian cells.** L. Xie[1], U. Jakob[1]; [1]Molecular, Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI

B736/P3444 **Exploring compartment-specific protein disaggregases to combat neurodegenerative diseases.** R.R. Cupo[1], J. Shorter[2]; [1]Pharmacology Graduate Group, University of Pennsylvania, Philadelphia, PA, [2]Department of Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA

B737/P3445 **Small HSP αB-Crystallin is a hydrolyzed eggshell membrane-response chaperone and keeps hydration of epidermis keratinocyte through the interaction of lipid membrane regulator-acid sphingomyelinase.** Y. Atomi[1], M. Shimizu[1], E. Fujita[1], A. Atomi[1], T. Mizutani[2], J. Masaki[2], Y. Hasebe[3]; [1]material health science, Tokyo university of agriculture and technology, Tokyo, Japan, [2]bioscience and biotechnology, Tokyo University of Technology, Tokyo, Japan, [3]Almado Inc., Tokyo, Japan

B738/P3446 **Endoplasmic reticulum morphology serves as predictor for stress severity.** L. Wünsche[1], A.R. Nair[1], K.C. Sadler[1]; [1]Biology Department, New York University Abu Dhabi, Abu Dhabi, United Arab Emirates

B739/P3447 **Suppressing Aβ toxicity with potentiated Hsp104 variants in a yeast model of Alzheimer's disease.** S. Sudesh[1], K.L. Mack[1], J. Stillman[1], E. Griffin[2], K.A. Caldwell[2], G.A. Caldwell[2], J. Shorter[1]; [1]Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA, [2]Biological Sciences, University of Alabama, Tuscaloosa, AL

B740/P3448 **Engineering Potentiated Hsp70 Variants to Combat Neurodegeneration.** I. Subudhi[1], J. Ramirez[1], J. Shorter[1]; [1]Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA

B741/P3449 **The Ribosome-Associated Complex Suppresses [PSI+] Prion Formation in Yeast.** C. Kelly[1], T. Tessitore[1], J. Taddeo[1], D.M. Cameron[1]; [1]Department of Biology, Ursinus College, Collegeville, PA

B742/P3450 **INMAD: Mechanisms for Protein Quality Control at the Inner Nuclear Membrane.** B.A. Koch[1], H. Yu[1]; [1]Biology, Florida State University, Tallahassee, FL

B743/P3451 **Induced protein unfolding uncovers a Golgi-specific stress response.** Y.V. Serebrenik[1], D. Hellerschmied[1], M. Toure[1], F. Lopez[2], D. Brookner[1], C.M. Crews[1]; [1]Molecular, Cellular Developmental Biology, Yale University, New Haven, CT, [2]Yale Center for Genome Analysis, Yale University, New Haven, CT

B744/P3452 **Unfolding of a Golgi-localized Protein Identifies Important Protein Quality Control Mechanisms in the Early Secretory Pathway.** D. Hellerschmied[1], Y.V. Serebrenik[1], C.M. Crews[1,2,3]; [1]Department of Molecular, Cellular and Developmental Biology, Yale University, New Haven, CT, [2]Department of Chemistry, Yale University, New Haven, CT, [3]Department of Pharmacology, Yale University, New Haven, CT

B745/P3453 **Modulation of calreticulin expression reveals a novel mechanism of Z variant alpha-1 Antitrypsin disposal.** N. Khodayari[1], Y. Lu[1], K. Krotova[1], M. Brantly[1]; [1]Medicine, University of Florida, Gainesville, FL

B746/P3454 **Redox modification of the Hsp70 nucleotide exchange factor Fes1.** E.E. Nicklow[1], C.S. Sevier[1]; [1]Molecular Medicine, Cornell University, Ithaca, NY

B747/P3455 **The ASNA-1/ENPL-1 redox sensitive complex modulates *C.elegans* insulin secretion.** A. Podraza[1], B. Natarajan[1], D. Robakowska[1], G. Kao[1], P. Naredi[1]; [1]Sahlgrenska Cancer Center, Gothenburg University, Gothenburg, Sweden

B748/P3456 **Amyloids as the natural protein storage reservoirs.** K.S. Antonets[1,2], S.F. Kliver[1,2], A.O. Kosolapova[1,2], M.V. Belousov[1,2], M.E. Belousova[2], O.Y. Shtark[2], E.N. Vasilyeva[2], A.A. Nizhnikov[1,2]; [1]Genetics and Biotechnology, St. Petersburg State University, St. Petersburg, Russia, [2]Proteomics of Supra-Organismal Systems, All-Russia Institute for Agricultural Microbiology, St. Petersburg, Russia

B749/P3457 **Broader perspectives of secretory pathway quality control revealed through the study of misfolded GPI-anchored proteins.** B.S. Park[1,2], C. Bi[1,2], K. Budharaju[1,2], P. Satpute-Krishnan[2]; [1]Thomas Jefferson High School for Science and Technology, Alexandria, VA, [2]Biochemistry and Molecular Biology, Uniformed Services University, Bethesda, MD

B750/P3458 **Prions may act as the gain-of-function mutations.** A.A. Nizhnikov[1,2], K.S. Antonets[1,2], S.F. Kliver[1,2], D.E. Polev[2], A.R. Shuvalova[2], E.A. Andreeva[2], S.G. Inge-Vechtomov[2]; [1]Proteomics of Supra-Organismal Systems, All-Russia Research Institute for Agricultural Microbiology, St. Petersburg, Russia, [2]Genetics and Biotechnology, St. Petersburg State University, St. Petersburg, Russia

B751/P3459 **Rapid heat-shock response depends on intracellular pH.** C.G. Triandafillou[1], A.R. Dinner[2], D.A. Drummond[3]; [1]Biophysical Sciences Graduate Program, University of Chicago, Chicago, IL, [2]James Franck Institute, University of Chicago, Chicago, IL, [3]Biochemistry and Molecular Biology, University of Chicago, Chicago, IL

B752/P3460 **Translation of heat shock proteins is regulated by poly(A)-binding protein assembly.** C.D. Katanski[1], J.A. Riback[1], E. Pilipenko[1], D.A. Drummond[1]; [1]Biochemistry and Molecular Biology, University of Chicago, Chicago, IL

B753/P3461 **Differential impact of several PD-associated genes on the toxicity associated with wild-type and familial mutant forms of α-synuclein in a yeast model.** P. Jones[1], E. Ong[1], A. Balaram[1], A. Biel[1], C. Mwale[1], M. Tembo[1], S. DebBurman[1]; [1]Neuroscience Program and Biology Department, Lake Forest College, Lake Forest, IL

B754/P3462 **The Saccharomyces cerevisiae SUMO-targeted ubiquitin ligase subunit Slx5 reduces the toxicity and transcriptional activity of poly-Q expanded huntingtin.** J.L. Peek[1], N. Pasupala[2], G. Driessnack-Sclar[1], R. Levy-Myers[1], K. Ohkuni[3], M.A. Basrai[3], O. Kerscher[1]; [1]Biology, The College of William Mary, Williamsburg, VA, [2]Biophysics and Biophysical Chemistry, The Johns Hopkins School of Medicine, Baltimore, MD, [3]Genetics Branch, NCI/CCR, Bethesda, MD

B755/P3463 **Functions of TPR Containing Proteins in the Endoplasmic Reticulum.** J. Bradley-Graham[1], J. Sunryd[1], D.N. Hebert[1]; [1]Biochemistry and Molecular Biology, University of Massachusetts, Amherst, Amherst, MA

Regulation of Aging

B756/P3464 **Molecular insights into life span through changes in tRNA export and transcription activation.** C.L. Lord[1], S.R. Wente[1]; [1]Cell and Developmental Biology, Vanderbilt University School of Medicine, Nashville, TN

B757/P3465 **IRBIT links nucleotide metabolism to aging in the gut.** A. Arnaoutov[1], K. Plevock Haase[1], M. Serpe[2], M. Dasso[1]; [1]Division of Molecular and Cellular Biology, National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD, [2]Section on Cellular Communication, National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD

B758/P3466 **Jaboticaba extract prevents inflammation and hormonal imbalance in the prostatic microenvironment of high-fat-fed aging mice.** C.A. Lamas[1], L.A. Kido [1], E. Nogueira-Pangrazi[1], C. Collares-Buzato[2], M. Maróstica Jr[2], V.H. Cagnon[1]; [1]Department of Structural ans Functional Biology, University of Campinas, Campinas, Brazil, [2]Department of Biochemistry and Tissue Biology, University of Campinas, Campinas, Brazil

B759/P3467 **Proteopathic proteins have characteristic phase behaviors.** J. Wu[1,2], R. Halfmann[1,2]; [1]Stowers Institute for Medical Research, Kansas city, MO, [2]Molecular and Integrative Physiology, University of Kansas Medical Center, Kansas City, KS

B760/P3468 **Increasing glucose uptake suppresses age-dependent reductions in ATP levels in brain neurons and behavioral deficits in *Drosophila*.** M. Oka[1], E. Suzuki[2,3], H. Imamura[4], S. Hisanaga[1], K.M. Iijima[5,6], K. Ando[1]; [1]Department of Biological Sciences, Tokyo Metropolitan University, Tokyo, Japan, [2]Structural Biology Center, National Institute of Genetics, Shizuoka, Japan, [3]Department of Genetics, The Graduate University for Advanced Studies (SOKENDAI), Mishima, Japan, [4]Department of Functional Biology, Kyoto University, Kyoto, Japan, [5]Department of Alzheimer's Disease Research, National Center for Geriatrics and Gerontology, Obu, Japan, [6]Department of Experimental Gerontology, Nagoya City University, Nagoya, Japan

B761/P3469 **Role of sphingolipid enzymes in the regulation of stress response and aging through detoxification protein pathways.** C.I. Meyer[1], A. Nolan[1], J. Brown[1], J.P. Chan[1]; [1]Biology, Juniata College, Huntingdon, PA

B762/P3470 **Sphingolipid metabolism affects maintenance of locomotion and neuromuscular function in aged C. elegans.** C.W. Wentz[1], S. Chuh[1], J.P. Chan[1]; [1]Biology, Juniata College, Huntingdon, PA

B763/P3471 **Poly(ADP-ribose) (PAR) promotes TDP-43 liquid droplet formation but reduces TDP-43 aggregation.** E. Gomes[1], L. McGurk[1], L. Guo[1], N.M. Bonini[2], J. Shorter[1]; [1]Biochemistry and Molecular Biophysics, University of Pennsylvania, Philadelphia, PA, [2]Biology, University of Pennsylvania, Philadelphia, PA

B764/P3472 **Young blood serum increased cellular response associated to wound healing in old rats.** M. Caceres Lluch[1], M. Saldias[1], C. Fernandez[1], V. Folli[1], O. Cerda[1]; [1]Molecular and cellular program, Universidad de Chile, Santiago, Chile

B765/P3473 **Alcohol causes a defect in telomere homeostasis.** Q. Zhu[1], J. Park[1], W. Belden[1]; [1]Department of Animal Sciences, Rutgers, The State University of New Jersey, New Brunswick, NJ

B766/P3474 **Functions of CLIC proteins in heat stress in C. elegans.** J. Liang[1], C. Guerrero[1], H. Wang[1]; [1]Science, Borough of Manhattan Community College, New York, NY

B767/P3475 **Human Dermal Stem/Progenitor Cell-derived Conditioned Medium Ameliorates Ultraviolet A-induced Damage of Normal Human Epidermal Keratinocytes.** J. SHIM[1]; [1]Faculty of cosmetics and biotechnology, Semyung Univ., Jecheon, South Korea

B768/P3476 ***Crataegus pinnatifida* extract increases lifespan of *Drosophila melanogaster*.** D. Jung[1], J. Shim[1]; [1]Korea Food Research Institute, Jeongju, Korea, South

Chemical Cell Biology

B770/P3477 **Probing mitochondrial dynamics and heterogeneity during cell state switching using multiplexed, environment-sensitive fluorescent dyes.** S.O. Raja[1], G. Sivaraman[1], A. Mukherjee[1], S. Kataria[1], C. Jamora[1], A. Gulyani[1]; [1]Technology for Advancement of Science, Institute for Stem Cell Biology Regenerative Medicine, Bengaluru, India

B771/P3478 **Discovery and development of novel antifungal compounds from marine endophytic fungal sources.** E.J. BLESSIE[1], P.K. ARTHUR[2]; [1]West African Center for Cell Biology of Infectious Pathogens, Department of Biochemistry, Cell and Molecular Biology, P.O BOX LG 54 Legon, UNIVERSITY OF GHAHA, ACCRA, Ghana, [2]West African center for Cell Biology of infectious Pathogens, Department of Biochemistry, Cell and Molecular Biology, P.O Box LG 54 Legon, UNIVERSITY OF GHANA, ACCRA, Ghana

B772/P3479 **Remodeling and Visualizing Bacterial Peptido*glycan* to Understand Crohn's Disease.** C.L. Grimes[1,2], K. DeMeester[2], H. Liang[2], Z. Jones[2]; [1]Biological Sciences, University of Delaware, Newark, DE, [2]Chemistry and Biochemistry, University of Delaware, Newark, DE

B773/P3480 **Exploration of a novel cyclic peptide that senses lipid-packing defects.** H. Hirose[1], H. Suga[1]; [1]Department of Chemistry, Graduate School of Science, The University of Tokyo, Tokyo, Japan

B774/P3481 **Study of the purinosome in HeLa cells and *Caenorhabditis elegans* model systems.** O. Souckova[1], V. Baresova[1], V. Skopova[1], M. Krijt[1], M. Zikanova[1]; [1]Institute of Inherited Metabolic Disorders, First Faculty of Medicine, Charles University, Prague, Czech Republic

B775/P3482 **Bioorthogonal fluorescent probe for molecular imaging of cancer aggressiveness.** H. Erkan[1], D. Telci[1], O. Dilek[2]; [1]Biotechnology, Yeditepe University, Istanbul, Turkey, [2]Biochemistry, Husson University, Bangor, ME

B776/P3483 **Structure-activity relationship study for α-dystroglycan binding peptide A2G80 derived from mouse laminin α2 chain sequence.** F. Katagiri[1], Y. Fukasawa[1], J. Kumai[1], K. Hozumi[1], Y. Kikkawa[1], M. Nomizu[1]; [1]Department of Clinical Biochemistry, Tokyo University of Pharmacy and Life Sciences, Hachioji, Japan

B777/P3484 **Inhibition of osteoclast formation and function by EW33.** J. LEE[1], G. LEE[1], Y. JO[1], S. HONG[1], H. Lee[1], N. Kim[1], M. Kwon[1], H. Son[1], E. Seo[2], W. Jeong[1]; [1]Life science and the Research Center for Cellular Homeostasis, EWHA Womans University, SEOUL, Korea, South, [2]College of pharmacy, EWHA Womans University, SEOUL, Korea, South

B778/P3485 **EW17 inhibits osteoclastogenesis and attenuates the migration and resorption of osteoclasts.** H. Lee[1], G. LEE[1], Y. JO[1], S. HONG[1], J. LEE[1], N. Kim[1], M. Kwon[1], H. Son[1], E. Seo[2], W. Jeong[1]; [1]Life Science and the Research Center for Cellular Homeostasis, Ewha Womans University, seoul, Korea, South, [2]College of Pharmacy, Ewha Womans University, Seoul, Korea, South

B779/P3486 **Synthesis, Characterization and Toxicity Studies of Gold Nanoparticles.** H.N. Khan[1], A.N. Sabri[1]; [1]Microbiology and Molecular Genetics, University of the Punjab, Lahore, Pakistan

B780/P3487 **Purification of an exceptionally resilient and long-lived orange fluorescent protein from the Gulf anemone *Calliactis tricolor*.** K.M. Hart[1], R. Lawson[1], D. Boggio[1], H. Flurry[1], K. Helbert[1], A.G. Moss[1]; [1]Biological Sciences, Auburn University, Auburn, AL

B781/P3488 **A chemical-genetic toggle switch for phosphorylation events applied to Plk1 signaling.** J.M. Johnson[1,2], Q. Drane[1,2], M.E. Burkard[1,2]; [1]Department of Medicine, Hematology/Oncology Division, University of Wisconsin-Madison, Madison, WI, [2]University of Wisconsin Carbone Cancer Center, University of Wisconsin-Madison, Madison, WI

B782/P3489 **Development of protein tools to study receptor clustering on cell membrane.** D. Song[1], Y. JUNG[1]; [1]Chemistry, KAIST (Korea Advanced Institute of Science and Technology), DAEJEON, South Korea

B783/P3490 **Synthesis, Characterization and Superoxide Dismutase-like Activity of Novel Cu(II), Ni(II), Co(II), and Zn(II) Complexes with 11*H*-Indeno[1,2-b] quinoxalin-11-one Oxime Ligand.** A.I. Khlebnikov[1,2], I.A. Schepetkin[3,4], N.P. Chernova[2], G.A. Anosova[2], A.S. Potapov [1], D. Atochin[4,5]; [1]Department of Biotechnology and Organic Chemistry, Tomsk Polytechnic University, Tomsk, Russia, [2]Department of Chemistry, Altai State Technical University, Barnaul, Russia, [3]Department of Microbiology and Immunology, Montana State University, Bozeman, MT, [4]RASA Center in Tomsk, Tomsk Polytechnic University, Tomsk, Russia, [5]Cardiovascular Research Center, Massachusetts General Hospital, Charlestown, MA

B784/P3491 **Development of a new photo-stable fluorescence probe for detecting biomolecule carbonylation in live mammalian cells.** S. Ghosh[1], K. Mukherjee[2], D.L. Sackett[3], S.L. Bane[1]; [1]Chemistry, State University of New York at Binghamton, Binghamton, NY, [2]Medicine, Massachusetts General Hospital/Harvard Medical School, Boston, MA, [3]Laboratory of Integrative and Medical Biophysics, Program in Physical Biology, Eunice Kennedy Shriver National Institute of Child Health and Human Development, Bethesda, MD

B785/P3492 **Polymeric Particles for the Control Release of Bioactive Molecules to PC12 Cells.** P.M. Gehret[1], R. Hoff[1], L.P. Kelly[1], W.H. Suh[1]; [1]Bioengineering, Temple University, Philadelphia, PA

B786/P3493 **Cholic Acid Conjugation as a Tool for Enhancing Intracellular Delivery of Linker-Extended Constructs.** R. Bhadoria[1], K. Ping[1], P. Starkov[1]; [1]Dept of Chemistry & Biotechnology, Tallinn University of Technology, 12618, Estonia

B787/P3494 **Identification of natural compounds that alter myoblast cell cycle kinetics.** J.N. Kidrick[1], S.E. Johnson[1]; [1]Animal and Poultry Sciences, Virginia Polytechnic Institute and State University, Blacksburg, VA

B788/P3495 **Research in the molecular mechanism of coagulation activity of sulfur-containing monoterpenoids of pinane series.** Z.R. Azizova[1], S.V. Kiselev[2], L.E. Nikitina[2], V.A. Srartseva[2], V.V. Klochkov[3]; [1]General Pathology Department, Kazan State Medical University, Kazan, Russia, [2]General and Organic Chemistry Department, Kazan State Medical University, Kazan, Russia, [3]Institute of Physics, Kazan Federal University, Kazan, Russia

Tissue Development and Morphogenesis 3

B790/P3496 **Src oxidation directs cell polarity to promote rapid embryonic wound healing.** M.V. Hunter[1,2], J. Woszczyk[3,4], P. Laprise[3,4], R. Fernandez-Gonzalez[1,2,5,6]; [1]Cell and Systems Biology, University of Toronto, Toronto, ON, [2]Ted Rogers Centre for Heart Research, University of Toronto, Toronto, ON, [3]Centre de Recherche sur le Cancer, Université Laval, Quebec, QC, [4]Oncologie, Centre de Recherche du CHU de Québec - Université Laval, Quebec, QC, [5]Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, [6]Developmental and Stem Cell Biology Program, Hospital for Sick Children, Toronto, ON

B791/P3497 **Actomyosin-based basal protrusions drive long range lateral inhibition via dynamic cell-cell contacts during epithelial tissue patterning.** G.L. Hunter[1,2,3], L. He[4], N. Perrimon[4], G. Charras[5], B. Baum[1,3], E. Giniger[2]; [1]Institute for the Physics of Living Systems, University College London, London, United Kingdom, [2]National Institute of Neurological Disorders and Stroke, Bethesda, MD, [3]MRC-LMCB, University College London, London, United Kingdom, [4]HHMI, Dept of Genetics, Harvard Medical School, Boston, MA, [5]Dept of Cell Dev Biology, University College London, London, United Kingdom

B792/P3498 **Erk-dependent control of epithelial morphogenesis.** H.E. Johnson[1], S.Y. Shvartsman[2,3], J.E. Toettcher[1]; [1]Molecular Biology, Princeton University, Princeton, NJ, [2]Chemical and Biological Engineering, Princeton University, Princeton, NJ, [3]Lewis–Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ

B793/P3499 **Unraveling multiciliated ependymal cell identity: Ubiquitin-proteasome and IKK2 control Foxj1 stability.** K.M. Abdi[1], J. Pyun[1], C.T. Kuo[1]; [1]Department of Cell Biology, Duke University, Durham, NC

B794/P3500 ***Nopo*, the *Drosophila* ortholog of the microcephalic primordial dwarfism gene *TRAIP*, encodes a centrosomal E3 ubiquitin ligase specifically required for mushroom body development.** R.S. O'Neill[1], B.J. Galletta[1], C.J. Fagerstrom[1], N.M. Rusan[1]; [1]Cell Biology and Physiology Center, National Heart, Lung, and Blood Institute, Bethesda, MD

TUESDAY

B795/P3501 **Negative feedback loops protect stem cell progenitors' identity and architecture during embryonic skin development.** I. Matos[1], A. Asare[1], J. Levorse[1], E. Fuchs[1]; [1]The Rockefeller University, New York, NY

B796/P3502 **The interaction between calreticulin and Wnt/β-catenin signaling induces hair follicle neogenesis.** A. Tellechea[1], S. Levental[1], U.M. Pandya[1], C. Egbuta[1], L.I. Gold[1]; [1]Medicine and Pathology, New York University School of Medicine-Langone Medical Center, New York, NY

B797/P3503 **Zebrafish models of RASopathies: the impact of *PTPN11* mutations on early embryogenesis.** V.L. Patterson[1], S.Y. Shvartsman[2,3], R.D. Burdine[1]; [1]Molecular Biology, Princeton University, Princeton, NJ, [2]Chemical and Biological Engineering, Princeton University, Princeton, NJ, [3]Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ

B798/P3504 **Interplay of ubiquitination and palmitoylation in trafficking of Fat-Hippo signaling pathway components.** J.R. Misra[1], K.D. Irvine[1]; [1]Waksman Institute, Rutgers University, Piscataway, NJ

B799/P3505 **Fish scales dictate the pattern of adult skin innervation.** J.P. Rasmussen[1], N. Vo[1], A. Sagasti[1]; [1]Molecular, Cellular and Developmental Biology, University of California, Los Angeles, Los Angeles, CA

B800/P3506 **Building a barrier: survival of the fittest in the developing skin.** S. Ellis[1], E. Fuchs[1]; [1]Laboratory of Cell Biology and Genetics, The Rockefeller University, New York, NY

B801/P3507 **Examining Carmil3's role in Kupffer's vesicle morphogenesis and function.** B.C. Stark[1], L. Solnica-Krezel[2], J.A. Cooper[1]; [1]Biochemistry & Molecular Biophysics, Washington University School of Medicine, St. Louis, MO, [2]Developmental Biology, Washington University School of Medicine, St. Louis, MO

B802/P3508 **Distinct Signaling Roles for Type I Receptors Bmpr1 and Acvr1l, and the Type II Receptors Bmpr2 and Acvr2 within the BMP Receptor Complex.** B. Tajer[1], M.C. Mullins[1]; [1]Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B803/P3509 **WITHDRAWN**

B804/P3510 ***Caenorhabditis elegans* BMP Signaling Determines Body Size Via Transcriptional Regulation of Collagen Genes.** U. Madaan[1], E. Yzeiraj[1], M. Meade[1], C. Rushlow[2], C. Savage-Dunn[1]; [1]Biology, Queens College and the Graduate Center, Flushing, NY, [2]Biology, New York University, New York, NY

B805/P3511 **Determination of Novel BMP-Smad1/5 Signaling Interactions in Fibrodysplasia Ossificans Progressiva.** R. Allen[1], M.C. Mullins[1], E. Shore[1]; [1]Developmental Stem cell and Regenerative Biology, University of Pennsylvania, Philadelphia, PA

B806/P3512 **Expression pattern and potential role of placental *Psg* genes in sex-specific immune response during pregnancy.** D. Jeong[1], J. Lee[1], M. Kim[1]; [1]Anatomy Embryology, Yonsei University College of Medicine, Seoul, South Korea

B807/P3513 **Role of HAND1 in collagen expression and post-translational modifications in the long bone.** Y. Taga[1], L.E. Laurie[2], H. Kokubo[3,4], Y. Saga[3,5], M. Kusubata[1], K. Ogawa-Goto[1], S. Hattori[1], N. Funato[2,6]; [1]Nippi Research Institute of Biomatrix, Ibaraki, Japan, [2]Department of Signal Gene Regulation, Tokyo Medical and Dental University (TMDU), Tokyo, Japan, [3]Division of Mammalian Development, National Institute of Genetics, Shizuoka, Japan, [4]Department of Cardiovascular Physiology and Medicine, Hiroshima University, Hiroshima, Japan, [5]Department of Genetics, Graduate University for Advanced Studies, Shizuoka, Japan, [6]Research Core, Tokyo Medical and Dental University (TMDU), Tokyo, Japan

B808/P3514 ***Tbx1* knockout mice exhibit dysregulated expression of genes associated with cleft palate in humans.** N. Funato[1,2], D. Srivastava[3], H. Yanagisawa[4]; [1]Department of Signal Gene Regulation, Tokyo Medical and Dental University (TMDU), Tokyo, Japan, [2]Research Core, Tokyo Medical and Dental University (TMDU), Tokyo, Japan, [3]Gladstone Institute of Cardiovascular Disease, University of California, San Francisco, CA, [4]Life Science Center of Tsukuba Advanced Research Alliance, University of Tsukuba, Tsukuba, Japan

B809/P3515 **Delineation of neuro-ontogenic mechanisms of schizophrenia using induced Pluripotent Stem Cells (iPSCs).** L. Bayona Chuye[1], A. Dimitri[1], S.T. Narla[1], C. Benson[1], S. Dhiman[1], P. Sarder[1], E.K. Stachowiak[1], M.K. Stachowiak[1]; [1]Pathology and Anatomical Sciences, State University of New York at Buffalo, Buffalo, NY

B810/P3516 **The Formin, DIAPH1, Contributes to Epidermal Structure and Differentiation By Enabling Basal Keratinocyte Crowding.** R.M. Harmon[1], M.L. Gardel[1]; [1]Institute of Biophysical Dynamics, University of Chicago, Chicago, IL

B811/P3517 **Role of ROOT UVB SENSITIVE 1 in Vitamin B6 Homeostasis Modulation.** N. O'Neil[1], H. Tong[1], C. Leasure[1], S. Reveles Jr.[1], Z. He[1]; [1]Department of Biology, San Francisco State University, San Francisco, CA

B812/P3518 **On the male disadvantage: generation and characterization of a male specific mouse model of bronchopulmonary dysplasia.** G. Turcatel[1,2], S. Ieguizamon[2], K. Millette[3], C. Dinkel[2], A. Shim[2], M. Thornton[4], A. Asif [2], N. Noe[2], H. Lee[5], L. Bartolin [6], B. Grubbs[4], D. Warburton[1,2], W. Shi[1,2]; [1] Keck School of Medicine, University of Southern California, Los Angeles, CA, [2]Surgery, Children's Hospital of Los Angeles, Los Angeles, CA, [3]Endo-Diabetes Obesity Program, Children's Hospital of Los Angeles, Los Angeles, CA, [4]Department of Obstetrics and Gynecology, Maternal-Fetal Medicine Division, Keck School of Medicine, University of Southern California, Los Angeles, CA, [5]Biological Science Department, Biola University, La Mirada, CA, [6]Centre de Recherche en Cancérologie de LYON, LYON, France

B813/P3519 **Sox2 inhibits lef1 expression in the trailing zone to facilitate FGF-dependent neuromast formation.** G.R. Palardy[1], K. Yoo[2], A.B. Chitnis[1]; [1]Aquatic Models of Human Development, National Institute of Child Health and Human Development, Bethesda, MD, [2] Department of Biology, Chungnam National University, Daejeon, Korea, South

B814/P3520 **Low-level copper exposure causes neurodevelopmental and cardiac defects in the embryonic zebrafish.** A. Shields[1], K. Figueroa[1], J. Pagnotta[1], K. Michalak[1], A.L. Dell[1,2]; [1]Biology, St. Francis College, Brooklyn, NY, [2]Neuroscience, Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA

B815/P3521 **Endoderm Nitric Oxide Focally Elevated "Hotspots" at the Heart Forming Regions (HFRs) Signals in Early Cardiogenesis in Chicken Embryos.** D. Shah[1], W.F. Denetclaw[1]; [1]Biology, San Francisco State University, San Francisco, CA

Cell Fate Determination

B816/P3522 **Mechanical cues control alveolar epithelial cell differentiation.** J. Li[1], Z. Wang[1], Q. Chu[1], K. Jiang[1], J. Li[1], N. Tang[1]; [1]National Institute of Biological Sciences, Beijing, Beijing, China

B817/P3523 **Metalloprotease activity shapes BMP signaling output in the developing zebrafish embryo.** F. Tuazon[1], M. Mullins[1]; [1]Cell & Developmental Biology, University of Pennsylvania, Philadelphia, PA

B818/P3524 **Loss of function of Seven-In-Absentia (SINA) E3 ligase impedes proper RAS signaling and alters peripheral nervous system (PNS) development in *Drosophila*.** R.E. Van Sciver[1], Y. Cao[1], A.U. Ahmed[2], A.H. Tang[1,2]; [1]Microbiology and Molecular Cell Biology, Eastern Virginia Medical School, Norfolk, VA, [2]Department of Surgery, Mayo Clinic, Rochester, MN

B819/P3525 **Different role of YAP1 during early and late stages of mesenchymal cells differentiation.** B. Jung[1], J. Kim[1], D. Kim[1], J. Sonn[1]; [1]Biology, Kyungpook National University, Daegu, South Korea

B820/P3526 **A new transgenic Xenopus reporter line reveals dynamic expression of snail2 during cranial neural crest development.** A. Makhija[1], M. Perfetto[1,2], J. Wang[1], J. Li[2], A. Shah[3], H. Tran[4], K. Vleminckx[4,5], S. Wei[1,2]; [1]Biological Sciences, University of Delaware, Newark, DE, [2]Biology, West Virginia University, Morgantown, WV, [3]Biology, University of Virginia, Charlottesville, VA, [4]Molecular Biomedical Research, Flanders Institute for Biotechnology, Ghent, Belgium, [5]Biomedical Molecular Biology, Ghent University, Ghent, Belgium

B821/P3527 **Enhanced Wnt signaling in Mesenchymal stem cells can induce cell differentiation but reduce cell viability.** H. Lee[1], Y. Shen[1], S. Chen[1], J. Lee[1]; [1]Bioagricultural Sciences, National Chiayi University, Chiayi, Taiwan

B822/P3528 **Six3 suppression of R-spondin 2-Wnt signaling is required during mammalian neuroretina development.** N. Takata[1], D. Abbey[2,3], L. Fiore[1], S. Acosta[1], R. Feng[2], H. Gil[1], A. Lavado[2], X. Geng[2,4], A. Interiano[2], G. Neale[5], M. Eiraku[6], Y. Sasai[7], G. Oliver[1]; [1]Medicine nephrology, Feinberg Cardiovascular Research Institute, Chicago, IL, [2]Department of Genetics, St. Jude Children's Research Hospital, Memphis, TN, [3]Division of Translational Medicine and Human Genetics Perelman School of Medicine, Pennsylvania University, Philadelphia, PA, [4]Cardiovascular Biology Research Program, Oklahoma Medical Research Foundation, Oklahoma, OK, [5]Hartwell Center for Bioinformatics and Biotechnology, St. Jude Children's Research Hospital, Memphis, TN, [6] Laboratory for in vitro Histogenesis, RIKEN Center for Developmental Biology, Kobe, Japan, [7]Laboratory for Organogenesis and Neurogenesis, RIKEN Center for Developmental Biology, Kobe, Japan

B823/P3529 **Epithelial-mesenchymal micro-niches integrate signaling effectors to drive dynamic chromatin remodeling during stem cell lineage choices.** H. Yang[1], R.C. Adam[1], Y. Ge[1], Z.L. Hua[1], W. Lien[2], P. Wang[3], Y. Zhao[3], L. Polak[1], J. Levorse[1], S.C. Baksh[1], D. Zheng[3], E. Fuchs[1]; [1]Laboratory of Mammalian Development and Cell Biology, The Rockefeller University, New York, NY, [2]de Duve Institute, Université Catholique de Louvain, Brussels, Belgium, [3]Department of Genetics, Albert Einstein College of Medicine, Bronx, NY

B824/P3530 **The Tumor Suppressor p53 Mediated Apoptotic Pathway Plays An Essential Role in HSF4 Regulation of Lens Fiber Cell Differentiation.** D.W. Li[1]; [1]Zhongshan Ophthalmic Center, Sun Yat-sen University, Guangzhou, China

B825/P3531 **The Impact of Flame Retardant Exposures on Human Pregnancy.** K.A. Puckett[1,2], J.F. Robinson[1], H. Chen[1], S.J. Fisher[1], K. Ona[1]; [1]Obstetrics Gynecology/ Center for Reproductive Science, University of California, San Francisco, San Francisco, CA, [2]Department of Biology, San Francisco State University, San Francisco, CA

B826/P3532 **Cell fate under N-acyl dopamines control: to die or to differentiate?** M.G. Akimov[1], A.M. Ashba[1], N.M. Gretskaya[1], V.V. Bezuglov[1]; [1]Laboratory of Oxylipins, Shemyakin-Ovchinnikov Institute of Bioorganic Chemistry, RAS, Moscow, Russia

B827/P3533 **The tumor suppressor Lkb1 controls cell fate through pyruvate-alanine transamination.** A.G. RADU[1,2], S. Torch[1,2], F. Fauvelle[3], P. Hainaut[2], L. Larue[4], C. Thibert[2,5], M. Billaud[5,6]; [1]cofirst authors, Grenoble, France, [2]Tumor molecular pathology and biomarkers, Institute for Advanced Biosciences, INSERM/UJF U1209, Grenoble, France, [3]MRI Facility IRMage, Grenoble Neurosciences Institut, INSERM/CEA U817, Grenoble, France, [4]Normal and Pathological Development of Melanocytes, Institut Curie, CNRS UMR3347; INSERM U1021, Orsay, France, [5]co-senior and co-corresponding authors, Grenoble, Lyon, France, [6]Centre de Recherche en Cancerologie, Université Claude Bernard Lyon I, INSERM 1052, CNRS 5286, Lyon, France

B828/P3534 **High accuracy prediction of cell meiosis by measuring the expression of carbohydrate metabolism enzymes.** Y. Liu[1], E. Wood[1], O. Miranda[1], P. Kositangool[1], A. Doncic[1]; [1]Cell biology, The University of Texas-Southwestern Medical Center, Dallas, TX

B829/P3535 **A Collagen Based 3D Model of Pulmonary Fibrosis.** B. Hindman[1], Q. Ma[1]; [1]Receptor Biology Laboratory, TMBB, HELD, National Institute of Occupational Safety and Health, Centers for Disease Control and Prevention, Morgantown, WV

B830/P3536 **Understanding programming logic of motor neurons from differentiated and undifferentiated cells.** G. Garipler[1], S.E. Vidal[2], M. Stadtfeld[2], E.O. Mazzoni[1]; [1]Department of Biology, New York University, New York, NY, [2]The Helen L. and Martin S. Kimmel Center for Biology and Medicine, Skirball Institute of Biomolecular Medicine, Department of Cell Biology, NYU School of Medicine, New York, NY

Host-Pathogen/Host-Commensal Interactions 2

B832/P3537 **Molecular mechanisms of sterol transfer in intracellular coral-algal symbiosis.** E.A. Hambleton[1], I. Maegele[1], N. Bechtoldt[1], A. Guse[1]; [1]Centre for Organismal Studies, Heidelberg University, Heidelberg, Germany

B833/P3538 **Type III interferon signaling affects *Cryptosporidium parvum* infection of human intestinal epithelial cells.** A.R. Gibson[1,2], B. Striepen[1,2], A. Sateriale[1]; [1]Center for Tropical and Emerging Global Diseases, University of Georgia, Athens, GA, [2]Cellular Biology, University of Georgia, Athens, GA

B834/P3539 **A possible role for unconventional splicing enzymes in nonreplicative recombination of poliovirus.** A.A. Shishova[1], I. Dyugay[1]; [1]biochemistry, Institute of Poliomyelitis and Viral Encephalitis, Moscow, Russia

B835/P3540 **Non-silencing miRNAs promotes autophagic viral degradation by inhibiting retroviral Gag assembly.** N. Qu[1], C.J. Krueger[1,2], A.K. Chen[1]; [1]Department of Biomedical Engineering, College of Engineering, Peking University, Beijing, China, [2]Wallace H Coulter Department of Biomedical Engineering, Georgia Institute of Technology, Atlanta, GA

B836/P3541 **Fulicin-like immunoreactivity in *Biomphalaria glabrata*, an intermediate host for schistosomiasis.** M.W. Miller[1], A. Hernandez Vazquez[1], M.B. Rodriguez[1], S. Rolon[1], L.O. Vaasjo[1], P. Mendez de Jesus[1], M. Rosa Casillas[1]; [1]Institute of Neurobiology, University of Puerto Rico Medical Sciences Campus, San Juan, PR

B837/P3542 **Identification of inflammatory biomarkers in dengue disease severity in eastern India.** A. Patro[1], B. Prusty[1], S. Gaikwad[1], D. Singh[1], S. Mohanty[2], B. Das[2], B. Ravindran[1]; [1]Infectious Disease Biology Group, Institute of Life Sciences, Bhubaneswar, India, [2]Medicine, SCB Medical College, Cuttack, India

B838/P3543 **The pathogenic yeast, *Cryptococcus neoformans*, alters the transcriptome of host macrophages.** L.M. Sircy[1], K.D. Cunningham[2], R.L. Seipelt-Thiemann[1], E.E. McClelland[1], D.E. Nelson[1]; [1]Biology, Middle Tennessee State University, Murfreesboro, TN, [2]Chemistry, Middle Tennessee State University, Murfreesboro, TN

B839/P3544 **Role of Viperin Interaction with Human Cytomegalovirus Tegument Protein pp28 in Virion Assembly.** J. Lee[1], H. Jeon[1], J. Seo[1]; [1]Severance Biomedical Science Institute, Brain Korea 21 PLUS Project for Medical Science, Yonsei University College of Medicine, Seoul, Korea, South

B840/P3545 **Computational analyses of the ExoS protein, a component of *Sinorhizobium meliloti* ExoR-ExoS/ ChvI pathway.** E. Wiech[1], H. Cheng[2], S.M. Singh[1]; [1]Biology, Brooklyn College, City University of New York, Brooklyn, NY, [2]Biological Sciences, Lehman College, City University of New York, Bronx, NY

B841/P3546 **SERINC5 Inhibits HIV-1 Fusion Pore Formation by Promoting Functional Inactivation of Env Glycoproteins.** M. Marin[1], C. Sood[1], A. Chande[2], M. Pizzato[2], G.B. Melikian[1,3]; [1]Pediatrics, Emory University, Atlanta, GA, [2]Centre for Integrative Biology, University of Trento, Trento, Italy, [3]Children's Healthcare of Atlanta, Atlanta, GA

TUESDAY

B842/P3547 **Behavioral Response of Caenorhabditis elegans with Pseudomonas aeruginosa Infection Controlled by Iron Variables.** Q.N. Robinson[1], R.E. McFarlane[1], J.A. Jordan[1]; [1]Department of Biology, Clayton State University, Morrow, GA

B843/P3548 **Multiple Epstein-Barr viral microRNAs downregulate human NF-kB pathway transcripts.** L. Parsley[1], D. Kolakada[1,2], K. Riley[1]; [1]Department of Chemistry, Rollins College, Winter Park, FL, [2]Immunology Microbiology, University of Colorado Denver, Denver, CO

B844/P3549 **Adhesion of Providencia stuartii onto Cultured Bladder Epithelial Cells.** N. Kurmasheva[1], M. Sharipova[1], A. Mardanova[1]; [1]Institute of Fundamental Medicine and Biology, Kazan (Volga region) Federal University, Kazan, Russia

B845/P3550 **Viperin exerts antiviral function against Junín mammarenavirus at different subcellular localizations.** M.L. Morell[1], J.R. Peña Cárcamo[1], C.A. Vázquez[1], S. Vatansever[2], A.S. Upadhyay[3], A.K. Överby[3], S.M. Cordo[1], C.C. García[1]; [1]Biochemistry Department, Antiviral Strategies Laboratory, School of Sciences-University of Buenos Aires, Buenos Aires, Argentina, [2]Graduate School of Science and Engineering, Koc University, Istanbul, Turkey, [3]Department of Clinical Microbiology, Laboratory for Molecular Infection Medicine Sweden (MIMS), Umeå University, Umeå, Sweden

Organ/Disease Biology and Therapeutic Targets 2

B847/P3551 **Synaptopodin-2, a novel promyogenic marker required for the development of sarcomeric Z-disk in zebrafish.** N. Margam[1], F. Kai[2], V. Rajan[1], J.N. Berman[1,3], R. Duncan[1,3,4]; [1]Microbiology and Immunology, Dalhousie University, Halifax, NS, [2]Department of Surgery, University of California, San Francisco, San Francisco, United States, [3]Department of Pediatrics, Dalhousie University, Halifax, NS, [4]Biochemistry and Molecular Biology, Dalhousie University, Halifax, NS

B848/P3552 **Role of metavinculin in actin reorganization and force transmission.** H.T. Lee[1], L.Y. Kim[2], M. Sarker[1], M. Lu[1], G.M. Alushin[2], K. Burridge[3], S.L. Campbell[1]; [1]Biochemistry and Biophysics, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Cell Biology and Physiology, NHLBI, Bethesda, MD, [3]Cell Biology and Physiology, University of North Carolina at Chapel Hill, Chapel Hill, NC

B849/P3553 **Altered cardiac expression of genes involved in iron metabolism is driven by an iron-independent process in heart failure.** J. Petrak[1], M. Krijt[2], D. Vyoral[2], M. Behounek[1], V. Melenovsky[3]; [1]BIOCEV, First Faculty of Medicine, Charles University, Prague, Czech Republic, [2]Institute of Hematology and Blood Transfusion, Prague, Czech Republic, [3]Department of Cardiology, Institute for Clinical and Experimental Medicine, Prague, Czech Republic

B850/P3554 **Analysis of fusion-related genes in ethanol-treated C2C12 muscle cells.** M.E. Boyle[1], C. Brough[1], O.M. Kielbasa[1]; [1]Biology Program, Department of Science and Mathematics, Alvernia University, Reading, PA

B851/P3555 **SNP analysis of a mixed population reveals associations with osteoarthritis.** H. Xia[1], T. Hua[1], J.L. Myers[2], M.Y. Caballero[1], J. Park[3], S. Valtier[3], G.J. Chaudry[1]; [1]Center for Advanced Molecular Detection, 59 Medical Wing, San Antonio, TX, [2]Medicine, University of Texas Health Science Center, San Antonio, TX, [3]Science and Technology, 59 Medical Wing, San Antonio, TX

B852/P3556 **Cell Size and Nuclear Scaling Relationships in Multinucleated Muscle Fibers.** S.E. Windner[1], A. Manhart[2], A. Mogilner[2], M.K. Baylies[1]; [1]Developmental Biology, Memorial Sloan Kettering Cancer Center, New York, NY, [2]Courant Institute, New York University, New York, NY

B853/P3557 **Genes Differentially Expressed During Reversion of Androgen-Dependent Skeletal Muscle Atrophy.** M.D. Gomes[1], F.A. Flavia A. Guarnier[2], L.B. Figueiredo[3], L.S. Zaramela[1], R.O. Godinho[3], P.O. Coelho[1]; [1]Biochemistry and Immunology, Ribeirão Preto Medical School, University of São Paulo, Ribeirao Preto, Brazil, [2]Laboratory of Pathophysiology and Muscle Adaptation, State University of Londrina, Londrina, Brazil, [3]Pharmacology, Escola Paulista de Medicina, Universidade Federal de São Paulo, Sao Paulo, Brazil

B854/P3558 **High throughput screening to identify mechanisms regulating endothelial fatty acid uptake.** A. Ibrahim[1], Z.P. Arany[1]; [1]Cardiovascular Institute, University of Pennsylvania, Philadelphia, PA

B855/P3559 **Determining the role of endothelial Notch signaling in vascular regeneration in the mouse hindlimb ischemia model.** J. Hyun[1], K. Pajcini[1], A.B. Malik[1]; [1]Pharmacology, University of Illinois at Chicago, Chicago, IL

B856/P3560 **Optogenetic stimulation of pericytes lacking alpha smooth muscle actin produces a decrease in capillary blood flow in the living mouse brain.** D.A. Hartmann[1], R.I. Grant[1], S.A. Harrill[1,2], T. Noonan[1,2], A.Y. Shih[1]; [1]Neuroscience, Medical University of South Carolina, Charleston, SC, [2]Undergraduate Biology, College of Charleston, Charleston, SC

B857/P3561 **The necroptosis machinery in normal gut development, and in the pathogenesis of neonatal necrotizing enterocolitis (NEC).** A.D. Werts[1], E. Banfield[2], M. Ladd[3], W. Fulton[3], C. Gosztyla[3], B. Johnson[3], L. Martin[3], H. Jia[3], P. Lu[3], T. Prindle[3], Y. Yamaguchi[3], J. Sung[3], C. Sodhi[3], D.J. Hackam[3]; [1]Molecular and Comparative Pathobiology, Johns Hopkins University, Baltimore, MD, [2]Human Genetics, Johns Hopkins University, Baltimore, MD, [3]Surgery, Johns Hopkins University, Baltimore, MD

B858/P3562 **Levels of CSF amyloid-β 40 and 42 are decreased in amyloid PET (-) normal pressure hydrocephalus patients.** Y. Kim[1], H. Kim[2], T. Kim[1], T. Yim[2], J. Chang[1]; [1]Department of Biomedical Sciences, Ajou University School of Medicine, Suwon, Korea, South, [2]Department of Neurology, Ajou University School of Medicine, Suwon, Korea, South

B859/P3563 **Control of high-fat-diet induced obesity by the mouse mSeg1 salivary protein.** M. Hu[1], Y. Bai[1], J. Wang[1], Z. Yang[2], S. Ye[3], J. Chen[1], J. Peng[1]; [1]college of animal science, Zhejiang University, HangZhou, China, [2]Model Animal Research Center, Nanjing Biomedical Research Institute, Nanjing University, HangZhou, China, [3]Life Sciences Institute, Zhejiang University, HangZhou, China

B860/P3564 **Intermittent hypoxia induces inflammation in 3T3-L1 adipocytes by stabilization of hypoxia-inducible factor 1α (HIF-1α).** J.S. Poblete[1,2], M. Alghothani[1], S. Bao[1], U.J. Magalang[1,3,4]; [1]Davis Heart and Lung Research Institute, The Ohio State University Wexner Medical Center, Columbus, OH, [2]College of Medicine, University of the Philippines Manila, Manila, Philippines, [3]Division of Pulmonary, Allergy, Critical Care and Sleep, Department of Internal Medicine, The Ohio State University Wexner Medical Center, Columbus, OH, [4]Department of Neuroscience, The Neurological Institute, The Ohio State University Wexner Medical Center, Columbus, OH

B861/P3565 **Mapping renal molecular signatures identifies unique cellular and matrix targets within the mammalian kidney.** H.H. Ward[1,2], J.M. Young[2,3], V.J. Yao[1,2], M. Cardo Vila[1,2], J.S. Uzarski[4], J.A. Wertheim[4,5], W. Arap[1,2], R. Pasqualini[1,2], A. Wandinger-Ness[1,6]; [1]Comprehensive Cancer Center, University of New Mexico, Albuquerque, NM, [2]Internal Medicine, University of New Mexico, Albuquerque, NM, [3]Molecular Genetics Microbiology, University of New Mexico, Albuquerque, NM, [4]Comprehensive Transplant Center, Northwestern University Feinberg School of Medicine, Chicago, IL, [5]Department of Surgery, Jesse Brown VA Medical Center, Chicago, IL, [6]Pathology, University of New Mexico, Albuquerque, NM

B862/P3566 **GENERATION OF AN EGFR ISOFORM D SPECIFIC KNOCKOUT MODEL.** N. Maihle[1], S. Yee[2], T. Ackley[3], G. Gronowicz[4], C. Dealy[5]; [1]Georgia Cancer Center, Augusta University, Augusta, GA, [2]Cell Biology, University of Connecticut Health Center, Farmington, CT, [3]Pharmacy, University of Connecticut, Storrs, CT, [4]Surgery, University of Connecticut Health Center, Farmington, CT, [5]Reconstructive Sciences, University of Connecticut Health Center, Farmington, CT

Therapies: Design and Mechanisms for Normal and Diseased Organs 2

B863/P3567 **Effects of rho-associated protein kinase inhibitor Y-27632 on scarring formation after glaucoma filtration surgery.** J. Ko[1], D.G. Ibrahim[1], Y. Kiuchi[1]; [1]Ophthalmology, Hiroshima University, Hiroshima, Japan

B864/P3568 **Metformin ameliorates progressive nephritis in a mouse model of Alport syndrome.** S. Kaseda[1,2], K. Omachi[1,2], T. Yokota[2], J. Kuwazuru[2], M. Kamura[1,2], K. Teramoto[1,2], H. Kojima[2], M. Suico[2], T. Shuto[2], S. Otsuki[3], H. Kai[1,2]; [1]Leading program HIGO, Kumamoto University, Kumamoto, Japan, [2]Molecular Medicine, Kumamoto University, Kumamoto, Japan, [3]Pharmaceutical Microbiology, Kumamoto University, Kumamoto, Japan

B865/P3569 **Beneficial effect of midazolam against vascular endothelial growth factor-induced vascular leakage in the retinas of diabetic mice.** J. LEE[1], Y. Lee[1], H. Jeon[1], Y. Kim[1], K. Ha[1]; [1]Molecular and Cellular Biochemistry, Kangwon national university school of medicine, Chuncheon, South Korea

B866/P3570 **Protective effects of chrysin on visual cycle impairment in diabetic retina.** M. Kang[1]; [1]Food Science and Nutrition, Hallym University, Chuncheon, South Korea

B867/P3571 **Protective effect of cysteamine against vascular leakage by inhibiting VEGF-induced transglutaminase activation in diabetic mice.** Y. Lee[1], J. LEE[1], H. Jeon[1], K. Ha[1], Y. Kim[1]; [1]molecular and cellular biochemistry, kangwon national universit school of medicine, chucheon, South Korea

B868/P3572 **Chrysin inhibits advanced glycation end products-associated glomerulosclerosis in glucose-exposed mesangial cells and db/db mice.** L. Eun Jung[1], Y. Kang[1]; [1]Food Science and Nutrition, Hallym University, Chuncheon, South Korea

B869/P3573 **Upregulation of glucose uptake by (+) lariciresinol, a lignan isolated from Rubia philippinensis, through the activation of AKT and AMPK/GLUT4 pathway in C2C12 cells.** J. Ra[1], H. An[1], J. Lim[1], S. Lee[1]; [1]Food Science and Biotechnology, Kyungpook National University, Daegu, South Korea

B870/P3574 **Upregulation of the GLUT4 expression by Spatholobus suberectus extracts via the activation of AMPK and AKT signaling and mitigates the type II diabetic symptoms.** P. Zhao[1], M. Alam[1], M. Ju[1], K.Y. Gyung[1], S. Lee[1], H. Kim[1], S. Lee[1]; [1]Food Science and Biotechnology, Kyungpook National University, Daegu, South Korea

B871/P3575 **WITHDRAWN**

B872/P3576 **Increased C-reactive protein (CRP) by placenta-derived mesenchymal stem cells is involved in angiogenesis and Wnt signaling pathway in hepatic failure model.** J. Jun[1], J. Choi[2], J.J. Kim[1], S. Bae[3], S. Hwang[4]; [1]Biomedical Science, CHA University, Seongnam-si, South Korea, [2]Dermatology, Northwestern University, Chicago, IL, [3]Internal Medicine, Catholic University Medical College, Seoul, South Korea, [4]Internal Medicine, CHA University, Seongnam-si, South Korea

B873/P3577 **Hypoxic preconditioned human bone marrow–derived mesenchymal stromal cell therapy in a rat model of renal ischemia-reperfusion injury.** M. Jang[1], D. You[2], J. Park[2], K. Kim[2], N. Suh[3], H. Shin[4], Y. Kim[4], C. Kim[2]; [1]Life Sciences, Asan Medical Center, Seoul, South Korea, [2]Urology, Asan Medical Center, Seoul, South Korea, [3]Pharmaceutical Engineering, Soon Chun Hyang University, Chungnam, South Korea, [4]Reseach, Pharmicell Co.Ltd, Gyeonggi, South Korea

B874/P3578 **Efficacy analysis of functional enhancement human mesenchymal stem cells depends on gene delivery systems.** J.J. Kim[1], J. Choi[2], S. Lee[3], S. Jin[1], J. Jun[1], G. Kim[1]; [1]Department of Biomedical Science, CHA University, Seongnam-si, South Korea, [2]Department of Dermatology, Northwestern University, Chicago, IL, [3]Department of Oral Pathology, Gangneung-Wonju National University, Gangneung-si, South Korea

B875/P3579 **Attenuation of UVB-induced skin senescence by Nypa fruticans bud extract: involvement of the suppression of MMP activity through downregulation of NF□B & AP1 signaling via the activation of MAP kinase.** H. Choi[1], H. Son[1], C. Jeong[1], H. Lee[1], S. Lee[1]; [1]Food Science and Biotechnology, Kyungpook National University, Daegu, South Korea

B876/P3580 **Mushroom anti-tyrosinase activities of Nymphaea nouchali flower extract attenuates melanogenesis in vitro and in vivo: involvement of cAMP/p-CREB, MAPKinase and proteasomal degradation machinery.** M. ALAM[1]; [1]Food Science and Biotechnology, Kyungpook National University, Daegu, South Korea

B877/P3581 **Attenuation of melanogenesis by jineol through the activation of MAP-Kinase mediated suppression of MITF and its downregulating proteins and the proteasomal degradation of tyrosinase.** Y. Cha[1], M. ALAM[1], P. Zhao[1], J. Byeon[1], S. Lee[1]; [1]Food Science and Biotechnology, Kyungpook National University, Daegu, South Korea

B878/P3582 **Cytoprotective properties of triphenylphosphonium derivatives of oligopeptide.** R. Akhmadishina[1], R. Garifullin[1], M. Kamalov[1], T. Abdullin[1]; [1]Institute of Fundamental Medicine and Biology, Kazan Federal University, Kazan, Russia

B879/P3583 **Jabuticaba peel extract favors the recovery of fertility and antioxidant activity in the testicle of high-fat-fed aging mice.** L. Cuquetto-Leite[1], C.A. Lamas[1], C. Collares-Buzato[2], M. Maróstica Jr[3], C.B. Cazarin[3], V.H. Cagnon[1], M.H. Dolder [1]; [1]Department of Structural and Functional Biology, University of Campinas, Campinas, Brazil, [2]Department of Biochemistry and Tissue Biology, University of Campinas, Campinas, Brazil, [3]Department of Food and Nutrition, Faculty of Food Engineering, University of Campinas, Campinas, Brazil

B880/P3584 **Zebrafish modeling defines complex innate immune mechanisms in sepsis and repetitive intestinal injury.** L. Chuang[1], N. Hsu[1], P. Labrias[1], S. Nayar[1], J. Facey [1], K. Gettler[2], N. Villaverde [1], G. Boschetti [3], M.A. Mucci [1], E. Chen[1], M. Giri [1], Y. Sharma[1], M. Merad [3], J. Chu[4], J. Cho [1]; [1]Department of Genetics and Genomic Sciences,, Icahn School of Medicine at Mount Sinai, NEW YORK, NY, [2]Department of Genetics, Yale University, NEW HAVEN, CT, [3]Department of Oncological Sciences, Icahn School of Medicine at Mount Sinai, NEW YORK, NY, [4]Department of Pediatrics and Mindich Institute for Child Health, Icahn School of Medicine at Mount Sinai, NEW YORK, NY

B881/P3585 **Hepatocyte exosomes are anti-fibrotic in the liver.** L. Chen[1], R. Chen[1], S. Kemper[1], D.R. Brigstock[1,2]; [1]Nationwide Children's Hospital, Columbus, OH, [2]The Ohio State University, Columbus, OH

B882/P3586 **Gomisin N inhibits an early stage of adipogenesis in 3T3-L1 preadipocytes.** M. Jung[1]; [1]School of Korean Medicine, Pusan National University, Yangsan, South Korea

B883/P3587 **Shockwaves decrease PPARgamma and suppress adipocyte differentiation.** W. Cho[1], M. Jeong[1], Y. Park[1]; [1]Molecular Medicine, Ewha Womans University, Medical School, Seoul, South Korea

NOTES