Tuesday Poster Session
ASCB Learning Center, Exhibit Halls A-C

Poster Set Up
Monday 6:00–6:30 pm

Posters Displayed
Monday 6:30–8:00 pm
Tuesday 7:30 am–3:00 pm

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

Poster Tear Down
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 ASCB LEARNING CENTER AFTER 4:00 PM. NO EXCEPTIONS!**

Board Numbers	Session Titles
B200-B217	Single Molecule and Super-Resolution in New Imaging Technologies
B218-B231	New Techniques in Proteomics
B232-B246	New Techniques in Mechanobiology
B248-B271	Actin and Actin-Associated Proteins 3
B272-B293	Regulation of Actin Dynamics 2
B295-B299; B300-B309	Kinesins 2
B310-B326	Dynein
B328-B344	Tubulin and Associated Proteins
B345-B360	Microtubule Dynamics and Its Regulation 2
B361-B389	Ciliary Formation and Trafficking
B401-B426	Cytokinesis 2
B427-B435	Chromosome Organization in Meiosis
B436-B454	Spindle Assembly 3
B455-B472	Kinetochore Assembly and Functions 3
B474-B489; B500-B514	Cancer Therapy 3
B515-B525	Cancer Stem Cells
B526-B538	Oncogenes and Tumor Suppressors 3
B539-B554	Regulators of Invasion and Metastasis
B556-B571; B900-B904	Chromatin and Chromosome Organization
B905-B916	Epigenetics and Chromatin Remodeling
B918-B927	Nuclear Lamina and Laminopathies
B928-B950	Nucleocytoplasmic Transport
B952-B970	Vesicle Docking and Fusion
B971-B987	Endosomes, Lysosomes, and Lysosome-Related Organelles 2
B1000-B1009	Membrane Fission and Coat Proteins
B1011-B1033	Polarity in the Development of Tissues and Organisms
B1035-B1050	The Synapse
B1052-B1065	Establishing and Maintaining Organelle Structure 2
B1066-B1087	Mitochondria, Chloroplasts, and Peroxisomes 3
B1100-B1109	Rho-Family GTPases
B1110-B1125	Kinases and Phosphatases 2
B1126-B1140	Signaling Receptors (RTKs and GPCRs) 2
B1141-B1165	Mechanotransduction 2
B1200-B1211	Dynamics of Focal Adhesions and Invadosomes
B1212-B1226	Chemotaxis and Directed Cell Migration
B1228-B1245	Cell-Cell Junctions 2
B1246-B1261	Bioengineering of Cell-Matrix Interactions
B1263-B1273	Regulation of Aging
B1274-B1289; B1300-B1306	Autophagy
B1308-B1316	Chemical Approaches to Cell Biology
B1318-B1330	Embryogenesis 2
B1331-B1344	Cytoskeleton in Tissue Development and Morphogenesis
B1345-B1356	Cell Fate Determination 2
B1357-B1371; B1400-B1409	Stem Cells and Pluripotency
B1411-B1429	Host-Pathogen/Host-Commensal Interactions 2
B1431-B1450	Immune System
B1451-B1465	Defining Therapeutic Targets and New Therapeutics 2
B1466-B1487	Muscle Structure, Function, and Disease

2016 Meeting 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 (specific time slot is included in the original poster notification emails sent on November 2). 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 is not responsible for any items left in the ASCB Learning Center.
- Cameras/Photography: Cameras and all other recording devices are strictly prohibited in all session rooms, in the ASCB Learning Center, and in all poster and oral presentation sessions.

Single Molecule and Super-Resolution in New Imaging Technologies

B200/P1657 **Resolving the molecular architecture of the NPC with 3D super-resolution fluorescence microscopy.** V. Jimenez-Sabinina[1], M. Bates[2], A.B. Szymborska[3], B. Nijmeijer[1], S. Mosalaganti[4], M. Beck[4], S.W. Hell[2], J. Ellenberg[1]; [1]Cell Biology and Biophysics Unit, European Molecular Biology Laboratory, Heidelberg, Germany, [2]NanoBiophotonics Department, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany, [3]Max Delbrück Center for Molecular Medicine, Berlin, Germany, [4]Structural and Computational Biology Unit, European Molecular Biology Laboratory, Heidelberg, Germany

B201/P1658 **Fast TCSPC Based Superresolution Microscopy Optimized for Hz Image Frame Rates with High Photon Throughput.** B. Kraemer[1], P. Reisch[1], M. Sackrow[1], S. Orthaus-Mueller[1], S. Tannert[1], O. Schulz[1], F. Koberling[1], P. Tan[2], E. Lemke[2], R. Erdmann[1]; [1]PicoQuant GmbH, Berlin, Germany, [2]Cell Biology and Biophysics Unit, EMBL, Heidelberg, Germany

B202/P1659 **Spectrally resolved super-resolution fluorescence microscopy.** K. Xu[1]; [1]Department of Chemistry, University of California, Berkeley, Berkeley, CA

B203/P1660 **3D Imaging of Whole Unstained Cells at Super-resolution – a laboratory scale cryo soft X-ray tomography microscope.** F. O Reilly[1,2], K. Fahy[2], T. McEnroe[2], J. Howard[2], R. Byrne[2], A. Mahon[2], O. Hammad[2], P. Dunne[1], G. O Sullivan[1], E. Sokell[1], P. Sheridan[2]; [1]School of Physics, University College Dublin, Dublin, Republic of Ireland, [2]SiriusXT, Dublin, Republic of Ireland

B204/P1661 **Defining caveolae and scaffolds by computational network analysis of particle localization super-resolution microscopy.** I. Khater[1], F. Meng[2], I.R. Nabi[2], G. Hamarneh[1]; [1]School of Computing Science, Simon Fraser University, Vancouver, BC, [2]Cellular Physiological Sciences, Life Sciences Institute, University of British Columbia, Vancouver, BC

B205/P1662 **SERS-STORM: A Super-Resolution Imaging Technique that Chemically Differentiates Bacterial Cell Surfaces.** K.B. Spies[1], A.C. Browning[1], P. Soneral[1], N.C. Lindquist[2]; [1]Department of Biological Sciences, Bethel University, St. Paul, MN, [2]Department of Pysics, Bethel University, St. Paul, United States

B206/P1663 **Two-color fast scanning STED microscopy of live bacteria cells.** C.J. Comerci[1], S. Saurabh[2], A.M. Perez[3,4], L. Shapiro[4], W.E. Moerner[2]; [1]Biophysics, Stanford University, Stanford, CA, [2]Chemistry, Stanford University, Stanford, CA, [3]Biology, Stanford University, Stanford, CA, [4]Developmental Biology, Stanford University School of Medicine, Stanford, CA

B207/P1664 **Superresolution imaging of Drosophila tissues using expansion microscopy.** N. Jiang[1], H. Kim[2], T. Chozinsk[2], J. Azpurua[3], B.A. Eaton[3], J. Vaughan[2], J.Z. Parrish[1]; [1]Department of Biology, University of Washington, Seattle, WA, [2]Department of Chemistry, University of Washington, Seattle, WA, [3]Department of Physiology, University of Texas Health Science Center at San Antonio, San Antonio, TX

B208/P1665 **Pair correlation analysis of Fixed Photoactivatable Localization Microscopy (PALM) and Powerspectral Analysis of Live PALM applied on the Water Channel Aquaporin-3.** E.C. Arnspang[1,2,3], P. Sengupta[1,4], H.H. Jensen[5], U. Hahn[6], I.T. Andersen[6], E.B. Jensen[6], K. Mortensen[7], J. Lippincott-Schwartz[1,4], L.N. Nejsum[3]; [1]The Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, United States, [2]Department of Chemical Engineering, Biotechnology and Environmental Technology, University of Southern Denmark, Odense, Denmark, [3]Department of Clinical Medicine and Interdisciplinary Nanoscience Center, Aarhus University, Aarhus, Denmark, [4]Janelia Research Campus, Ashburn, United States, [5]Department of Molecular Biology and Genetics, Aarhus University, Aarhus, Denmark, [6]Department of Mathematics, Aarhus University, Aarhus, Denmark, [7]Department of Micro- and Nanotechnology, Technical University of Denmark, Copenhagen, Denmark

B209/P1666 **Engineering nanobodies for super-resolution imaging and native protein complex isolation.** T. Pleiner[1], M. Bates[2], S. Trakhanov[1], C.T. Lee[3], J.E. Schliep[4], H. Chug[1], M. Böhning[1], H. Stark[4], H. Urlaub[3], D. Görlich[1]; [1]Cellular Logistics, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany, [2]NanoBiophotonics, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany, [3]Bioanalytical Mass Spectrometry, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany, [4]Structural Dynamics, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany

B210/P1667 **Quantitative analysis of the 3D spatial organization of cells and organelles.** J. Chen[1], D. Dedham[1], A. Walter[1], R. Wercberger[1], J. Kuhn[1], M.A. Le Gros[1,2], A. Basbaum[1], C.A. Larabell[1,2]; [1]Anatomy, University of California San Francisco, San Francisco, CA, [2]Molecular Biophysics Integrated Bioimaging, Lawrence Berkeley National Laboratory, Berkeley, CA

B211/P1668 **Single Molecule Tracking of Ace1p In *Saccharomyces cerevisiae* defines a characteristic residence time for non-specific interactions of transcription factors with chromatin.** G.D. Mehta[1], D.A. Ball[1], R. Salomon-Kent[1], D. Mazza[2], T. Morisaki[3], F. Mueller[4], J.G. McNally[5], T.S. Karpova[1]; [1]Laboratory of Receptor Biology and Gene Expression, National Institutes of Health, Bethesda, MD, [2]Centro di Imaging Sperimentale e Università Vita-Salute San Raffaele, Istituto Scientifico Ospedale San Raffaele, Milano, Italy, [3]Department of Biochemistry and Molecular Biology, Colorado State University, Colorado, CO, [4]Computation Imaging and Modeling Unit, CNRS, Institut Pasteur, Paris, France, [5]Helmholtz Center Berlin, Berlin, Institute for Soft Matter and Functional Materials, Berlin, Germany

B212/P1669 **Imaging molecular order of dynamic cytoskeletal assemblies in live cells with single molecule sensitivity.** S.B. Mehta[1], M. McQuilken[2], H. Ishii[1], P. La Riviere[3], P. Occhipinti[2], R. Oldenbourg[1], A.S. Gladfelter[1,2,4], T. Tani[1]; [1]Eugene Bell Center for Regenerative Biology Tissue Engineering, Marine Biological Laboratory, Woods Hole, MA, [2]Department of Biological Sciences, Dartmouth College, Hanover, NH, [3]Department of Radiology, University of Chicago, Chicago, IL, [4]Department of Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC

B213/P1670 **Real-time subcellular localization reveals hidden intraflagellar transport mechanisms.** A.P. Kovacs[1], J.M. Kessler[1], J. Li[2], H. Lin[3], S.K. Dutcher[3], Y. Wang[1,4]; [1]Physics, Washington University in St. Louis, St. Louis, MO, [2]D. E. Shaw Research, New York, NY, [3]Genetics, Washington University in St. Louis, St. Louis, MO, [4]Physics, Princeton University, Princeton, NJ

B214/P1671 **Atomic force microscopic (AFM) imaging of cytoskeleton in retinal photoreceptor cells in cryosection.** E. Usukura[1], A. Narita[1], A. Yagi[2], S. Ito[2], J. Usukura[1]; [1]Structural Biology Center, Nagoya University, Nagoya, Japan, [2]Olympus Corporation, Hachioji, Japan

B215/P1672 **A genetically-directed, photostable fluoromodule for sub-diffraction imaging and single protein tracking in live bacteria.** S. Saurabh[1], A.M. Perez[2], C.J. Comerci[3], L. Shapiro[2], W.E. Moerner[1]; [1]Chemistry, Stanford University, Stanford, CA, [2]Developmental Biology, Stanford University, Stanford, CA, [3]Biophysics, Stanford University, Stanford, CA

B216/P1673 **Detecting and quantifying single molecules of RNA at the single cell level.** M.M. Soruco[1], T. Okamoto[1], A.V. Orjalo[1], B. Meluch[1], R.H. Yin[1], J.M. Kaplunov[1], H.E. Johansson[1]; [1]Genomics, LGC Biosearch Technologies, Petaluma, CA

B217/P1674 **Novel in vitro imaging techniques for understanding mTORC1 signaling.** K. Cho[1], E. Sydir[1], R. Lawrence[1], R. Zoncu[1]; [1]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA

New Techniques in Proteomics

B218/P1675 **Application specific antibody validation. The Human Protein Atlas validation scheme and how to confirm subcellular protein localization.** L. Björk[1], C. AitBlal[1], T.L. Alm[1], A. Bäckström[1], C. Gnann[1], M. Hjelmare[1], R. Schutten[1], M. Skogs[1], C. Stadler[1], M. Uhlén[1], E. Lundberg[1]; [1]School of Biotechnology, Science for Life Laboratory, KTH—Royal Institute of Technology, Stockholm, Sweden

B219/P1676 **Purification of Intra-Mitotic Subpopulations from Asynchronous Cells Enables Global Identification of Anaphase Promoting Complex/ Cyclosome (APC/C) Substrates and Their Degradation Timing.** T. Ly[1], R. Pippa[1], A. Whigham[2], R. Clarke[2], A. Lamond[1]; [1]Centre for Gene Regulation and Expression, University of Dundee, Dundee, United Kingdom, [2]Centre for Advanced Scientific Technologies, University of Dundee, Dundee, United Kingdom

B220/P1677 **Improving Split Fluorescent Proteins for Endogenous Protein Labeling.** S. Feng[1,2], S. Sekine[1], V. Pessino[1,3], B. Huang[1]; [1]Department of Pharmaceutical Chemistry, University of California in San Francisco, San Francisco, CA, [2]Graduate Program in Bioengineering, University of California in Berkeley-UCSF, Berkeley-San Francisco, CA, [3]Graduate Program in Biophysics, University of California in San Francisco, San Francisco, CA

B221/P1678 **Understanding New Aspects of the Mechanism and Biomarkers of Pyrazinamide Resistance in Mycobacterium Tuberculosis.** D. Rueda[1], P. Sheen[1], C. Bernard[2], M. Santos[1], L. Gandy[2], F. Brossier[2], V. Pando-Robles[3], C. Batista[4], N. Veziris[2], W. Sougakoff[2], M. Zimic[1]; [1]Departamento de Ciencias Celulares y Moleculares, Universidad Peruana Cayetano Heredia, Lima, Peru, [2]Centre d'Immunologie et des Maladies Infectieuses, Université Pierre et Marie Curie, Paris, France, [3]Centro de Investigación Sobre Enfermedades Infecciosas, Instituto Nacional de Salud Pública, Cuernavaca, Mexico, [4]Laboratorio Universitario de Proteómica, Universidad Nacional Autónoma de Mexico, Mexico DF, Mexico

B222/P1679 **Mass-spectrometry of single mammalian cells quantifies proteome heterogeneity during lineage specification.** N. Slavov[1,2,3], B. Budnik[4], E. Levy[3]; [1]Bioengineering, Northeastern University, Boston, MA, [2]Proteomics, Broad Institute, Boston, MA, [3]Biology, Northeastern University, Boston, MA, [4]Systems Biology, Harvard University, Cambridge, MA

B223/P1680 **A complete removal of genomic DNAs from cell lysate enhances the quality of protein research.** S. Hong[1], A. Law[1], H. Horita[1], K. Middleton[1]; [1]RD, Cytoskeleton, Inc., Denver, CO

B224/P1681 **Novel Neuron Types and Anatomical Organization of the Striatum Revealed by Single-Cell RNA-Seq.** G.M. Stanley[1], O. Gokce[2], B. Treutlein[3], S. Quake[1], T.C. Sudhof[4]; [1]Bioengineering, Stanford University, Stanford, CA, [2]Institute for Stroke and Dementia Research, Ludwig-Maximilians-Universitat, Munich, Germany, [3]Department of Evolutionary Genetics, Max Planck Institute for Evolutionary Anthropology, Leipzig, Germany, [4]Molecular and Cellular Physiology, Stanford University, Stanford, CA

B225/P1682 **Analyzing mutations in human γD crystallin using high-throughput thermal stability shift assays.** I.A. Mills-Henry[1], C. O'Neil[1], K. Piasta[2], M.S. Kosinski-Collins[2]; [1]Chemistry and Food Science, Framingham State University, Framingham, MA, [2]Biology, Brandeis University, Waltham, MA

B226/P1683 **The Affinity Binder Knockdown Initiative.** T.L. Alm[1], E. Lundberg[1], M. Uhlén[1]; [1]School of Biotechnology, KTH Royal Institute of Technology, Stockholm, Sweden

B227/P1684 **Proteome-wide cell cycle characterization from fluorescent microscopy images of asynchronous cells.** D.P. Sullivan[1], D. Mahdessian[1], E. Lundberg[1], M. Uhlén[1]; [1]Biotechnology, Science for Life Laboratory (KTH), Stockholm, Sweden

B228/P1685 **Laser capture microdissection and microproteomics: a novel method to study the proteomes of cell protrusions.** K. Gousset[1], A. Gordon[1], S. Kannan[1]; [1]Biology, California State University, Fresno, Fresno, CA

B229/P1686 **Identification of local GPCR protein networks with sub-minute temporal resolution using proteomics and proximity labeling.** B. Lobingier[1], R. Hüttenhain[2], K. Eichel[1], A. Ting[3], N. Krogan[2], M. von Zastrow[1]; [1]Psychiatry, UCSF, San Francisco, CA, [2]Cellular and Molecular Pharmacology, UCSF, San Francisco, CA, [3]Genetics, Stanford University, Stanford, CA

B230/P1687 **Antibody verification by protein immunoprecipitation and mass spectrometry (IP-MS) demonstrates enrichment of antibody targets and interacting proteins.** G.K. Potts[1], B.B. Patel[1], L.A. Foster[1], J. Bucci[1], A. Behling[1], J.C. Rogers[1]; [1]Protein and Cell Analysis, Thermo Fisher Scientific, Rockford, IL

B231/P1688 **A multiplex quantitative analysis of secreted proteins in bronchoalveolar lavage samples from war veterans with chronic respiratory symptoms.** H. Xia[1], J.L. Myers[1], M.Y. Caballero[1], S. Valtier[1], A.J. Skabelund[2], M.J. Morris[2], G.J. Chaudry[1]; [1]Center for Advanced Molecular Detection, Science Technology, 59 Medical Wing, JBSA-Lackland, TX, [2]Pulmonary/Critical Care, San Antonio Military Medical Center, JBSA-Ft. Sam Houston, TX

New Techniques in Mechanobiology

B232/P1689 **Tracking Real Time Cell-Cell, Cell-Matrix and Cell-Biomolecule Interactions during 3D Cell Migration in a Microfluidic Platform.** S. Lim[1], A. Pavesi[1], C. Kuan[1]; [1]AIM Biotech, Singapore, Singapore

B233/P1690 **Nano-networks of Staphylococcus aureus on hydrophobic micropillars.** Z. Jahed[1], H. Shahsavan[2], M. Verma[2], J. Rogowski[2], B. Seo[2], B. Zhao[2], T. Tsui[2], F. Gu[2], M. Mofrad[1]; [1]Bioengineering, University of California Berkeley, Berkeley, CA, [2]Department of Chemical Engineering, University of Waterloo, Waterloo, ON

B234/P1691 **Response of shape and orientation to cyclic stretch stimulation in cardiomyocytes.** C. Nihei[1], T. Kaneko[1]; [1]Frontier Bioscience, LaRC, Graduate School of Science and Engineering, Hosei University, Koganei, Japan

B235/P1692 **Development of cardiotoxicity testing using chick heart tissue pieces on the multi electrode array system.** Y. Kamei[1], T. Mitsui[2], T. Kaneko[1]; [1]Frontier Biosciences, Hosei University, Tokyo, Japan, [2]Department of Physics and Mathematics, Aoyama University, Kanagawa, Japan

B236/P1693 **Development of a multi-sided polydimethylsiloxane cell growth surface using 3-D printing technology.** E. Amaro Gonzalez[1], M. Connolly[1], A. Parrillo[2], R.M. Bellin[1]; [1]Biology, College of the Holy Cross, Worcester, MA, [2]Alpert Medical School, Brown University, Providence, RI

B237/P1694 **Development of new cardiac toxicity testing system to drug discovery.** M. Maruyama[1], T. Kaneko[1]; [1]Frontier Bioscience, Hosei Univ., Tokyo, Japan

B238/P1695 **Efficient protein patterning of polyacrylamide hydrogels using photoresist lift-off.** A.K. Denisin[1,2], J. Moeller[1], J. Sim[1], R.E. Wilson[1], A.J. Ribeiro[1], B.L. Pruitt[1,3,4]; [1]Mechanical Engineering, Stanford University, Stanford, CA, [2]Bioengineering, Stanford University, Stanford, CA, [3]Molecular and Cellular Physiology, Stanford University, Stanford, CA, [4]Stanford Cardiovascular Institute, Stanford University, Stanford, CA

B239/P1696 **Direct visualization of multinucleated giant cell formation.** J.J. Faust[1,2], W. Christenson[3,4], K. Doudrick[5], R. Ros[3,4], T.P. Ugarova[1,2]; [1]Center for Metabolic and Vascular Biology, Mayo Clinic, Scottsdale, AZ, [2]Molecular and Cellular Biology, Arizona State University, Tempe, AZ, [3]Department of Physics, Arizona State University, Tempe, AZ, [4]Center for Biological Physics, Arizona State University, Tempe, AZ, [5]Department of Civil and Environmental Engineering, University of Notre Dame, Notre Dame, IN

B240/P1697 **Spatiotemporal control of intracellular phase transitions using light-activated Optodroplets.** Y. Shin[1], J.M. Berry[2], N. Pannucci[3], M.P. Haataja[2], J.E. Toettcher[3], C.P. Brangwynne[1]; [1]Chemical and biological engineering, Princeton University, Princeton, NJ, [2]Mechanical Engineering, Princeton University, Princeton, NJ, [3]Molecular Biology, Princeton University, Princeton, NJ

B241/P1698 **Applying A Novel Force Measurement Method Particle Drag Force (PDF) to Quantify Stress Fiber-Independent Traction Forces at Sub-pN Scale.** M. Pittman[1], S. Park[1], Y. Chen[1]; [1]Mechanical Engineering, Johns Hopkins University, Baltimore, MD

B242/P1699 **Change of beating rate on single cardiomyocytes by focused infrared laser irradiation.** M. Ishii[1], T. Kaneko[1]; [1]Department of Frontier Bioscience, Hosei University, Tokyo, Japan

B243/P1700 **Magnetic 3D bioprinting for generating spheroids in high-throughput.** G.R. Souza[1,2], P. Desai[1], H. Tseng[1,2], J. Gage[1], W. Haisler[1]; [1]Nano3D Biosciences, Inc., Houston, TX, [2]Department of Internal Medicine, Division of Oncology, University of Texas Health Science Center at Houston, Houston, TX

B244/P1701 **Assessment of the biocompatibility of silk-nitride composites with applications as biosensors and osteogenic differentiation on silk films as a potential treatment for bone defects.** M. Dittmar[1], F. Giginis[1], E. Schmidt[1], Y. Xue[2], D. Jao[2], J. Scully[1], X. Hu[2], C. Iftode[1]; [1]Biological Sciences, Rowan University, Glassboro, NJ, [2]Physics and Astronomy, Rowan University, Glassboro, NJ

B245/P1702 **Numerical Determination of Wall Shear Stress in Red Blood Cell Membranes.** P. Cabrales[1], V.P. Jani[1], A. Lucas [1], . Munoz [1]; [1]Bioengineering, University of California San Diego, La Jolla, CA

B246/P1703 **Mapping cell-to-cell variations in power-law rheology investigated by multifrequency force modulation atomic force microscopy.** M. Sawano[1], R. Tanaka[1], R. Takahashi[1], K. Kurubayashi-Shigetomi[1], A. Subagyo[1], K. Sueoka[1], T. Okajima[1]; [1]Hokakido University, Sapporo, Japan

Actin and Actin-Associated Proteins 3

B248/P1704 **Characterizing the interaction between microtubule-binding protein, CLIP-170, and actin.** Y.O. Wu[1,2], E.O. Alberico[1], A.G. Madey[1], R.A. Miller[1], E.J. Jonasson[1], H.V. Goodson[1,2]; [1]Chemistry and Biochemistry, University of Notre Dame, Notre Dame, IN, [2]Integrated Biomedical Sciences, University of Notre Dame, Notre Dame, IN

B249/P1705 **Actin and microtubule crosstalk mediate persistent polarized growth.** S. Wu[1], M. Bezanilla[1]; [1]Biology, University of Massachusetts Amherst, Amherst, MA

B250/P1706 **Understanding cellular shape modulation and motility – the Actin associated human proteome.** D.P. Sullivan[1], E. Lundberg[1], M. Uhlén[1]; [1]Biotechnology, Science for Life Laboratory (KTH), Stockholm, Sweden

B251/P1707 ***Dictyostelium* mechanics accurately identifies new targetable drug space for pancreatic cancer delineated by myosin IIs, filamins, and α-actinins, collectively comprising the mechanobiome.** A. Surcel[1], E. Schiffhauer[1], D. Thomas[1], Q. Zhu[2], R.A. Anders[2], D.N. Robinson[1]; [1]Department of Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD, [2]Department of Pathology, Johns Hopkins University School of Medicine, Baltimore, MD

B252/P1708 **Myosin IIA and Myosin IIB play distinct roles in metastasis progression of triple-negative breast cancer.** H. Park[1], C. Choi[1], D.M. Helfman[1]; [1]Biological Sciences, Korea Advanced Institute of Science and Technology, Deajeon, Korea, South

B253/P1709 **Molecular Simulations of Acto-Myosin Network Dynamics.** G.A. Papoian[1], J. Komianos[1], A. Chandrasekaran[1]; [1]Chemistry and Biochemistry, University of Maryland, College Park, MD

B254/P1710 **Effects of size and shape on the actomyosin network contractile response.** I. Scarfone[1], A. Michelot[2], C. Campillo[3], M. Théry[1,4], L. Blanchoin[1,4]; [1]CytoMorpho Lab, Biosciences Biotechnology Institute of Grenoble, LPCV, CEA, Grenoble, France, [2]IBDM, Aix Marseille Univ, CNRS, Marseille, France, [3]LAMBE, Université d'Evry Val d'Essonne, Paris Evry, France, [4]Institut Universitaire d'Hematologie, CytoMorpho Lab, Hôpital Saint Louis, Paris, France

B255/P1711 **LSP-1 is a myosin-IIA binding regulator of podosome dynamics and macrophage migration and invasion.** P. Cervero[1], C. Wiesner[1], A. Booissou[2], I. Maridonneau-Parini[2], S. Linder[1]; [1]Institute for Medical Microbiology, Virology and Hygiene, University Medical Center Eppendorf, Hamburg, Germany, [2]CNRS UMR 5089, Institut de Pharmacologie et de Biologie Structurale, Toulouse, France

B256/P1712 **Non-Muscle Myosin 2 Filament Assembly by Grouped Expansion of Myosin Later than Initial Nucleation (GrEMLIN).** J.R. Beach[1], K.S. Bruun[1], L. Shao[2], D. Li[2], Z. Swider[1], K. Remmert[1], Y. Zhang[3], M.A. Conti[3], R.S. Adelstein[3], N.M. Rusan[3], E. Betzig[2], J.A. Hammer[1]; [1]Cell Biology and Physiology Center, NHLBI, Bethesda, MD, [2]Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA, [3]Laboratory of Molecular Cardiology, NHLBI, Bethesda, MD

B257/P1713 **Intermediate filament and Plakin family function in the morphogenesis of actin-based microridges in zebrafish.** Y. Inaba[1], V. Chauhan[1], A. Sagasti[1]; [1]Department of Molecular, Cell and Developmental Biology,, University of California, Los Angeles, Los Angeles, CA

B258/P1714 **Non-muscle Myosin II and Rho Kinase play distinct roles in microridge formation and maintenance, sometimes in a single pathway, sometimes in opposition.** A.P. van Loon[1], A. Sagasti[1]; [1]MBI, University of California, Los Angeles, Los Angeles, CA

B259/P1715 **Impaired muscle relaxation and mitochondrial fission associated with genetic ablation of cytoplasmic ß- or γ-actin.** A.R. ORourke[1], A. Lindsey[2], M.D. Tarpey[3], B.J. Perrin[4], E.E. Spangenburg[3], J.M. Ervasti[5]; [1]Department of Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN, [2]Physical Medicine and Rehabilitation, University of Minnesota, Minneapolis, MN, [3]Physiology, East Carolina University, Greenville, NC, [4]Biology, Indiana University-Purdue University Indianapolis, Indianapolis, IN, [5]Biochemistry, Molecular Biology, and Biophysics, University of Minnesota, Minneapolis, MN

B260/P1716 **Atomic force microscopic (AFM) imaging of muscle sarcomere at high resolution.** E. Usukura[1], A. Narita[1], A. Yagi[2], S. Itoh[2], J. Usukura[1]; [1]Structural Biology Center, Nagoya University, Nagoya, Japan, [2]Olympus Corporation, Tokyo, Japan

B261/P1717 **Nebulette – Highway connecting actin to desmin in heart cells.** G.M. Conover[1], H. Herrmann[2]; [1]Biochemistry and Biophysics, Texas AM University, College Station, TX, [2]Molecular Genetics, German Cancer Research Center (DKFZ), Heidelberg, United States

B262/P1718 **Nucleus-dependent sarcomere assembly is mediated by the LINC complex.** A.L. Auld[1], E.S. Folker[1]; [1]Biology, Boston College, Chestnut Hill, MA

B263/P1719 **The Nuclear Function of Tes, an Actin-Binding LIM Protein.** R. Vaccaroli[1], M. Catillon[1], I. Kesisova[1], E. Hadzic[2], A. Halavatyi[2], E. Schaffner-Reckinger[1], C. Ampe[3], M. Koffa[4]; [1]Cytoskeleton cell plasticity, University of Luxembourg, Esch-sur-Alzette, Luxembourg, [2]Cell Biology and Biophysics Unit, EMBL, Heidelberg, Germany, [3]Department of Biochemistry, University of Ghent, Ghent, Belgium, [4]Department of Molecular Biology and Genetics, Democritus University of Thrace, Xanthi, Greece

B264/P1720 **CD2AP in actin-mediated endosome trafficking.** I.R. Veland[1,2], D. Sumpton[1], N.R. Paul[1], D.M. Bryant[1,3], L.M. Machesky[1,3]; [1]The Cancer Research UK Beatson Institute, Glasgow, United Kingdom, [2]BRIC, University of Copenhagen, Copenhagen, Denmark, [3]MVLS, Glasgow University, Glasgow, United Kingdom

B265/P1721 **Cyclophilin A is a novel leading edge protein, regulator of bacterial invasion and crucial component for Listeria cell-to-cell spreading.** A.S. Dhanda[1], K.E. Warren[1], J.A. Guttman[1]; [1]Biological Sciences, Simon Fraser University, Burnaby, BC

B266/P1722 **SM22 (Transgelin) plays a functional role in bacteria-induced actin-rich structures.** M.D. Chua[1], K.J. Hipolito[1], J.A. Guttman[1]; [1]Biological Sciences, Simon Fraser University, Burnaby, BC

B267/P1723 **The actin cytoskeleton of the filamentous fungi *Aspergillus fumigatus* is resistant to F-actin stabilizing compounds.** L.L. LeClaire[1], J.R. Fortwendel[2]; [1]Biochemistry and Molecular Biology, University of South Alabama, Mobile, AL, [2]Clincal Pharmacy, University of Tennessee Health Center, Memphis, TN

B268/P1724 **The actin homologue Glucokinase-1 forms actin-like filaments in S. cerevisiae, modulating its enzymatic activity.** P.R. Stoddard[1], Q.A. Justman[2], J.M. Kollman[3], E.C. Garner[2], A.W. Murray[2]; [1]MCO, Harvard University, Cambridge, MA, [2]Center for Systems Biology, Harvard University, Cambridge, MA, [3]Department of Biochemistry, University of Washington, Seattle, WA

B269/P1725 **Profilins suppress the apoptosis induced by cytoskeletal 15kDa-β-actin in cancer cell lines.** N. Ito[1], H. Honda[1], S. Tone[1], M. Tanaka[1]; [1]Life Science and Engineering, Tokyo Denki University, Hatoyama-Machi, Japan

B270/P1726 **Single actin filament elongation rate and length fluctuations in the presence of profilin.** B.G. Horan[1], D. Vavylonis[1]; [1]Physics, Lehigh University, Bethlehem, PA

B271/P1727 **ZBP1 expression is necessary for the epithelial function of MDCK cells.** J.L. Davis[1], H.Ü. Mücahit[1], B.G. Ayee[1], G.F. Weber[1], A.J. Rodriguez[1]; [1]Biological Sciences, Rutgers University, Newark, NJ

Regulation of Actin Dynamics 2

B272/P1728 **How Spire enhances actin assembly by the formin Capu.** C.L. Vizcarra[1,2], A.O. Bradley[1], H. Yoo[1], J. Walsh[1], M.E. Quinlan[1]; [1]Chemistry and Biochemistry, UCLA, Los Angeles, CA, [2]Chemistry, Barnard College, New York, NE

B273/P1729 **A Novel Actin Filament Sliding and Compaction Mechanism Jointly Catalyzed by Srv2/CAP and its Interacting Partner Abp1.** S. Guo[1], B.L. Goode[1]; [1]Department of Biology, Brandeis University, Waltham, MA

B274/P1730 **Dynamical changes of actin filaments of fibroblast and surrounding collagen fibers in 3D collagen gel culture.** R. Takabayashi[1], T. Kihara[1]; [1]Faculty and graduate School of Environmental Engineering, The university of kitakyusyu, Kitakyusyu, Japan

B275/P1731 **Intranuclear actin-based motility drives nuclear envelope disruption during baculovirus egress.** T. Ohkawa[1], M.D. Welch[1]; [1]Molecular and Cell Biology, University of California Berkeley, Berkeley, CA

B276/P1732 **Cell migration speed is defined by actin mRNA coding sequence.** P. Vedula[1], S. Kurosaka[1], A. Kashina[1]; [1]Biomedical Sciences, University of Pennsylvania, Philadelphia, PA

B277/P1733 **Remodeling of the F-actin Cytoskeleton in Response to Plasma Membrane Attack by Pore-Forming Toxins.** J. Lam[1], S.M. Seveau[1]; [1]Department of Microbial Infection and Immunity, The Ohio State University, Columbus, OH

B278/P1734 **Pathogenic *E. coli* manipulate intracellular actin to drive extracellular motility and cell-to-cell spread.** K.B. Velle[1], K.G. Campellone[1]; [1]Molecular and Cell Biology, University of Connecticut, Storrs, CT

B279/P1735 **Alp7A reveals conserved features of actin-based plasmid segregation.** N.A. Petek[1], A.I. Derman[2], J. Royal[2], J. Pogliano[2], R.D. Mullins[1]; [1]CMP, University of California, San Francisco, San Francisco, CA, [2]University of California, San Diego, La Jolla, CA

B280/P1736 **Form and Function: Distinct Actin Architectures and Nucleators for the Epithelial Plasticity Programs of Embryonic Stem Cell Differentiation and Epithelial to Mesenchymal Transition.** F.M. Aloisio[1], M. Rana[1], D.L. Barber[1]; [1]Department of Cell and Tissue Biology, University of California, San Francisco, San Francisco, CA

B281/P1737 **G1P3, a mitochondrial antiapoptotic protein augments breast cancer cell metastasis through ROS-mediated actin remodeling.** J. Kaur[1], A.F. Khalel[1], N. Chowdhury[1], V. Cheriyath[1]; [1]Biological and Environmental Sciences, Texas AM University-Commerce, Commerce, TX

B282/P1738 **Deciphering the relationship between apical and basal actin fibers with contractile properties of micropatterned myoblasts.** C. Bruyere[1], S. Gabriele[1]; [1]Mechanobiology Soft Matter group, Interfaces and Complex Fluids Laboratory, Research Institute for Biosciences, CIRMAP, University of Mons, Mons, Belgium

B283/P1739 **Zinc regulates actin mesh formation in mouse oocyte via Spire2.** Y. Jo[1], N. Kim[1], S. Namgoong[1]; [1]Department of Animal Science, Chungbuk National University, Cheongju, Korea

B284/P1740 **WHAMM play essential roles in mouse meiotic spindle formation and migration by the controlling actin network near endoplasmic reticulum.** Y. Jo[1,2], S. Namgoong[1], N. Kim[1,2]; [1]Animal science, Chungbuk National University, Cheongju-si, Korea, South, [2]BrainKorea 21 Center for Bio-Resource Development, Chungbuk National University, Cheongju-si, Korea, South

B285/P1741 **Bidirectional Interplay between Vimentin Intermediate Filaments and Actin Stress Fibers.** Y. Jiu[1], P. Lappalainen[1]; [1]University of Helsinki, Institute of Biotechnology, Helsinki, Finland

B286/P1742 **Long-tailed class I myosins coordinate actin remodeling during Fc receptor-mediated phagocytosis.** S.R. Barger[1], S.K. Chandhoke[2], M.S. Mooseker[2], R.A. Flavell[3], M. Krendel[1], N.C. Gauthier[4]; [1]State University of New York Upstate Medical University, Syracuse, NY, [2]MCDB, Yale University, New Haven, CT, [3]Immunobiology, Yale University, New Haven, CT, [4]Istituto FIRC di Oncologia Molecolare (IFOM), Milan, Italy

B287/P1743 **Arginylation dynamically regulates leading edge beta actin during cell migration.** I. Pavlyk[1], A. Kashina[1]; [1]Department of Biomedical Sciences, University of Pennsylvania, Philadelphia, PA

B288/P1744 **Actomyosin network organization in contractile tissue depends on spatiotemporal regulation of myosin II activity.** A.C. Wirshing[1], E.J. Cram[1]; [1]Biology, Northeastern University, Boston, MA

B289/P1745 **Actin filament homeostasis, but not actin turnover, is critical for robust actomyosin ring contraction.** T. Chew[1], J. Huang[1], S. Palani[1], R. Sommese[2], A. Kamnev[1], Y. Gu[3], S. Oliferenko[3], S. Sivaramakrishnan[2], M. Balasubramanian[1]; [1]Warwick Medical School, University of Warwick, Coventry, United Kingdom, [2]Department of Genetics, Cell Biology, and Development, University of Minnesota, Twin Cities Minneapolis, MN, [3]Randall Division of Cell and Molecular Biophysics, King's College London, London, United Kingdom

B290/P1746 **Cellular events mediating extracellular trap formation in neutrophil-like granulocytes.** H.R. Thiam[1], S.L. Wong[2,3], D.D. Wagner[2,3,4], C.M. Waterman[1]; [1]National Heart Lung and Blood Institute, National Institute of Health, Bethesda, MD, [2]Program in Cellular and Molecular Medicine, Boston Children's Hospital, Boston, MA, [3]Department of Pediatrics, Harvard Medical School, Boston, MA, [4]Division of Hematology/Oncology, Boston Children's Hospital, Boston, MA

B291/P1747 **Calcium influx through CRAC channels controls actin organization and dynamics at the immune synapse.** C.A. Hartzell[1], K.I. Jankowska[2,3], J.K. Burkhardt[2,3], R.S. Lewis[1]; [1]Molecular and Cellular Physiology, Stanford University, Stanford, CA, [2]Pathology and Laboratory Medicine, Children's Hospital of Philadelphia Research Institute, Philadelphia, PA, [3]Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, PA

B292/P1748 **The regulation of N-WASP activity by phase separation.** L.B. Case[1], X. Zhang[1], J.A. Ditlev[1], M.K. Rosen[1]; [1]Department of Biophysics, UT Southwestern Medical Center, Dallas, TX

B293/P1749 **Characterizing novel ORFs in the regulation of the actin cytoskeleton and mitochondrial quality control during aging.** C.N. Sing[1], R. Higuchi-Sanabria[1,2], A.C. Coughlin[1], I.R. Boldogh[1], L.A. Pon[1]; [1]Pathology and Cell Biology, Columbia University, New York, NY, [2]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA

Kinesins 2

B295/P1750 **Motility and Microtubule Depolymerization Mechanisms of the Kinesin-8 motor, KIF19A.** D. Wang[1,2], R. Nitta[3], M. Morikawa[1,2], H. Yajima[1,2], S. Inoue[1,2], H. Shigematsu[3], M. Kikkawa[2], N. Hirokawa[1,2,4]; [1]Department of Molecular Structure and Dynamics, Graduate School of Medicine, the University of Tokyo, Tokyo, Japan, [2]Depatment of Cell Biology and Anatomy, Graduate School of Medicine, the University of Tokyo, Tokyo, Japan, [3]Center for Life Science Technology, RIKEN, Yokohama, Japan, [4]Center of Excellence in Genome Medicine Research, King Abdulaziz University, Jeddah, Saudi Arabia

B296/P1751 **Eg5 inhibitors have contrasting effects on microtubule stability and spindle integrity.** G. Chen[1], Y. Kang[1], A.S. Gayek[2], R. Ohi[2], W.O. Hancock[1]; [1]Biomedical Engineering, Pennsylvania State University, University Park, PA, [2]Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B297/P1752 **Mitotic motor CENP-E cooperates with PRC1 in temporal control of central spindle assembly.** W. Wang[1,2], X. Liu[1,2], P. Yao[1], X. Wang[2], H. Wang[2], X. Yao[1,2]; [1]Morehouse School of Medicine Georgia Cancer Coalition, Atlanta, GA, [2]2Anhui Key Laboratory for Cellular Dynamics Chemical Biology, Hefei, China

B298/P1753 **Regulation of the mitotic motor Eg5 by Casein Kinase 2 (CK2) suggests important pathway opposing small molecule cancer drug treatment in vitro and in cells.** D.E. Chapman[1], M. Mattson-Hoss[1], J. Xu[1], Y. Jun[1], J. Muretta[2], S. Rosenfeld[3], S.P. Gross[1]; [1]Developmental and Cell Biology, University of California Irvine, Irvine, CA, [2]Biochemistry, Molecular Biology, and Biophysics, University of Minnesota, Minneapolis, MN, [3]Cleveland Clinic, Cleveland, OH

B299/P1754 **Polar ejection force generation by the “non-motile” chromokinesin NOD.** A.A. Ye[1,2], T.J. Maresca[1,2]; [1]Molecular and Cellular Biology Graduate Group, University of Massachusetts Amherst, Amherst, MA, [2]Biology Department, University of Massachusetts Amherst, Amherst, MA

B300/P1755 **The stalk region of Kid is required to turn off the polar ejection force generation at anaphase, thereby facilitating chromosome segregation.** S. Soeda[1], K. Yamada-Nomoto[2], M. Ohsugi[1]; [1]Department of Life Sciences, Graduate School of Arts and Sciences, The University of Tokyo, Meguro-Ku, Tokyo, Japan, [2]Department of Obstetrics and Gynecology, The University of Toyama,, Toyama city, Toyama, Japan

B301/P1756 **Kinesin-1-dependent nucleus positioning is required for directed cell migration.** B. Latgé[1], P. Maiuri[1], B. Goud[1], K. Schauer[1]; [1]UMR144 Subcellular Structure and cellular Dynamics, Institut Curie, PSL Research University, CNRS, Paris, France

B302/P1757 **The role of Kinesin-II and Intraflagellar transport complex A (IFTA) in canonical Wnt signaling independent of their role in the cilium in Drosophila.** L.T. Vuong[1]; [1]) Department of Developmental and Regenerative Biology, Icahn School of Medicine at Mount Sinai, New York, United States

B303/P1758 **Multiple kinesin-14 family members provide the retrograde transport mechanism in plants.** M. Yamada[1], K. Ariga[1], Y. Tanaka-Takiguchi[1], M. Nishina[1], G. Goshima[1]; [1]Biological science, Nagoya University, Nagoya, Japan

B304/P1759 **A novel isoform of Drosophila non-muscle Tropomyosin interacts with Kinesin-1 and functions in mRNA localization.** D. Boggupalli[1], R. Veeranan-Karmegam[1], G. Liu[1], G.B. Gonsalvez[1]; [1]Cellular Biology and Anatomy, Medical College of Georgia, Augusta University, Augusta, GA

B305/P1760 **Microtubule-microtubule sliding by kinesin-1 is essential for normal cytoplasmic streaming in *Drosophila* oocytes.** W. Lu[1], M. Winding[1], M. Lakonishok[1], J. Wildonger[2], V.I. Gelfand[1]; [1]Department of Cell and Molecular Biology, Northwestern University Feinberg School of Medicine, Chicago, IL, [2]Department of Biochemistry, University of Wisconsin-Madison, Madison, WI

B306/P1761 **Kinetics of nucleotide-dependent structural transitions in the kinesin-1 mechanochemical cycle.** K.J. Mickolajczyk[1], W.O. Hancock[1]; [1]Biomedical Engineering, Penn State University, University Park, PA

B307/P1762 **Altered Mechanical Properties of Kinesins With Mutations That Cause Hereditary Spastic Paraplegia.** L. Prophete[1], C. Kelland[1], L. Thornton[1], K. Gilmore[1], T.M. Huckaba[1]; [1]Biology, Xavier University of Louisiana, New Orleans, LA

B308/P1763 **Direct measurement of the binding rate constant of kinesin to microtubules in living cells.** T. Kambara[1], Y. Okada[1]; [1]Quantitative Biology Center, RIKEN, Suita, Japan

B309/P1764 **KIF18B is regulated by distinct interactions in the 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

Dynein

B310/P1765 **Two Alternative Modes of Dynein Regulation by LIS1.** M.E. DeSantis[1], Z. Htet[1], M. Cianfrocco[1], P.T. Tran[1], A.E. Leschziner[1], S.L. Reck-Peterson[1]; [1]CMM, UCSD, La Jolla, CA

B311/P1766 **Mutations in dynein's stalk reveal hotspots that impact motility.** S. Niekamp[1], G. Bhabha[1], N. Zhang[2], R.D. Vale[2]; [1]Cellular and Molecular Pharmacology, University of California - San Francisco, San Francisco, CA, [2]Cellular and Molecular Pharmacology, University of California - San Francisco / HHMI, San Francisco, CA

B312/P1767 **Cooperative accumulation of processive dynein-dynactin complexes drives the clustering and focusing of microtubule minus-ends.** R. Tan[1], R.J. McKenney[1]; [1]Molecular and Cellular Biology, University of California - Davis, Davis, CA

B313/P1768 **Dynamics of cortical dynein in mitosis.** P. Wadsworth[1], H. Jordan[1]; [1]Biology, University of Massachusetts, Amherst, MA

B314/P1769 **Intracellular logistics of LIS1 and cytoplasmic dynein in lissencephaly.** M. Yamada[1]; [1]Molecular Bio-signaling, University of Fukui, Yoshida-gun, Fukui, Japan

B315/P1770 **A pathogenic dynactin variant suppresses cell migration by inhibiting integrin recycling.** T. Yeh[1], E. Kahney[1], T.A. Schroer[1]; [1]Biology, Johns Hopkins University, Baltimore, MD

B316/P1771 **Cortical dynein attachment molecule Num1 regulates dynein pulling mechanism based on its distribution at the cell cortex.** S. Omer[1], W. Lee[1]; [1]Biology, University of Massachusetts, amherst, Amherst, MA

B317/P1772 **She1 affects dynein motility through simultaneous and direct interactions between the microtubule and the dynein microtubule-binding domain.** K. Ecklund[1], L.G. Lammers[1], S.M. Markus[1]; [1]Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO

B318/P1773 **RILP is a stress-activated dynein recruitment factor required for mammalian autophagosome biogenesis, maturation and transport.** N.V. Khobrekar[1,2], R.B. Vallee[2]; [1]Department of Biological Sciences, Columbia University, New York, NY, [2]Department of Pathology and Cell Biology, Columbia University, New York, NY

B319/P1774 **Motor and Auto-Inhibitory Traits of Dynein-2 Reveal a Basis for Cyclic Intraflagellar Transport.** K. Toropova[1], M. Mladenov[1], A.J. Roberts[1]; [1]Institute of Structural Molecular Biology, Birkbeck, London, United Kingdom

B320/P1775 **Dynein destabilizes its microtubule track: evidence for regulating dynein transport through negative feedback.** C.E. Estrem[1], J.K. Moore[1]; [1]Cell and Development, University of Colorado Anshutz Medical Campus, Aurora, CO

B321/P1776 **Characterization of a mouse model carrying a CMT2O dynein heavy chain mutation.** S. Nandini[1], J. Conley[1], T. Sabblah[1], A. Ghersi[1], N. Wilson[1], R. Love[1], L. King[1], S.J. King[1]; [1]Burnett School of Biomedical Sciences, University of Central Florida, Orlando, FL

B322/P1777 **NMJ Analysis in a CMT2O Mouse Model with a Dynein Heavy Chain Mutation.** T.T. Sabblah[1], A. Ledray[1], J. Pasos[1], R. Love[1], S.J. King[1]; [1]Burnett School of Biomedical Sciences, University of Central Florida, Orlando, FL

B323/P1778 **Application of the fluctuation theorem to the non-invasive force measurement during the transport of pigment granules in melanocytes.** S. Hasegawa[1], K. Ikeda[2], T. Sagawa[3], Y. Okada[2,4], K. Hayashi[1,5]; [1]Tohoku University, Sendai, Japan, [2]Quantitative Biology Center, RIKEN, Suita, Japan, [3]Information and Communications Technology, Kobe, Japan, [4]The University of Tokyo, Tokyo, Japan, [5]AMED□PRIME, Tokyo, Japan

B324/P1779 **Regulation of the balance between microtubule plus-end localisation and minus-directed motion of human dynein.** R. Jha[1], J. Roostalu[1], M. Trokter[1], T. Surrey[1]; [1]Lincoln's Inn Fields Laboratory, The Francis Crick Institute, London, United Kingdom

B325/P1780 **Dynamic control of dynein localization in mitosis.** J.K. Monda[1,2], I.M. Cheeseman[1,2]; [1]Whitehead Institute for Biomedical Research, Cambridge, MA, [2]Biology, MIT, Cambridge, MA

B326/P1781 **Regulation of the Dynein Adaptor Bicaudal D2 and Its Role in Spinal Muscular Atrophy.** W. Huynh[1], R.D. Vale[1]; [1]Cellular and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA

Tubulin and Associated Proteins

B328/P1782 **An image-based view of the microtubule proteome.** F. Danielsson[1], M. Skogs[1], L. Åkesson[1], D. Mahdessian[1], D.P. Sullivan[1], P. Thul[1], M. Wiking[1], L. Björk[1], R. Schutten[1], C. AitBlal[1], M. Hjelmare[1], C. Gnann[1], M. Uhlén[1], E. Lundberg[1]; [1]Proteomics, KTH Royal Institute of Technology, Stockholm, Sweden

B329/P1783 **Effects of HDAC5 and aTAT1 expression on axon regeneration in adult neurons.** S. Lin[1], N. Sterling[1], I. Junker[1], G.M. Smith[1]; [1]Shriners Research Center for Neural Regeneration and Neural Rehabilitation, Temple University, Philadelphia, PA

B330/P1784 **Tau influences the stability of axonal microtubules in an unexpected fashion: implications for development and disease.** T.O. Austin[1], P.W. Baas[1], L. Qiang[1], D.C. Jean[2]; [1]Neurobiology and Anatomy, Drexel University College of Medicine, Philadelphia, PA, [2]American Association for the Advancement of Science, National Science Foundation, Washington, DC

B331/P1785 **Deregulation of tubulin polyglutamylation induces neurodegeneration.** M.M. Magiera[1,2,3,4], S. Bodakuntla[1,2,3,4], M. Lutz[5], A. Calas[6], T. Hausrat[7], P. Catarino Marques Sousa[1,2,3,4], M. Kneussel[7], M. Landry[6], T. Harkany[8], G.G. Kovacs[5], C. Janke[1,2,3,4]; [1]Universite Paris-Saclay, Saclay, France, [2]PSL Research University, Paris, France, [3]Genotoxic stress and cancer, CNRS, Orsay, France, [4]Genotoxic stress and cancer, Institut Curie, Orsay, France, [5]Institute of Neurology, Medical University, Vienna, Austria, [6]Interdisciplinary Institute for Neuroscience, Université Bordeaux/ CNRS UMR 5297, Bordeaux, France, [7]Zentrum für Molekulare Neurobiologie, University of Hamburg, Hamburg, Germany, [8]Department of Molecular Neurosciences, Center for Brain Research, Medical University, Vienna, Austria

B332/P1786 **Loss of RPGR glutamylation underlies the pathogenic mechanism of retinal dystrophy caused by TTLL5 mutations.** X. Sun[1], J.H. Park[2], A. Roll-Mecak[2], T. Li[1]; [1]NEI, NIH, Bethesda, MD, [2]NINDS, NIH, Bethesda, MD

B333/P1787 **Near-atomic cryo-EM structural studies of microtubules, microtubule-stabilizers, and microtubule-associated proteins.** E.H. Kellogg[1], S. Howes[2], N.M. Hejab[1], S. Ti[3], E. Ramírez-Aportela[4], P. Northcote[5], J.H. Miller[5], J. Díaz[6], K.H. Downing[1], T.M. Kapoor[3], P. Chacón[4], E. Nogales[1,7]; [1]Molecular Biophysics and Integrative Bioimaging, UC Berkeley, Berkeley, CA, [2]Molecular and Cellular Biology, Leiden University Medical Center, Leiden, Netherlands, [3]Chemical and Cell Biology, Rockefeller University, New York, NY, [4]Biological Physical Chemistry, Rocasolano Physical Chemistry Institute, Madrid, Spain, [5]Centre for Biodiscovery, Victoria University of Wellington, Wellington, New Zealand, [6]Chemical and Physical Biology, Centro de Investigaciones Biológicas, Madrid, Spain, [7]Howard Hughes Medical Institute, Berkeley, CA

B334/P1788 **The TOG protein STU2/ XMAP215 interacts with SUMO.** M. Greenlee[1], A. Alonso[1], M. Rahman[1], N. Meednu[2], S. Morris[1], R.K. Miller[1]; [1]Dept of Biochemistry, Oklahoma State University, Stillwater, OK, [2]Dept of Biology, University of Rochester, Rochester, NY

B335/P1789 **The role of multiple TOG domains in XMAP215/Dis1's MT polymerase function.** B.D. Cook[1], S. Nithianantham[1], J.M. Al-Bassam[1]; [1]Molecular and Cellular Biology, University of California, Davis, Davis, CA

B336/P1790 **Structural and biochemical characterization of CLASP TOGs.** S. Majumdar[1], L.M. Rice[1]; [1]Biophysics, UT Southwestern Medical Center, Dallas, TX

B337/P1791 **Arl4D acts with EB1 to regulate microtubule plus-end dynamics at the centrosome.** S.J. Lin[1], C.f. Huang[1], T.S. Wu[1], C.C. Li[1], F.J. Lee[1,2]; [1]Institute of Molecular Medicine, College of Medicine, National Taiwan University, Taipei, Taiwan, [2]Department of Medical Research, National Taiwan University Hospital, Taipei, Taiwan

B338/P1792 **GSK3β-elicited competition between SKAP and Kif2b at the kinetochore microtubule ensures accurate chromosome segregation.** B. Qin[1], D. Cao[1], H. Wu[1], W. Wang[1,2], X. Liu[1,2], C. Fu[1,2], X. Yao[1,2]; [1]Anhui Key Laboratory of Cellular Dynamics and Chemical Biology, University of Science Technology of China, Hefei, China, [2]Center of Excellence on Molecular Cell Sciences, Chinese Academy of Sciences, Hefei, China

B339/P1793 **Septin-microtubule interplay enables initiation of branching morphogenesis.** D.K. Bogorodskaya[1], L. Ligon[1]; [1]Biology, Rensselaer Polytechnic Institute, Troy, NY

B340/P1794 **A role for the yeast CLIP170 ortholog, the plus-end-tracking protein Bik1, and the Rho1 GTPase in Snc1 trafficking.** C. Boscheron[1], F. Caudron[2], E. Denarier[1], L. Aubry[1], A. Andrieux[1]; [1]Grenoble Insitut of neurosciences, Université Grenoble Alpes, Grenoble, France, [2]Randall Division of Cell Molecular Biophysics, King's College London, London, United Kingdom

B341/P1795 **Structural Basis of Tubulin Recruitment and Assembly by Microtubule Polymerases.** S. Nithianantham[1], B.D. Cook[1], F. Chang[2,3], J. Al-Bassam[1]; [1]Molecular and Cellular Biology, University of California, Davis, CA, [2]Department of Cell and Tissue Biology, University of California, San Francisco, CA, [3]Department of Microbiology and Immunology, Columbia University Medical Center, New York, NY

B342/P1796 **Electrostatic regulation of microtubule crosslinking during spindle assembly and elongation.** A. Ismael[1], J.E. Aiken[1], J.K. Moore[1]; [1]Cell and Developmental Biology, University of Colorado, Anschutz Medical Campus, Aurora, CO

B343/P1797 **Molecular Pathogenesis of Tubulin Disorders During Neural Development.** J.E. Aiken[1], D. Mitchell[2], E. Bates[2], J.K. Moore[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

B344/P1798 **Implication of tubb6, a minor beta-tubulin isotype, in muscle defects of the *mdx* mouse model of Duchenne muscular dystrophy.** D. Randazzo[1], U. Khalique[1], D.M. Talsness [2], J.J. Belanto[2], K.J. Zaal[1], M.D. Tran[1], A. Kenea[1], D.L. Sackett[3], J.M. Ervasti[2], E. Ralston[1]; [1]Light Imaging Section, Office of Science and Technology, National Institute of Arthritis and Musculoskeletal and Skin Diseases, National Institutes of Health, Bethesda, MD, [2]Department of Biochemistry, Molecular Biology, and Biophysics, and Program in Molecular, Cellular, Developmental Biology, and Genetics, University of Minnesota-Twin Cities, Minneapolis, MN, [3]Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD

Microtubule Dynamics and Its Regulation 2

B345/P1799 **Rapid control of microtubule plus end interactions and dynamics by light.** J. van Haren[1], A.W. Ettinger[1], H. Wang[2], K.M. Hahn[2], T. Wittmann[1]; [1]Department of Cell Tissue Biology, UCSF, San Francisco, CA, [2]Department of Pharmacology, UNC Chapel Hill, Chapel Hill, NC

B346/P1800 **Optogenetic Control of Microtubule-Actin Crosslinking.** R.C. Adikes[1], B.F. Saway[1], R.A. Hallett[2], B. Kuhlman[2], K.C. Slep[1]; [1]Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Biochemistry and Biophysics, University of North Carolina at Chapel Hill, Chapel Hill, NC

B347/P1801 **DRG1: an unusual GTPase that binds and severs microtubules.** A. Schellhaus[1], D. Moreno-Andrés[1], M. Chugh[2], H. Yokoyama[1], E. Schaeffer[2], W. Antonin[1]; [1]Friedrich Miescher Laboratory of the Max Planck Society, Tuebingen, Germany, [2]Zentrum für Molekularbiologie der Pflanzen, Eberhard-Karls-Universität, Tuebingen, Germany

B348/P1802 **Fidgetin-like 2, a microtubule severing enzyme, is a novel regulator of angiogenesis and heart regeneration.** A.H. Kramer[1], R. Charaffedine[1], B. O Rourke[1], Y. Wang[1], J. Nosanchuk[1], R. Kitsis [1], J.M. Friedman[1], B. Zhou[1], D.J. Sharp[1]; [1]Physiology and Biophysics, Albert Einstein College of Medicine, Bronx, NY

B349/P1803 **Polarized endosome dynamics by spindle asymmetry during asymmetric cell division.** E. Derivery[1,2], C. Seum[2], A. Daeden[2], S. Loubéry[2], L. Holtzer[1], F. Julicher[3], M. Gonzalez-Gaitan[2]; [1]Cell Biology, MRC Laboratory of Molecular Biology, Cambridge, United Kingdom, [2]Biochemistry, University of Geneva, Geneva, Switzerland, [3]Max Planck Institute for the Physics of Complex Systems, Dresden, Germany

B350/P1804 **Spindle force measurements using hydrogel micro-cantilevers.** T. Sulerud[1]; [1]MCLS, University of Wyoming, Laramie, WY

B351/P1805 **Mechanism of Microtubule Dynamics Regulation by the drug Colchicine.** M. Hemmat[1], D.J. Odde[2], B.T. Castle[2]; [1]Mechanical Engineering, University of Minnesota, Minneapolis, MN, [2]Biomedical Engineering, University of Minnesota, Minneapolis, MN

B352/P1806 **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

B353/P1807 **DRG2 is implicated in microtubule dynamics.** I. Han[1], D. Thi Thao[1], S. Jang[1], J. Park[1]; [1]Biological Sciences, University of Ulsan, Ulsan, Korea, South

B354/P1808 **The TACC protein family and their unique regulation of the dynamic microtubule plus-end.** G. Cammarata[1], B. Erdogan[1], E.L. Rutherford[1], P. Ebbert[1], L.A. Lowery[1]; [1]Biology, Boston College, Chestnut Hill, MA

B355/P1809 **Elevated ATP/ADP ratio destabilizes the microtubule network to facilitate insulin secretion in pancreatic beta cells.** K. Ho[1], G. Gu[1], I. Kaverina[1]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B356/P1810 **Treadmilling of microtubules drives the directional transport of maternal mRNAs in fertilized ascidian eggs.** H. Ishii[1], T. Tani[1]; [1]Eugene Bell Center, Marine Biological Laboratory, Woods Hole, MA

B357/P1811 ***Drosophila* kinesin-8 has a microtubule depolymerisation activity and is required for stable kinetochore-microtubule attachment.** T. Edzuka[1,2], G. Goshima[1,2]; [1]Marine Biological Laboratory (MBL), Woods Hole, MA, [2]Division of Biological Science, Nagoya University, Nagoya, Japan

B358/P1812 **Using computational models to study treadmilling behavior of microtubules and other steady-state polymers.** J.P. Scripture[1], E.C. Norby[1], E.J. Jonasson[1], C. Li[2], S.M. Mahserejian[2], A.J. Mauro[2], M.S. Alber[2], H.V. Goodson[1]; [1]Chemistry and Biochemistry, University of Notre Dame, South Bend, IN, [2]Applied and Computational Mathematics and Statistics, University of Notre Dame, South Bend, IN

B359/P1813 **Elucidating the Role of a Human β-tubulin, TUBB4B: Functional Analysis of a Novel Patient-Derived Mutation.** S.M. Schreiner[1], D.L. Sackett[2], J.K. Moore[1]; [1]Cell and Developmental Biology, University of Colorado Anschutz Medical Campus, Aurora, CO, [2]Program in Physical Biology, Eunice Kennedy Shriver NICHD, National Institutes of Health, Bethesda, MD

B360/P145 **Microtubule dynamics sense and respond to ECM density to regulate matrix metalloprotease-14 trafficking and localization.** A. Braun[1], P. Singh[1], K.A. Myers[1]; [1]Biology, University of the Sciences in Philadelphia, Philadelphia, PA

Ciliary Formation and Trafficking

B361/P1814 **Intraflagellar transport protein tip remodeling and motor dynamics revealed with a photobleaching gate.** A. Chien[1], S. Shih[1], R. Bower[2], M.E. Porter[2], A. Yildiz[1]; [1]BioPhysics, UC Berkeley, Berkeley, CA, [2]Genetics, University of Minnesota, Minneapolis, MN

B362/P1815 **Dynein-2 requires HSP90 chaperone activity to ensure robust retrograde IFT and ciliogenesis.** T.J. Dantas[1], N.V. Khobrekar[1,2], R.B. Vallee[1]; [1]Pathology and Cell Biology, Columbia University, New York, NY, [2]Biological Sciences, Columbia University, New York, NY

B363/P1816 ***Chlamydomonas* IFT54 is required for flagellar assembly.** X. Zhu[1], Y. Liang[1], J. Pan[1,2]; [1]School of Life Sciences, Tsinghua University, Beijing, China, [2]Laboratory for Marine Biology and Biotechnology, Qingdao National Laboratory for Marine Science and Technology, Qingdao, Shandong Province, China

B364/P1817 **Flagellar length synchronization in *Chlamydomonas*.** S. Dutta[1], P. Avasthi[1,2]; [1]Anatomy and Cell Biology, University of Kansas Medical Center, Kansas City, KS, [2]Ophthalmology, University of Kansas Medical Center, Kansas City, KS

B365/P1818 **Flagellar length regulation in the intestinal parasite *Giardia lamblia*.** S.G. McInally[1], S.C. Dawson[1]; [1]Microbiology and Molecular Genetics, University of California, Davis, Davis, CA

B366/P1819 **Ciliary PI(4,5)P2 dictates fall of primary cilia and rise of cell cycle.** S.C. Phua[1], T. Inoue[1]; [1]Cell Biology, Johns Hopkins University, Baltimore, MD

B367/P1820 **The Glial Actin Cytoskeleton Regulates Neuronal Ciliogenesis in C. elegans.** Y. Zhang[1], H. Zhu[1], G. Ou[1]; [1]life science, Tsinghua University, Beijing, China

B368/P1821 **Jasplakinolide-induced cell rounding provokes ciliogenesis.** T. Nagai[1], K. Mizuno[1]; [1]Graduate School of Life Sciences, Tohoku University, Sendai, Japan

B369/P1822 **Investigating Actin Redundancy in *Chlamydomonas reinhardtii* Flagellar Assembly.** A.L. Tetlow[1], D.M. Mueller[1], P. Avasthi[1,2]; [1]Department of Anatomy and Cell Biology, University of Kansas Medical Center, Kansas City, KS, [2]Department of Ophthalmology, University of Kansas Medical Center, Kansas City, KS

B370/P1823 **The centriolar satellite protein CEP109 and CEP290 interact and are required for recruitment of BBS proteins to the cilium.** D. Conkar[1], E. Culfa[1], E. Odabasi[1], N. Rauniyar[2], J. Yates iii[2], E.N. Firat-Karalar[1]; [1]Molecular Biology and Genetics, Koc University, Istanbul, Turkey, [2]Department of Chemical Biology, The Scripps Research Institute, La Jolla, CA

B371/P1824 **Defining Centriole Function In *C. elegans* Cilia Assembly.** D. Serwas[1], A. Dammermann[1]; [1]Max F. Perutz Laboratories, University of Vienna, Vienna, Austria

B372/P1825 **The distal appendage protein CEP164 is critical for embryonic development and multiciliated cell differentiation.** S.S. Siller[1,2,3], H. Sharma[1,2,3], F. Li[2], M.J. Holtzman[4], H. Colognato[1,2,3], B.C. Holdener[5], K. Takemaru[1,2,3]; [1]Graduate Program in Molecular and Cellular Pharmacology, Stony Brook University, Stony Brook, NY, [2]Department of Pharmacological Sciences, Stony Brook University, Stony Brook, NY, [3]Medical Scientist Training Program, Stony Brook University, Stony Brook, NY, [4]Department of Medicine, Washington University School of Medicine, St. Louis, MO, [5]Department of Biochemistry and Cell Biology, Stony Brook University, Stony Brook, NY

B373/P1826 **A Novel Mechanism Regulating Centriole Maturation in Quiescent Cells.** E. Betleja[1], K. Shim[1], B. Wang[2], M.R. Mahjoub[1]; [1]Nephrology Division, Washington University School of Medicine, Saint Louis, MO, [2]Genetic Medicine, Weill Medical College of Cornell University, New York, NY

B374/P1827 **Growth factor signaling regulation of a Rab-effector switch required for ciliogenesis initiation.** V. Walia[1], M. Vetter[2], C. Insinna[1], Q. Lu[1], D. Ritt[1], S. Specht[1], J. Stauffer[1], D. Morrison[1], E. Lorentzen[2], C.J. Westlake[1]; [1]Center for Cancer Research, National Cancer Institute, Frederick, MD, [2]Max Plank Institute of Biochemistry, Martinsried, Germany

B375/P1828 **TULP3 and Tubby function as general adapters for trafficking of structurally diverse integral membrane proteins to the primary cilium.** H.B. Badgandi[1], S. Hwang[1], I. Shimada[1], S. Mukhopadhyay[1]; [1]Cell Biology, University of Texas Southwestern Medical Center, Dallas, TX

B376/P1829 **The ciliary trafficking of a group of membrane proteins is dependent on the ternary complex comprising transportin1, Rab8 and the ciliary targeting signal.** L. Lu[1], V. Madugula[1]; [1]School of Biological Sciences, Nanyang Technological University, Singapore, Singapore

B377/P1830 **A possible role for endocytosis in signaling-regulated trafficking of a membrane protein from the plasma membrane into the ciliary membrane of existing cilia in *Chlamydomonas*.** P. Ranjan[1,2], W.J. Snell[1,2]; [1]Cell Biology and Molecular Genetics, University of Maryland, College Park, MD, [2]Cell Biology, University of Texas Southwestern Medical Center, Dallas, TX

B378/P1831 **An ancient origin for IFT-dependent transport of rhodopsins: *Chlamydomonas* Channelrhodopsin I and Chlamyopsin 8 localize to the eyespot and to cilia, and trafficking to both organelles requires IFT.** M. Awasthi[1,2], P. Ranjan[1,2], K. Sharma[1], S.K. Veetil[1], W.J. Snell[2], S. Katerina[1]; [1]Biochemistry, University of Delhi South Campus, New Delhi, India, [2]Cell Biology and Molecular Genetics, University of Maryland, College Park, MD

B379/P1832 **Novel ciliary gene, *Thm2*, interacts with *Thm1* to regulate skeletal, sperm and forebrain development.** B.A. Allard[1,2], L.M. Silva[1,2], D.T. Jacobs[1,2], G. Sanchez[1,3,4], G. Blanco[1,3,4], J.L. Vivian[3,5], P.V. Tran[1,2]; [1]Kidney Institute, University of Kansas Medical Center, Kansas City, KS, [2]Department of Anatomy and Cell Biology, University of Kansas Medical Center, Kansas City, KS, [3]Institute for Reproductive Health and Regenerative Medicine, University of Kansas Medical Center, Kansas City, KS, [4]Department of Molecular and Integrative Physiology, University of Kansas Medical Center, Kansas City, KS, [5]Department of Pathology and Laboratory Medicine, University of Kansas Medical Center, Kansas City, KS

B380/P1833 **Regulation of ciliary retrograde protein trafficking by Joubert syndrome proteins Arl13b and INPP5E.** S. Nozaki[1], Y. Katoh[1], K. Nakayama[1]; [1]Pharmaceutical Sciences, Kyoto University, Kyoto, Japan

B381/P1834 **The ESCRT protein VPS4 is involved in ciliogenesis.** C.M. Ott[1], D. Nachmias[2], S. Adar[2], S. Sherman[2], J. Lippincott-Schwartz[1], N. Elia[2]; [1]Janelia Research campus, Ashburn, MD, [2]Life Sciences, Ben Gurion University of the Negev, Beer Sheva, Israel

B382/P1835 **Inhibition of nuclear import regulates flagellar length in *Chlamydomonas reinhardtii*.** S. Huang[1], P. Avasthi[1,2]; [1]Ophthalmology, University of Kansas Medical Center, Kansas City, KS, [2]Anatomy and Cell Biology, University of Kansas Medical Center, Kansas City, KS

B383/P1836 **The function of the basal body microtubules associated with intraflagellar transport (IFT).** Y. Koiso[1], S. Yamaguchi[1], M. Sugawa[1], T. Kobayashi[1], Y.Y. Toyoshima[1], J. Yajima[1]; [1]Department of Life Sciences Graduate School of Art & Sciences, The University of Tokyo, Tokyo, Japan

B384/P1837 **A Novel Interaction Between Kinase and Phosphatase Activities in Regulation of Cilia Formation in ARPE-19 Cells.** A.O. Sperry[1]; [1]Department Anatomy & Cell Biology, East Carolina Univ-Brody School of Medicine, Greenville, NC

B385/P1838 **FHDC1 acts at the subdistal appendages to regulate cilia assembly.** S.J. Copeland[1], A.S. McRae[1], J.W. Copeland[1]; [1]Cellular and Molecular Medicine, University of Ottawa, Ottawa, ON

B386/P1839 **Caveolin-1 localizes to the ciliary transition zone in a KIF13B- and NPHP4-dependent manner and is required for ciliary accumulation of Smoothened.** K.B. Schou[1], J.B. Mogensen[1], S.K. Morthorst[1], B. Nielsen[1], N. Fürstenberg[1], S. Saunier[2,3], A. Bizet[2,3], S.T. Christensen[1], L.B. Pedersen[1]; [1]Department of Biology, University of Copenhagen, Copenhagen, Denmark, [2]Laboratory of Hereditary Kidney diseases, Inserm UMR-1163, Paris, France, [3]Imagine Institut, Paris Descartes Sorbonne Paris Cité University, Paris, France

B387/P1840 **RAB-28, linked to retinal degeneration, associates with the BBSome and intraflagellar transport in C. elegans.** S.P. Carter[1], V.L. Jensen[2], A.A. Sanders[1], J. Kennedy [1], B. Kennedy[1], M.R. Leroux[2], O.E. Blacque[1]; [1]School of Biomolecular and Biomedical Sciences, University College Dublin, Dublin, Republic of Ireland, [2]Department of Molecular Biology and Biochemistry, Simon Fraser University, Burnaby, BC

B388/P1841 **Cilia-related roles for endosome maturation regulators Rabenosyn-5 and VPS45 in *C. elegans*.** N. Scheidel[1], J. Kennedy [1], O.E. Blacque[1]; [1]University College Dublin, UCD Conway Institute of Biomolecular and Biomedical Research, Dublin, Republic of Ireland

B389/P1842 **The N-terminal 60-residues and membrane anchoring of phospholipase D are sufficient for transport and ciliary export by the BBSome/IFT system in *Chlamydomonas*.** P. Liu[1], K.F. Lechtreck[1]; [1]Department of Cellular Biology, University of Georgia, ATHENS, GA

Cytokinesis 2

B401/P1843 **Nanoscale architecture of Cdc15 and the *S. pombe* contractile ring.** N.A. McDonald[1], S.E. Smith[2], R. Li[3], K.L. Gould[1]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN, [2]Stowers Institute for Medical Research, Kansas City, MO, [3]Cell Biology, Johns Hopkins University, Baltimore, MD

B402/P1844 **Septin-binding protein Bni5 reorganizes yeast septin filament structure.** S.M. Sterling[1], E.A. Booth[1], D. Dovala[2], E. Nogales[1,3,4], J.W. Thorner[1]; [1]Division of Biochemistry, Biophysics, and Structural Biology, Department of Molecular and Cellular Biology, University of California, Berkeley, CA, [2]Program in Microbial Pathogenesis and Host Defense, Department of Microbiology and Immunology, University of California, San Francisco, CA, [3]Life Science Division, Lawrence Berkeley National Laboratory, Berkeley, CA, [4]Howard Hughes Medical Institute, Chevy Chase, MD

B403/P1845 **Unravelling the Role of Adaptor Proteins Cin85 and CD2AP in Septin-mediated Cytokinesis.** . Safavian[1], K. Fung[1], W.S. Trimble[1]; [1]Department of Biochemistry, University of Toronto, Toronto, ON

B404/P1846 **Node-mediated and backup pathways in contractile ring assembly.** T.C. Bidone[1,2], N. Wang[3], J. Wu[3], D. Vavylonis[1]; [1]Physics, Lehigh University, Bethlehem, PA, [2]Chemistry, The University of Chicago, Chicago, IL, [3]Molecular Genetics, The Ohio State University, Columbus, OH

B405/P1847 **Evaluating the Combined Roles of Blt1p and Gef2p in Sid2p/Mob1p Localization to the Contractile Ring During Fission Yeast Cytokinesis.** J.W. Goss[1], L. Kwon[1]; [1]Biological Sciences, Wellesley College, Wellesley, MA

B406/P1848 **Membrane composition is important in contractile ring anchoring in *Schizosaccharomyces pombe*.** C.E. Snider[1], A.H. Willet[1], J. Chen[1], K.L. Gould[1]; [1]Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B407/P1849 **Cdc42 GEF Gef1 promotes uniform protein organization along the cytokinetic ring to enable concentric furrowing.** B. Wei[1], J. Habiyaremye[1], P. Mlynarczyk[2], 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

B408/P1850 **Cytoskeletal crosslinkers both drive and brake cytokinetic ring closure.** C. Patino Descovich[1], D.B. Cortes[2], S. Ryan[2], M. Werner[2], L. Zhang[3], K.N. Rehain[2], P.S. Maddox[2], A.S. Maddox[2]; [1]Pathology and Laboratory Medicine, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [3]Institute for Research in Immunology and Cancer, Université de Montréal, Montréal, QC

B409/P1851 **Constriction mechanism of the actomyosin ring.** L.T. Nguyen[1], M.T. Swulius[1], M. Mishra[2], G.J. Jensen[1]; [1]Biology Bioengineering, California Institute of Technology, Pasadena, CA, [2]Biological Sciences, Tata Institute of Fundamental Research, Mumbai, India

B410/P1852 **Back-to-back mechanisms drive actomyosin ring contraction during *Drosophila* embryo cleavage.** Z. Xue[1], A.M. Sokac[1]; [1]Verna Marrs McLean Department of Biochemistry and Molecular Biology, Baylor College of Medicine, Houston, TX

B411/P1853 **Component turnover in the cytokinetic ring maintains organizational homeostasis and tension production.** S. Wang[1], S. Thiyagarajan[1], T.G. Chew[2], J. Huang[2], S. Palani[2], A. Kamnev[2], Y. Gu[3], S. Oliferenko[3], M. Balasubramanian[2], B. O'Shaughnessy[4]; [1]Physics, Columbia University, New York, NY, [2]Biomedical Sciences, University of Warwick, Coventry, United Kingdom, [3]King's College London, Randall Division of Cell and Molecular Biophysics, London, NY, [4]Chemical Engineering, Columbia University, New York, NY

B412/P1854 **Fission yeast contractile ring tension increases ~2-fold as the ring constricts, but the tension regulates septum closure and does not set the rate of constriction.** S. Thiyagarajan[1], H. Chin[2,3], E. Karatekin[4], T.D. Pollard[2,5,6], B. O'Shaughnessy[3]; [1]Physics, Columbia University, New York, NY, [2]Molecular, Cellular and Developmental Biology, Yale University, New Haven, CT, [3]Chemical Engineering, Columbia University, New York, NY, [4]Department of Cellular and Molecular Physiology, Yale University, New Haven, CT, [5]Molecular Biophysics and Biochemistry, Yale University, New Haven, CT, [6]Cell Biology, Yale University, New Haven, CT

B413/P1855 **Cortical flow into the contractile ring drives exponential increases in myosin concentration and constriction rate during cytokinetic ring closure.** R. Khaliullin[1], R.A. Green[1], L. Shi[2], M. Berns[2], J.S. Gomez Cavazos[1], A.B. Desai[1], K. Oegema[1]; [1]Department of Cellular and Molecular Medicine, Ludwig Institute for Cancer Research, University of California, San Diego, La Jolla, CA, [2]Department of Bioengineering and Institute of Engineering in Medicine, University of California, San Diego, La Jolla, CA

B414/P1856 **Myosin efflux promotes adaptive cell elongation to coordinate chromosome segregation with cell cleavage.** E. Montembault[1], m. Claverie[1], L. Bouit[1], C. Landmann[1], C. Cabernard[1], A. Royou[1]; [1]IECB, PESSAC, France

B415/P1857 **Polarized Actin Polymerization Enlarges Daughter Cell Asymmetry.** D. Tian[1], Y. Chai[1], Z. Zhu[1], G. Ou[1]; [1]School of Life Sciences, Tsinghua University, Beijing, China

B416/P1858 **Effects of cell size and shape on cleavage furrow ingression in sea urchin cytokinesis.** B. Knapp[1], M. Bennett[2], Z. Zhou[1], N. Minc[3], F. Chang[1], D.R. Burgess[2]; [1]Cell and Tissue Biology, University of California San Francisco, San Francisco, CA, [2]Biology, Boston College, Chestnut Hill, MA, [3]CNRS, Institut Jacques Monod, Paris, France

B417/P1859 **Defining a cell's internal compass: Focal adhesions control cleavage furrow shape and spindle tilt during mitosis.** N. Taneja[1], A.M. Fenix[1], L. Rathbun[2], B.A. Millis[1], M.J. Tyska[1], H. Hehnly[2], D.T. Burnette[1]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN, [2]Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY

B418/P1860 **EBP50 is localized at the blebs and phosphorylated at Serine 347-348 residues in mitotic cells.** H. Lim[1], T. Jou[1]; [1]Graduate Institute of Clinical Medicine, National Taiwan University, Taipei, Taiwan

B419/P1861 **Visualizing direct interactions in the mechanobiome.** P. Kothari[1], V. Srivastava[2], I. Tchernyshyov[3], J. Van Eyk[3], D.N. Robinson[1]; [1]Cell Biology, Johns Hopkins School of Medicine, Baltimore, MD, [2]Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA, [3]Advanced Clinical Biosystems Institute, Cedar-Sinai Medical Center, Los Angeles, CA

B420/P1862 **Oxidation of F-actin controls the terminal steps of cell division.** S. Frémont[1], H. Hammich[2], J. Bai[1], H. Wioland[3], K. Klinkert[1], M. Rocancourt[1], C. Kikuti[2], D. Stroebel[4], G. Romet-Lemonne[3], O. Pylypenko[2], A.M. Houdusse[2], A.F. Echard[1]; [1]Cell Biology and Infection, Institut Pasteur, Paris, France, [2]Cell Biology, Institut Curie, Paris, France, [3]Cell Biology, Institut Jacques Monod, Paris, France, [4]IBENS, Ecole Normale Supérieure, Paris, France

B421/P1863 **Comparative analysis of the GAP activity of *C. elegans* CYK-4 in the germline epithelium and embryonic cytokinesis.** K. Lee[1], J. Rahajeng[2], S.J. Field[2], A.B. Desai[1], R.A. Green[1], K. Oegema[1]; [1]Department of Cellular and Molecular Medicine, Ludwig Institute for Cancer Research, University of California, San Diego, La Jolla, CA, [2]Division of Endocrinology and Metabolism, Department of Medicine, University of California, San Diego, La Jolla, CA

B422/P1864 **Control of actin polymerization by actin capping complex, CapZ in the terminal stages of cytokinesis.** S.J. Terry[1], U. Eggert[1]; [1]Randall Division of Cell & Molecular Biophysics, King's College London, London, United Kingdom

B423/P1865 **Polo kinase mediates the phosphorylation and cellular localization of Nuf/FIP3, a Rab11 effector.** L.A. Brose[1], J. Crest[1,2], L. Tao[1,3], W. Sullivan[1]; [1]Molecular, Cell, and Developmental Biology, University of California, Santa Cruz, Santa Cruz, CA, [2]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, [3]Biology, University of Hawai'i at Hilo, Hilo, HI

B424/P1866 **Multimodal and polymorphic interactions between anillin and actin: their implications for cytokinesis.** S. Jananji[1], C. Risi[2], G. Laflamme[3], L. Picard[1], R. Van Sciver[2], A. Albaghjati[3], G.R. Hickson[1,4], B.H. Kwok[3], V.E. Galkin[2]; [1]Sainte-Justine Hospital Research Center, Montreal, QC, [2]Department of Physiological Sciences, Eastern Virginia Medical School, Norfolk, VA, [3]Institute for Research in Immunology and Cancer, Université de Montréal, Montreal, QC, [4]Pathology Cell Biology, Université de Montréal, Montreal, QC

B425/P1867 **Cytokinetic events are spatiotemporally organized by a gradient of active Cdc42.** B.S. Hercyk[1], B. Wei[1], M. Das[1]; [1]Biochemistry Cellular and Molecular Biology, University of Tennessee, Knoxville, TN

B426/P1868 **Spatiotemporal characterization of cytokinetic abscission in developing zebrafish embryos.** S. Adar[1], R. Birnbaum[1], N. Elia[1]; [1]Life Sciences, Ben Gurion University of the Negev, Beer Sheva, Israel

Chromosome Organization in Meiosis

B427/P1869 **Yeast chromosomes exhibit subdiffusive motion during meiosis.** T. Newman[1], J. McGehee[1,2], C. Cahoon[1,3], . . Elnatan[1,4], . . Bui[1], . . Chu[1], S. Burgess[1]; [1]Molecular and Cellular Biology, University of California, Davis, Davis, CA, [2]Biology and Biological Engineering, California Institute of Technology, Pasadena, CA, [3]Stowers Institute of Medical Research, Kansas City, MO, [4]Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

B428/P1870 **Chromosome congression and segregation in mammalian oocytes.** C.M. Heath[1], S.M. Wignall[1]; [1]Molecular Biosciences, Northwestern University, Evanston, IL

B429/P1871 **Phosphoregulation of meiotic chromosome dynamics by CHK-2 and PLK-2.** Y. Kim[1,2,3], S.C. Rosenberg[4,5], O. Rog[1,3], N. Kostow[1,3], K.D. Corbett[4,5], A.F. Dernburg[1,3]; [1]Howard Hughes Medical Institute, Chevy Chase, MD, [2]Department of Biology, Johns Hopkins University, Baltimore, MD, [3]Department of Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, [4]Department of Cellular and Molecular Medicine, University of California, San Diego, La Jolla, CA, [5]Ludwig Institute for Cancer Research, La Jolla, CA

B430/P1872 **Dynamic centromeres facilitate chromosome segregation in oocytes.** S.J. Radford[1], A. Parikh[1,2], K.S. McKim[1,2]; [1]Waksman Institute, Rutgers University, Piscataway, NJ, [2]Department of Genetics, Rutgers University, Piscataway, NJ

B431/P1873 **Diversity of meiotic mechanisms in the nematode lineage.** B. Avsaroglu[1,2], J.J. Bayes[3], K.S. Baskevitch[1,3], A.F. Dernburg[1,2,3]; [1]Molecular and Cell Biology, UC Berkeley, Berkeley, CA, [2]California Institute for Quantitative Biosciences, Berkeley, CA, [3]Howard Hughes Medical Institute, Berkeley, CA

B432/P1874 **A self-extinguishing signaling circuit within the synaptonemal complex regulates meiotic recombination.** A.F. Dernburg[1,2,3,4], O. Rog[1,3,4], S. Köhler[1,3,4], L. Zhang[1,3,4]; [1]Howard Hughes Medical Institute, Chevy Chase, MD, [2]Life Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA, [3]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, [4]California Institute for Quantitative Biosciences (QB3), Berkeley, CA

B433/P1875 **Super-resolution microscopy reveals the three-dimensional organization of meiotic chromosome axes in intact *C. elegans* tissue.** M. Wojcik[1], S. Köhler[2], A.F. Dernburg[2], K. Xu[1]; [1]Chemistry, UC Berkeley, Berkeley, CA, [2]Molecular and Cell Biology, UC Berkeley, Berkeley, CA

B434/P1876 **F-actin restricts kinesin-1 dependent sperm transport in *C. elegans* meiotic embryos.** M.T. Panzica[1], H.C. Marin[1], A.J. Rocha[1], F.J. McNally[1]; [1]MCB, University of California- Davis, Davis, CA

B435/P1877 **Meiotic regulation of *SOD1*.** H.M. Vander Wende[1], D.W. Goodnight[1], G.A. Brar[1]; [1]Molecular & Cell Biology, University of California, Berkeley, Berkeley, CA

Spindle Assembly 3

B436/P1878 **Biophysics of mitotic spindle positioning in *C. elegans* embryos.** H. Wu[1,2], E. Nazockdast[3], C. Yu[2,4], M.J. Shelley[3,5], D.J. Needleman[2,4,6]; [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]Courant Institute of Mathematical Sciences, New York University, New York, NY, [6]Department of Molecular and Cellular Biology, Harvard University, Cambridge, MA

B437/P1879 **Microtubule-associated proteins in S. cerevisiae promote microtubule formation from a fragment of the spindle pole body.** B.R. King[1], T. Vojnar[1], K. Yabut[1], E. Muller[1], T.N. Davis[1]; [1]Biochemistry, University of Washington, Seattle, WA

B438/P1880 **Mitotic Golgi disassembly is required for bipolar spindle formation and mitotic progression.** G. Guizzunti[1], J. Seemann[1]; [1]Cell Biology, UT Southwestern, Dallas, TX

B439/P1881 **Phosphorylation of TPX2 C-terminus contributes to bipolar spindle assembly.** B. Estes[1,2], B. Mann[1,2], C. Pelletier[1], P. Wadsworth[1]; [1]Biology Department, University of Massachusetts Amherst, Amherst, MA, [2]Molecular and Cell Biology Graduate Program, University of Massachusetts Amherst, Amherst, MA

B440/P1882 **MESP-1 collaborates with KLP-18/Kinesin-12 to promote acentrosomal spindle bipolarity in *C. elegans* oocytes.** I.D. Wolff[1], E.C. Landahl[2], S.E. Rice[3], S.M. Wignall[1]; [1]Department of Molecular Biosciences, Northwestern University, Evanston, IL, [2]Department of Physics, DePaul University, Chicago, IL, [3]Department of Cell and Molecular Biology, Feinberg School of Medicine, Northwestern University, Chicago, IL

B441/P1883 **RanGTP regulation of Kinesin-14 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

B442/P1884 **Induction of cell cycle progression and mitotic spindle assembly via light-induced release of a small number of proteins from photodegradable hydrogels.** J.S. Bisht[1,2], P.J. LeValley[1,3,4], B.E. Noren[1,3], M. Tomschik[2], A.M. Kloxin[4], J.S. Oakey[1,3], J.C. Gatlin[1,2]; [1]Cell Division Group, Marine Biological Laboratory, Woods Hole, MA, [2]Department of Molecular Biology, University of Wyoming, Laramie, WY, [3]Department of Chemical Engineering, University of Wyoming, Laramie, WY, [4]Department of Chemical and Biomolecular Engineering, University of Delaware, Newark, DE

B443/P1885 **Ensuring genome stability: a novel experimental system reveals that reduced tension directly activates the spindle assembly checkpoint independent of kinetochore detachment.** K.G. Proudfoot[1], M. Gupta[2]; [1]Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL, [2]Genetics, Development, and Cell Biology, Iowa State University, Ames, IA

B444/P1886 **Silencing the Spindle Assembly Checkpoint.** C. Marcozzi[1,2], O. Nashchekina[1], J. Pines[1]; [1]Cancer Biology, The Institute of Cancer Research, London, United Kingdom, [2]Gurdon Institute, Cambridge, United Kingdom

B445/P1887 **Mad2-Mps1 Interaction is Sufficient to Activate the Spindle Assembly Checkpoint in Budding Yeast.** S. Han[1], A. Dumbre-Patil[1], A.P. Joglekar[1]; [1]Cell and Developmental Biology, University of Michigan Medical School, Ann Arbor, MI

B446/P1888 **Mechanistic Basis of Spindle Size Control and Scaling.** R. Farhadifar[1], G. Fabig[2], M. Rockman[3], T. Müller-Reichert[2], D. Needleman[1]; [1]MCB/SEAS, Harvard University, Cambridge, MA, [2]MTZ, Technische Universität, Dresden, Germany, [3]Biology, New York University, New York, NY

B447/P1889 **The mitotic function of augmin is dependent on its microtubule-associated protein subunit EDE1 in *Arabidopsis thaliana*.** Y. Lee[1], Y. Hiwatashi[2,3], J. Doonan[3], B. Liu[1]; [1]Department of Plant Biology, University of California, Davis, Davis, CA, [2]Agricultural and Environmental Sciences, Miyagi University, Sendai, Japan, [3]The National Plant Phenomics Centre, Aberystwyth University, Aberystwyth, United Kingdom

B448/P1890 **Myosin activity orients cell divisions in the Drosophila embryonic epithelium.** S. Chanet[1], A. Martin[1]; [1]Biology, MIT, Cambridge, MA

B449/P1891 **Regulation of Kif15 localization and motility by the C-terminus of TPX2 and microtubule dynamics.** B. Mann[1,2], S. Balchand[1,2], P. Wadsworth[1,2]; [1]Biology, University of Massachusetts Amherst, Amherst, MA, [2]Molecular and Cellular Biology Graduate Program, Amherst, MA

B450/P1892 **Aurora Kinases Control Timing of Regeneration in *Stentor*.** A. Lin[1], W.F. Marshall[1]; [1]Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

B451/P1893 **Sirtuin inhibition by Tenovins disrupts microtubule dynamics and chromosome structure: potential use as antimitotic agents.** M. Carmena[1], O. Molina[1], E.M. Peat[1], C. Breunig[1], I. van Leeuwen[2], M. Ladds[2], S. Lain[2], W.C. Earnshaw[1]; [1]Wellcome Trust Centre for Cell Biology, University of Edinburgh, Edinburgh, United Kingdom, [2]2Department of Microbiology, Tumor and Cell Biology, Karolinska Institutet, Stockholm, Sweden

B452/P1894 **NuMA recognizes spindle microtubule minus-ends independently of dynein and spatially targets dynein-powered force.** C.L. Hueschen[1,2], S.J. Kenny[3], K. Xu[3], S. Dumont[1,4]; [1]Dept. of Cell and Tissue Biology, UCSF, San Francisco, CA, [2]Biomedical Sciences Graduate Program, UCSF, San Francisco, CA, [3]Dept. of Chemistry, UC Berkeley, Berkeley, CA, [4]Dept. of Cellular and Molecular Pharmacology, UCSF, San Francisco, CA

B453/P1895 **The 'Wait Anaphase' Signal Is Not Spindle Confined.** L.R. Heasley[1], S.M. Markus[1], J.G. DeLuca[1]; [1]Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO

B454/P1896 **Probing the role of microtubule contact geometry in cortical force generation at mitosis.** J. Guild[1], S. Dumont[1,2]; [1]Dept. of Cell and Tissue Biology, University of California San Francisco, San Francisco, CA, [2]Dept. of Cellular and Molecular Pharmacology, University of California San Francisco, San Francisco, CA

Kinetochore Assembly and Functions 3

B455/P1897 **The Ndc80 complex bridges two Dam1 complex rings.** J. Kim[1], A. Zelter[1], N.T. Umbreit[1,2], A. Bollozos[1], R. Johnson[3], M. MacCoss[3], C.L. Asbury[4], T.N. Davis[1]; [1]Biochemistry, University of Washington, Seattle, WA, [2]Pediatric Oncology, Dana-Farber Cancer Institute, Boston, MA, [3]Genome Sciences, University of Washington, Seattle, WA, [4]Physiology and Biophysics, University of Washington, Seattle, WA

B456/P1898 **Mechanism of Cdt1-mediated control of kinetochore microtubule attachment stabilization by the Ndc80 Complex.** S. Agarwal[1], S. Seshadrinathan[1], J.G. Cook[2], R.J. McKenney[3], D. Varma[1]; [1]Cell and Molecular Biology, Feinberg School of Medicine, Northwestern University, Chicago, IL, [2]Biochemistry and Biophysics, UNC Chapel Hill School of Medicine, Chapel Hill, IL, [3]Molecular and Cellular Biology, University of California at Davis, Davis, CA

B457/P1899 **Kinesin-5 regulates Ndc80 tension at the kinetochore.** A. Suzuki[1], K.M. Granger[1], B.L. Badger[1], E.D. Salmon[1], K. Bloom[1]; [1]Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC

B458/P1900 **An alternative pathway independent of Ndc80 and Rod function for chromosome alignment during mitosis.** M. Amin[1], D. Varma[1]; [1]Cell and Molecular Biology, Feinberg School of Medicine, Northwestern University, Chicago, IL

B459/P1901 **Kif18A coordinates the alignment and attachment of chromosomes during cell division.** H. Kim[1], C. Fonseca[1], J.K. Stumpff[1]; [1]Molecular Physiology and Biophysics, University of Vermont, Burlington, VT

B460/P1902 **A nucleoporin docks protein phosphatase 1 to direct meiotic chromosome segregation and nuclear assembly.** N. Hattersley[1], D.K. Cheerambathur[1], M. Moyle[1], M. Stefanutti[2], A.K. Richardson[1], K. Lee[1], J. Dumont[2], K. Oegema[1], A.B. Desai[1]; [1]Ludwig Cancer Research, University of California, San Diego, San Diego, CA, [2]University Paris Diderot, Institut Jacques Monod, Paris, France

B461/P1903 **Correction of aneuploidy in meiosis in C. *elegans*.** E. Vargas[1], K. McNally[1], D.B. Cortes[1], F.J. McNally[1]; [1]Molecular and Cellular Biology, University of California, Davis, Davis, CA

B462/P1904 **An Atypical Mechanism of Chromosome Segregation in the *C. elegans* Oocyte.** K.A. Laband[1], M. Stefanutti[2], J. Dumont[1]; [1]Institut Jacques Monod, Paris, France, [2]Institut Curie, Paris, France

B463/P1905 **A novel chromosome segregation mechanism during female meiosis.** K. McNally[1], M.T. Panzica[1], T. Kim[2], D.B. Cortes[1], F.J. McNally[1]; [1]Molecular and Cellular Biology, University of California, Davis, Davis, CA, [2]Cellular Molecular Medicine, Ludwig Institute for Cancer Research, La Jolla, CA

B464/P1906 ***C. elegans* oocytes detect meiotic errors in the absence of apparent end-on kinetochore attachments.** A.C. Davis-Roca[1], C.C. Muscat[1], S.M. Wignall[1]; [1]Molecular Biosciences, Northwestern University, Evanston, IL

B465/P1907 **End-on microtubule attachment to the kinetochore is necessary, however not sufficient, to inactivate spindle assembly checkpoint signaling.** B. Roy[1], A. Joglekar[1], J. Sim[1], V. Verma[1]; [1]CDB, University of Michigan, Ann Arbor, MI

B466/P1908 **Mps1 kinase activation couples kinetochore microtubule attachment sensing to chromosome stability.** Z. Dou[1], X. Liu[1], W. Wang[1], L. Xu[1], C. Fu[1], X. Yao[1]; [1]Anhui Key Laboratory for Cellular Dynamics & Chemical Biology, Hefei National Laboratory for Physical Sciences at Nanoscale, Hefei, China

B467/P1909 **Study of Mps1 kinase regulation through its N-Terminal region.** G. Combes[1], P. Thebault[1], L. Murakami[1], S. Elowe[1]; [1]Reproduction, perinatal health, and child health, Centre de Recherche du CHU-Université Laval, Quebec, QC

B468/P1910 **Biophysics of kinetochore-microtubule attachment.** T. Yoo[1], D.J. Needleman[1]; [1]John A. Paulson School of Engineering and Applied Sciences, Harvard University, Cambridge, MA

B469/P1911 **The mammalian kinetochore independently regulates its passive and active interfaces with microtubules.** A.F. Long[1], D.B. Udy[1], S. Dumont[1,2]; [1]Cell and Tissue Biology, University of California San Francisco, San Francisco, CA, [2]Cell and Molecular Pharmacology, University of California San Francisco, San Francisco, CA

B470/P1912 **The human Ska kinetochore complex bears load on dynamic microtubules and strengthens the microtubule end attachments of weakened Ndc80 complexes.** L.A. Helgeson[1], C.L. Asbury[2], T.N. Davis[1]; [1]Biochemistry, University of Washington, Seattle, WA, [2]Physiology Biophysics, University of Washington, Seattle, WA

B471/P1913 **Hec1 architecture at human kinetochores is responsive to microtubule attachment status.** A.A. Kukreja[1], A.P. Joglekar[1,2]; [1]Biophysics, University Of Michigan, Ann Arbor, MI, [2]Cell and Developmental Biology, University of Michigan, Ann Arbor, MI

B472/P1914 **Structural studies of the budding yeast kinetochore using dual-color superresolution microscopy.** K.A. Cieslinski[1], J. Ries[1]; [1]Cell Biology and Biophysics, EMBL, Heidelberg, Germany

Cancer Therapy 3

B474/P1915 **Platinum coordinated compounds bind DNA and alter cellular viability presenting the potential for use as novel anticancer therapeutics.** D.S. Shah[1], B.T. Dang[1], J. Hu[2], M.L. Mortensen[2], B.W. Smucker [2], L.F. Barton[1]; [1]Department of Biology, Austin College, Sherman, TX, [2]Department of Chemistry, Austin College, Sherman, TX

B475/P1916 **The p97 inhibitor CB-5083 is a unique disrupter of protein homeostasis in cancer.** Z. Wu[1], S. Djakovic[1], J. Rice[1], B. Kumar[1], S. Kiss von Soly[1], A. Madriaga[1], E. Valle[1], F. Soriano[1], M.K. Menon[1], J. Wang[1], B. Yao[1], Y. Tang[1], R. LeMoigne[1], H. Zhou[1], D. Wustrow[1], M. Rolfe[1], D.J. Anderson[1]; [1]Cleave Biosciences, Burlingame, CA

B476/P1917 **Effects of Nanomaterials on HB-EGF Protein Expression in Endometrial (RL95-2), Cervical (HeLa) and Lung Cancer (A549) Cells and Photothermal Therapy.** D. Gilbert[1], D. Peterson[1], S. Hussain[2], H. Roberson[2], J. Lewis[2], S.C. Gonzales[1], L. Carson Ph.D[2], G. Regisford Ph.D[2], A. Oki[1]; [1]Chemistry, Prairie View AM University, Prairie View, TX, [2]Biology, Prairie View AM University, Prairie View, TX

B477/P1918 **Photothermal Therapy in an Endometrial Cancer Cell Line, (RL95-2) Using Copper Sulfide and Chitosan Nanoparticles.** J. Lewis[1], D. Gilbert[2], H. Roberson[1], S.C. Gonzales[2], L. Carson Ph.D[3], G. Regisford Ph.D[1], A. Oki[2]; [1]Biology, Prairie View AM University, Prairie View, TX, [2]Chemistry, Prairie View AM University, Prairie View, TX, [3]Cooperative Agricultural Research Center, Prairie View AM University, Prairie View, TX

B478/P1919 **Ovarian Cancer being treated with Nanoparticles.** H. Roberson[1], G. regisford[1], D. Gilbert[1], S.C. Gonzales[1], J. Lewis[1]; [1]Biology, Prairie View,Prarie View, TX

B479/P1920 **HDAC inhibitor treatment induces a metastatic phenotype in cell lines with p53 gain of function mutations.** M.R. Montgomery[1], E.E. Hull[1]; [1]Biomedical Sciences, Midwestern University, Glendale, AZ

B480/P1921 **Low-Dose Long-Term Dimethylsulfoxide (DMSO) Reduces Carcinogenity and Changes Some Morphological And Biochemical Properties of HepG2 Cells.** R.G. Aktas[1], M. Erinc[1], H. Isan[1], S. Uzun[2]; [1]Cancer and Stem Cell Research Center, School of Medicine, Maltepe University, Istanbul, Turkey, [2]Department of Biology, Faculty of Science, Istanbul University, Istanbul, Turkey

B481/P1922 **Study of Toxicity of Copper Sulfide and Graphene Oxide Nanoparticles for Use in Photothermal Therapy in the Ovarian Cancer Cell Line, (SKOV-3).** J.C. DuBois[1], S. Gonzales[1], H. Roberson[1], J. Lewis[1], G. Regisford Ph.D[1], A. Oki[1], D. Gilbert[1], L. Carson Ph.D[1]; [1]Biology, Prairie View AM University, Prairie View, TX

B482/P1923 **The effects of Ganoderma lucidum extract fractions in Triple-Negative Breast Cancer.** J.J. Feliciano-Ildefonso[1], G. Lamela[1], I.J. Suárez-Arroyo[1], T. Ling[2], F. Rivas[2], L.A. Cubano[3], M.M. Martinez-Montemayor[1]; [1]Department of Biochemistry, Universidad Central del Caribe-School of Medicine, Bayamon, PR, [2]Chemical Biology Therapeutics, St. Jude Children's Research Hospital, Memphis, TN, [3]Department of Anatomy and Cell Biology, Universidad Central del Caribe-School of Medicine, Bayamon, PR

B483/P1924 **Neriifolin in the extracts of Cerbera manghas L. effectively inhibits the growth of glioblastoma and its cancer stem cells *in vitro* and *in vivo*.** J. Tsai[1], Y. Tseng[1], Y. Lai[1]; [1]Department of Life Science, National Taiwan Normal University, Taipei, Taiwan

B484/P1925 **Effect of FTY720 on TRPM7 activity, calcium signaling and Neuroblastoma cell death.** L. Espana-Serrano[1], I. Lange[1], M. Ali[1], D. Tacdol[1], D.L. Koomoa[1]; [1]Department of Pharmaceutical Sciences, DKICP, University of Hawaii at Hilo, Hilo, HI

B485/P1926 **The 2-O-methylmagnolol activates long non-coding RNA GAS5 and inhibits growth of skin cancer cells.** C. Chen[1], C. Chan[1], J. Fang[2], T. Wang[3], T.V. Wang[4]; [1]Graduate Institute of Health Industry Technology, Chang Gung University of Science and Technology, Taoyuan City, Taiwan, [2]Graduate Institute of Natural Products, Chang Gung University, Taoyuan City, Taiwan, [3]Tissue Bank, Chang Gung Memorial Hospital, Taoyuan City, Taiwan, [4]Department of Molecular and Cellular Biology, Chang Gung University, Taoyuan City, Taiwan

B486/P1927 **Saffron's Bioactive Molecule Prevents Chemical Induced-Liver Cancer: A Pre-clinical Study.** A. Amin[1], A.A. Hamza[2], S. Daoud[3], K. Khazanehdari [4], A. Al Hrout[1], B. Baig[1], A. Chaiboonchoe[5], T.E. Adrian[6], N. Zaki[7], K. Salehi-Ashtiani[5]; [1]Biology, UAE University, Al-Ain, United Arab Emirates, [2]National Organization of Drug Control and Research, Giza, Egypt, [3]Histopathology Laboratory, Tawaam Hospital, Al-Ain, United Arab Emirates, [4]Molecular Biology and Genetics Laboratory, Dubai, United Arab Emirates, [5]Center for Genomics and Systems Biology, New York University-Abu Dhabi, Abu Dhabi, United Arab Emirates, [6]College of Medicine and Health Sciences, UAE University, Al-Ain, United Arab Emirates, [7]College of Information Technology, UAE University, Al-Ain, United Arab Emirates

B487/P1928 **Prolonged Cytostatic Impact of a Novel Small Hydroxamic Acid: Differentiation and Normalization of Glioblastoma Multiforme *In Vitro*.** T. Ogas[1], A. Pendleton[1], L. Frolova[2], S. Rogelj[1]; [1]Biology, New Mexico Institute of Mining and Technology, Socorro, NM, [2]Chemistry, New Mexico Institute of Mining and Technology, Socorro, NM

B488/P1929 **Inhibition of adhesion and migration processes in melanoma cells using cyclic peptide MkA09s.** P.M. Cunha[1], M.M. Kanashiro[2], J.H. Fernandez[1]; [1]Laboratório de Química e Função de Proteínas e Peptídeos, Universidade Estadual do Norte Fluminense, Campos dos Goytacazes, Brazil, [2]Laboratório de Biologia do Reconhecer, Universidade Estadual do Norte Fluminense, Campos dos Goytacazes, Brazil

B489/P1930 **Epigenetic silencing of β-catenin by NADPH oxidase-derived reactive oxygen species facilitates migration and invasion of HT29 colon cancer cells.** S. Banskota[1], J. Kim[1]; [1]College of Pharmacy, Yeungnam University, Gyeongsan, Korea, South

B500/P1931 **shRNA Knockdown of NFKB1 expression inhibits proliferation and promotes apoptosis of renal cell carcinoma.** A. Ikegami[1], L.F. Teixiera[1], M.S. Braga[2], E.C. da Silva[1], M.H. Bellini[1]; [1]Biotechnology Department, IPEN-CNEN/SP, São Paulo, São Paulo, Brasil, Brazil, [2]Faculty of Pharmaceutical Sciences, University of São Paulo, São Paulo, São Paulo, Brasil, Brazil

TUESDAY

B501/P1932 **BIX02189 inhibits TGF-β1-induced lung cancer cell metastasis by directly targeting TGF-β type I receptor.** S. Park[1], Y. CHOI[1], B. Kim[1]; [1]Biochemistry, Kangwon National University, Chuncheon, Korea, South

B502/P1933 **Kaempferol Suppresses Transforming Growth Factor-β1-Induced Epithelial-to-Mesenchymal Transition and Migration of A549 Lung Cancer Cells by Inhibiting Akt1-Mediated Phosphorylation of Smad3 at Thr 179.** Y. CHOI[1], S. Park[1], B. Kim[1]; [1]Department of Biochemistry, Kangwon National University, Chuncheon, Korea

B503/P1934 **NSAIDs-induced reactive oxygen species from mitochondria enhanced accumulation of photosensitizer in gastric cancer cells.** H. Matsui[1], H. Ito[1]; [1]Faculty of Medicine, University of Tsukuba, Tsukuba, Japan

B504/P1935 **MiRNA-26a Inhibits the Proliferation and Invasiveness of Malignant Melanoma and Directly Targets on the MITF gene.** H. Qian[1], C. Yang[1], Y. Yang[1]; [1]Department of Biological Sciences, Emporia State University, Emporia, KS

B505/P1936 **Identification of novel isoform-specific HDAC inhibitors.** N. Ramasamy[1], H. Ravinarayanan[1], K. Sundar[1]; [1]Department of Biotechnology, Kalasalingam University, Krishnankoil, India

B506/P1937 **Targeting hypoxia is an essential prerequisite for cell sensitivity to metformin and lapatinib.** S. Hong[1,2], H. Jin[3], M. Seong[4], H. Kim[4], W. Noh[4], I. Park[5]; [1]Department of Translational Research, Korea Institute of Radiological Medical Sciences, Seoul, Korea, South, [2]Department of Food and Microbial Technology, Seoul Women's University, Seoul, Korea, South, [3]KIRAMS Radiation Biobank, Korea Institute of Radiological Medical Sciences, Seoul, Korea, South, [4]Department of Surgery, Korea Institute of Radiological Medical Sciences, Seoul, Korea, South, [5]Division of Basic Radiation Bioscience, Korea Institute of Radiological Medical Sciences, Seoul, Korea, South

B507/P1938 **Modulation of Cell Death and Multicellular Tumor Spheroid Growth by DCA in MCF-7 and MDA-MB-231 Breast Cancer Cells.** J. Yang[1], Y. Shin[1], K. KANG[1]; [1]Chemistry and Biology, Korea Science Academy of KAIST, BUSAN, Korea, South

B508/P1939 **Combination of Vitamin C and BRAF Inhibitor in Treatment of Human Malignant Melanoma.** Y. Yan[1], Y. Xiao[1], G. Yang[1], Y. Yang[1]; [1]Biological Science, Emporia State University, Emporia, KS

B509/P1940 **Inhibition of PANX1 reduces the malignant properties of human melanoma.** T. Freeman[1], L. Harland[1], D. Johnston[1], D. Nouri Nejad[1], B. O'Donnell[1], S. Penuela[1]; [1]Anatomy and Cell Biology, The University of Western Ontario, London, ON

B510/P1941 **The Effect of p85-sHER3 on Cancer Cell Growth and Migration in Melanoma derived cell line: Requirement for Tenascin-C.** N.J. Maihle[1]; [1]Georgia Cancer Center, Augusta University, Augusta, GA

B511/P1942 **The anticancer effects of miR-15a.** C. Alderman[1], A. Sehlaoui[2], Y. Yang[1]; [1]Biology, Emporia State University, Emporia, KS, [2]Physical Sciences, Emporia State University, Emporia, KS

B512/P1943 **Targeted cytochrome c delivery to cancer cells using the transferrin-receptor.** M. Saxena[1], Y. Delgado[2], R. Sharma[1], S. Sharma[1], S.P. Guzman[2], A.D. Tinoco[2], K.H. Griebenow[2]; [1]Environmental Sciences, University of Puerto Rico Rio Piedras Campus, San Juan, PR, [2]Chemistry, University of Puerto Rico Rio Piedras Campus, San Juan, PR

B513/P1944 **Mapping p63 phosphorylation after DNA damage.** K. Jung[1], E. Suh[1]; [1]Life Science, Ewha Woman's University, Seoul, Korea, South

B514/P1945 **Effects of UTX inhibition on neuronal differentiation through REST.** Y. Santana Rivera[1], J. Swaminathan[2], V. Gopalakrishnan[2], B.A. Kennis[2]; [1]Cancer Comprehensive Center, University of Puerto Rico, San Juan, PR, [2]Pediatric Research, MD Anderson Cancer Center, Houston, TX

Cancer Stem Cells

B515/P1946 **iPSC derived CSC model with lung metastasis developed in the microenvironment of lung carcinoma.** A.K. Oo[1], T. Kasai[1], A. Vaidyanath[1], H.B. Mahmud [1], N. Nair[1], A.S. Calle[1], M. Seno[1]; [1]Department of Medical Bioengineering, Graduate School of Natural Science and Technology, Okayama University, Okayama, Japan

B516/P1947 **ITGA1 is a novel biomarker and therapeutic target for blocking stemness in pancreatic cancer.** S. Kim[1], A. Gharibi[1], D.C. Brambilla[1], Y. Adamian[1], M. Hoover[1], J. Lin[1], M. Agajanian[1], L. Wolfenden[1], J.A. Kelber[1]; [1]Biology, California State University Northridge, Northridge, CA

B517/P1948 **Promising Association of Expression of CD133 and SOX2 with Distant Metastatic Relapse and Tumor Growth in Advanced Prostate Cancer.** D. Srinivasan[1], S. Majumdar[1], L.T. Senbanjo[1], M.A. Chellaiah[1]; [1]Department of Oncology and Diagnostic Sciences, University of Maryland, Dental School, Baltimore, MD

B518/P1949 **Ganoderma lucidum extract significantly decreases stemness properties in Inflammatory Breast Cancer cells via STAT3 regulation.** T.J. Rios[1], Y. Loperena[1], M.Y. Lacourt[1], P. Lopez[2], Y. Yamamura[2], L.A. Cubano[3], M.M. Martinez-Montemayor[1]; [1]Department of Biochemistry, Universidad Central del Caribe-School of Medicine, Bayamon, PR, [2]Department of Basic Sciences (Microbiology), Ponce Health Sciences University, Ponce, PR, [3]Department of Anatomy and Cell Biology, Universidad Central del Caribe-School of Medicine, Bayamon, PR

B519/P1950 **Matrix Metalloproteinases-9 and 10 are required for prostate cancer stem cell maintenance, tumor initiation and metastasis.** V. Joga[1], S. Rentala[2], A. Mokkapati[2]; [1]Dept. of Biotechnology, Institute of Science, GITAM University, Visakhapatnam, India, [2]Dept of Biotechnology, Institute of Technology GITAM University, Visakhapatnam, India

B520/P1951 **Constitutive activation of RhoA sensitizes glioblastoma-initiating cells to mechanical inputs, reduces invasion and downregulates epidermal growth factor signaling.** J.H. Hughes[1,2], S.Y. Wong[1,2], T.A. Ulrich[1,2], L.P. Deleyrolle[3], J.L. MacKay[4], G. Lin[1,2], R.T. Martuscello[3], M.A. Jundi[3], B.A. Reynolds[3,5], S. Kumar[1,2]; [1]UC Berkeley - UCSF Graduate Program in Bioengineering, Berkeley, CA, [2]Department of Bioengineering, University of California, Berkeley, Berkeley, CA, [3]Department of Neurosurgery, University of Florida, Gainesville, FL, [4]Department of Chemical and Biomolecular Engineering, University of California, Berkeley, Berkeley, CA, [5]Queensland Brain Institute, University of Queensland, St. Lucia, Australia

B521/P1952 **Aberrant activation of CaMKII-gamma accelerates chronic myeloid leukemia blast crisis.** Y. Gu[1], W. Huang[1]; [1]Department of Cellular & Mol. Diabetes, Beckman Research Institute, City of Hope Medical Center, Duarte, CA

B522/P1953 **Superoxide dismutase protects osteoprogenitors from irradiation with low-LET but not high-LET species.** A. Schreurs[1], L. Tran[1], C.G. Tahimic[1], J.S. Alwood[1], R.K. Globus[1]; [1]Space Biosciences, NASA ARC, Mountain View, CA

B523/P1954 **Optimal 3D cell culture model of human renal carcinoma stem-like cells.** A.M. Czarnecka[1], Z.F. Bielecka[1,2], K.K. Brodaczewska[1], K. Maliszewska[1,3], A. Malinowska[4], P. Krasowski[1,5], D. Matak[1,2], M. Lipiec[1,6], J. Piwowarski[5], E. Grzesiuk[5], C. Szczylik[1]; [1]Department of Oncology with Laboratory of Molecular Oncology, Military Institute of Medicine, Warsaw, Poland, [2]School of Molecular Medicine, Warsaw Medical University, Warsaw, Poland, [3]Institute of Biochemistry and Biophysics, Laboratory of DNA Sequencing and Oligonucleotides Synthesis, Polish Academy of Sciences, Warsaw, Poland, [4]Institute of

Biochemistry and Biophysics, Environmental Laboratory of Mass Spectrometry, Polish Academy of Sciences, Warsaw, Poland, [5]Institute of Biochemistry and Biophysics, Department of Molecular Biology, Polish Academy of Sciences, Warsaw, Poland, [6]Faculty of Pharmacy with Laboratory Medicine Division, Medical University of Warsaw, Warsaw, Poland

B524/P1955 **Reluctant Opening of Mitochondrial Permeability Transition Pore Sensitizes Glioma Stem Cells to a Novel OXPHOS Inhibitor.** Y. Shi[1], K.S. Lim[2], Q. Liang[2], Y. Li[1], I. Nazarenko[1], H. Wang[2], N. Williams[2], J.D. Brabander[2], L.F. Parada[1]; [1]Cancer Biology Genetics Program, Memorial Sloan Kettering Cancer Center, New York, NY, [2]Developmental Biology, UT Southwestern Medical Center, Dallas, TX

B525/P1956 **Cancer Stem Cell Proliferation in Human Prostate Cancer Cells utilizing a New Defined 3D Sphere Culture System.** K. Saito[1], N.J. Asbrock[1], V. Chu[1]; [1]Cellular Assays, Biological Reagents & Kits, MilliporeSigma, Temecula, CA

Oncogenes and Tumor Suppressors 3

B526/P1957 **The Oncogene MYC Alters Mitotic Function via TPX2.** J. Rohrberg[1], A. Corella[1], S. Balakrishnan[1], A. Goga[1]; [1]Cell and Tissue Biology, UCSF, San Francisco, CA

B527/P1958 **Understanding the multinucleation induced by the inhibition of Aurora Kinase A in precancerous skin cells.** E. Torchia[1], W. Ryan[1], J. Fernandez[1], M. Peterson[1]; [1]Dermatology, University of Colorado Anschutz Medical Campus, Aurora, CO

B528/P1959 **Overexpression of Early Mitotic Inhibitor 1 (Emi1) promotes genomic instability and cancer.** S. Vaidyanathan[1], K. Cato[1], L. Tang[2], S. Pavey[1], N.K. Haass[1], B.G. Gabrielli[1], P.H. G. Duijf[1]; [1]The University of Queensland Diamantina Institute, Brisbane, Australia, [2]School of Basic Medical Sciences, Fudan University, Shanghai, China

B529/P1960 **Chk1-mediated phosphorylation of Cdh1 promotes its SCFβTrCP-dependent degradation to facilitate cell cycle progression and checkpoint regulation.** D. Pal[1], A. Messina[1], M.K. Summers[1]; [1]Radiation Oncology, The Ohio State University Comprehensive Cancer Center- The James Cancer Hospital, Columbus, OH

B530/P1961 **DNA methylation, DNMT1 and breast cancer cells.** L. Delgado-Cruzata[1], L. Duran[1], R.M. Santella[2], M.B. Terry[2]; [1]Sciences, John Jay College, City University of New York, New York, NY, [2]Environmental Health Sciences, Mailman School of Public Health, Columbia University, New York, NY

B531/P1962 **BCL2 methylation in Oral Squamous Cell Carcinoma.** G. Khor[1], G. . Froemming[2], R. Binti Zain[3]; [1]Faculty of Dentistry, University Teknologi MARA, Selangor, Malaysia, [2]Faculty of Medicine, University Teknologi MARA, Selangor, Malaysia, [3]Oral Cancer Research and Coordinating Center, Faculty of Dentistry, University of Malaya, Kuala Lumpur, Malaysia

B532/P1963 **Inactivation of *Ezh2* upregulates *Gfi1* to accelerate aggressive Myc-driven Group 3 medulloblastoma.** B.T. Vo[1], C. Li[1], M. Morgan[2], I. Theurillat[3], D. Finkelstein[4], S. Wright[1,5], J. Hyle[1,5], S.M. Smith[1], Y. Fan[4], Y. Wang[4], G. Wu[4], B.A. Orr[6], P.A. Northcott[7], A. Shilatifard[2], C.J. Sherr[1,5], M.F. Roussel[1]; [1]Deparment of Tumor Cell Biology, St. Jude Children's Research Hospital, Memphis, TN, [2]Department of Biochemistry and Molecular Genetics, Northwestern University Feinberg School of Medicine, Chicago, IL, [3]Department of Cell Biology and Infection, Institut Pasteur, Paris, France, [4]Department of Computational Biology, St. Jude Children's Research Hospital, Memphis, TN, [5]Howard Hughes Medical Institute, Memphis, TN, [6]Department of Pathology, St. Jude Children's Research Hospital, Memphis, TN, [7]Department of Developmental Neurobiology, St. Jude Children's Research Hospital, Memphis, TN

B533/P1964 **Semaphorin 3B is a Direct Target of GATA3 Transcription Factor and is Indispensible for GATA3 Tumor Suppressive Activity in the Mammary Gland.** C. Wang[1,2,3], P. Shahi[2,4], J. Chou[2], H. Gonzalez[2], M. Lai[1,3], Z. Werb[2]; [1]The Institute of Basic Medical Sciences, National Cheng Kung University, Tainan, Taiwan, [2]Department of Anatomy, University of California, San Francisco , San Francisco, CA, [3]Department of Biochemistry and Molecular Biology, National Cheng Kung University, Tainan, Taiwan, [4]Department of Bioengineering and Therapeutic Sciences, University of California, San Francisco, San Francisco, CA

B534/P1965 **The X-linked tumor suppressor TSPX activates CDKN1A/p21 gene and suppresses MYC expression and cell proliferation in prostate cancer.** T. Kido[1], Y. Li[1], Y.C. Lau[1]; [1]Department of Medicine, VA Medical Center, University of California, San Francisco, San Francisco, CA

B535/P1966 **CD44-Associated Response to Hydrogen Peroxide-Mediated Oxidative Stress in MCF-7 Cells.** A.S. Shelton[1], J.P. Parson[1], K.E. Miletti-Gonzalez[1]; [1]Biological Sciences, Delaware State University, Dover, DE

B536/P1967 **MiR-133a function in the pathogenesis of dedifferentiated liposarcoma.** P.Y. Yu[1], J.M. Fenger[2], A. Strohecker[1], O.H. Iwenofu[3], R.E. Pollock[4], D.C. Guttridge[1]; [1]Cancer Biology and Genetics, Ohio State University, Columbus, OH, [2]Veterinary Clinical Sciences, Ohio State University, Columbus, OH, [3]Pathology, Ohio State University, Columbus, OH, [4]Surgical Oncology, Ohio State University, Columbus, OH

B537/P1968 **Modeling Glioma-Associated Genomic Rearrangements Using Somatic Genome Editing.** P.J. Cook[1], A. Ventura[1], R. Benezra[1]; [1]Cancer Biology and Genetics, Memorial Sloan Kettering Cancer Center, New York, NY

B538/P1969 **The RNA-Binding Protein with Multiple Splicing (RBPMS) Acts as a Tumor Suppressor in Ovarian Cancer.** P.E. Vivas-Mejia[1], P. Baez-Vega[2], G. Santiago[1], F. Valiyeva[2], N.J. Maihle[1]; [1]Biochemistry, University of Puerto Rico Medical Sciences Campus, San Juan, PR, [2]University of Puerto Rico Cancer Center, San Juan, PR

Regulators of Invasion and Metastasis

B539/P1970 **Cell Cycle Regulation of Invasive Behavior.** A.Q. Kohrman[1], W. Zhang[1], D.Q. Matus[1]; [1]Biochemistry and Cell Biology, Stony Brook University, Stony Brook, NY

B540/P1971 **Identification of new regulators of tumor cells clustering.** V. Lobjois[1], B. Ducommun[1]; [1]ITAV- CNRS, University of Toulouse, Toulouse, France

B541/P1972 **CD44-intracellular domain (ICD) a possible co-factor for Runx2 in the regulation of transcription of metastasis related genes.** L.T. Senbanjo[1], D. Srinivasan[1], S. Majumdar[1], M.A. Chellaiah[1]; [1]Department of Oncology and Diagnostic Sciences, University of Maryland Baltimore, Baltimore, MD

B542/P1973 **Role of oriented cell divisions in luminal breast cancer initiation.** L. Seldin[1], I.G. Macara[1]; [1]Cell and Developmental Biology, Vanderbilt University School of Medicine, Nashville, TN

B543/P1974 **SILAC identification of cell adhesion plasma membrane associated proteins in inflammatory breast cancer models.** I.J. Suárez-Arroyo[1], Y.R. Feliz-Mosquea[2], J. Perez-Laspiur[3], R. Arju[4], S. Giashuddin[5], G. Maldonado[6], R.J. Schneider[4], L.A. Cubano[7], M.M. Martinez-Montemayor[1]; [1]Department of Biochemistry, Universidad Central del Caribe-School of Medicine, Bayamon, PR, [2]Department of Biology, Inter American University, Bayamon, PR, [3]Translational Proteomics, University of Puerto Rico, Medical Sciences Campus, San Juan, PR, [4]Radiation Oncology, New York University, New York, NY, [5]Department of Pathology, The Brooklyn Hospital Center, Brooklyn, NY, [6]Data Management and Statistical Research Support Unit, Universidad Central del Caribe-School of Medicine, Bayamon, PR, [7]Department of Anatomy and Cell Biology, Universidad Central del Caribe-School of Medicine, Bayamon, PR

B544/P1975 **Identification of novel molecular markers of inflammatory breast cancer.** I.J. Suárez-Arroyo[1], Y.R. Feliz-Mosquea[2], J. Perez-Laspiur[3], R. Arju[4], S. Giashuddin[5], G. Maldonado[6], R.J. Schneider[4], M.M. Martinez-Montemayor[1], L.A. Cubano[7]; [1]Department of Biochemistry, Universidad Central del Caribe-School of Medicine, Bayamon, PR, [2]Department of Biology, Inter American University, Bayamon, PR, [3]Translational Proteomics, University of Puerto Rico, Medical Sciences Campus, San Juan, PR, [4]Radiation Oncology, New York University, New York, NY, [5]Department of Pathology, The Brooklyn Hospital Center, Brooklyn, NY, [6]Data Management and Statistical Research Support Unit, Universidad Central del Caribe-School of Medicine, Bayamon, PR, [7]Department of Anatomy and Cell Biology, Universidad Central del Caribe-School of Medicine, Bayamon, PR

B545/P1976 **Down-regulation of a high molecular weight tropomyosin Tpm4.1 leads to disruption of cell-cell adhesions and invasive behavior in breast epithelial cells.** S. Jeong[1], S. Lim[1], G. Schevzov[2], P.W. Gunning[2], D.M. Helfman[1]; [1]Biological Sciences, Korea Advanced Institute of Science and Technology, Daejeon, Korea, South, [2]Oncology Research Unit, School of Medical Sciences, Sydney, Australia

B546/P1977 **Establishing the involvement of exosomal NM23 in pro-angiogenic communication between triple negative breast cancer cells and their vascular targets.** S. Duan[1], S. Nordmeier[1], I.L. Buxton[1]; [1]Pharmacology, University of Nevada, Reno School of Medicine, Reno, NV

B547/P1978 **The role of ELK3 to regulate transforming growth factor-β signaling in the triple negative breast cancer.** J. Park[1], K. Park[1], J. Park[1]; [1]Biomedical Science, Cha University, Seong Nam, Korea, South

B548/P1979 **Assembly of the WASH complex by HSBP1 promotes mammary carcinoma invasiveness.** S.P. Visweshwaran[1], P.A. Thomason[2], R. Guérois[3], S. Vacher[4], S. Lilla[2], C. Lazennec-Schurdevin[1], G. Lakisic[1], Y. Mechulam[1], E. Schmitt[1], I. Bièche[4], R.H. Insall[2], A. Gautreau[1]; [1]CNRS UMR7654, Ecole Polytechnique - Université Paris-Saclay, Palaiseau, France, [2]Beatson Institute, Cancer Research UK, Glasgow, United Kingdom, [3]I2BC, CEA - Université Paris-Saclay, Gif-sur-Yvette, France, [4]Unité de Pharmacogénomique, Institut Curie, Paris, France

B549/P1980 **Adipose signaling and actomyosin contractility in breast cancer invasion.** A.R. Acheva[1], V. Deckwirth[1], S. Tojkander[1]; [1]Department of Veterinary Biosciences, Section of Pathology, University of Helsinki, Helsinki, Finland

B550/P1981 **The role of *fad104*, a positive regulator for adipogenesis, in TGF-β1-induced epithelial to mesenchymal transition.** M. Goto[1], M. Nishizuka[1], S. Osada[1], M. Imagawa[1]; [1]Molecular Biology, Graduate School of Pharmaceutical Sciences, Nagoya City University, Nagoya, Japan

B551/P1982 **PSPC1 is an activator to drive the epithelial–mesenchymal transition, stemness and TGF-β metastatic switch.** Y. Jou[1,2], H. Yeh[1,2], Y. Lang[1]; [1]Academia Sinica, Institute of Biomedical Sciences, Taipei, Taiwan, [2]National Defense Medical Center, Graduate Institute of Life Sciences, Taipei, Taiwan

B552/P1983 **Arrestin 3 Mediates a Mesenchymal to Epithelial Transition in Renal Cell Carcinoma Cells.** J. Masannat[1], M. Russin[1], Y. Daaka[1]; [1]Anatomy and Cell Biology, University of Florida, Gainesville, FL

B553/P1984 **Akt-elicited phosphorylation of Acapin promotes liver cancer metastasis.** J. Zhou[1], X. Liu[1,2], Y. Zhang[1,2], W.W. Yao[2], S. Zhou[1], F. Wang[1,2], X. Yao[1,2]; [1]CAS Center of Excellence, University of Science and Technology of China, Hefei, China, [2]Atlanta Clinical Translational Science Institute, Atlanta, GA

B554/P1985 **Adenosine Generated by Ectonucleotidases of Glioblastoma-Initiating Cells Controls the cell migration/invasion of Glioma cells through the activation of Low-Affinity Adenosine Receptors under Hypoxia.** A.S. Torres[1], J.I. Erices[1], I.P. Ehrenfeld[2], T. Virolle[3], L. Turchi[3], C.F. Oyarzún[1], R.E. San Martín[1], C.A. Quezada[1]; [1]Institute of Biochemistry and Microbiology, Universidad Austral de Chile, Valdivia, Chile, [2]Institute of Physiology and Pathology, Universidad Austral de Chile, Valdivia, Chile, [3]Institut de Biologie Valrose (iBV), Université Nice Sophia Antipolis, Nice, France

Chromatin and Chromosome Organization

B556/P1986 **The p150N domain of Chromatin Assembly Factor-1 regulates chromosome organization throughout the cell cycle via Ki-67.** T.D. Matheson[1], P.D. Kaufman[1]; [1]Molecular, Cell and Cancer Biology, U. Massachusetts Medical School, Worcester, MA

B557/P1987 **The composition and organization of Drosophila heterochromatin are heterogeneous and dynamic.** J.M. Swenson[1], S.U. Colmenares[1], A.R. Strom[1,2], S.V. Costes[1], G.H. Karpen[1,2]; [1]Organismal Systems Bioresilience, Lawrence Berkeley National Lab, Berkeley, CA, [2]Molecular and Cell Biology, University of California at Berkeley, Berkeley, CA

B558/P1988 **Boundaries of newly established heterochromatin domains are defined by a G-quadruplex binding protein, Lia3, and related DNA-binding proteins.** D.L. Chalker[1], C.M. Carle[1], V.N. Jaspan[1], M. Taye[1], J.J. Chung[1]; [1]Biology, Washington University in St Louis, St Louis, MO

B559/P1989 **CRISPR-based tracking of interphase chromosome dynamics in living cells.** H. Ma[1], L. Tu[2], A. Naseri[3], M. Huisman[2], S. Zhang[3], D. Grunwald[2], T. Pederson[1]; [1]Biochemistry and Molecular Pharmacology, University of Massachusetts Medical School, Worcester, MA, [2]RNA Therapeutics Institute, University of Massachusetts Medical School, Worcester, MA, [3]Computer Science, University of Central Florida, Orlando, FL

B560/P1990 **Live cell imaging reveals dynamic sister chromatid linkage at individual genomic loci.** R. Stanyte[1], J. Nuebler[2], R. Stocsits[3], A. Schleiffer[3], L. Mirny[2], J. Peters[3], D.W. Gerlich[1]; [1]Institute of Molecular Biotechnology of the Austrian Academy of Sciences (IMBA), Vienna Biocenter (VBC), Vienna, Austria, [2]Institute for Medical Engineering and Sciences, and Department of Physics, Massachusetts Institute of Technology (MIT), Cambridge, MA, [3]Research Institute of Molecular Pathology (IMP), Vienna Biocenter (VBC), Vienna, Austria

B561/P1991 **Spatial organization of topologically associated domains in individual chromosomes.** S. Wang[1,2], J. Su[1,3], B.J. Beliveau[4], B. Bintu[1,5], J.R. Moffitt[1,2], C. Wu[4], X. Zhuang[1,2,5]; [1]Howard Hughes Medical Institute, Cambridge, MA, [2]Department of Chemistry and Chemical Biology, Harvard University, Cambridge, MA, [3]Department of Molecular and Cellular Biology, Harvard University, Cambridge, MA, [4]Department of Genetics, Harvard Medical School, Cambridge, MA, [5]Department of Physics, Harvard University, Cambridge, MA

B562/P1992 **Multicolor labeling and imaging nuclear organization of native chromatin loci with type II CRISPR/Cas9 system in living cells.** P. Qin[1], M. Parlak[2], J. Bandaria[1], A. Yildiz[1], A. Mazhar[2]; [1]QB3, UC Berkeley, Berkeley, CA, [2]Department of Biochemistry and Molecular Genetics, University of Virginia, Charlottesville, VA

B563/P1993 **Multicolor labeling of genomic loci using orthogonal CRISPR effectors and modified guide RNAs in living human cells.** S. Wang[1,2], J. Su[1,2,3], F. Zhang[4,5,6], X. Zhuang[1,2,7]; [1]Department of Chemistry and Chemical Biology, Harvard University, Cambridge, MA, [2]Department of Physics, Harvard University, Cambridge, MA, [3]Department of Molecular and Cellular Biology, Harvard University, Cambridge, MA, [4]McGovern Institute for Brain Research, Massachusetts Institute of Technology, Cambridge, MA, [5]Department of Brain and Cognitive Science, Massachusetts Institute of Technology, Cambridge, MA, [6]Broad Institute of MIT and Harvard, Cambridge, MA, [7]Howard Hughes Medical Institute, Chevy Chase, MD

B564/P1994 **Hunchback and Krüppel mediate early cell fate competence correlated with distinct actin-dependent intranuclear re-localization of gene loci in *Drosophila* neuroblasts.** P. Chikte[1], S. Jansen[1], N. Dinges[2], J. Urban[1]; [1]Biology, Institute of Genetics, Mainz, Germany, Mainz, Germany, [2]Institute of Molecular Biology, Mainz, Germany

B565/P1995 **Assembly of Heterochromatin and CENP-A chromatin at Fission Yeast Centromeres.** A.L. Pidoux[1], P. Tong[1], R. Ard[1], M. Shukla[1], N. Toda[1], H. Berger[1], R. Allshire[1]; [1]Wellcome Trust Centre for Cell Biology, Institute of Cell Biology, The University of Edinburgh,, Edinburgh, United Kingdom

B566/P1996 **Nucleosome–nucleosome interactions via histone tails and linker DNA regulate nuclear rigidity.** Y. Shimamoto[1,2,3], S. Tamura[4], K. Maeshima[1,4]; [1]Department of Genetics, SOKENDAI University, Shizuoka, Japan, [2]AMED-PRIME, Japan Agency for Medical Research and Development, Tokyo, Japan, [3]Center for Frontier Research, National Institute of Genetics, Shizuoka, Japan, [4]Structural Biology Center, National Institute of Genetics, Shizuoka, Japan

B567/P1997 **Tissue mechanics regulate heterochromatin formation in breast epithelial cells.** J. Northcott[1], R. Bainer[1], V.M. Weaver[1]; [1]Department of Surgery, University of California San Francisco, San Francisco, CA

B568/P1998 **Characterization of double strand DNA breaks response in primary cells from Huntington's disease transgenic minipig model.** M. Vaskovicova[1], J. Valasek[1], P. Rausova[1], A. Herbert[2], J. Motlik[1], P. Solc[1]; [1]Pigmod Centre, Institute of Animal Physiology and Genetics, The Czech Academy of Sciences, Libechov, Czech Republic, [2]Genome Damage and Stability Centre, University of Sussex, Sussex, United Kingdom

B569/P1999 **Exploiting Non-canonical Heterochromatin-mediated Telomere Protection Mechanisms in Human Cells.** T.T. Chow[1], S. Chen[1], J. Wei[1], C. Wilson[2], M.R. Arkin[2], E.H. Blackburn[1]; [1]Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA, [2]Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA

B570/P2000 **Characterization of PARP-1 and PARP-2 function at heterochromatin domains.** D. Quenet[1]; [1]Biochemistry, University of Vermont, Burlington, VT

B571/P2001 **A single double strand break system reveals repair dynamics and mechanisms in heterochromatin and euchromatin.** A. Janssen[1], G.A. Breuer[2], E.K. Brinkman[3], A.I. van der Meulen[1], S.V. Borden[1], B. van Steensel[3], R.S. Bindra[2], J.R. LaRocque[4], G.H. Karpen[1]; [1]Biological Systems and Engineering, Lawrence Berkeley National Lab, Berkeley, CA, [2]Departments of Therapeutic Radiology and Experimental Pathology, Yale School of Medicine, New Haven, CT, [3]Division of Gene Regulation, Netherlands Cancer Institute, Amsterdam, Netherlands, [4]Department of Human Science, Georgetown University Medical Center, Washington DC, DC

B900/P2002 **Identification of molecular determinants of Tousled-like kinase 2 (TLK2) activity.** C. Jauset[1,2], S. Segura-Bayona[2], T.H. Stracker[2]; [1]Faculty of Medicine, Universitat de Lleida (UdL), Lleida, Spain, [2]Oncology, Institute for Research in Biomedicine (IRB Barcelona), Barcelona, Spain

B901/P2003 **RecBCD degradation controls template choice during double stranded break repair.** J. Wiktor[1], M. van der Does[1], L. Buller[1], D. Sherratt[2], C. Dekker[1]; [1]Department of Bionanoscience, TU Delft, Delft, Netherlands, [2]Department of Biochemistry, University of Oxford, Oxford, United Kingdom

B902/P2004 **Transition of Higher-Order Structure of DNA with Polyamines Causes Marked Change on Gene-Expression.** A. Kanemura[1], Y. Yoshikawa[1], W. Fukuda[2], K. Tsumoto[3], T. Kenmotsu[1], K. Yoshikawa[1]; [1]Faculty of Life and Medical Sciences, Doshisha University, Kyotanabe, Kyoto, Japan, [2]Department of Biotechnology, College of Life Sciences, Ritsumeikan University, Kusatsu, Shiga, Japan, [3]Department of Chemistry for Materials, Faculty of Engineering, Mie University, Tsu, Mie, Japan

B903/P2005 **DNA Replication Timing During Development Anticipates Transcriptional Programs and Parallels Enhancer Activation.** J.C. Siefert[1,2], C. Georgescu[3], J.D. Wren[3,4], A. Koren[5], C.L. Sansam[1,2]; [1]Cell Cycle Cancer Biology Research Program, Oklahoma Medical Research Foundation, Oklahoma City, OK, [2]Department of Cell Biology, University of Oklahoma Health Sciences Center, Oklahoma City, OK, [3]Arthritis and Clinical Immunology Research Program, Oklahoma Medical Research Foundation, Oklahoma City, OK, [4]Department of Biochemistry and Molecular Biology, University of Oklahoma Health Sciences Center, Oklahoma City, OK, [5]Department of Molecular Biology and Genetics, Cornell University, Ithaca, NY

B904/P2006 **CENP-B protects centromere chromatin integrity by facilitating histone deposition via the H3.3-specific chaperone Daxx.** V.M. Morozov[1], S. Giovinazzi[1,2], A.M. Ishov[1]; [1]Department of Anatomy and Cell Biology, University of Florida College of Medicine, Gainesville, FL, [2]Department of Biomedical Sciences, Florida State University College of Medicine, Tallahassee, FL

Epigenetics and Chromatin Remodeling

B905/P2007 **Linker Histone function of Yeast HMO1 – Implications for DNA Repair.** A. Panday[1], A. . Grove[1]; [1]Biological Sciences, Louisiana State University, Baton rouge, LA

B906/P2008 **Studying combinatorial histone modifications.** L. Handoko[1], J. Chang[1], B. Kaczkowski[1], K. Fujita[2], M. Lizio[1], Y. Sato[3], M. Wakamori[4], H. Kimura[3], Y. Taniguchi[2], T. Yanagida[2], T. Umehara[4], A. Minoda[1]; [1]CLST-DGT, RIKEN, Yokohama, Japan, [2]Quantitative Biology Center, RIKEN, Osaka, Japan, [3]Institute of Innovative Research, Tokyo Institute of Technology, Yokohama, Japan, [4]CLST-DSSB, RIKEN, Yokohama, Japan

B907/P2009 **Methylation profiles of the genes involved in self-defense mechanisms in a carnivorous plant *Drosera adelae*.** N. Arai[1], T. Ohyama[1]; [1]Biology, Waseda University, Tokyo, Japan

B908/P2010 **Drosophila O-GlcNAcase Deletion Globally Perturbs Chromatin O-GlcNAcylation.** I. Akan[1], D. Love[1], J.A. Hanover[1]; [1]LCMB, NIH / NIDDK, Bethesda, MD

B909/P2011 **Identification and characterization of active enhancers as potential biomarkers of aggressive colorectal cancer.** R. Wu[1], C.R. Jerde[1], R.B. Diasio[1], S.M. Offer[1]; [1]Department of Molecular Pharmacology and Experimental Therapeutics, Mayo Clinic, Rochester, MN

B910/P2012 **Methylation and Acetylation of Sperm Histone 3 Regulate Chromatin Dynamics and Male Fertility.** A.M. Chiappetta[1,2,3], N.A. Kutchy[1], E. Menezes[1], A. Moura[4], A. Kaya[5], A. Perkins[2], E. Memili[1]; [1]Department of Animal and Dairy Sciences, Mississippi State University, Mississippi State, MS, [2]Department of Computer Science and Engineering, Mississippi State University, Mississippi State, MS, [3]Department of Biology and Biochemistry, University of Northwestern - St. Paul, St. Paul, MN, [4]Department of Animal Science, Federal University of Ceara, Fortaleza, Brazil, [5]Department of Reproduction and Artificial Insemination, Selcuk University, Konya, Turkey

B911/P2013 **Ccp1 homodimer mediates chromatin integrity by antagonizing CENP-A loading.** Q. Dong[1], F. Yin[2], Y. Li[2], J. Yang[1], Y. Chen[2], F. Li[1]; [1]Department of Biology, New York University, New York, NY, [2]Institute of Genetics and Developmental Biology, Chinese Academy of Sciences, Beijing, China

B912/P2014 **Mechanisms of γ-H2AX spreading by Mec1^{ATR} and Tel1^{ATM} around a double strand break in *Saccharomyces cerevisiae*.** K. Li[1], G. Bronk[1], J. Kondev[1], J.E. Haber[2]; [1]Department of Physics, Brandeis University, Waltham, MA, [2]Rosenstiel Basic Medical Sciences Research Center, Brandeis University, Waltham, MA

B913/P2015 **RNA dependent stabilization of SUV39H1 at constitutive heterochromatin.** W.L. Johnson[1], W.T. Yewdell[1], S.M. McNulty[2], Z. Duda[3], R.J. O'Neill[3], B.A. Sullivan[2], A.F. Straight[1]; [1]Biochemistry, Stanford Medical School, Stanford, CA, [2]Molecular Genetics and Microbiology, Duke University Medical Center, Durham, NC, [3]Molecular and Cellular Biology, University of Connecticut, Storrs, CT

B914/P2016 **Live-cell imaging reveals dynamics and distribution of Tet1 in mouse embryonic stem cells.** J. Ryan[1,2], C.B. Mulholland[1], E. Schmidtmann[1], H. Leonhardt[1]; [1]Biology, LMU Munich, Munich, Germany, [2]Life Sciences, International Max-Planck Research School, Munich, Germany

B915/P2017 **Internal modifications in the CENP-A nucleosome modulate centromeric dynamics.** S. Roque[1], M. Bui[1], M. Pitman[2], A. Nuccio[3], P.G. Donlin-Asp[4], A. Nita-Lazar[3], G. Papoian[2], Y. Dalal[1]; [1]CCR, NCI, Bethesda, MD, [2]UMCP, University of Maryland, College park, College Park, MD, [3]Laboratory of Systems Biology, NIAID, Bethesda, MD, [4]Department of Cell Biology, Emory University, Atlanta, GA

B916/P2018 **Histone H1 phosphorylation dynamics in cell differentiation: differential regulation and function.** R. Liao[1], C.A. Mizzen[1,2]; [1]Department of Cell and Developmental Biology, University of Illinois at Urbana-Champaign, Urbana, IL, [2]Institute for Genomic Biology, University of Illinois at Urbana-Champaign, Urbana, IL

Nuclear Lamina and Laminopathies

B918/P2019 **Stiffness-dependent maintenance of Mkl1/SRF-signaling requires Emerin and Lamin A.** M.K. Willer[1], C.W. Carroll[1]; [1]Dept. of Cell Biology, Yale University, New Haven, CT

B919/P2020 **Cytoskeleton medicated nuclear mechanics.** D. Kim[1], J. Park[1], S. Sun[2], D. Wirtz[3]; [1]KU-KIST Graduate School of Converging Science and Technology, Korea University, Seoul, Korea, South, [2]Mechanical Engineering, Johns Hopkins University, Baltimore, MD, [3]Chemical and Biomolecular Engineering, Johns Hopkins University, Baltimore, MD

B920/P2021 **Rescue of emerin-null myogenic progenitor differentiation by inhibition of multiple MAP kinases or activation of HDAC3.** J.A. Ellis[1], C.M. Collins[1], J.M. Holaska[1]; [1]Pharmaceutical Sciences, University of the Sciences, Philadelphia, PA

B921/P2022 **Emerin induces nuclear rupture in Xenopus egg extract.** M.R. Dilsaver[1], D.L. Levy[1]; [1]Molecular Biology, University of Wyoming, Laramie, WY

B922/P2023 **Characterization of the interaction between β-Dystroglycan and emerin and its functional relevance.** W.L. Gómez Monsiváis[1], P.M. Azuara[1], B. Cisneros-Vega[1]; [1]Genetics and Molecular Biology, CINVESTAV-IPN, Mexico city, Mexico

B923/P2024 **Direct visualization of nuclear envelope breakdown.** N. Wesolowska[1], M. Mori[2], P. Machado[3], P. Lénárt[1]; [1]Cell Biology and Biophysics, European Molecular Biology Laboratory, Heidelberg, Germany, [2]Department of Experimental Genome Research, Osaka University, Osaka, Japan, [3]Electron Microscopy Core Facility, European Molecular Biology Laboratory, Heidelberg, Germany

B924/P2025 **HECW2 ubiquitin ligase targets PCNA and Lamin B1 in laminopathic cells.** V. Krishnamoorthy[1], V.K. Parnaik[1]; [1]CSIR-Centre for Cellular and Molecular Biology, Hyderabad, India

B925/P2026 **RNF123 ubiquitin ligase targets lamin-binding proteins in laminopathic cells.** R. Khanna[1], V.K. Parnaik[1]; [1]CSIR-Centre for Cellular and Molecular Biology, Hyderabad, India

B926/P2027 **Lamin A-binding membrane-tethered kinase phosphorylates barrier-to-autointegration factor.** B. KC[1], D.I. Kim[1], K.J. Roux[1]; [1]Children's Health Research Center, Sanford Research, Sioux Falls, SD

B927/P2028 **Highly branched nuclei in the Xenopus tail fin.** A.E. Wills[1], H.E. Arbach[1]; [1]Biochemistry, University of Washington, Seattle, WA

Nucleocytoplasmic Transport

B928/P2029 **Super-resolution study of nuclear envelope transmembrane protein transport in live cells.** K.C. Mudumbi[1], E. Schirmer[2], W. Yang[1]; [1]Department of Biology, Temple University, Philadelphia, PA, [2]Wellcome Trust Center for Cell Biology, University of Edinburgh, Edinburgh, United Kingdom

B929/P2030 **Regulation of pronuclear size in mouse zygotes.** M. Ohsugi[1], H. Watanabe[1,2]; [1]Department of Life Sciences, Graduate School of Arts and Sciences, The University of Tokyo, Tokyo, Japan, [2]Department of Pathology, Immunology and Microbiology, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan

B930/P2031 **The exportin Xpo4 recognizes eIF5A through its unique amino acid hypusine for nuclear export.** M. Aksu[1], S. Trakhanov[1], D. Görlich[1]; [1]Department of Cellular Logistics, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany

B931/P2032 **Characterizing the minimal system for mRNA quality control at the entry of the nuclear pore complex.** M. Soheilypour[1], M. Mofrad[1]; [1]Department of Bioengineering, University of California, Berkeley, Berkeley, CA

B932/P2033 **Like Charge Regions (LCRs) are major regulators of transport through the Nuclear Pore Complex.** M. Peyro[1,2], M. Soheilypour[1], A. Ghavami[1], M. Mofrad[1,2]; [1]Department of Bioengineering, University of California Berkeley, Berkeley, CA, [2]Department of Mechanical Engineering, University of California Berkeley, Berkeley, CA

B933/P2034 **The interaction between the nuclear basket protein Mlp1 and the RNA-binding protein Nab2 sheds light on mRNA quality control mechanism.** M. Soheilypour[1], M. Peyro[1,2], H. Shams[1], M. Mofrad[1,2]; [1]Department of Bioengineering, University of California, Berkeley, Berkeley, CA, [2]Department of Mechanical Engineering, University of California, Berkeley, Berkeley, CA

B934/P2035 **Relationship of proteostasis and nucleocytoplasmic transport in neurodegenerative diseases.** K. Zhang[1], K. Cunningham[1], K. Ruan[1], J. Grima[1], G. Daigle[1], J. Rothstein[1], T.E. Lloyd[1]; [1]Neurology and Neuroscience, Johns Hopkins University School of Medicine, Baltimore, MD

B935/P2036 **Altering nuclear size in melanoma cell lines affects cancer cell characteristics.** L.D. Vukovic[1], B.A. Stohr[2], D.L. Levy[1]; [1]Molecular Biology, University of Wyoming, Laramie, WY, [2]Pathology, University of California, San Francisco, CA

B936/P2037 **Simple biophysics underpins collective conformations of the intrinsically disordered proteins of the Nuclear Pore Complex.** A. Vovk[1], C. Gu[1], M. Opferman[2], L.E. Kapinos[3], R.Y. Lim[3], R. Coalson[2], D. Jasnow[2], A. Zilman[1]; [1]Physics and Institute for Biomaterials and Bioengineering, University of Toronto, Toronto, ON, [2]Physics and Astronomy, University of Pittsburgh, Pittsburgh, PA, [3]Biozentrum, University of Basel, Basel, Switzerland

B937/P2038 **Possible Interaction of NIL-16, a Neural-Specific Cytokine Precursor, with HDAC3 and Dysbindin-1.** K.W. Baugh[1], S.D. Fenster[1]; [1]Biology, Fort Lewis College, Durango, CO

B938/P2039 **Unusual NLS and NES are the basis for active nucleocytoplasmic shuttling of TAZ.** M.M. Kofler[1], P. Speight[1], K. Szaszi[1,2], A. Kapus[1,2]; [1]Keenan Research Centre, St. Michael's Hospital, Toronto, ON, [2]Dept. Surgery and Biochemistry, University of Toronto, Toronto, ON

B939/P2040 **Nuclear export pathway of alpha-dystrobrevin 1.** I.A. Mandujano-Ramos[1], J. Gomez-Lopez[1], B. Cisneros-Vega[1]; [1]Genetics and Molecular Biology, CINVESTAV, Mexico City, Mexico

B940/P2041 **CRM1 mediates nuclear export of beta dystroglycan to maintain correct nuclear envelope integrity and function.** G. Vélez Aguilera[1], J. Gómez López[1], E. Jiménez Gutiérrez[1], A. Vásquez Limeta[1], M. Laredo Cisneros[1], S.J. Winder[2], B. Cisneros-Vega[1]; [1]Genetic and Molecular Biology, CINVESTAV, IPN, Mexico, Mexico, [2]Biomedical Science, University of Sheffield, UK, United Kingdom

B941/P2042 **Proteosome-mediated Nuclear Degradation of Alpha Dystrobrevin-1.** J. Gomez-Lopez[1], B. Cisneros-Vega[1]; [1]Genetic and Molecular Biology, CINVESTAV, México City, Mexico

B942/P2043 **Nuclear matrix protein CIZ1 is localised to the inactive X chromosome, and its absence results in loss of *Xist* localisation and highly penetrant female-specific lympho-proliferative disorder in mice.** E.R. Stewart[1], T. Nesterova[2], R. Ridings Figueroa[1], H. Coker[2], J. Roulson[3], A. Haslam[1], G. Albadrani[4], N. Brockdorff[2], J.F. Ainscough[1,4], D. Coverley[1]; [1]Department of Biology, University of York, York, United Kingdom, [2]Department of Biochemistry, University of Oxford, Oxford, United Kingdom, [3]Leeds Institute of Molecular Medicine, University of Leeds, Leeds, United Kingdom, [4]LICAMM, University of Leeds, Leeds, United Kingdom

B943/P2044 **Does the nuclear pore complex adopt different transport mechanisms in different species?** R. Moussavi-Baygi[1], M. Mofrad[1]; [1]Applied Science and Technology, University of California, Berkeley, Berkeley, CA

B944/P2045 **Traffic across the nuclear membrane: The cargo shape matters.** R. Moussavi-Baygi[1], M. Mofrad[1]; [1]Applied Science and Technology, University of California, Berkeley, Berkeley, CA

B945/P2046 **Pressurized transport of viral genome across the nuclear pore complex.** R. Moussavi-Baygi[1], M. Mofrad[1]; [1]Applied Science and Technology, University of California, Berkeley, Berkeley, CA

B946/P2047 **Prolines in the α-helix confer structural flexibility on importin β necessary for nuclear transport.** M. Kumeta[1], H. Konishi[1], S. Yoshimura[1]; [1]Graduate School of Biostudies, Kyoto University, Kyoto, Japan

B947/P2048 **Nuclear volume control in the green lineage: testing the constancy of the N/C ratio in Chlamydomonas.** D. Liu[1,2], J.G. Umen[1]; [1]Donald Danforth Plant Science Center, St. Louis, MO, [2]Biology, University of Missouri, St. Louis, MO

B948/P2049 **The unexpected importance of nucleoporin Nup153 in the intracellular traffic of influenza A virus.** M. Acevedo[1], W. Wu[1], N. Pante[1]; [1]Zoology, University of British Columbia, Vancouver, BC

B949/P2050 **Plasticity of nucleoporin nuclear transport receptor interactions.** I. Valle Aramburu[1], P.S. Tan[1], S. Tyagi[1], E. Lemke[1]; [1]Structural and Computational Biology Unit, Cell Biology and Biophysics Unit, European Molecular Biology Laboratory (EMBL), Heidelberg, Germany

B950/P2051 **An alternative nuclear export pathway in *Saccharomyces cerevisiae*.** B. Ding[1], A.M. Mirza[2], V. Budnik[1], M. Munson[2]; [1]Neurobiology, University of Massachusetts Medical School, Worcester, MA, [2]Biochemistry Molecular Pharmacology, University of Massachusetts Medical School, Worcester, MA

Vesicle Docking and Fusion

B952/P2052 **MAP1B-LC1 regulates autophagosome formation by interacting with the autophagy-related SNARE syntaxin 17.** K. Arasaki[1], M. Tagaya[1], N. Dohmae[2], Y. Kurosawa[1], H. Nagashima[1]; [1]School of Life Sciences, Tokyo University of Pharmacy and Life Sciences, Tokyo, Japan, [2]Biomolecular Characterization Unit, RIKEN Center for Sustainable Resource Science, Saitama, Japan

B953/P2053 **The HOPS/Class C Vps complex tethers autophagosomes to lysosomes/vacuoles by binding simultaneously to the autophagosome surface protein LC3B/Atg8p and to a lysosome/vacuole Rab GTPase.** C. Stroupe[1]; [1]Molecular Physiology and Biological Physics, University of Virginia, Charlottesville, VA

B954/P2054 **TRIM9-dependent ubiquitination of DCC constrains kinase signaling, exocytosis and axon branching.** C.C. Winkle[1], S. Menon[2], M. Plooster[3], F.L. Urbina[3], C. Monkiewicz[2], C. Hanlin[2], S.L. Gupton[2,4,5]; [1]Neurobiology Curriculum, University of North Carolina, Chapel Hill, NC, [2]Department of Cell Biology and Physiology, University of North Carolina, Chapel Hill, NC, [3]Cell Biology and Physiology Curriculum, University of North Carolina, Chapel Hill, NC, [4]Neuroscience Center, University of North Carolina, Chapel Hill, NC, [5]Lineberger Comprehensive Cancer Center, University of North Carolina, Chapel Hill, NC

B955/P2055 **The cell membrane repair protein dysferlin binds SNAREs and stimulates membrane fusion in a calcium-sensitive manner.** C.P. Johnson[1], S. Codding[1]; [1]Biochemistry, Oregon State University, Corvallis, OR

B956/P2056 **A Link to the Past - How endosomal vesicles are captured by Golgins at the TGN.** J.J. Shin[1], A. Gillingham[1], J. Chadwick[1], S. Munro[1]; [1]Cell Biology, MRC Laboratory of Molecular Biology, Cambridge, United Kingdom

B957/P2057 **Yeast dynamin for the fusion of endosome-derived vesicles at the Golgi.** P. Makaraci[1], H. McDermott[1], M. Delgado Cruz[1], K. Kim[1]; [1]Biology, Missouri State University, Springfield, MO

B958/P2058 WITHDRAWN

B959/P2059 **Vps1 functions with the GARP tethering complex for endosome-to-Golgi traffic.** U. Saimani[1], J. Smothers[1], K. Kim[1]; [1]Biology, Missouri State University, Springfield, MO

B960/P2060 **Coordination of tethering and fusion machinery by the Golgin protein Coy1.** N.S. Anderson[1], C. Barlowe[1]; [1]Cell Biology and Biochemistry, Dartmouth College, Hanover, NH

B961/P2061 **In vitro reconstitution of COG function in membrane tethering and fusion.** W. Wang[1], T. Kudlyk[1], V.V. Lupashin[1]; [1]Department of Physiology and Biophysics, University of Arkansas for Medical Sciences, Little Rock, AR

B962/P2062 **Establishing a new role for the MAL2 N-terminal proline-rich domains in actin remodeling and cancer progression.** A. Lopez Coral[1], E.T. Azurin[1], P.L. Tuma[1]; [1]Biology, The Catholic University of America, Washington, DC

B963/P2063 **Alcohol□induced tubulin acetylation alters lipid droplet dynamics.** J.L. Groebner[1], M.M. Girón Bravo[1], D.J. Tuma[2], P.L. Tuma[1]; [1]Biology, The Catholic University of America, Washington, DC, [2]Internal Medicine, University of Nebraska, Omaha, NE

B964/P2064 **Chromaffin cell synaptotagmin isoforms belong to spatially and functionally vesicle granule pools.** T.C. Rao[1], P.J. Dahl[1], A.H. Ranski[1], M. Schmidtke[1], J. Bourg[2], S.L. Veatch[2], D.R. Giovannucci[3], E.R. Chapman[4], A. Anantharam[1]; [1]Pharmacology, University of Michigan, Ann Arbor, MI, [2]Biophysics, University of Michigan, Ann Arbor, MI, [3]Neuroscience, University of Toledo, Toledo, OH, [4]Neuroscience, University of Wisconsin, Madison, WI

B965/P2065 **Different Munc18 Proteins Mediate Baseline and Stimulated Airway Mucin Secretion.** A. Jaramillo[1], M.J. Tuvim[1], B.F. Dickey[1]; [1]Pulmonary Medicine, MD Anderson Cancer Center, Houston, TX

B966/P2066 **Roles of Lipid Binding in Polarized Exocytosis Regulated by the OSBP Homologue Osh4p.** R.J. Smindak[1], M.A. Hand[1], G.E. Mantus[1], D.M. Hyatt[1], R.C. Deutscher[1], K.G. Kozminski[1,2]; [1]Biology, University of Virginia, Charlottesville, VA, [2]Cell Biology, University of Virginia, Charlottesville, VA

B967/P2067 **Title: Macropinosome-lysosome fusion is a clathrin dependent process in bone marrow derived macrophages.** S. Poudel[1], L. Huang[2], J. Lou[2], G. Opoku-kusi[2], A.D. Hoppe[2], N.W. Thiex[1]; [1]Biology and Microbiology, South Dakota State University, Brookings, SD, [2]Chemistry and Bio-Chemistry, South Dakota State University, Brookings, SD

B968/P2068 **Coiled-coils as molecular motors: entropic polymer engines.** M. Jahnel[1,2], D.H. Murray[2], M. Zerial[2], S.W. Grill[1,2]; [1]BIOTEC, TU Dresden, Dresden, Germany, [2]Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany

B969/P2069 **Exocytosis of *Toxoplasma gondii* microneme and rhoptry organelles is controlled by the ferlin family of Ca^{2+}-sensors.** B.I. Coleman[1], S. Saha[1], E.C. Gray[1], D. Tagoe[1], M. Gubbels[1]; [1]Biology, Boston College, Chestnut Hill, MA

B970/P2070 **The Rab27 effector synaptotagmin-like protein 2 interacts with lipids to regulate Weibel-Palade body exocytosis.** S.N. Koerdt[1], A. Biesemann[1], V. Gerke[1]; [1]Institute of Medical Biochemistry, Center for Molecular Biology of Inflammation, University of Muenster, Muenster, Germany

Endosomes, Lysosomes, and Lysosome-Related Organelles 2

B971/P2071 **Conessine Interferes with Oxidative Stress-Induced C2C12 Myoblast Cell Death through Inhibition of Autophagic Flux.** H. Kim[1], M. Jang[1], R. Park[1], J. Park[1]; [1]Division of Biological Science and Technology, Yonsei University, Wonju, Korea, South

B972/P2072 **Gyp1 mutant cells are defective in autophagy regulation.** T. Chang[1], W. Huang[1]; [1]Department of Life Science, National Taiwan University, Taipei, Taiwan

B973/P2073 **Identification and characterization of deubiquitinating enzymes regulate autophagosome formation in Drosophila.** G. Chen[1]; [1]Inst Biological Chemistry, Academia Sinica, Taipei, Taiwan

B974/P2074 **Visualization of the autophagosomal maturation: The ATG-conjugation systems are important for degradation of the inner autophagosomal membrane.** I. Koyama-Honda[1], K. Tsuboyama[1], Y. Sakamaki[2], M. Koike[3], N. Mizushima[1]; [1]Department of Biochemistry and Molecular Biology, The University of Tokyo, Graduate School and Faculty of Medicine, Tokyo, Japan, [2]Research Center for Medical and Dental Sciences, Tokyo Medical and Dental University, Tokyo, Japan, [3]Departments of Cell Biology and Neuroscience, Juntendo University Graduate School of Medicine, Tokyo, Japan

B975/P2075 **Identification of Downstream Effectors of Arl1 Function in Macroautophagy.** S. Yang[1], A. Rosenwald[1]; [1]Biology, Georgetown University, Washington, DC

B976/P2076 **PLEKHM1 is a shared effector of Rab7 and Arl8b that regulates endosome and autophagosome maturation and lysosome positioning.** R. Marwaha[1], S.B. Arya[2], D. Jagga[1,2], H. Kaur[2], A. Tuli[2], M. Sharma[1]; [1]Department of Biological Sciences, Indian Institute of Science Education and Research (IISER)-Mohali, Mohali, India, [2]Division of Cell Biology and Immunology, Institute of Microbial Technology, Chandigarh, India

B977/P2077 **Proximity-based biotinylation identifies a new role for autophagy in ribonucleoprotein loading into extracellular microvesicles.** A.M. Leidal[1], H. Huang[2], J. Ye[1], T. Solvik[1], J.Y. Liu[1], F. Kai[3], J. Goldsmith[1], M. Stanley[1], T. Marsh[1], A. Wiita[2], J. Debnath[1]; [1]Department of Pathology, University of California, San Francisco, San Francisco, CA, [2]Department of Laboratory Medicine, University of California, San Francisco, San Francisco, CA, [3]Department of Surgery, University of California, San Francisco, San Francisco, CA

B978/P2078 ***Histoplasma capsulatum*, an endemic fungal pathogen of humans, manipulates phagosome maturation and the associated cytokine response in macrophages but not dendritic cells.** N. Van Prooyen[1], C.A. Henderson[1], D. Hocking Murray[1], A. Sil[1]; [1]Microbiology Immunology, University of California San Francisco, San Francisco, CA

B979/P2079 **Atg8 is involved in endosome/phagosome maturation in the enteric protozoan parasite *Entamoeba histolytica*.** K. Nakada-Tsukui[1], E. Miyamoto[1,2], N. Watanabe[1,2], K. Shibata[1], R. Wahyuni[1,2], Y. Saito-Nakano[1], T. Nozaki[1,2]; [1]Department of Parasitology, National Institute of Infectious Diseases, Tokyo, Japan, [2]Graduate School of Life and Environmental Science, University of Tsukuba, Tsukuba, Japan

B980/P2080 **Env7 phosphorylation is dependent on Tor1 and Yck3 and is regulated during cell cycle in Saccharomyces cerevisiae.** S.P. Manandhar[1], S.P. Valencia[1], E. Gharakhanian[1]; [1]Biological Sciences, California State University Long Beach, Long Beach, CA

B981/P2081 **Structure, inhibition, and regulation of a vacuolar two-pore channel TPC1.** A.F. Kintzer[1], R.M. Stroud[1]; [1]Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

B982/P2082 **Mutations in the vacuolar H^+-ATPase bypass the requirement for $PI(3,5)P_2$ in *Saccharomyces cerevisiae*.** Z.N. Wilson[1], G. Odorizzi[1], M. West[1]; [1]MCDB, University of Colorado Boulder, Boulder, CO

B983/P2083 **Autophagy enhances glucose uptake during metabolic stress by facilitating retromer-dependent trafficking of Glut1 to the plasma membrane.** S. Roy[1], A.M. Leidal[1], J. Ye[1], J. Debnath[1]; [1]Pathology, University of California San Francisco, San Francisco, CA

B984/P2084 **WHAMM- and Arp2/3-complex-driven endomembrane trafficking during infection.** J. Kollasser[1], S. Stahnke[1], M. Kirchenwitz[1], A. Otto[1], K. Rottner[2], T.E. Stradal[1]; [1]Cell Biology, Helmholtz Centre for Infection Research, Braunschweig, Germany, [2]Division of Molecular Cell Biology, Braunschweig University of Technology, Braunschweig, Germany

B985/P2085 **Screening for inhibitors of endocytosis that influence zebrafish epidermal plasma membrane homeostasis.** S. Banerjee[1], M.S. Sonawane[1]; [1]Department of Biological Sciences, Tata Institute of Fundamental Research, MUMBAI, India

B986/P2086 **A potential role for TtSNX4 in macronuclear degradation in Tetrahymena thermophila Conjugation.** M. Patterson[1], A. Ariatti[1], B. McField[1], S. Guerrier[1]; [1]Biology, Millsaps College, Jackson, MS

B987/P2087 **The Contractile Vacuole Polarizes to the Rear of Migrating *Dictyostelium*.** S. Fadil[1], K. Smith[1], W. Lord[1], M. Beshay[1], N. Bawazir[1], M. Myre[2], C.J. Janetopoulos[1]; [1]Cell Biology and Biotechnology, University of the Sciences, Philadelphia, PA, [2]Harvard Medical School, Massachusetts General Hospital, Boston, MA

Membrane Fission and Coat Proteins

B1000/P2088 **Cryo-CLEM of clathrin coats reveals the architecture of the clathrin lattice during maturation.** O. Avinoam[1], M. Kaksonen[2], J.A. Briggs[1,3]; [1]Structural and Computational Biology Unit, The European Molecular Biology Laboratory (EMBL), Heidelberg, Germany, [2]Department of Biochemistry, University of Geneva, Geneva, Switzerland, [3]Cell Biology and Biophysics Unit, The European Molecular Biology Laboratory (EMBL), Heidelberg, Germany

B1001/P2089 **Hot-wiring clathrin-mediated endocytosis in human cells.** L.A. Wood[1], N.I. Clarke[1], S. Sarkar[1], S.J. Royle[1]; [1]Centre for Mechanochemical Cell Biology, Warwick Medical School, Coventry, United Kingdom

B1002/P2090 **Functional recruitment of dynamin requires multimeric interactions with SH3 domain containing proteins for efficient endocytosis.** D. Perrais[1], M. Rosendale[1], T. Van[1], D. Grillo-Bosch[1], I. Gauthereau[1], D. Choquet[1], M. Sainlos[1]; [1]Interdisciplinary Institute for Neuroscience, CNRS and University of Bordeaux, Bordeaux, France

B1003/P2091 **The structure of the COPI coat determined within the cell.** Y.S. Bykov[1], M. Schaffer[2], S.O. Dodonova[1], S. Albert[2], J.M. Plitzko[2], W. Baumeister[2], B.D. Engel[2], J.A. Briggs[1]; [1]Structural and Computational Biology Unit, European Molecular Biology Laboratory, Heidelberg, Germany, [2]Max Planck Institute of Biochemistry, Martinsried, Germany

B1004/P2092 **Maintenance of EGFR plasma membrane levels involves cargo-specific COPII components of the early secretory pathway machinery.** S. Scharaw[1], M. Iskar[2], A. Ori[2], G. Boncompain[3,4], V. Laketa[1], I. Poser[5], E. Lundberg[6,7], F. Perez[3,4], M. Beck[2], P. Bork[2,8,9], R. Pepperkok[1]; [1]Cell Biology and Biophysics Unit, European Molecular Biology Laboratory, Heidelberg, Germany, [2]Structural and Computational Biology Unit, European Molecular Biology Laboratory, Heidelberg, Germany, [3]PSL Research University, Institut Curie, Paris, France, [4]CNRS UMR144, Institut Curie, Paris, France, [5]Molecular Cell Biology and Genetics, Max Planck Institute, Dresden, Germany, [6]KTH-Royal Institute of Technology, Stockholm, Sweden, [7]Science for Life Laboratory, Solna, Sweden, [8]Molecular Medicine, Max-Delbrueck-Center, Berlin, Germany, [9]Bioinformatics, University of Wuerzburg, Wuerzburg, Germany

B1005/P2093 **Reconstitution of ESCRT membrane remodeling processes with designer lipid membrane systems.** I. Lee[1], H. Kai[2], L. Carlson[1], J.T. Groves[3], J.H. Hurley[1]; [1]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, [2]Division of Mechanical Engineering, Tohoku University, Tohoku, Japan, [3]Chemistry, University of California, Berkeley, Berkeley, CA

B1006/P2094 **Vps4 Induces Dynamic Instability in ESCRT-III Polymers.** B. Mierzwa*[1], N. Chiaruttini*[2], L. Redondo-Morata[3], J. Moser von Filseck[2], J. König[4,5], I. Poser[6], T. Müller-Reichert[4], S. Scheuring[3], A. Roux[2,7], D.W. Gerlich[1]; [1]Institute of Molecular Biotechnology of the Austrian Academy of Sciences (IMBA), Vienna, Austria, [2]Department of Biochemistry, University of Geneva, Geneva, Switzerland, [3]U1006 INSERM, Aix-Marseille Université, Marseille, France, [4]Medical Theoretical Center, Dresden University of Technology, Dresden, Germany, [5]Electron Microscopy Unit, Francis Crick Institute, London, United Kingdom, [6]Max Planck Institute for Molecular Cell Biology and Genetics, Dresden, Germany, [7]Swiss National Centre for Competence in Research Programme Chemical Biology, Geneva, Switzerland

B1007/P2095 **The microtubule severing protein, Spastin, mediates efficient endosomal tubule fission.** G.J. Pearson[1,2], R. Allison[1], J. Lippincott-Schwartz[2], E. Reid[1]; [1]Cambridge Institute of Medical Research, Cambridge, United Kingdom, [2]Janelia Research Centre, Ashburn, VA

B1008/P2096 **The dynamics of chemokine receptor CXCR4 endocytosis.** L.K. Rosselli-Murai[1], M. DeNies[2], M. White[3], A.P. Liu[1,2,3]; [1]Department of Mechanical Engineering, University of Michigan, Ann Arbor, MI, [2]Department of Molecular and Cellular Biology, University of Michigan, Ann Arbor, MI, [3]Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI

B1009/P2097 **A model for the architecture of caveolae based on a flexible, net-like assembly of Cavin1 and Caveolin discs.** M. Stoeber[1,2], P. Schellenberger[3], K. Grünewald[3], A. Helenius[2]; [1]Psychiatry, UCSF, San Francisco, CA, [2]Biochemistry, ETH Zurich, Zurich, Switzerland, [3]Structural Biology, University of Oxford, Oxford, United Kingdom

Polarity in the Development of Tissues and Organisms

B1011/P2098 **A feedback between cellular growth and polarity in fission yeast.** A. Haupt[1], D. Ershov[1], N. Minc[1]; [1]Insitut Jacques Monod, UMR7592, CNRS, Paris, France

B1012/P2099 **The Glucan Synthase BGS1 Cooperates with TEA1-TEA4 Complex in the Maintenance of Fission Yeast Polarity.** M. Ramos[1], I. Barragan[1], J.G. Cortés[1], B. Moreno[1], J. Ribas[1], P. Perez[1]; [1]Instituto de Biología Funcional y Genómica, Consejo Superior de Investigaciones Científicas, Salamanca, Spain

B1013/P2100 **Rapid asymmetric induction of zygotic transcription prevents re-fertilization in fission yeast.** A. Vjestica[1], S.G. Martin[1]; [1]Department of Fundamental Microbiology, University of Lausanne, Lausanne, Switzerland

B1014/P2101 **Feedback inhibition of Ras activity coordinates cell fusion with cell-cell contact.** L. Merlini[1], S.G. Martin[1]; [1]Department of Fundamental Microbiology, University of Lausanne, Lausanne, Switzerland

B1015/P2102 **Sphingolipids Are Required for Mother-specific Retention of Plasma Membrane Proteins in S. cerevisiae.** P. Singh[1], J. Zhu[1], R. Li[1]; [1]Cell Biology, Johns Hopkins school of medicine, Baltimore, MD

B1016/P2103 **Non-transport functions of the Na^+-K^+-ATPase beta1 subunit contribute to lung epithelial tight junction formation.** H. Bai[1,2], M. Barravecchia[2], A. Joynt[2], A. Friedman[2,3], D.A. Dean[2]; [1]Pathology, University of Rochester Medical Center, Rochester, NY, [2]Pediatrics, University of Rochester Medical Center, Rochester, NY, [3]Chemistry, The State University of New York at Buffalo, Buffalo, NY

B1017/P2104 **TTLL12-Dependent Midbody Microtubule Modification Drives Polarized Endosome Targeting During Epithelial Cell Lumenogenesis.** A.J. Mangan[1], R. Prekeris[1]; [1]Department of Cell and Developmental Biology, University of Colorado, Anschutz Medical Campus, Aurora, CO

B1018/P2105 **Utilization of lipid droplets is essential for energy production during hepatocyte polarization.** S. Kang[1], D. Fu[1]; [1]Faculty of Pharmacy, The University of Sydney, Sydney, Australia

B1019/P2106 **Role of β and γ-catenin in maintaining hepatocyte polarity.** T. Pradhan[1], S.P. Singh Monga[1]; [1]Pathology, University Of Pittsburgh, Pittsburgh, PA

B1020/P2107 **Nox1 regulates polarity during cell migration.** A. Valdivia [1], C. Duran[1], A. San Martin[1]; [1]Medicine, Emory University, Atlanta, GA

B1021/P2108 **Pumilio-dependent transcript polarization drives chemotaxis.** M. Hotz[1], W.J. Nelson[1]; [1]Department of Biology, Stanford University, Stanford, CA

B1022/P2109 **Role of molecular motors and protein phosphatase 2A (PP2A) in cell polarity of the unicellular ciliate *Stentor*.** T. Makushok[1], W.F. Marshall[1]; [1]Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

B1023/P2110 **LET-99 acts in the Mes-1/Src-1 pathway for EMS spindle positioning in C. elegans.** M.J. Liro[1], A. Hussein [1], L.S. Rose[1]; [1]Department of Molecular and Cellular Biology, University of California, Davis, Davis, CA

B1024/P2111 **Single-particle dynamics underlying the segregation of GFP::PIE-1 during asymmetric division of the C. elegans zygote.** Y. Wu[1], B. Han[1], E. Griffin[1]; [1]Biology, Dartmouth College, Hanover, NH

B1025/P2112 **A conserved amino acid cluster in the planar cell polarity protein Van Gogh confers binding to antagonistic effectors and regulates *Drosophila* polarity establishment.** A.C. Humphries[1], M. Mlodzik[1]; [1]Department of Developmental and Regenerative Biology, Icahn School of Medicine at Mount Sinai, New York, NY

B1026/P2113 **HMMR-mediated Ran activity at the centrosome orients neuroprogenitor cell division and is essential for nervous system development.** M. Connell[1], J. Jiang[1], T.C. Lengyell[2], H. Chen[1], H. Li[3], T. Kroll[3], A. Fotovati[1], T. Chu[1], Z. He[1], A.M. Li[1], D. Goldowitz[2,4], M. Patel[4], L. Frappart[3], G.R. Reid[1], E.M. Simpson[2], A. Ploubidou[3], D.W. Allan[5], C.A. Maxwell[1]; [1]Pediatrics, University of British Columbia, Vancouver, BC, [2]Centre for Molecular Medicine and Therapeutics, UBC, Vancouver, BC, [3]Leibniz Institute on Aging, Jena, Germany, [4]Medical Genetics, University of British Columbia, Vancouver, BC, [5]Cellular and Physiological Sciences, University of British Columbia, Vancouver, BC

B1027/P2114 **Apical Polarization of SVCT2 in Apical Radial Glial Cells And Progenitors During Brain Development.** F.J. Nualart[1], C. Silva-Alvarez[1], K.A. Salazar [1], P. Cisternas[1], F.A. Martinez[1], N.A. Jara[1], R. Bertinat[1], N. Saldivia[1]; [1]Center for Advanced Microscopy CMA BIO BIO, Concepcion University, Concepción, Chile

B1028/P2115 **Influence of cell wall mechanics on cell morphogenesis.** V. Davì[1], H. Tanimoto[1], R. Le Borgne[1], H. Guo[1], E. Couturier[1], A. Boudaoud[2], N. Minc[1]; [1]CNRS, Paris, France, [2]ENS Lyon, Lyon, France

B1029/P2116 **Regulation of cell polarity and epithelial morphogenesis by the ciliary GTPase Arl3.** S. Bhattarai[1], S. Begum[1], R. Popow[1], E.J. Ezratty[1]; [1]Pathology and Cell Biology, Columbia University, New York City, NY

B1030/P2117 **Topology Regulates Cell Polarity via Spatial Distribution of Both Adhesions and Actomyosin Contraction.** R.S. Fischer[1], X. Sun[2], W. Losert[3], J.T. Fourkas[2], C.M. Waterman[1]; [1]Cell Biology and Physiology, National Heart Lung and Blood Institute, Bethesda, MD, [2]Chemistry, University of Maryland, College Park, MD, [3]Physics, University of Maryland, College Park, MD

B1031/P2118 **Cell specification is influenced by endoplasmic reticulum protein, Jagunal, in the Drosophila larval brain.** S.A. Beyeler[1], B. Riggs[1]; [1]Biology, San Francisco State University, San Francisco, CA

B1032/P2119 **Iterating compactions coupled to apical cell polarity oscillations maintain order in proliferating epithelia.** K. Ragkousi[1], K. Marr[1], S. McKinney[1], L. Ellington[1], M.C. Gibson[1]; [1]Stowers Institute for Medical Research, Kansas City, MO

B1033/P2120 **Genome organizer SATB1 regulates cell polarity of ameloblasts and enamel matrix formation.** Y. Zhang[1], L. Zheng[1], M. Lee[1], Y. Nakano[1], Y. Kohwi[1], S. Habelitz[2], R. Marcucio [3], P. DenBesten@ucsf.edu[1], T. Kohwi-Shigematsu[1]; [1]Department of Orofacial Sciences, University of California San Francisco, San Francisco, CA, [2]Preventive and Restorative Dental Sciences, University of California San Francisco, San Francisco, CA, [3]Department of Orthopaedic Surgery, University of California San Francisco, San Francisco, CA

The Synapse

B1035/P2121 **Autism susceptibility gene *TAOK2* mediates dendritic spine maturation through Septin7 phosphorylation.** S. Yadav[1,2], J.A. Oses-Prieto[3], C. Peters[1,2], A. Burlingame[3], L.Y. Jan[1,2], Y.N. Jan[1,2]; [1]Howard Hughes Medical Institute, San Francisco, CA, [2]Physiology, University of California San Francisco, San Francisco, CA, [3]Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA

B1036/P2122 **CDC42EP4/BORG4-septin complex beneath perisynaptic membrane domains of Bergmann glial processes facilitates GLAST-mediated glutamate clearance and motor learning.** N. Ageta-Ishihara[1], M. Kinoshita[1]; [1]Graduate School of Science, Nagoya University, Nagoya, Japan

B1037/P2123 **A Genetically-Encoded N-Cadherin Tension Sensor Reveals Localized Tension Associated with Synapse Maturation.** K.A. Litwa[1,2], A.N. Urs[3], A.R. Horwitz[2], B.D. Hoffman[3]; [1]Anatomy and Cell Biology, East Carolina University, Greenville, NC, [2]Cell Biology, University of Virginia, Charlottesville, VA, [3]Biomedical Engineering, Duke University, Durham, NC

B1038/P2124 **Branched Actin Promotes Synapse Elimination.** A.A. Cuentas-Condori[1], D.M. Miller III[1,2]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN, [2]Neuroscience Program, Vanderbilt University, Nashville, TN

B1039/P2125 **Investigating the Association of Cyclin G2 with β-catenin Complexes in Neurons.** A. Hergarden[1], A. Arachchige Don[2], K. Kim[1], M. Le Marois[1], A. De Crescenzo[1], T. Patriarchi[1], J.W. Hell[1,2], M.C. Horne[1,2]; [1]Pharmacology, University of California, Davis, CA, [2]Pharmacology, University of Iowa, Iowa City, IA

B1040/P2126 **The G protein-coupled receptor FSHR-1 controls excitatory to inhibitory balance at the *C. elegans* neuromuscular junction.** S. Olofsson[1], A. Munneke[1], A. Wasilk[1], J. Kolnik[1], E. Damler[1], J.R. Kowalski[1]; [1]Biological Sciences, Butler University, Indianapolis, IN

B1041/P2127 **Investigation of the neuronal functions of the SUMO conjugating enzyme UBC-9 at the *C. elegans* neuromuscular junction.** V. Kreyden[1], M. Harrison[1], K. Rush[1], J.R. Kowalski[1]; [1]Biological Sciences, Butler University, Indianapolis, IN

B1042/P2128 **The investigation of SYD-2 as a potential substrate of the Anaphase Promoting Complex in promoting GABA release at the *C. elegans* neuromuscular junction.** L. Campagnoli[1], J.R. Kowalski[1], D. Lester[1], K. Rush[1]; [1]Biological Science, Butler University, Indianapolis, IN

B1043/P2129 **GABAergic neuron-specific loss of PLCγ1 induce handling-induced seizures.** H. Kim[1]; [1]BioSignal Network Laboratory, Ulsan National Institute of Science and Technology (UNIST), Ulsan, Korea, South

B1044/P2130 **Screening for Novel Molecular Contributors to Dopamine Signaling using the Nematode *Caenorhabditis elegans* Million Mutation Project Library.** P. Rodriguez[1,2], O. Refai[2], R.D. Blakely[2]; [1]Department of Biology, Barry University, Miami Shores, FL, [2]Brain Institute and Department of Biomedical Sciences, Charles E. Schmidt College of Medicine, Florida Atlantic University, Jupiter, FL

B1045/P2131 **Grafting voltage and pharmacological sensitivity in potassium channels.** X. Lan[1,2], C. Fan[2,3], W. Ji[2,3], F. Tian[1,2], T. Xu[2,3], Z. Gao[1,2]; [1], Shanghai Institute of Materia Medica, CAS, Shanghai, China, [2]University of Chinese Academy of Sciences, Beijing, China, [3]Institute of Biophysics, CAS, Beijing, China

B1046/P2132 **Immunofluorescence and freeze-fracture replica immunogold labeling of CNS and PNS axons reveal that Kv1/Cx29 rosettes link axoplasm to myeloplasm in mammalian myelinated axons.** J.E. Rash[1], K.G. Vanderpool[1], T. Yasumura[1], J.I. Nagy[2]; [1]Biomedical Sciences, Colorado State University, Fort Collins, CO, [2]Physiology, University of Manitoba, Winnipeg, MB

B1047/P2133 **Exposure to 835MHz Radiofrequency Electromagnetic Field induces Alteration of Synaptic Vesicles in the Hypothalamus of Mice brain.** Y. Huh[1], J. Kim[1], H. Kim[1,2], S. Choi[1,3], H. Kim[2]; [1]Center for Electron Microscopy Research, Korea Basic Science Institute, Cheongju-si, Korea, South, [2]Department of Pharmacology, College of Medicine, Dankook University, Cheonan-si, Korea, South, [3]Department of Biological Sciences and Biotechnology, Hannam University, Daejeon, Korea, South

B1048/P2134 **Endogenous Nitric oxide decreases sensitization in nervous system of Manduca sexta.** F.R. Curiel[1]; [1]Cell and Molecular Biology, San Francisco State University, San Francisco, CA

B1049/P2135 **The Schizophrenia Susceptibility Factor Dysbindin and its associated BLOC-1 complex functionally and genetically interact with the Arp2/3 Actin polymerization complex at the synapse.** A. Gokhale[1], C. Hartwig[2,3], A. Freeman[1], R. Das[4], S. Zlatic[1], R. Vistein[5], A. Burch[1], G. Carrot[3], A. Lewis[1], S. Nelms[2], D. Dickman[6], M. Puthenveedu[5], D. Cox[4], V. Faundez[1]; [1]Cell Biology, Emory University, Atlanta, GA, [2]Kennesaw State University,, Atlanta, GA, [3]Department of Chemistry, Agnes Scott College, Decatur, GA, [4]Center for Behavioral Neuroscience, Georgia State University, Atlanta, GA, [5]Biological Sciences, Carnegie Mellon University, Pittsburgh, PA, [6]fDepartment of Biology, Neurobiology Section, University of Southern California, Los Angeles, CA

B1050/P2136 **Glycolytic Enzymes Localize to Synapses under Energy Stress to Support Synaptic Function.** S.K. Jang[1], J.C. Nelson[1], E.G. Bend[2], L. Rodríguez-Laureano[1], F.G. Tueros[3], L. Cartagenova[1], K. Underwood[1], E. Jorgensen[2], D.A. Colón-Ramos[1]; [1]Cell Biology, Yale University, New Haven, CT, [2]Department of Biology, University of Utah, Salt Lake City, UT, [3]Ciencias Biológicas, Universidad Ricardo Palma, Lima, Peru

Establishing and Maintaining Organelle Structure 2

B1052/P2137 **Piezo mechanically activated ion channels regulate cell division and mitochondrial function.** H. Miraoui[1], J. Xi[1], s. Chaturantabut[1], H. Qiu[1], A. Bennett[1], V. Gupta[1], W. Goessling[1], R. Maas[1]; [1]Medicine - Division of Genetics, Brigham and Women's Hospital and Harvard Medical School, Boston, MA

B1053/P2138 **Yeast Ivy1p is a putative I-BAR-domain protein with pH-sensitive filament forming ability in vitro.** Y. Itoh[1], K. Kida[2], K. Hanawa-Suetsugu[1,2], S. Suetsugu[1,2]; [1]Institute of Molecular and Cellular Biosciences, University of Tokyo, Tokyo, Japan, [2] Graduate School of Biological Sciences, Nara Institute of Science and Technology, Nara, Japan

B1054/P2139 **Increased spatiotemporal resolution reveals highly dynamic dense tubular matrices in the peripheral ER.** J. Nixon-Abell[1,2], C.J. Obara[3,4], A.V. Weigel[3,4], D. Li[3,5], W.R. Legant[3], C. Xu[3], H. Pasolli[3], K. Harvey[1], H.F. Hess[3], E. Betzig[3], C.D. Blackstone[2], J. Lippincott-Schwartz[3,4]; [1]Department of Pharmacology, University College London School of Pharmacy, London, United Kingdom, [2]Cell Biology Section, National Institute of Neurological Disorders and Stroke, Bethesda, MD, [3]Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA, [4]Section on Organelle Biology, Eunice Kennedy Shriver National Institute of Child Health and Human Development, Bethesda, MD, [5]Institute of Biophysics, Chinese Academy of Sciences, Beijing, China

B1055/P2140 **The ERG2 gene is necessary for the optimal functioning of the Unfolded Protein Response after phenol stress in S. cerevisiae.** A. Baris[1,2], G. Edwalds-Gilbert[1,2]; [1]Biology, Keck Science Department of Scripps, Claremont Mckenna, and Pitzer Colleges, Claremont, CA, [2]Biology, Scripps College, Claremont, CA

B1056/P2141 **Changes in location of organelles in cells of different shape regulate calcium signaling dynamics.** R. Calizo[1], P. Rangamani[2], S. Scarlata[3], J. Hone[4], R. Iyengar[1]; [1]Department of Pharmacological Sciences, Icahn School of Medicine at Mount Sinai, New York, NY, [2]Department of Mechanical and Aerospace Engineering, University of California San Diego, La Jolla, CA, [3]Department of Chemistry and Biochemistry, Worcester Polytechnic Institute, Worcester, MA, [4]Department of Mechanical Engineering, Columbia University, New York, NY

B1057/P2142 **A yeast perilipin, collaborates with seipin and Fit2 to promote lipid droplet stability, morphology, and accumulation of triglycerides.** Q. Gao[1], D. Binns[1], L. Kinch[2], N. Ortiz[1], X. Chen[1], J.M. Goodman[1]; [1]Pharmacology, University of Texas Southwestern Medical Center, Dallas, TX, [2]Department of Biophysics and Howard Hughes Medical Institute, University of Texas Southwestern Medical Center, Dallas, TX

B1058/P2143 **Cytoplasmic and Organelle Intermixing upon Cell-to-Cell Fusion.** D. Feliciano[1,2], C.J. Obara[1,2], E. Rieckhoff[2,3], L. Lee[2,4], H. Rakusova[2,5], O. Afonso[2,6], G. Adams[2,7], J. Lippincott-Schwartz[1,2]; [1]Howard Hughes Medical Institute, Janelia Research Campus, Ashburn, VA, [2]Physiology Course, Marine Biological Laboratory, Woods Hole, MA, [3]Molecular Cell Biology and Genetics, Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, [4]Applied Physics Department, Harvard University, Cambridge, MA, [5]Department of Plant Systems Biology, McGill University, Macdonald Campus, Québec, Canada, [6] IBMC INEB, Institute for Molecular and Cell Biology, Porto, Portugal, [7]National Heart, Lung and Blood Institute, National Institutes of Health, Bethesda, MD

B1059/P2144 **Utilizing 3D printed scaffold to generate a novel Cardiac toxicity Model for screening potential drug candidates.** K. Amezcua[1], M. Jani[1], M.R. Sharma[1], C.R. Sharma[1], P. Narayanan[1], N. Amezcua[1], M. Navel[1], D. Staton[1], H. Wong[2], R. Hasson[1], J. Kohana[2], K. Kramberger[1], J. Collins[2], F. Douglas[1], R. Punzalan[1], J. Jani[1], J. Sharma[1]; [1]Stem Cell Biology, Celprogen, Torrance, CA, [2]bio-engineering, Biopico, Irvine, CA

B1060/P2145 **Characterization of organelle localization and dynamics during leader-bleb based motility of melanoma cells under non-adhesive confinement.** G. Adams Jr[1], J. Logue[2], J. Lippincott-Schwartz[3], C.M. Waterman[1]; [1]NHLBI, National Institute of Health, Bethesda, MD, [2]Regenerative and Cancer Cell Biology (RCCB), Albany Medical Center, Albany, NY, [3]HHMI Janelia Research Campus, Ashburn, VA

B1061/P2146 **Mutations in the Sec pathway lead to altered nuclear morphology in Saccharomyces cerevisiae.** A.D. Walters[1], R. Wang[2], O. Gadal[2], O. Cohen-Fix[1]; [1]NIDDK, NIH, Bethesda, MD, [2]Toulouse University, Toulouse, France

B1062/P2147 **Quantitative Measure of Effect of PAT Protein Expression on Total Lipid Droplet Volume.** S. Yilmaz Dejgaard[1], J.F. Presley[2]; [1]Medical Biology, Near East University, Nicosia, Cyprus, [2]Anatomy and Cell Biology, McGill University, Montreal, QC

B1063/P2148 **Super-resolution microscopy reveals protuberance at the ciliary tip when retrograde transport is impaired.** J. Yoon[1,2], L. Milenkovic[3,4], L.E. Weiss[2], T. Stearns[4], W.E. Moerner[1,2]; [1]Applied Physics, Stanford University, Stanford, CA, [2]Chemistry, Stanford University, Stanford, CA, [3]Developmental Biology, Stanford University, Stanford, CA, [4]Biology and Genetics, Stanford University, Stanford, CA

B1064/P2149 **On the Mechanism of GPAT4 Targeting from the Endoplasmic Reticulum to Lipid Droplets.** M. Olarte[1,2,3], R.V. Farese[2,3,4], T. Walther[2,3,4,5]; [1]Cell Biology, Yale University School of Medicine, New Haven, CT, [2]Genetics and Complex Diseases, Harvard T.H Chan School of Public Health, Boston, MA, [3]Cell Biology, Harvard Medical School, Boston, MA, [4]Broad Institute, Cambridge, MA, [5]Howards Hugues Medical Institute, Chevy Chase, United States

B1065/P2150 **Modulation of ESCRT protein expression modifies domain-specific release of exosomes from cholangiocytes.** B.A. Davies[1], L.A. Morton[2], E.B. Leof[3], N.F. LaRusso[2], D.J. Katzmann[1]; [1]Biochemistry and Molecular Biology, Mayo Clinic, Rochester, MN, [2]Gastroenterology and Hepatology, Mayo Clinic, Rochester, MN, [3]Pulmonary and Critical Care, Mayo Clinic, Rochester, MN

Mitochondria, Chloroplasts, and Peroxisomes 3

B1066/P2151 **Inhibiting Autophagy prevents Peroxisome Loss in Peroxisome Biogenesis Disorder.** K.B. Law[1,2], D. Bronte-Tinkew[2], E. Di Pietro[3], J.H. Brumell[2,4], N. Braverman[3], P.K. Kim[1,2]; [1]Biochemistry, University of Toronto, Toronto, ON, [2]Cell Biology, Hospital for Sick Children, Toronto, ON, [3]McGill University, Montreal, QC, [4]Molecular Genetics, University of Toronto, Toronto, ON

B1067/P2152 **Biogenesis of peroxisome: Assembly of nascent membrane proteins.** Y. Liu[1], Y. Yagita[2], K. Okumoto[2], K. Shinohara[2], A. Nagata[2], Y. Fujiki[1]; [1]Division of Organelle Homeostasis, Medical Institute of Bioregulation, Kyushu University, Fukuoka, Japan, [2]Department of Biology and Graduate School of Systems Life Sciences, Kyushu University, Fukuoka, Japan

B1068/P2153 **The effect of the Chloroplast Division Protein ARC3 on FtsZ Assembly.** R.S. Shaik[1], M. Sung[1], S. Vitha[2], A. Holzenburg[1,2,3,4]; [1]Biology, Texas AM University, College Station, TX, [2]Microscopy Imaging Center, Texas AM University, College Station, TX, [3]Biochemistry Biophysics, Texas AM University, College Station, TX, [4]Div.of Research, Innovation, and Economic Development, University of Texas Rio Grande Valley, Brownsville-Edinburg-Harlingen, TX

B1069/P2154 **Exploring *MARS*, a collection of *M*utants *A*ffecting chloroplast-to-nucleus *R*etrograde *S*ignaling.** S. Ramundo[1,2,3], K. Perlaza[1], M. Lam[1,2], M. Jonikas[3], P. Walter[1,2]; [1]Department of Biochemistry and Biophysics, University of California at San Francisco, San Francisco, CA, [2]Howard Hughes Medical Institute, Chevy Chase, MD, [3]Department of Plant Biology, Carnegie Institution for Science, Palo Alto, CA

B1070/P2155 **Regulation of mitochondrial transfer and mitophagy in osteocytes.** J. Gao[1], T.S. Cheng[1], R. Ruan[1], T. Wang[1], N.J. Pavlos[1], A. Qin[2], J. Steer[3], Q. Jiang[4], H. Takayanagi[1,5], M. Zheng[1]; [1]Centre for Orthopaedic Research, School of Surgery, University of Western Australia, Perth, Australia, [2]Shanghai Key Laboratory of Orthopedic Implants, Department of Orthopedic Surgery, Shanghai Jiao Tong University School of Medicine, Shanghai, China, [3]Pharmacology Unit, School of Medicine and Pharmacology, University of Western Australia, Perth, Australia, [4]Department of Sports Medicine and Adult Reconstruction Surgery, Medical School of Nanjing University, Nanjing, China, [5]Department of Immunology, The University of Tokyo, Tokyo, Japan

B1071/P2156 **The selective autophagy receptor NIX is up-regulated during epidermal keratinocyte differentiation and functions to recruit LC3 to mitochondria to induce mitophagy.** C.L. Simpson[1], P. Rompolas[1], E.L. Holzbaur[2]; [1]Dermatology, University of Pennsylvania, Philadelphia, PA, [2]Physiology, University of Pennsylvania, Philadelphia, PA

B1072/P2157 **Imbalance in phospholipid synthesis in budding yeast leads to abnormal aggregation of mitochondria.** K. Power[1], O. Cohen-Fix[1]; [1]NIDDK, National Institutes of Health, Bethesda, MD

B1073/P2158 **Energy Need-Dependent PINK1 Phosphorylates Mitofilin to Maintain Mitochondrial Crista Junctions in a Pathway Linked to Parkinson's Disease.** P. Tsai[1], C. Lin[2], C. Schoor[3], J. COUTHOUIS[4], R. Wu[2], O. Ross[5], A. Gitler[4], D. Winter[3], X. Wang[1]; [1]Neurosurgery, Stanford University School of Medicine, Palo alto, CA, [2]Neurology, National Taiwan University Hospital, Taipei, Taiwan, [3]Biochemistry and Molecular Biology, University of Bonn, Bonn, Germany, [4]Genetics, Stanford University School of Medicine, Palo alto, CA, [5]Neuroscience, Mayo Clinic, Jacksonville, FL

B1074/P2159 **Loss of endogenous PINK1 and Parkin affects cell growth.** A.M. Pickrell[1], D.P. Sideris[1], C. Huang[1], C. Wang[1], R.J. Youle[1]; [1]National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD

B1075/P2160 **The distribution and phosphorylation of PINK1 and Parkin proteins in mice and rats.** H. Wang[1], S. Zhang[2], C. Ma[1], Y. Zhou[1]; [1]RD, AbboMax, San Jose, CA, [2]Department of Pathology and Medicine, UT Health Science Center at Houston, Houston, TX

B1076/P2161 **Investigating the roles of Mulan and Fis1 in Mitophagy.** R.E. Huang[1,2], D.C. Chan[1]; [1]Biology, California Institute of Technology, Pasadena, CA, [2]Biology, Williams College, Williamstown, CA

B1077/P2162 **Regulation of Gp78 S538 phosphorylation and Gp78-dependent endoplasmic reticulum-mitochondria association and mitochondrial fission by its extracellular ligand AMF.** G. Gao[1], C. Pichon[1], B. Joshi[1], I.R. Nabi[1]; [1]Department of Cellular and Physiological Sciences, Life Sciences Institute, University of British Columbia, Vancouver, BC

B1078/P2163 **Ascl3 cross-talk with Phb1 and Sgk1 in mitochondrial homeostasis.** M.T. Garcia-Barrio[1], T.P. Callier IV[1], A. Driss[2], S.C. Francis[1], L. Chang[3], W.E. Thompson[1]; [1]Physiology, Morehouse School of Medicine, Atlanta, GA, [2]Obstetrics and Gynecology, Morehouse School of Medicine, Atlanta, GA, [3]Medicine, University of Michigan, Ann Arbor, MI

B1079/P2164 **Adenine Nucleotide Translocase and Actin-Interacting Protein as New Targets in the Protection of Airway Epithelial Cells Against Cigarette Smoke.** C.R. Kliment[1,2], J. Nguyen[1,3], Y. Lu[3], J.E. Radder[4], S.M. Claypool[5], S.D. Shapiro[4], R. Sidhaye[2], D.N. Robinson[1]; [1]Cell Biology, Johns Hopkins School of Medicine, Baltimore, MD, [2]Pulmonary Critical Care, Johns Hopkins School of Medicine, Baltimore, MD, [3]Pharmacology and Molecular Sciences, Johns Hopkins School of Medicine, Baltimore, MD, [4]Pulmonary Critical Care, University of Pittsburgh, Pittsburgh, PA, [5]Physiology, Johns Hopkins School of Medicine, Baltimore, MD

B1080/P2165 **Drafting the mitochondrial proteome.** M. Wiking[1], M. Uhlén[1], E. Lundberg[1]; [1]Affinity Proteomics, Science for Life Laboratories (KTH), Solna, Sweden

B1081/P2166 **Vespa amino acid mixture augments oxidative phosphorylation and induces oxidative stress, leading to mitochondrial membrane degradation and activating apoptotic signaling.** S.B. Redmond[1], A.I. Mohamed[1], S.R. Stowers[1], K. Clark[1], M. Dameron[1], E. Grandy[1], J. Davis[1]; [1]Biology, Radford University, Radford, VA

B1082/P2167 **Pro-apoptotic Bax molecules densely populate the edges of membrane pores.** T. Kuwana[1], N.H. Olson[2], W.B. Kiosses[1], B. Peters[1], D.D. Newmeyer[1]; [1]La Jolla Institute for Allergy and Immunology, La Jolla, CA, [2]CryoEM Core Facility, University of California San Diego, La Jolla, CA

B1083/P2168 **Engineering phagocytosis to understand conserved mechanisms of membrane-proximal signal transduction.** A.P. Williamson[1], M.A. Morrissey[1], R.D. Vale[1]; [1]Cellular and Molecular Pharmacology, UCSF/HHMI, San Francisco, CA

B1084/P2169 **Discovery of novel subunits in the mitochondrial calcium uniporter complex of *Trypanosoma brucei*.** G. Huang[1], R. Docampo[1]; [1]Center for Tropical and Emerging Global Diseases and Department of Cellular Biology, University of Georgia, Athens, GA

B1085/P2170 **INA complex links assembly of the nuclear- and mitochondrial-encoded modules of ATP synthase.** N. Naumenko[1], P. Rehling[1,2]; [1]Department of Cellular Biochemistry, University Medical Center Goettingen, Goettingen, Germany, [2]Max Planck Institute for Biophysical Chemistry, Goettingen, Germany

B1086/P2171 **Role for Rtg2p carboxy-terminus in retrograde signaling.** J. Jiang[1], L. Nunes[1], D.M. Gordon[1]; [1]Biological Sciences, Mississippi State University, Mississippi State, MS

B1087/P2172 **Glycolytic acetyl-CoA production is dispensable for myelination.** G. Della Flora Nunes[1,2], L. Mueller[1], E. Hurley[1], N. Silvestri[3], K. Nave[4], M. Patel[2], L. Wrabetz[1,2,3], M. Feltri[1,2,3], Y. Poitelon[1,2]; [1]Hunter James Kelly Research Institute, Jacobs School of Medicine and Biomedical Sciences, University at Buffalo, Buffalo, NY, [2]Departament of Biochemistry, Jacobs School of Medicine and Biomedical Sciences, University at Buffalo, Buffalo, NY, [3]Departament of Neurology, Jacobs School of Medicine and Biomedical Sciences, University at Buffalo, Buffalo, NY, [4]Department of Neurogenetics, Max Planck Institute of Experimental Medicine, Göttingen, Germany

Rho-Family GTPases

B1100/P2173 **Regulation of circular dorsal ruffles, macropinocytosis and cell migration by RhoG and its exchange factor Trio.** A. Valdivia[1,2], S.M. Goicoechea[1], R. Garcia-Mata[1]; [1]Department of Biological Sciences, University of Toledo, Toledo, OH, [2]Division of Cardiology, Emory University, Atlanta, GA

B1101/P2174 **A RhoG-mediated signaling pathway that modulates invadopodia formation in breast cancer cells.** S.M. Goicoechea[1], A.E. Zinn[1], K.L. Snyder[1], S. Awadia[1], R. Garcia-Mata[1]; [1]Department of Biological Sciences, University of Toledo, Toledo, OH

B1102/P2175 **SPV-1, a RhoGAP with a novel F-BAR domain, regulates calcium signaling in the *C. elegans* spermatheca during ovulation events.** J. Bouffard[1], A.R. Asthagiri[1,2], R. Zaidel-Bar[3,4], E.J. Cram[5]; [1]Bioengineering, Northeastern University, Boston, MA, [2]Chemical Engineering, Northeastern University, Boston, MA, [3]Biomedical Engineering, National University of Singapore, Singapore, Singapore, [4]Mechanobiology Institute, National University of Singapore, Singapore, Singapore, [5]Biology, Northeastern University, Boston, MA

B1103/P2176 **Rho GTPases signaling: from cytoskeleton regulation to nuclear DNA damage response and repair.** F.L. Forti[1], Y.T. Magalhaes[1]; [1]Department of Biochemistry, Institute of Chemistry, University of Sao Paulo, Sao Paulo, Brazil

B1104/P2177 **Pattern formation of Rho GTPase effectors during single cell wound healing.** A. Moe[1], M.E. Larson[2], W.M. Bement[3,4]; [1]Graduate Program in Cellular and Molecular Biology, University of Wisconsin Madison, Madison, WI, [2]Medical Scientist Training Program, University of Wisconsin Madison, Madison, WI, [3]Department of Zoology, University of Wisconsin Madison, Madison, WI, [4]Laboratory of Cell and Molecular Biology, University of Wisconsin Madison, Madison, WI

B1105/P2178 **RhoGDI Phosphorylation by PKCβ Promotes Cdc42 Activation During Cell Wound Repair.** A.E. Golding[1], W.M. Bement[1,2,3]; [1]Graduate Program in Cell and Molecular Biology, University of Wisconsin-Madison, Madison, WI, [2]Laboratory of Cell and Molecular Biology, University of Wisconsin-Madison, Madison, WI, [3]Department of Zoology, University of Wisconsin-Madison, Madison, WI

B1106/P2179 **Unique Modalities of MAP Kinase Signaling Generates Specificity Among Pathways That Share Components.** S. Basu[1], B. Li[1], P.J. Cullen[1]; [1]Biological Sciences, University at Buffalo, The state University of New York, Buffalo, NY

B1107/P2180 **Identification of novel RhoA binding proteins by using BioID system.** A. Kushiya[1], Y. Kato[1], S. Yamada[2], K. Yoshino[3], A. Takeuchi[4], M. Yamanoue[1], Y. Shirai[1], S. Ueda[1]; [1]Agrobioscience, Kobe University, Kobe, Japan, [2]Biomedical Engineering, University of California, Davis, Davis, CA, [3]Biosignal Research Center, Kobe University, Kobe, Japan, [4]Analytical Laboratory, Kobe Pharmaceutical University, Kobe, Japan

B1108/P2181 **Cdc42 regulates enucleation of human erythroblasts.** K. Ubukawa[1], T. Goto[2], I. Kobayashi[1], Y. Guo[1], K. Asanuma[3], N. Takahashi[1], H. Wakui[2], W. Nunomura[2,4]; [1]Dept. of Hematol., Nephrol., Rheumatol., Akita Univ., Akita, Japan, [2]Dept of Life Sci., Akita Univ., Akita, Japan, [3]Center for RI, BERSC, Akita Univ., Akita, Japan, [4]Res. Center for Engin. Sci., Akita Univ., Akita, Japan

B1109/P2182 **The dual Rho GEF/Rac GAP protein Bcr regulates p38 MAPK signaling and cancer cell growth.** S.E. Kohrt[1], A.D. Dubash[1]; [1]Biology, Furman University, Greenville, SC

Kinases and Phosphatases 2

B1110/P2183 **Utilization of Akt isoform specific multiplex assays to quantitate Akt1/pAkt1, Akt2/pAkt2, Akt3/pAkt3 levels in mouse and human models.** W. Lie[1], A. Saporita[1], M. Schluter[1], J. Hwang[1]; [1]MilliporeSigma, St Louis, MO

B1111/P2184 **A cell cycle kinase with tandem sensory PAS domains integrates cell fate cues.** T.H. Mann[1,2], W.S. Childers[3], J.A. Blair[4], M.R. Eckart[5], L. Shapiro[1]; [1]Developmental Biology, Stanford University, Stanford, CA, [2]Biochemistry, Stanford University, Stanford, CA, [3]Chemistry, University of Pittsburgh, Pittsburgh, PA, [4]Chemistry, Williams College, Williamstown, MA, [5]Protein and Nucleic Acid Facility, Stanford University, Stanford, CA

B1112/P2185 **PKA inhibition restores adenosine uptake in renal tubular epithelial cells under high D-glucose conditions.** W. Garrido[1], J. Catalan[1], S. Alarcon[1], R. San Martín[1]; [1]Facultade de Ciencias, Universidad Austral de Chile, Valdivia, Chile

B1113/P2186 **Single Molecule Analysis of Allosteric Interactions in Protein Kinase A.** Y. Hao[1], J. England[1], S.S. Taylor[2,3], R.A. Maillard[1]; [1]Department of Chemistry, Georgetown University, Washington, DC, [2]Department of Pharmacology, University of California, San Diego, La Jolla, CA, [3]Department of Chemistry Biochemistry, University of California, San Diego, La Jolla, CA

B1114/P2187 **Mimicking transient activation of protein kinases in living cells.** J. Klomp[1], A. Ray[1], V. Huyot[1], K.B. Collins[1], A.V. Karginov[1]; [1]Pharmacology, University of Illinois - Chicago, Chicago, IL

B1115/P2188 **Suppressor of IKK epsilon (SIKE) links the cytoskeleton to innate immune signaling pathways.** H.A. Sonnenschein[1], F. Slykas[1], K.F. Lawrence[2], J.K. Bell[1]; [1]Chemistry Biochemistry Department, University of San Diego, San Diego, CA, [2]Immunology Microbiology Department, Virginia Commonwealth University, Richmond, VA

B1116/P2189 **Novel insights into regulation of Target of Rapamycin Complex 2 by hyperosmotic stress.** K.L. Leskoske[1], F.M. Roelants[1], J.W. Thorner[1]; [1]Department of Molecular & Cell Biology, University of California, Berkeley, Berkeley, CA

B1117/P2190 **Novel approach for rapid development of optimized FRET-based biosensor for signaling network interrogation *in cellulo* and *in vivo*.** F. Sipieter[1,2], B. Cappe[1,2], O.C. Gavet[3], L. Heliot[4], P. Vandenabeele[1,2], P. Vincent[5], F.B. Riquet[1,2,6]; [1]Molecular Signaling and Cell Death Unit, Department of Biomedical Molecular Biology, Ghent University, Ghent, Belgium, [2]Molecular Signaling and Cell Death Unit, Inflammation Research Center (IRC), a VIB-UGent department, VIB, Ghent, Belgium, [3]Institut Gustave Roussy (IGR), CNRS-UMR 8200, CNRS/Paris-Sud University, Villejuif, France, [4]Team Biophotonique Cellulaire Fonctionnelle, Laboratoire de Physique des Lasers, Atomes et Molécules (PhLAM), CNRS UMR 8523, CNRS/Lille1 University, Villeneuve d'Ascq, France, [5]Neurobiologie des processus adaptatifs (NPA), CNRS UMR 7102, CNRS / UPMC Paris 6, Paris, France, [6]Structural and Functional Glycobiology Unit (UGSF), CNRS UMR 8576, Lille 1 University, Villeneuve d'Ascq, France

B1118/P2191 **Phospholipase C-related but Catalytically Inactive Protein, PRIP is Involved in the Regulation of Insulin Signaling *via* IRS-1/Akt Pathway by Modulating Serine Phosphorylation of IRS-1.** J. Gao[1], A. Mizokami[1,2], M. Hirata[1]; [1]Laboratory of Molecular and Cellular Biochemistry, Faculty of Dental Science, Kyushu University, Fukuoka, Japan, [2]OBT Research Center, Faculty of Dental Science, Kyushu University, Fukuoka, Japan

B1119/P2192 **Pharmacological activation of p70 S6 Kinase in C2C12 myotubes.** K. Sakamoto[1], S. Tanaka[1]; [1]Department of Pharmacology, Fukushima Medical University School of Medicine, Fukushima, Japan

B1120/P2193 **A single-molecule approach to deciphering the mechanism of T-cell receptor triggering.** K.A. Ganzinger[1], R. Fernandes[2], S. Lee[1], M. Palayret[1], P. Jönsson[1], J. McColl[1], S.J. Davis[2], D. Klenerman[1]; [1]Chemistry, University of Cambridge, Cambridge, United Kingdom, [2]Radcliffe Department of Medicine and MRC Human Immunology Unit, University of Oxford, Oxford, United Kingdom

B1121/P2194 **PLK4 targets growth arrest and DNA damage-inducible protein 45 alpha (GADD45a).** N.J. Gosselin[1], G. Sivakumar[1], B. Wu[1], R.A. Ward[1], A. Kozarova[1], J.W. Hudson[1]; [1]Biological Sciences, University of Windsor, Windsor, ON

B1122/P2195 **KANPHOS (Kinase-Associated Neural PHOspho-Signaling), a comprehensive database for specific substrates of kinases.** T. Takano[1], J. Yoshimoto[2], T. Kannon[3], T. Nishioka[1], M. Amano[1], K. Kaibuchi[1]; [1]Department of Cell Pharmacology,, Nagoya University Graduate School of Medicine, Nagoya, Japan, [2]Graduate School of Information Science, Nara Institute of Science and Technology, Nara, Japan, [3]Faculty of Medicine, Institute of Medical, Pharmaceutical and Health Sciences, Kanazawa University, Kanazawa, Japan

B1123/P2196 **Conserved tyrosine residue in MAPKK Ste7 regulates kinase activity during mating signal transduction.** N. Lee[1], S. Park[1]; [1]Department of Biological Sciences, Seoul National University, Seoul, Korea

B1124/P2197 **STK25 is a novel kinase activator of LATS-YAP signaling.** S. Lim[1], T. Mudianto[1], B.W. Howell[2], N.J. Ganem[1]; [1]Pharmacology and Experimental Therapeutics, Boston University School of Medicine, Boston, MA, [2]Neuroscience and Physiology, SUNY Upstate Medical University, Syracuse, NY

B1125/P2198 **TRAF2 and NCK-interacting protein kinase (TNIK) as a molecular target of ponatinib- induced endothelial apoptosis and inflammation.** N. Le[1], K. Fujiwara[1], J. Abe[1]; [1]Cardiology, University of Texas MD Anderson Cancer Center, Houston, TX

Signaling Receptors (RTKs and GPCRs) 2

B1126/P2199 **PKC-ζ regulates thrombin-induced proliferation of human Müller Glial Cells.** I. Lee-Rivera[1], E.C. Lopez-Hernandez[1], A. López-Colomé[1]; [1]Instituto de Fisiología Celular UNAM, Mexico, Mexico

B1127/P2200 **Effect of NVPAEW541 and RAD001 on Cell Growth and Apoptosis in two Pancreatic Adenocarcinoma Cell lines.** G.S. Warshamana-Greene[1], A. Panthi[1]; [1]Biological & Physical Sciences, South Carolina State University, Orangeburg, SC

B1128/P2201 **A DNA based T cell receptor reveals the mechanistic role of spatial organization in ligand discrimination.** M.J. Taylor[1,2,3], K. Husain[3], Z.J. Gartner[4], S. Mayor[1,3], R.D. Vale[1,2]; [1]HHMI Summer Institute, Woods Hole, MA, [2]Molecular and Cellular Pharmacology, University of California San Francisco, San Francisco, CA, [3]Cellular Organization and Signalling, National Centre for Biological Sciences, Bangalore, India, [4]Dept. of Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA

B1129/P2202 **A novel signaling mechanism for plasma serotonin and the serotonin transporter in the remodeling of cell-cell junctions during microvascular leakage.** A. Cooper[1], P. Mayeux[2], F. Kilic[1]; [1]Biochemistry and Molecular Biology, University of Arkansas for Medical Sciences, Little Rock, AR, [2]Pharmacology and Toxicology, University of Arkansas for Medical Sciences, Little Rock, AR

B1130/P2203 **Lipocalin-2 modulates EGFR recycling to cell membrane after a TGF-a stimulation.** L. Yammine[1], W. Baron[1], F. Terzi[1], M. Gallazzini[1]; [1]U1151, INSERM, Paris, France

B1131/P2204 **Examining Spatial Organization of the Phagocytic Synapse: Segregation of the 'Don't Eat Me' Receptor SIRPA during Engulfment.** M.A. Morrissey[1], A.P. Williamson[1], R.D. Vale[1]; [1]Cell and Molecular Pharmacology, UCSF, San Francisco, CA

B1132/P2205 **Identification and functional study of novel IRAK1-IKK cascade signaling inhibitor, linQ.** K. Kang[1], H. Byun[1], M. Won[1], K. Park[1], S. Lee[1], G. Hur[1]; [1]Medical Science, Chungnam Medical University, Daejeon, Korea, South

B1133/P2206 **Phosphorylation of cortactin at Y446 residue is required for G protein-coupled receptor agonist-induced nuclear export and degradation of p21Cip1.** J. Janjanam[1], G.N. Rao[1]; [1]Department of Physiology, University of Tennessee Health Science Center, Memphis, TN

B1134/P2207 **Constructing Interactomes of Human and Drosophila ARRDC Family Proteins.** I.K. Pranoto[1], Y. Kwon[1]; [1]Biochemistry, University of Washington, Seattle, WA

B1135/P2208 **Measuring dynamic cAMP levels using cADDis, a live-cell assay for Gs and Gi signaling with improved sensitivity.** S.E. Tillo[1], P.H. Tewson[1], T.E. Hughes[1], S.A. Martinka[1], A.M. Quinn[1]; [1]Montana Molecular, Bozeman, MT

B1136/P2209 **MCH Receptor 1 Signaling Influences Adipocyte Differentiation Which Influences MCH Receptor 1 Signaling: A GPCR Adapting To A Changing Cellular Environment.** H.D. Ophardt[1], C. King[1], H. Abdullah[1], L. Galbier[1], R. Shen[1], L.B. Cook[1]; [1]Biology, The College at Brockport, SUNY, Brockport, NY

B1137/P2210 **The spatial organization of receptor tyrosine kinase signaling by clathrin-coated pits at the plasma membrane.** S. Lucarelli[1], G. Judge[1], C.N. Antonescu[1], J. Abousawan[1]; [1]Chemistry and Biology, Ryerson University, Toronto, ON

B1138/P2211 **Phospholipase Cβ1 is essential in potentiation of glucose-stimulated insulin secretion in pancreatic β-cell.** H. Hwang[1], H. Jang[1], P. Suh[1]; [1]Life Science, Ulsan National Institute of Science and Technology, Ulsan, Korea, South

B1139/P2212 **Involvement of specific Akt isoforms in the decidualization mechanisms of Human Immortalized Endometrial Stromal Cells.** P. Adam[1], K. Grenier[1], F. Fabi[1], S. Parent[1], V. Leblanc[1], E. Asselin[1]; [1]Medical Biology, Université du Québec à Trois-Rivières, Trois-Rivières, QC

B1140/P2213 **Ligand mediated switch in trafficking of the GIP-receptor: implication for a disease related natural human variant.** N. Abdullah[1], D. Soares[1], J. Dittman[1], T.E. McGraw[1]; [1]Biochemistry, Weill Cornell Medicine, New York, NY

Mechanotransduction 2

B1141/P2214 **Intercellular communication pathways are hijacked by bacterial pathogens during cell-to-cell spread.** R. Lamason[1], E.E. Bastounis[2], N. Kafai[1], R. Serrano[3], J.C. Del Alamo[3], J.A. Theriot[2], M.D. Welch[1]; [1]MCB, University of California, Berkeley, Berkeley, CA, [2]Microbiology and Immunology and Howard Hughes Medical Institute, Stanford University, Stanford, CA, [3]Mechanical and Aerospace Engineering Department, University of California San Diego, La Jolla, CA

B1142/P2215 **Cell-cell fusion is a mechanical process driven by actin-propelled protrusion, mechanosensing, and actomyosin contractility.** J. KIM[1], E. Chen[1]; [1]Molecular Biology and Genetics, Johns Hopkins University, Baltimore, MD

B1143/P2216 **Curvotaxis directs cell migration through cell-scale topographical landscapes.** L. Pieuchot[1], M. Vassaux[2], T. Cloatre[1], I. Brigaud[1], T. Petithory[1], J. Milan[2], M. Bigerelle[3], K. Anselme[1]; [1]IS2M, CNRS UMR 736, Mulhouse, France, [2]ISM, CNRS UMR 7287, Marseille, France, [3]LAMIH, CNRS UMR 8201, Valenciennes, France

B1144/P2217 **Investigating the role of turgor pressure in fission yeast growth.** B. Knapp[1], E.R. Rojas[2], K.C. Huang[2], F. Chang[1]; [1]Cell and Tissue Biology, University of California, San Francisco, San Francisco, CA, [2]Bioengineering, Stanford University, Stanford, CA

B1145/P2218 **Interplay between mechanical tensile forces and Notch activation following asymmetric cell division.** R. Le Borgne[1], M. Pinot[1], K. Bellec[1]; [1]Epithelia Dynamics and Mechanics, CNRS UMR 6290-Institute of Genetics and Development, Rennes, France

B1146/P2219 **Mechanical tuning of T lymphocyte responses.** M. Saitakis[1,2], S. Dogniaux[1,2], N. Bufi[3], C. Goudot[1,2], M. Maurin[1,2], A. Asnacios[3,4], C. Hivroz[1,2]; [1] INSERM U932, Institut Curie Section Recherche, Paris, France, [2]PSL Research University, Paris, France, [3]Laboratoire Matières et Systèmes Complexes, Université Paris-Diderot, Pa, France, [4]UMR 7057, CNRS, Paris, France

B1147/P2220 **Mechanics of T lymphocytes: activation, cytotoxicity, and membrane rupture.** L. Guillou[1], A. Sawicka[1], A. Babataheri[1], S. Dogniaux[2], A.I. Barakat[1], C. Hivroz[2], J. Husson[1]; [1]Hydrodynamics Laboratory (LadHyX), Ecole polytechnique, Palaiseau, France, [2]Immunity and Cancer, Institut Curie Section Recherche, PSL Research University, INSERM U932, Paris, France

B1148/P2221 **Single molecular force sensitivity and threshold for the activation of B cell receptors.** W. Liu[1], Z. Wan[1]; [1]School of Life Sciences, Tsinghua University, Beijing, China

B1149/P2222 **Physical cues direct the shape of cell processes independently during oligodendrocyte myelin sheath formation.** M.E. Bechler[1], C. ffrench-Constant[1]; [1]MRC Centre for Regenerative Medicine, The University of Edinburgh, Edinburgh, United Kingdom

B1150/P2223 **Force fluctuations in three-dimensional suspended fibroblasts.** F. Rehfeldt[1], F. Schlosser[1], C.F. Schmidt[1]; [1]3rd Institute of Physics - Biophysics, Georg-August-University, Göttingen, Germany

B1151/P2224 **In-plane shear strain induces epithelial reorganization.** M.A. Garcia[1], E. Sadeghipour[1,2], W.J. Nelson[1,3], B.L. Pruitt[2,3,4]; [1]Biology, Stanford University, Stanford, CA, [2]Mechanical Engineering, Stanford University, Stanford, CA, [3]Molecular and Cellular Physiology, Stanford University, Stanford, CA, [4]Bioengineering, Stanford University, Stanford, CA

B1152/P2225 **Treadmilling stress fibers couple cytoskeletal dynamics to cellular traction in a 3D extracellular matrix.** L.M. Owen[1], A.S. Adhikari[2], M. Patel[3], P. Grimmer[4], M. Kim[2], N. Leijnse[2], J. Notbohm[4], C. Franck[3], A.R. Dunn[2]; [1]Biophysics, Stanford University, Stanford, CA, [2]Chemical Engineering, Stanford University, Stanford, CA, [3]School of Engineering, Brown University, Providence, RI, [4]Engineering Physics, University of Wisconsin-Madison, Madison, WI

B1153/P2226 **Extracellular matrix synthesis and remodeling by mechanical forces in cultured endothelial cells and in arteries of atherosclerotic mice.** T.A. Russo[1], M.L. Ferreira[1], M.E. Perrud[1], H.B. Nader[1], J.L. Dreyfuss[1,2]; [1]Biochemistry, Universidade Federal de São Paulo, São Paulo, Brazil, [2]Health Informatics, Universidade Federal de São Paulo, São Paulo, Brazil

B1154/P2227 **Rigidity of silicone substrates controls cell spreading and stem cell differentiation.** E. Gutierrez[1], A. Groisman[1], E. Tkachenko[2], G.K. Vertelov[3], E. Ronan[1]; [1]Physics, University of California, San Diego, San Diego, CA, [2]Medicine, University of California, San Diego, San Diego, CA, [3]Stemedica, San Diego, CA

B1155/P2228 **STIM1-induced conformational transition of Orai-1 leads to channel activation.** Z. Haydari[1], H. Shams[1], M. Mofrad[1]; [1]Bioengineering, University of California Berkeley, Berkeley, CA

B1156/P2229 **Leveraging interfacial mechanics for preventing breast cancer progression through tissue architecture stabilization.** V. Srivastava[1], J. Garbe[1,2], J.L. Hu[1], M.A. LaBarge[2,3], Z.J. Gartner[1]; [1]Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA, [2]Life Science Division, Lawrence Berkeley National Laboratory, Berkeley, CA, [3]Beckman Research Institute of City of Hope, Duarte, CA

B1157/P2230 **Allosteric effect of α-actinin binding to Vh on vinculin activation.** H. Shams[1], M. Mofrad[1]; [1]Bioengineering, University of California, Berkeley, Berkeley, CA

B1158/P2231 **Cellular geometry and cytoskeletal network architecture regulate the mechanics of single stress fibers.** E. Kassianidou[1,2], C.A. Brand[3], U.S. Schwarz[3], S. Kumar[1,2]; [1]UC Berkeley-UCSF Graduate Program in Bioengineering, Berkeley, United States, [2]Bioengineering, UC Berkeley, Berkeley, CA, [3]Institute for Theoretical Physics and BioQuant, Heidelberg University, Heidelberg, Germany

B1159/P2232 **Multiparametric BioAFM Imaging with Simultaneous Advanced Optical Microscopy.** D.R. Stamov[1], C. Gonnermann[2], C.A. Wurm[3], S.B. Kaemmer[4], C.M. Franz[2], H. Haschke[1]; [1]JPK Instruments AG, Berlin, Germany, [2]DFG-Center for Functional Nanostructures (CFN), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany, [3]Abberior Instruments, Göttingen, Germany, [4]JPKInstruments USA Inc., Carpinteria, CA

B1160/P2233 **Control of Cell Traction and Migration by Microtubule-Targeting Agents.** L.S. Prahl[1], P.F. Bangasser[1], M. Hemmat[1], S.S. Rosenfeld[2], D.J. Odde[1]; [1]Biomedical Engineering, University of Minnesota, Minneapolis, MN, [2]Cancer Biology, Lerner Research Institute of the Cleveland Clinic, Cleveland, OH

B1161/P2234 **Investigating the Role of ROCK Isoforms in Regulation of Stiffness Induced Myofibroblast Differentiation in Lung Fibrosis.** S. Htwe[1], A. Knox[2], A. Ghaemmaghami[1]; [1]School of Life Sciences, Faculty of Medicine and Health Sciences, University of Nottingham, Nottingham, United Kingdom, [2]Division of Respiratory Medicine, University of Nottingham, Nottingham, United Kingdom

B1162/P2235 **Transient mechanical strain down-regulates integrin β3 to promote the maturation of invadopodia and enhance cancer cell invasion in-vitro.** A.N. Gasparski[1], S. Ozarkar[1], K.A. Beningo[1]; [1]Biological Sciences, Wayne State University, Detroit, MI

B1163/P2236 **Role of caveolae mechanics in muscular dystrophy pathophysiology.** M. Dewulf[1], C. Blouin[1], D.V. Koester[2], B. Sinha[3], A. Bigot[4], G. Butler-Browne[4], C. Lamaze[1]; [1]UMR3666, Institut Curie, Paris, France, [2]NCBS, Bangalore, India, [3]University of Calcutta, Calcutta, India, [4]UMRS 974, Institut de myologie, Paris, France

B1164/P2237 **Effects of Mechanical Stress on Remodeling of Periodontal Ligament.** A. Fujita[1,2], M. Morimatsu[2], K. Takahashi[2], S. Takashiba[1], K. Naruse[2]; [1]Department of Pathophysiology-Periodontal Science, Okayama University Graduate School of Med, Dent and Pharmaceutical Sciences, Okayama, Japan, [2]Department of Cardiovascular Physiology, Okayama University Graduate School of Med, Dent and Pharmaceutical Sciences, Okayama, Japan

B1165/P2238 **Integration of mechanotransduction and T-cell activation thresholds: the effects of mechanical forces on assembly and integration of the signal transduction machinery during T cell activation.** M.A. Nelman-Gonzalez[1], S.J. Clemett[2], A.J. Beitman[1], M.R. Alexander[3], C.L. Merrill[3], B.E. Crucian[4], C.F. Sams[4]; [1]Biomedical Sciences and Environmental Research, KBRWyle, Houston, TX, [2]Lunar Planetary Sciences, Jacobs, Houston, TX, [3]Human Research Program, National Research Council, Houston, TX, [4]Biomedical Sciences and Environmental Research, NASA - Johnson Space Center, Houston, TX

Dynamics of Focal Adhesions and Invadosomes

B1200/P2239 **p27^{Kip1} promotes invadopodia turnover and invasion through the regulation of the PAK1/Cortactin pathway.** P. Jeannot[1], A. Nowosad[1], R. Perchey[1], A. Besson[1]; [1]CRCT UMR 1037 INSERM-Universite Paul Sabatier, Cancer Research Center of Toulouse, Toulouse, France

B1201/P2240 **S100A4 Regulates Podosomes and MMP9 Secretion by Distinct Myosin-Dependent and Independent Mechanisms.** N.G. Dulyaninova[1], A. Chang[1], J.M. Backer[1,2], A.R. Bresnick[1]; [1]Biochemistry, Albert Einstein College of Medicine, Bronx, NY, [2]Molecular Pharmacology, Albert Einstein College of Medicine, Bronx, NY

B1202/P2241 **Particle drag force (PDF): a novel technique for high-precision measurement of molecular tension and force at sub-pN scale.** S. Park[1], M. Pittman[1], Y. Chen[1]; [1]Mechanical Engineering, Johns Hopkins University, Baltimore, MD

B1203/P2242 **Two distinct actin networks mediate traction oscillations to confer mechanosensitivity of focal adhesions.** Z. Wu[1], S.V. Plotnikov[2], A.Y. Moalim[2], C.M. Waterman[1], J. Liu[1]; [1]NHLBI, NIH, Bethesda, MD, [2]Department of Cell Systems Biology, University of Toronto, Toronto, ON

B1204/P2243 **Caveolae-independent Caveolin-1 translocation to focal adhesions upon melanoma adhesion and spreading.** R. Ortiz[1], A. Cardenas[1], L. Leyton[1], A.F. Quest[1]; [1]Laboratory of Cellular Communication, Center for Molecular Studies of the Cell (CEMC), Advanced Center for Chronic Diseases (ACCDiS), Faculty of Medicine, Universidad de Chile, Santiago, Chile

B1205/P2244 **Tyrosine phosphorylated caveolin-1 regulates vinculin tension in focal adhesions through its scaffolding domain.** F. Meng[1], S. Saxena[1], B. Joshi[1], J. Shankar[1], K. Moon[2], L.J. Foster[2], P.N. Bernatchez[3,4], I.R. Nabi[1]; [1]Department of Cell and Developmental Biology, Life Sciences Institute, University of British Columbia, Vancouver, BC, [2]Department of Biochemistry Molecular Biology and Michael Smith Labs, Centre for High-Throughput Biology, University of British Columbia, Vancouver, BC, [3]Institute for Heart + Lung Health, St Paul's Hospital, The James Hogg Research Centre, Vancouver, BC, [4]Department of Anesthesiology, Pharmacology and Therapeutics, University of British Columbia, Vancouver, BC

B1206/P2245 **The small GTPase RhoG modulates focal adhesion turnover.** A.E. Zinn[1], S.M. Goicoechea[1], R. Garcia-Mata[1]; [1]Biological Sciences, University of Toledo, Toledo, OH

B1207/P2246 **Formin-dependent Adhesions are required to Initiate Invasion by Intact Epithelia.** T. Fessenden[1,2,3,4], M. Perez-Neut[1,5], G.R. Ramirez-SanJuan[2,3,4,6], Y.M. Beckham[2,3,4], M.L. Gardel[1,3,4]; [1]Committee on Cancer Biology, University of Chicago, Chicago, ID, [2]Institute for Biophysical Dynamics, University of Chicago, Chicago, IL, [3]Department of Physics, University of Chicago, Chicago, IL, [4]James Franck Institute, University of Chicago, Chicago, IL, [5]Ben May Department for Cancer Research, University of Chicago, Chicago, IL, [6]Graduate Program on Biophysical Sciences, University of Chicago, Chicago, IL

B1208/P2247 **Alterations in Basal Lamina Stiffness Lead to Impaired Epithelial Cell Migration.** O.E. Onochie[1], C.B. Rich[1], V. Trinkaus-Randall[1,2]; [1]Biochemistry, Boston University School of Medicine, Boston, MA, [2]Ophthalmology, Boston University School of Medicine, Boston, MA

B1209/P2248 **Tensin 3 activates the Rac exchange factor Dock5 to drive the assembly of podosome superstructures in osteoclast and to control bone resorption.** H. Touaitahuata[1], A. Morel[1], S. Urbach[2], J. Mateos-Langerak[3], S. De Rossi[3], A. Blangy[1]; [1]CRBM CNRS UMR 5237, Montpellier University, Montpellier, France, [2]Functional Proteomics Platform, CNRS UMR 5203, Montpellier, France, [3]Montpellier RIO Imaging, CNRS UMS3426 Biocampus, Montpellier, France

B1210/P2249 **Filamin, migfilin and kindlin form a link between the extracellular matrix and the actin cytoskeleton at mature focal adhesions.** M. Preciado López[1], W. Shin[2], D.A. Calderwood[2], C.M. Waterman[2]; [1]National Heart Lung and Blood Institute, NIH, Bethesda, MD, [2]Yale University School of Medicine, New Haven, CT

B1211/P2250 **Talin's Coordination of the Focal Adhesion Network.** D.M. Jethwa[1]; [1]Faculty of Biology, Medicine and Health, University of Manchester, Manchester, United Kingdom

Chemotaxis and Directed Cell Migration

B1212/P2251 **The effect of multiple diatom species on responses to high-light irradiation.** S.A. Cohn[1], K. Patterson[1], A. Wolske[1]; [1]Biological Sciences, DePaul University, Chicago, IL

B1213/P2252 **Proper actin network architecture is essential for restricting polarization to a single leading edge in neutrophils.** 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

B1214/P2253 **The impact of WAVE-complex deficiency on macrophages and the immune system.** S. Stahnke[1], D.J. de Gorter[2,3], F. Lai[2,4], O. Kershaw[5], A. Gruber[5], K. Rottner[1,6], T.E. Stradal[1,2]; [1]Department of Cell Biology, Helmholtz Centre for Infection Research, Braunschweig, Germany, [2]Institute for Molecular Cell Biology, University of Münster, Münster, Germany, [3]Institute of Experimental Musculoskeletal Medicine, University Hospital Münster, Münster, Germany, [4]Department of Surgery, University of Hong Kong, Hong Kong, Hong Kong, [5]Department of Veterinary Medicine, Freie Universität Berlin, Berlin, Germany, [6]Zoological Institute, Technische Universität Braunschweig, Braunschweig, Germany

B1215/P2254 **Sphingosine 1-phosphate receptor 1 is necessary for collective lymphatic endothelial cell migration in response to fluid shear stress.** V.N. Surya[1], E. Michalaki[1], E. Huang[1], G.G. Fuller[1], A.R. Dunn[1]; [1]Chemical Engineering, Stanford University, Stanford, CA

B1216/P2255 **Angiopoitein-1 Promotes Endothelial Cell Polarization and Angiogenic Sprouting Through a PAK2- and Paxillin-Dependent CDC42 Activation.** C. Boscher[1], J. Gratton[1]; [1]Phamacology, Université de Montréal, Montréal, QC

B1217/P2256 **Exosome secretion promotes chemotaxis of cancer cells.** B. Sung[1], A.M. Weaver[1,2,3]; [1]Cancer Biology, Vanderbilt University, Nashville, TN, [2]Cell and Developmental Biology, Vanderbilt University, Nashville, TN, [3]Pathology, Microbiology, and Immunology, Vanderbilt University, Nashville, TN

B1218/P2257 **Chemotaxis in the absence of gradients.** D.A. Knecht[1]; [1]Molecular and Cell Biology, University of Connecticut, Storrs, CT

B1219/P2258 **Contact Guidance in Breast Cancer Cells Depends on Substrate Flexibility and Correlates with Myosin Phosphorylation on Stress Fibers.** I.C. Schneider[1], J. Wang[1], J. Nuhn[1]; [1]Chemical and Biological Engineering, Iowa State University, Ames, IA

B1220/P2259 **Multiscale Cues Drive Collective Cell Migration.** K. Nam[1,2,3], P. Kim[1], D.K. Wood[4], S. Kwon[2,5,6], P. Provenzano[4,7], D. Kim[1]; [1]Department of Bioengineering, Institute for Stem Cell and Regenerative Medicine, University of Washington, Seattle, WA, [2]Department Electrical Computer Engineering, Seoul National University, Seoul, Korea, [3]Division of Scientific Instrumentation, Optical Instrumentation Development Team, The Korea Basic Science Institute, Daejeon, Korea, [4]Department of Biomedical Engineering, University of Minnesota, Minneapolis, MN, [5]Institutes of Entrepreneurial BioConvergence, Seoul National University, Seoul, Korea, [6]Seoul National University Hospital Biomedical Research Institute, Seoul National University, Seoul, Korea, [7]Masonic Cancer Center, and Stem Cell Institute, University of Minnesota, Minneapolis, MN

B1221/P2260 **The dynamic mechanical adaptation of keratocytes squeezed on 2D micropatterns.** D. Mohammed[1], G. Charras[2], S. Gabriele[1]; [1]Mechanobilogy Soft Matter Group, University of Mons, Mons, Belgium, [2]London Centre of Nanotechnology, University College London, London, United Kingdom

B1222/P2261 **Displacement correlations between a single cell and its nucleus effectively link subcellular activities and motility in cell migration analysis.** T. Lan[1], X. Su[1], Y. Tseng[1,2,3]; [1]Chemical Engineering Department, Gainesville, FL, [2]Institute of Cell Tissue Science and Engineering, Gainesville, FL, [3]3National Cancer Institute-Physical Science Oncology Center, Gainesville, FL

B1223/P2262 **MCAK contributes to cell migration by promoting MTOC reorientation.** H. Zong[1], C. Moe[1], Y. Kim[2], W. Wang[3], C.E. Walczak[3]; [1]Biology, Indiana University, Bloomington, IN, [2]IU-ISURP Program, Indiana University, Bloomington, IN, [3]Medical Sciences, Indiana University, Bloomington, IN

B1224/P2263 **The role of MMPs in collective cell migration of zebrafish keratocytes.** M.A. Jeffery[1], C.K. Uppalapati[2], E.L. McGee[3], A.S. Pascual[1], M.R. Montgomery[1], K.E. Cooper[1], E.E. Hull[1], K.J. Leyva[2]; [1]Biomedical Sciences, College of Health Sciences, Midwestern University, Glendale, AZ, [2]Microbiology Immunology, Arizona College of Osteopathic Medicine, Midwestern University, Glendale, AZ, [3]College of Veterinary Medicine, Midwestern University, Glendale, AZ

B1225/P2264 **Quantification of macrophage protrusion dynamics with in vivo light sheet microscopy.** M. Albert[1], N. Norlin[1], F. Peri[1]; [1]Developmental Biology, European Molecular Biology Laboratory, Heidelberg, Germany

B1226/P2265 **Mitomycin C treatment alters epithelial cell migration.** M. Stepp[1], V. Lieberman [1,2], G. Tadvalkar[1], S. Pal-Ghosh[1]; [1]Anatomy and Regenerative Biology, GWU Medical School, Washington, DC, [2]Department of Biology, GWU, Washington, DC

Cell-Cell Junctions 2

B1228/P2266 **A Novel Role for SNARE Proteins in Cardiac Desmosomal Biology and Disease.** J. Pellman[1], R.C. Lyon[1], Y. Liang[1], V. Mezzano[1], F. Zanella[1], J. Zhang[1], Y. Gu[1], N. Dalton[1], K.L. Peterson[1], F. Sheikh[1]; [1]Department of Medicine, University of California-San Diego, La Jolla, CA

B1229/P2267 **Transcriptional control of desmosomal gene expression in breast and skin cancer cells.** L. Eldredge[1], A.D. Dubash[1], J. Decker[1]; [1]Biology, Furman University, Greenville, SC

B1230/P2268 **Regulation of cell-cell adhesions by I-BAR domain proteins.** Y. Senju[1], H. Vihinen[1], M. Varjosalo[1], J. Saarikangas[1], E. Jokitalo[1], P. Lappalainen[1]; [1]Institute of Biotechnology, University of Helsinki, Helsinki, Finland

B1231/P2269 ***Totaliter aliter*: In the molecular architecture of its cytoskeleton and junctions the seminiferous epithelium of mammalian testes differs fundamentally from all other epithelia.** L.M. Domke[1], W.W. Franke[1]; [1]Helmholtz Group for Cell Biology, German Cancer Research Center, Heidelberg, Germany

B1232/P2270 **Comprehensive analysis of formin localization at cell-cell junctions and cytokinetic contractile rings in epithelial cells.** T. Higashi[1], A.L. Miller[1]; [1]MCDB, University of Michigan, Ann Arbor, MI

B1233/P2271 **SUMO-modification alters intracellular localization of ZO-2.** F. Wetzel[1], S. Mittag[1], M. Cano-Cortina[2], T. Wagner[3], O. Krämer[4], R. Niedenthal[5], L. Gonzalez-Mariscal[2], O. Huber[1]; [1]Biochemistry, Jena University Hospital, Jena, Germany, [2]Physiology, Biophysics and Neuroscience, Cinvestav, Mexico City, Mexico, [3]Center for Molecular Biomedicine, Jena, Germany, [4]Toxicology, University Medical Center Mainz, Mainz, Germany, [5]Institute of Physiological Chemistry/Biochemistry, Hannover Medical School, Hannover, Germany

B1234/P2272 **Pannexin 1 regulates adipocyte development and fat accumulation.** V.R. Lee[1], K.J. Barr[1], J.J. Kelly[1], D. Johnston[1], C.F. Brown[1], K.P. Robb[2], R. Gros[3,4], L.E. Flynn[1,2], S. Penuela[1]; [1]Anatomy and Cell Biology, University of Western Ontario, London, ON, [2]Chemical and Biochemical Engineering, University of Western Ontario, London, ON, [3]Physiology and Pharmacology, University of Western Ontario, London, ON, [4]Robarts Research Institute, University of Western Ontario, London, ON

B1235/P2273 **A Sight For Injured Eyes: Role of Purinoreceptor-Mediated Calcium Oscillations.** Y.K. Lee[1], V. Trinkaus-Randall[1]; [1]Biochemistry, Boston University School of Medicine, Boston, MA

B1236/P2274 **STIM/Orai colocalize at the periphery of apical processes in the seminiferous epithelium.** K. Lyon[1], A. Vogl[2]; [1]Obstetrics and Gynaecology, University of British Columbia, Vancouver, BC, [2]Cellular and Physiological Sciences, University of British Columbia, Vancouver, BC

B1237/P2275 **Resolvin D1 protects endothelial barrier function from LPS-induced disruption via inhibition of xanthine oxidase-mediated reactive oxygen species production and SHP2 activation.** R. Chattopadhyay[1], G.N. Rao[1]; [1]Physiology, University of Tennessee Health Science Center, Memphis, TN

B1238/P2276 **Sertoli Cell-Specific Knockout of Coxsackievirus and Adenovirus Receptor (Cxadr) Impairs Spermatogenesis.** K. Huang[1], S. Chow[1], B. Ru[1], J. Zhang[1], W. Lui[1]; [1]School of Biological Sciences, The University of Hong Kong, Hong Kong, Hong Kong

B1239/P2277 **Galnt3 glycosylates key substrates essential for epithelial maintenance in trophoblast stem cells.** D. Raghu[1], A.N. Abell[1]; [1]Biological Sciences, University of Memphis, Memphis, TN

B1240/P2278 **The Cell Wall Integrity pathway regulates cell wall degradation during *S. cerevisiae* mating.** A.E. Hall[1], M.D. Rose[1]; [1]Molecular Biology, Princeton University, Princeton, NJ

B1241/P2279 **Claudin-11, Occludin, Vimentin and Keratin-7 expression at the blood-testis barrier in rat testis: An immunohistochemical study.** M. Barwig[1], A. Blaschitz[1], H. Hutter[1], G. Dohr[1]; [1]Institute for Cell Biology, Histology and Embryology, Medical University of Graz, Graz, Austria

B1242/P2280 **Super resolution mapping of membrane molecule organization and dynamics in confined cellular environments using monomeric streptavidin.** I. Chamma[1,2], M. Letellier[2], C. Butler[2,3], O. Rossier[2], D. Choquet[2,4], J. Sibarita[2], G. Giannone[2], S. Park[5], M. Sainlos[2], O. Thoumine[2]; [1]University of Bordeaux, 33077, France, [2]UMR 5297, Interdisciplinary Institute for Neuroscience, CNRS, 33077, France, [3] Imagine Optic, 91400, France, [4]UMS 3420, Bordeaux Imaging Center, CNRS, 33077, France, [5]Department of Chemical and Biological Engineering, University at Buffalo, 14260, NY

B1243/P2281 **β-catenin is a pH sensor with decreased stability at higher pH.** K.A. White[1], B. Grillo-Hill[2], M. Esquivel[1], D.L. Barber[1]; [1]Cell and Tissue Biology, University of California San Francisco, San Francisco, CA, [2]Biological Sciences, San Jose State University, San Jose, CA

B1244/P2282 **Cx46 hemichannel inhibition induced by carbon monoxide, possible participation of lipid peroxides.** M.A. Retamal[1]; [1]Centro de Fisiología Celular e Integrativa, Univeridad del Desarrollo, Santiago, Chile

B1245/P2283 **Desmoplakin's Regulation of Gap Junction Dynamics in Cardiocutaneous Model Systems.** C.Y. Kam[1], A.D. Dubash[2], F. Sheikh[3], P.D. Lampe[4], K.J. Green[1,5]; [1]Department of Pathology, Northwestern University, Chicago, IL, [2]Department of Biology, Furman University, Greenville, SC, [3]Department of Medicine, University of California-San Diego, La Jolla, CA, [4]Translational Research Program, Public Health Sciences Division, Fred Hutchinson Cancer Research Center, Seattle, WA, [5]Department of Dermatology, Northwestern University, Chicago, IL

Bioengineering of Cell-Matrix Interactions

B1246/P2284 **Emergence of supracellular boundaries on stiffness gradients.** R. Sunyer[1,2], P. Roca-Cusachs[1,2,3], X. Trepat[1,2,3,4]; [1]CIBER-BBN, Madrid, Spain, [2]IBEC, Barcelona, Spain, [3]Departament de Ciències Fisiològiques I, University of Barcelona, Barcelona, Spain, [4]Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain

B1247/P2285 **Synergistic Effects of Matrix Nanotopography and Stiffness on Vascular Smooth Muscle Cell Function.** S. Chaterji[1], P. Kim[2], S.H. Choe[1], J.H. Tsui[2], C.H. Lam[1], D.S. Ho[1], A.B. Baker[1], D. Kim[2,3,4]; [1]Biomedical Engineering, Cockrell School of Engineering, University of Texas, Austin, TX, [2]Bioengineering, University of Washington, Seattle, WA, [3]Center for Cardiovascular Biology, University of Washington, Seattle, WA, [4]Institute of Stem Cell and Regenerative Medicine, University of Washington, Seattle, WA

B1248/P2286 **Interplay between matrix topography and stiffness in the regulation of endothelial cytokines and chemokine secretion.** H. Jeon[1], J.H. Tsui[2], S. Jang[1], J.H. Lee[2], S. Park[1], K. Mun[2], Y. Boo[1], D. Kim[2,3]; [1]Molecular Medicine, School of Medicine and Cell and Matrix Research Institute, Kyungpook National University, Daegu, Korea, [2]Bioengineering, University of Washington, Seattle, WA, [3]Institute for Stem Cell and Regenerative Medicine and Center for Cardiovascular Biology, University of Washington, Seattle, WA

B1249/P2287 **Single-cell and collective geometry sensing of biomaterial surfaces with micron-scale, smoothly curved topologies.** P. Rougerie[1], L. Pieuchot[2], B. Pontes[3], F. de Sá[1], N. Sgambato[1], M. Bigerelle[4], N. Bessa Viana[3], K. Anselme[2], M. Farina de Souza[1]; [1]Instituto de Ciências Biomédicas, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil, [2]Institut de Science des Materiaux de Mulhouse, Universite de Haute Alsace, Mulhouse, France, [3]Instituto de Física, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brazil, [4]Departement de Mecanique, Universite de Valenciennes et du Hainaut Cambresis, Valenciennes, France

B1250/P2288 **Differential collective and single cell behaviors on silicon micropillar arrays.** Z. Jahed[1], R. Zareian[1], Y. Chau[2], B. Seo[3], M. West[1], T. Tsui[3], W. Wen[2], M. Mofrad[1]; [1]Bioengineering, University of California Berkeley, Berkeley, CA, [2]Department of Physics, The Hong Kong University of Science and Technology, Kowloon, Hong Kong, [3]Department of Chemical Engineering, University of Waterloo, Waterloo, ON

B1251/P2289 **Signal mingle: Micropatterns of BMP-2 and fibronectin on soft biopolymeric films regulate myoblast shape and SMAD signaling.** V. Fitzpatrick[1], L. Fourel[2], O. Destaing[2], F. Gilde[1], C. Albiges-Rizo[2], C. Picart[1], T. Boudou[1]; [1]LMGP (Laboratoire des Matériaux et du Génie Physique), Grenoble, France, [2]IAB (Institut Albert Bonniot), Grenoble, France

B1252/P2290 **Microprinted neuronal networks as an efficient platform for studying the role of cytokines on neuronal plasticity.** J. Lantoine[1], L. Ris[2], S. Gabriele[1]; [1]Mechanobiology and Soft Matter Group-InFluX, UMons, Mons, Belgium, [2]Département de Neuroscience, UMons, Mons, Belgium

B1253/P2291 **Fibronectin derived RGD and PRARI peptides conjugated chitosan matrix promotes cell adhesion and neurite outgrowth through integrin α4β1, α5β1, αvβ3, and syndecan.** K. Hozumi[1], K. Nakamura[1], H. Hori[1], M. Miyagi[1], R. Nagao[1], F. Katagiri[1], Y. Kikkawa[1], M. Nomizu[1]; [1]Laboratory of Clinical Biochemistry, Tokyo Univ Pharm and Life Sci, Hachioji, Japan

B1254/P2292 **3D spatial rearrangement of gingival fibroblast spheroids affected by collagen1 and fibrin hydrogels and nanofibers.** G. Kaufman[1], R. Whitescarver[1], L. Nunes[1], A. Eftimiades[1], W. Tutak[1]; [1]Volpe Research Center, ADA Foundation, Gaithersburg, MD

B1255/P2293 **Cardiac tissue bioengineering: studying the interface between extracellular matrix and stem cell-derived cardiomyocytes.** C. Hochman-Mendez[1], B.d. Mendes[1], D.B. Campos[1], A.B. Carvalho[1], A.C. Carvalho[1]; [1]Institute of Biophysics, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil

B1256/P2294 **Effects of the extracellular matrix from failing human hearts on cardiac stem cell phenotypes.** D.A. Delfin[1], E.N. McKown[1], J.L. DeAguero[1]; [1]Pharmaceutical Sciences, University of New Mexico, Albuquerque, NM

B1257/P2295 **Glaucomatous extracellular matrix modulates normal trabecular meshwork cell responses.** V. Raghunathan[1,2], C.J. Murphy[3,4]; [1]Department of Basic Sciences, College of Optometry, University of Houston, Houston, TX, [2]The Ocular Surface Institute, University of Houston, Houston, TX, [3]Department of Surgical and Radiological Sciences, School of Veterinary Medicine, University of California Davis, Davis, CA, [4]Department of Ophthalmology, School of Medicine, University of California Davis, Davis, CA

B1258/P2296 **Cytoskeletal stability-enhancing effects of hyaluronic acid on *in vitro* cultured endometrial stromal cells potentiates the regeneration of damaged uterine endometrium.** Y. Kim[1], S. Ku[2], Y. Kim[2], B. Kang[3], H. Liu[4]; [1]Department of Obstetrics and Gynecology, Korea University Medical College, Seoul, Korea, South, [2]Department of Obstetrics and Gynecology, Seoul National University College of Medicine, Seoul, Korea, South, [3]Department of Experimental Animal Research, Biomedical Research Institute, Seoul National University Hospital, Seoul, Korea, South, [4]Weill Cornell Medical College, Center for Reproductive Medicine and Infertility, Seoul, United States

B1259/P2297 **Invasion pattern analysis of oral cancer cells *In Vitro*.** E. Hoque Apu[1], .U. Akram[2], M. Sutinen[1], L. Eklund[3], T. Salo[1]; [1]Cancer and Translational Medicine Research Unit, University of Oulu, Oulu, Finland, [2]Computer Science and Engineering, University of Oulu, Oulu, Finland, [3]Biocenter Oulu, University of Oulu, Oulu, Finland

B1260/P2298 **Collective cell polarization and arrangement on patterned substrate.** B. Ji[1]; [1]Department of Applied Mechanics, Beijing Institute of Technology, Beijing, China

B1261/P2299 **The roles of biomimetic material-mediated cell-matrix interaction in redifferentiation of chondrocytes.** Y. Kim[1,2], S.H. Kim[3], Y. Hwang[1,2]; [1]Department of integrated Biomedical Science, Soonchunhyang Institute of Medi-bio Science (SIMS), Soonchunhyang University, Cheonan-si, Korea, South, [2]Institute of Tissue Regeneration, College of Medicine, Soonchunhyang University, Cheonan-si, Korea, South, [3]Center for Biomaterials, Biomedical Research Institute, Korea Institute of Science and Technology, Seoul, Korea, South

Regulation of Aging

B1263/P2300 **Age-dependent microenvironmental cues regulate epithelial lineage fidelity in human breast.** M. Miyano[1,2], M. Stoiber[2], R. Sayaman[2], C. Lin[2], M. Stampfer[2], J.B. Brown[2], M.A. LaBarge[1,2]; [1]Population Sciences, City of Hope, Duarte, CA, [2]Biological Systems and Engineering, Lawrence Berkeley National Laboratory, Berkeley, CA

B1264/P2301 **Skin improvement by eggshell membrane associating with in vivo-epidermal moisture keeping and -dermal elasticity links to niche environment for skin cells with slow proliferation but good metabolism.** Y. Atomi[1], M. Shimizu[1], E. Fujita[1], M. Kurimoto[1], S. Sano[1], K. Yoshimura[2], Y. Hasebe[3]; [1]Material Health Science, Tokyo Univ Agriculture and Technology, Tokyo, Japan, [2]Plastic Surgery, Jichi Medical University, Tochigi, Japan, [3]Almado Inc., Tokyo, Japan

B1265/P2302 **Combined exposure to UVA1 and Polycyclic Aromatic Hydrocarbons impairs redox homeostasis in human keratinocytes.** J. Soeur[1], J. Belaidi[1], C. Chollet[1], L. Denat[1], A. Dimitrov[1], C. Jones[1], P. Perez[1], M. Zanini[1], O. Zobiri[1], S. Mezzache[1], D. Erdmann[1], J. Eilstein[1], G. Lereaux[1], L. Marrot[1]; [1]Advanced Research, L'Oreal, Aulnay-sous-Bois, France

B1266/P2303 **Analysis of mitochondrial dysfunction in Hutchinson-Gilford Progeria Syndrome.** I.A. Garcia-Aguirre[1], B. Cisneros-Vega[1]; [1]Departament of Genetic and Molecular Biology, CINVESTAV, Mexico City, Mexico

B1267/P2304 **Effect of the aging on the relationships between the visceral fat area and the CBC, including lymphocyte fraction and red blood cell numbers.** Y. Kawata[1], T. Kada[1], M. Koyoshi[1], T. Nakano[1], M. Kawamura[1], N. Okamoto[1], Y. Hirotsu[1], J. Kawata[2]; [1]Department of Medicine, Saiseikai Toyoura Hospital, Shimonoseki, Japan, [2]Internal Medicine, Kawata Junko Clinic, Shimonoseki, Japan

B1268/P2305 **Screening for MicroRNAs Influencing Double-strand Break Repair Choice.** Y. Chen[1], Z. Liu[1], Z. Mao[1]; [1]School of Life Sciences and Technology, Tongji University, Shanghai, China

B1269/P2306 **An alternative approach to studying chronological aging in yeast *Saccharomyces cerevisiae*.** M. Bialecka-Fornal[1], S.M. Rafelski[1]; [1]Developmental and Cell Biology, University of California, Irvine, Irvine, CA

B1270/P2307 **Aged blood factors decrease cellular responses associated to gingival wound healing.** M. Caceres Lluch[1], A. Morgan[1], C. Diaz[1], A. Silva[1], M. Saldias[1], C. Fernandez[1], F. Briceño[1], O. Cerda[1]; [1]Program of Molecular and Cell Biology. ICBM, Universidad de Chile, Santiago, Chile

B1271/P2308 **Antiproliferative and Proapoptotic Activity of the Goniothalamin in Prostatic Microenvironment from Senile Mice.** L.A. Kido [1], F. Montico[1], D.B. Vendramini-Costa[2], V.H. Cagnon[1], R.A. Pilli[2]; [1]Structural and Funcional Biology, University of Campinas, Campinas, Brazil, [2]Department of Organic Chemistry- Institute of Chemistry, University of Campinas, Campinas, Brazil

B1272/P2309 **NOX4 Inhibit the eNOS Protein folding With Aging.** H.A. Zeeshan[1], H.Y. Lee[1], A. Noureen[2], H.R. Kim[3], H.J. Chae[1]; [1]Pharmacology, Chonbuk National University, Jeonju, Korea, South, [2]Burjeel Medical Centre, Al-Shamkha, Abu Dhabi, United Arab Emirates, [3] Graduate School, DGIST, daegu, Korea, South

B1273/P2310 **An important role of EGLN3 in epidermal regeneration and differentiation.** S. Yoon[1], A. Primorac[1], M. Dumas[2], R. Huggenberger[1], C. Nizard[2], S. Schnebert[2], M. Detmar[1]; [1]Institute of Pharmaceutical Sciences, ETH Zurich, Zurich, Switzerland, [2]LVMH Recherche, Saint-Jean-de-Braye, France

Autophagy

B1274/P2311 **VCP-Dependent Muscle Degeneration is Linked to Defects in a Dynamic Tubular Lysosomal Network in vivo.** A.E. Johnson[1], H. Shu[1], A. Hauswirth[1], A. Tong[1], G.W. Davis[1]; [1]Biochemistry and Biophysics, UCSF, San Francisco, CA

B1275/P2312 **Establishment of a novel lysosomal integrity assay.** E. Itakura[1], A. Matsuura[1]; [1]Graduate School of Advanced Integration Science, Chiba University, Chiba, Japan

B1276/P2313 **Understanding the relationship between ubiquitinated proteins and constitutive autophagy.** K. Takayama[1], A. Matsuura[1], E. Itakura[1]; [1]Graduate School of Advanced Integration Science, Chiba University, Chiba, Japan

B1277/P2314 **Autophagy and ubiquitin proteasome pathway feedback stimulation in corneal epithelial cells with limbal stem cell deficiency.** F. Bardag-Gorce[1], R.H. Hoft[1], A. Laporte[1], A. Makalinao[1], J.P. Stark[1], Y. Niihara[1]; [1]Pathology, LA BioMed, Torrance, CA

B1278/P2315 **Loss of autophagy receptors reveals roles in the maintenance of cellular proteostasis and clearance of aggregation prone proteins.** S.A. Sarraf[1], H.V. Shah[1], C. Wang[1], R.J. Youle[1]; [1]National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD

B1279/P2316 **Role of the human Vps15 kinase in PI3K complex I mediated autophagy regulation.** G. Stjepanovic[1,2], M.G. Lin[1], S. Baskaran[1], L. Carlson[1], J.H. Hurley[1,2]; [1]MCB, UC Berkeley, Berkeley, CA, [2]LBNL, Berkeley, CA

B1280/P2317 **Study of termination mechanism of autophagy under prolonged starvation.** S. Kira[1], M. Noguchi[2], T. Noda[1,2]; [1]Grad Sch Dentistry, Osaka University, Osaka, Japan, [2]Grad Sch Frontier Biosicence, Osaka University, Osaka, Japan

B1281/P2318 **Autophagy regulates myelin compaction in the final stages of CNS myelination.** A.N. Bankston[1,2], M.D. Forston[2,3], A.M. Smith[1,2], R.M. Howard[1,2], S.R. Whittemore[1,2]; [1]Department of Neurological Surgery, University of Louisville, Louisville, KY, [2]Kentucky Spinal Cord Injury Research Center, University of Louisville, Louisville, KY, [3]Department of Anatomical Sciences and Neurobiology, University of Louisville, Louisville, KY

B1282/P2319 **Ribosome profiling uncovers that autophagy instructs the translation of proteins involved in cell cycle control and centrosome maintenance.** J. Goldsmith[1], S. Asthana[2], H. Huang[3], A. Xu[1], A. Olshen[2], A. Wiita[3], J. Debnath[1]; [1]Pathology, UCSF, San Francisco, CA, [2]Department of Medicine, UCSF, San Francisco, CA, [3]Laboratory Medicine, UCSF, San Francisco, CA

B1283/P2320 **The role of cancer-associated protein survivin in autophagy.** N. Humphry[1], S.P. Wheatley[1]; [1]Life Science, University of Nottingham, Nottingham, United Kingdom

B1284/P2321 **The nuclear splicing factor Acinus moonlights as a cytosolic activator of autophagy.** N. Nandi[1], L.K. Tyra[1], H. Kramer[1]; [1]Dept. of Neuroscience, University of Texas Southwestern Medical Center, Dallas, TX

B1285/P2322 **α-Tubulin Acetylation as a Key Modification for Plant Autophagy Development.** V. Fedyna[1], D.I. Lytvyn[1], A.I. Yemets[1], Y.B. Blume[1]; [1]Dept. Genomics and Molecular Biotechnology, Institute of Food Biotechnology and Genomics, Kiev, Ukraine

B1286/P2323 **Visualizing the architecture and dynamics of the phagophore assembly site.** M.G. Lin[1], J. Schoeneberg [1]; [1]Molecular and Cell Biology, UC Berkeley, Berkeley, CA

B1287/P2324 **Atg12 maintains skeletal integrity by modulating pro-osteoclastogenic signals and chondrocyte differentiation.** C.G. Tahimic[1,2], Y. Shirazi-fard[1,2], T. Marsh[3], A. Schreurs[1], V.E. Rael[4,5], C. Glikbarg[1], J. Debnath[3], R.K. Globus[1]; [1]Space Biosciences Division, NASA Ames Research Center, Moffett Field, CA, [2]Wyle Laboratories, Moffett Field, CA, [3]School of Medicine, Department of Pathology, University of California at San Francisco, San Francisco, CA, [4]Space Life Sciences Training Program (SLSTP), NASA Ames Research Center, Moffett Field, CA, [5]Biological Sciences Collegiate Division, University of Chicago, Chicago, IL

B1288/P2325 **Mitochondrial Fusion Is Required for Atg14p Redistribution onto the Vacuole Membrane to Trigger LD Autophagy upon Glucose Restriction.** A.Y. Seo[1], M.A. Le Gros[2], C.A. Larabell[2], J. Lippincott-Schwartz[1]; [1]Janelia Research Campus, HHMI, Ashburn, VA, [2]Anatomy, University of California San Francisco, San Francisco, CA

B1289/P2326 **mTORC1-regulated lipid droplet biogenesis maintains cellular energy homeostasis during starvation.** T. Nguyen[1], Q. Tran[1], R. Perera[2], R. Zoncu[3], J.A. Olzmann[1]; [1]Nutritional Sciences and Toxicology, University of California, Berkeley, Berkeley, CA, [2]Anatomy, University of California, San Francisco, San Francisco, CA, [3]Molecular and Cellular Biology, University of California, Berkeley, Berkeley, CA

B1300/P2327 **IPMK promotes AMPK dependent ULK phosphorylation critical for autophagy activation.** P. Guha[1], S.H. Snyder[1]; [1]Neuroscience, Johns Hopkins School of Medicine, Baltimore, MD

B1301/P2328 **Beclin1 phosphorylation by Death-associated protein kinase1 contributes to autophagy activation by globular adiponectin in RAW 264.7 macrophages.** N. Tilija Pun[1], P. Raut[1], E. Kim[1], A. Khakurel[1], H. Oh[1], A. Shrestha[1], P. Park[1]; [1]College of Pharmacy, Yeungnam University, Gyeongsan, Korea, South

B1302/P2329 **Dietary compound α-asarone ameliorates oxysterol-induced macrophage injury through beclin-1-dependent autophagy.** S. Park[1], Y. Kang[1]; [1]Department of Food Science and Nutrition, Hallym University, Chuncheon, Kangwon-do, Korea, South

B1303/P2330 **TBK1 activation in the PINK1-PARKIN-mediated mitophagy.** J. Heo[1], J.A. Paulo[1], J.W. Harper[1]; [1]Cell Biology, Harvard Medical School, Boston, MA

B1304/P2331 **Autophagy machinery genes are differentially required for autophagy and Parkin-mediated mitophagy.** C. Wang[1], C. Nezich[1], R.J. Youle[1], C. Zhen[2]; [1]SNB/NINDS, National Institutes of Health, Bethesda, MD, [2]Department of Biochemistry, California Institute of Technology, Pasadena, CA

B1305/P2332 **Esm1p, a novel regulator of phospholipid imbalance-induced microlipophagy.** E.J. Garcia[1], J.D. Vevea[1,2], L.A. Pon[1]; [1]Department of Pathology and Cell Biology, Columbia University, New York, NY, [2]Department of Neuroscience, University of Wisconsin, Madison, WI

B1306/P2333 **Impact of autophagy deletion on bone structure.** D. Bahl[1], Y. Shirazi-fard[1], T. Marsh [2], A. Schreurs[1], V.E. Rael[3,4], C. Glikbarg[1], J. Debnath[2], R.K. Globus[1], C.G. Tahimic[1,5]; [1]Space Biosciences Division, NASA Ames Research Center, Mountain View, CA, [2]Pathology, School of Medicine, University of California at San Francisco, San Francisco, CA, [3]Space Life Sciences Training Program, NASA Ames Research Center, Mountain View, CA, [4]Biological Sciences Collegiate Division, University of Chicago, Chicago, IL, [5]Wyle Laboratories, El Segundo, CA

Chemical Approaches to Cell Biology

B1308/P2334 **Graphene Based Binding Kinetics Assay for Real-Time Monitoring of Biological Signals in Complex Media.** B.R. Goldsmith[1], A. Walker[1], D. Pan[1], M. Lerner[1], F.E. Barron[1]; [1]Nanomedical Diagnostics, San Diego, CA

B1309/P2335 **Graphene Oxide-Incorporated PLGA/RGD Peptide Fiber Sheets for Vascular Smooth Muscle Regeneration.** Y. Shin[1], J. Han[2], C. Kim[2], W. Kim[2], D. Han[1], J. Oh[3]; [1]Cogno-Mechatronics Engineering, Pusan National University, Busan, Korea, South, [2]Nano Fusion Technology, Pusan National University, Busan, Korea, South, [3]Nano Energy Engineering, Pusan National University, Busan, Korea, South

B1310/P2336 **The phosphorylation of focal adhesion kinase in human dermal fibroblasts on chiral/racemic amyloid-like fibrils.** F. Katagiri[1], K. Mori[1], K. Hozumi[1], Y. Kikkawa[1], M. Nomizu[1]; [1]Tokyo University of Pharmacy and Life Sciences, Hachioji, Japan

B1311/P2337 **Somatic Reprogramming Mediated by Mesoporous Silica Nanoparticle(MSN).** Y. Liu[1], F. Sun[1], M. Wang[1]; [1]School of Life Sciences and Technology, Tongji University, Shanghai, China

B1312/P2338 **Therapeutic application of taurine as a potential TRPV1 inhibitor.** M. Moriuchi[1], Y. Nakano[2], Y. Tsurekawa[1,3], M. Piruzyan[1,3], M. Takada[2], M. Morita[2], M.A. Suico[1], T. Shuto[1], H. Kai[1,3]; [1]Graduate school of Pharmaceutical Science, Kumamoto university, Kumamoto, Japan, [2]School of Pharmacy, Kumamoto university, Kumamoto, Japan, [3]Health life science: Interdisciplinary and Glocal Oriented, Kumamoto university, Kumamoto, Japan

B1313/P2339 **Asymmetric mutations in a reengineered homodimer reveal multiple communication pathways in binding cooperativity.** M. Lanfranco[1], F. Garate[1], A.J. Engdahl[2], R.A. Maillard[1]; [1]Chemistry, Georgetown University, Washington, DC, [2]University of Maryland School of Medicine, Baltimore, MD

B1314/P2340 **Inhibition of vascular leakage through inhibiting VEGF-induced transglutaminase activation in diabetic retina.** Y. Lee[1], H. Jeon[1], K. Ha[1]; [1]molecular and cellular biochemistry, kangwon national university school of medicine, chuncheon, Korea, South

B1315/P2341 **Regulation and synthesis of a putative iron-binding biocontrol pigment in the budding yeast *Kluyveromyces lactis*.** S. Opara[1], A. Cain[1], A. Lopez-Rivera[1], L.A. Silveira[1]; [1]Biology Department, University of Redlands, Redlands, CA

B1316/P2342 **Towards Understanding the Crystal Structure of Wild Type Phenylalanine Hydroxylase: The H□O Count Discrepancy.** O. Grosser[1], J. Caradonna[2]; [1]Biotechnology, Massachusetts Bay Community College, Wellesley, MA, [2]Chemistry, Boston University, Boston, MA

Embryogenesis 2

B1318/P2343 **Implication of Importin-8 in mouse brain development.** G. Nganou[1], B. Coumans[1], T. GRISAR[1], L. Denijs[2], B. Lakaye[1]; [1]GIGA-Neurosciences, University of Liege, Liège, Belgium, [2]MHeNs School for Mental Health and Neuroscience, Maastricht University, Maastricht, Netherlands

B1319/P2344 **Investigation of the molecular mechanisms underlying Reelin-induced neuronal aggregation in the mouse neocortex.** S. Inoue[1], K. Hayashi[1], K. Kubo[1], K. Nakajima[1]; [1]Department of Anatomy, Keio University School of Medicine, Tokyo, Japan

B1320/P2345 **Deficiency of *MNL1* Causes Pleiotropic Developmental Defects in Mice.** H. Kweon[1], M. Lee[1], H. Noh[1], G. Oh[1]; [1]Division of Life Science, Ewha Womans University, Seoul, Korea, South

B1321/P2346 **Microtubule based nuclear spacing in the *Drosophila* syncytial embryo.** O. Deshpande[1], I.A. Telley[1]; [1]IGC, Fundaçao Calouste Gulbenkian, Oeiras, Portugal

B1322/P2347 ***SJJ1* deficiency leads to abnormal morphogenesis and embryonic lethality.** T. Kim[1], S. Jeon[1], G. Oh[1]; [1]Division of Life Science, Ewhah Womans University, Seoul, Korea, South

B1323/P2348 **Hypoxic Zebrafish and Inositol.** S.D. Williams[1], B. Sims[1]; [1]Pediatrics, University of Alabama at Birmingham, Birmingham, AL

B1324/P2349 **Cell Size Regulated Zygotic Genome Activation.** H. Chen[1], L. Einstein[1], M. Good[1,2]; [1]Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA, [2]Bioengineering, University of Pennsylvania, Philadelphia, PA

B1325/P2350 **CYK-4's Role in Regulating CENP-A Maintenance in Chromosomes.** C.A. Barnhardt[1], E. Hughes[1], L. Smith[2], P.S. Maddox[1]; [1]Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Curriculum in Genetics and Molecular Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC

B1326/P2351 **Linking cell size and transcription in *Xenopus* egg and embryo extracts.** L.C. Einstein[1], M. Good[1]; [1]Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B1327/P2352 **Regulation of brain development and neuronal function by protein arginylation.** J. Wang[1], N.A. Leu[1], S. Sterling[1], A.S. Kashina[1]; [1]Department of Biomedical Sciences, University of Pennsylvania, Philadelphia, PA

B1328/P2353 **Biophysical context shaping the emergence of animal multicellularity.** B.T. Larson[1], N. King[2,3]; [1]Biophysics, UC Berkeley, Berkeley, CA, [2]MCB, UC Berkeley, Berkeley, CA, [3]HHMI, Berkeley, CA

B1329/P2354 **Chick cranial neural crest cells do not utilize contact inhibition of locomotion for migration.** M. Genuth[1], T. Mikawa[1], O.D. Weiner[1]; [1]Cardiovascular Research Institute, UCSF, San Francisco, CA

B1330/P2355 **Direct monitoring of nitric oxide levels show cardiogenic signaling in early staged chicken embryos.** D. Shah[1], W.F. Denetclaw[1]; [1]Biology, San Francisco State University, San Francisco, CA

Cytoskeleton in Tissue Development and Morphogenesis

B1331/P2356 **Desmosomal cadherin association with a dynein-cortactin complex exerts temporal and spatial control over mechanical changes required for epidermal morphogenesis.** O. Nekrasova[1,2], R.M. Harmon[3], J.A. Broussard[1], J.L. Koetsier[1], K.J. Green[1,2]; [1]Department of Pathology, Northwestern University Feinberg School of Medicine, Chicago, IL, [2]Department of Dermatology, Northwestern University Feinberg School of Medicine, Chicago, IL, [3]. Institute for Biophysical Dynamics, James Franck Institute and Department of Physics, The University of Chicago, Chicago, IL

B1332/P2357 **Dynamin regulates actin cytoskeletal organization during cell-cell fusion.** N. Gerassimov[1], S. Kim[1], A. Mercado-Perez[1], T. Tran[1], D. Luvsanjav[1], E.H. Chen[1]; [1]Molecular Biology and Genetics, Johns Hopkins School of Medicine, Baltimore, MD

B1333/P2358 **Control of apico-basal epithelial polarity by the microtubule minus-end binding protein CAMSAP3 and spectraplakin ACF7.** I. Noordstra[1], Q. Liu[1], W. Nijenhuis[1], S. Hua[1], K. Jiang[1], M. Baars[1], S. Remmelzwaal[1], M. Martin[1], L.C. Kapitein[1], A. Akhmanova[1]; [1]Cell Biology, Utrecht University, Utrecht, Netherlands

B1334/P2359 **Loss of $G_{\alpha12/13}$ exacerbates apical area-dependence of actomyosin contractility.** S. Xie[1,2], F.M. Mason[3], A. Martin[3]; [1]Computational and Systems Biology PhD Program, MIT, Cambridge, MA, [2]Department of Biology, Stanford University, Stanford, CA, [3]Department of Biology, MIT, Cambridge, MA

B1335/P2360 **Asymmetrical distribution of actin and endocytic proteins in fusing myoblasts.** Y. Liu[1]; [1]Institute of Molecular Medicine, National Taiwan University, Taipei, Taiwan

B1336/P2361 **Possible functions of obscurin in non-muscle tissue.** A. Katzemich[1], F. Schöck[1]; [1]Biology, McGill University, Montreal, QC

B1337/P2362 **A gain-of-function β tubulin mutation causes dendrite degeneration in *C. elegans* sensory neurons.** X. Liang[1], X. Wang[1], K. Shen[1,2]; [1]Institute of Biophysics, CAS, Beijing, China, [2]Department of Biology, Howard Hughes Medical Institute, Stanford University, CA

B1338/P2363 **Orchestrated content release from Drosophila glue-protein vesicles by a contractile actomyosin network.** D. Meyen[1], T. Rousso[1], E.D. Schejter[1], B. Shilo[1]; [1]Molecular Genetics, Weizmann Institute, Rehovot, Israel

B1339/P2364 **Tissue-specific, acute MyosinII activity depletion dismisses current models of tissue force orchestration in dorsal closure.** L. Pasakarnis[1], E. Frei[1], E. Caussinus[1], M. Affolter[2], D. Brunner[1]; [1]Institute of Molecular Life Sciences, University of Zurich, Zurich, Switzerland, [2]Biozentrum, University of Basel, Basel, Switzerland

B1340/P2365 **The Physics of Blastoderm Flow during Early Gastrulation of Tribolium castaneum.** S. Muenster[1,2,3], A. Mietke[3], A. Jain[1], P. Tomancak[1], S.W. Grill[2,3]; [1]MPI-CBG, Dresden, Germany, [2]Biophysics, TU Dresden, Dresden, Germany, [3]Biophysics, MPI-PKS, Dresden, Germany

B1341/P2366 **Myonuclear domains establishment during skeletal muscle fibers formation implicates SH3KBP1 activity.** A. Guiraud[1], N. Couturier[1], C. Burny[2], S. Janczarski[2], V. Buchman[3], V. Gache[1]; [1]U1217/INMG/MNCA, INSERM, Lyon, France, [2]UMR 5239, LBMC, ENS Lyon-CNRS, lyon, France, [3]Cardiff University, School of Biosciences, Cardiff, United Kingdom

B1342/P2367 **Anillin regulates epithelial mechanics by structuring the apical actin network.** T.R. Arnold[1], R.E. Stephenson[1], K.M. Dinshaw[1], T. Higashi[1], A.L. Miller[1]; [1]Molecular, Cellular, and Developmental Biology, University of Michigan, Ann Arbor, MI

B1343/P2368 **Identifying genetic players in cell sheet morphogenesis using a *Drosophila* deficiency screen for genes that contribute to dorsal closure.** R.D. Mortensen[1], S.M. Fogerson[1], D.P. Kiehart[1]; [1]Biology, Duke University, Durham, NC

B1344/P2369 **Boundary formation and maintenance during zebrafish neurodevelopment.** A. Vichas[1], C.B. Moens[1]; [1]Basic Science Division, Fred Hutchinson Cancer Research Center, Seattle, WA

Cell Fate Determination 2

B1345/P2370 **Cdo regulates cell-surface expression and activity of Kir2.1 K+ channel in myogenic differentiation.** Y. Leem[1,2], H. Jeong[1,2], H. Kim[2,3], H. Cho[2,3], J. Kang[1,2]; [1]Department of Molecular Cell Biology, Sungkyunkwan University School of Medicine, Suwon, Korea, South, [2]Samsung Biomedical Research Institute, Suwon, Korea, South, [3]Department of Physiology, Sungkyunkwan University School of Medicine, Suwon, Korea, South

B1346/P2371 **Desmin modulates Nkx2.5 expression in cardiac stem cells by entering the nucleus and participating in transcription factor complexes that interact with the nkx2.5 gene.** C. Fuchs[1], S. Gawlas[1], P. Heher[1], S. Nikouli[2], H. Paar[1], M. Ivankovic[1], M. Schultheis[1], J. Klammer[1], T. Gottschamel[1], Y. Capetanaki[2], G. Weitzer[1]; [1]Department of Medical Biochemistry, Max F. Perutz Laboratories, Vienna Biocenter, Medical University of Vienna, Vienna, Austria, [2]Biomedical Research Foundation Academy of Athens, Athens, Greece

B1347/P2372 **Knocking out individual miRNA17 family members results in mis-expression of cardiac genes and cardiac defects.** G.I. Gallicano[1], Z. Zhang[1], S. Mahapatra[1], R. Ursin[1]; [1]Biochemistry and Molecular Cellular Biology, Georgetown University Medical Center, Washington, DC

B1348/P2373 **Matrix tension directs human embryonic stem cell mesoderm and cardiomyocyte differentiation.** L. Przybyla[1], J.M. Muncie[1,2], J.N. Lakins[1], V.M. Weaver[1,3,4,5,6]; [1]Surgery, UCSF, San Francisco, CA, [2]Bioengineering, UC Berkeley, Berkeley, CA, [3]Anatomy, UCSF, San Francisco, CA, [4]Eli and Edythe Broad Center of Regeneration Medicine and Stem Cell Research, UCSF, San Francisco, CA, [5]The Helen Diller Family Comprehensive Cancer Center, UCSF, San Francisco, CA, [6]Bioengineering and Therapeutic Sciences, UCSF, San Francisco, CA

B1349/P2374 **The Role of Phosphatidylinositol Transfer proteins (PITPs) in Mouse Brain Development.** S.K. HUR[1], Z. Xie[1], V.A. Bankaitis[1]; [1]Department of Molecular and Cellular Medicine, Texas AM University Health Science Center, College Station, TX

B1350/P2375 **Role of Pumilio proteins during neural crest development.** E. Kunttas-Tatli[1], M.E. Bronner[1]; [1]Biology and Biological Engineering, California Institute of Technology, Pasadena, CA

B1351/P2376 **RNF220 mediated K-63 linked ubiquitinagion induces sequestration of Gli to pattern the ventral neural tube.** P. Ma[1], N. Song[2], Y. Ding[2], B. Mao[1]; [1]Kunming Institute of Zoology, Chinese Academy of Sciences, Kunming, China, [2]Medical School, Tongji University, Shanghai, China

B1352/P2377 **Satellite glial cells represent a population of arrested Schwann cell precursors.** D. George[1], P. Ahrens[2], W. Anderson[1], S. Lambert[2]; [1]Burnett School of Biomedical Sciences, University of Central Florida, Orlando, FL, [2]Department of Medical Education, University of Central Florida, Orlando, FL

B1353/P2378 **mTOR and PAK1 regulate oligodendrocyte differentiation through morphological differentiation and myelination.** T. Brown[1], L.T. Finseth[1], W.B. Macklin[1]; [1]Cell and Developmental Biology, University of Colorado AMC, Aurora, CO

B1354/P2379 ***actr10* regulates trafficking of *mbp* mRNA in oligodendrocytes to promote proper myelination of the central nervous system.** A.L. Herbert[1], M. Fu[2], C. Drerup[3], B. Harty[1], S. Ackerman[1], R. Gray[4], T. O Reilly Pol[5], S. Johnson[1], A. Nechiporuk[3], B. Barres[2], K.R. Monk[1]; [1]Developmental Biology, Washington University School of Medicine, St. Louis, MO, [2]Neurobiology, Stanford University School of Medicine, Stanford, CA, [3]Cell, Developmental and Cancer Biology, Oregon Health and Science University, Portland, OR, [4]Pediatrics, University of Texas Dell Medical School, Austin, TX, [5]Genetics, Washington University School of Medicine, St. Louis, MO

B1355/P2380 **Cross talk between microglia and astrocyte promote proliferation and M2-polarization of microglia.** S. Kim[1], J. Lim[1], W. Ahn[1], M. Zhang[1], E. Chung[1], Y. Son[1]; [1]Life science, Kyung Hee University, Yongin-si, Korea, South

B1356/P2381 **Postnatal development and age- and region-dependent diversity of glial GLAST-positive cells.** I.N. Dominova[1], O.P. Tuchina[1], L. Klimaviciusa[1], N.A. Filiakova[1], A.A. Vasilev[1], M.V. Patrushev[1], V.A. Kasymov[1]; [1]Department of Neurobiology and Medical Physics, Immanuel Kant Baltic Federal University, Kaliningrad, Russia

Stem Cells and Pluripotency

B1357/P2382 **The molecular basis for the deficiency of innate immunity in mouse embryonic stem cells and their differentiated cells.** Y. Guo[1], W. DAngelo[1], C. Gurug[1], D. Acharya[1], B. Chen[1], N. Ortolano[1]; [1]Department of Biological Sciences, The University of Southern Mississippi, Hattiesburg, MS

B1358/P2383 **Dicer-1 regulates proliferative potential of *Drosophila* larval neural stem cells through bantam miRNA dependent downregulation of the G1/S inhibitor Dacapo.** A. Banerjee[1], J.K. Roy[1]; [1]Cytogenetics Laboratory, Department of Zoology, Banaras Hindu University, Varanasi, India

B1359/P2384 **Characterization of ESC-differentiated fibroblasts with mesenchymal stem cell properties.** W.A. D'Angelo[1], D. Acharya[1], C. Gurung[1], Y. Guo[1]; [1]Department of Biological Sciences, The University of Southern Mississippi, Hattiesburg, MS

B1360/P2385 **A key role for occluding junctions in regulating the hematopoietic stem cell microenvironment to trigger immune activation in Drosophila.** R. Khadilkar[1], G. Tanentzapf[1], A. Vogl[1]; [1]Cellular& Physiological Sciences, The University of British Columbia, Vancouver, BC

B1361/P2386 **Transcriptional regulation of *Drosophila* intestinal stem cells.** D.P. Doupe[1], O.J. Marshall[2,3], A.H. Brand[2,3], N. Perrimon[1,4]; [1]Genetics, Harvard Medical School, Boston, MA, [2]Physiology, Development and Neuroscience, University of Cambridge, Cambridge, United Kingdom, [3]The Gurdon Institute, Cambridge, United Kingdom, [4]Howard Hughes Medical Institute, Boston, MA

B1362/P2387 **Role of the mitochondrial pyruvate carrier in transcriptional reprogramming of intestinal stem cells.** J.M. Tanner[1], J. Rutter[1]; [1]Biochemistry, University of Utah School of Medicine, Salt Lake City, UT

B1363/P2388 **Novel insights into the molecular mechanisms of transdifferentiation of cells into brown adipose tissue-like cells.** S.R. Taylor[1], E. Miller[1], C.A. Gemma[1], D.C. Pfeil[1], P.A. Harding[1]; [1]Biology, Miami University, Oxford, OH

B1364/P2389 **Regulation of stem cell repopulation in the planarian Schmidtea mediterranea.** K. Lei[1], H.T. Vu[1], R.D. Mohan[2], S. McKinney[1], C. Seidel[1], R. Alexander[1], K. Gotting[1], J.L. Workman[1], A. Sánchez Alvarado[1,3]; [1]Stowers Institute for Medical Research, Kansas City, MO, [2]School of Biological Sciences, Division of Cell Biology and Biophysics, University of Missouri - Kansas City, Kansas City, MO, [3]Howard Hughes Medical Institute, Kansas City, MO

B1365/P2390 **Mitochondrial networking and mitophagy in human pluripotent stem cells.** S.E. Krantz[1], M. Rexius-Hall[1], L. Wang[1], P. Toth[1], G. Marsboom[1], J. Rehman[1]; [1]Medicine and Pharmacology, University of Illinois at Chicago, Chicago, IL

B1366/P2391 **The Role of KDF1 and IKKα in Keratinocyte Differentiation.** Y. Li[1], X. Gou[1], J. Yue[1], P. Lee[1], X. Wu[1]; [1]The Ben May Department for Cancer Research, the University of Chicago, Chicago, IL

B1367/P2392 **Glucose inhibits cardiac muscle maturation through nucleotide biosynthesis.** H. Nakano[1,2], I. Minami[3], D. Braas[4], H. Pappoe[1], X. Wu[5], A. Sagadevan[1], L. Vergnes[6], K. Fu[1], M. Morselli[1], X. Ding[7], A.Z. Stieg[8], J.K. Gimzewski[7,8,9], M. Pellegrini[1], P.M. Clark[4,9,10], K. Reue[6,11], A. Lusis[5,6,11,12], B. Ribalet[13], S. Kurdistani[2,9,11,14], H. Christofk[2,4,11,14], N. Nakatsuji[3], A. Nakano[1,2,9,11]; [1]Departmemt of Molecular Cell Developmental Biology, University of California, Los Angeles, Los Angeles, CA, [2]Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research, University of California, Los Angeles, Los Angeles, CA, [3]Institute for Integrated Cell-Material Sciences, Kyoto University, Kyoto, Japan, [4]Department of Molecular and Medical Pharmacology, University of California, Los Angeles, Los Angeles, CA, [5]Department of Medicine, University of California, Los Angeles, Los Angeles, CA, [6]Department of Human Genetics, University of California, Los Angeles, Los Angeles, CA, [7]Department of Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles, CA, [8]California NanoSystems Institute, University of California, Los Angeles, Los Angeles, CA, [9]Jonsson Comprehensive Cancer Center, University of California, Los Angeles, Los Angeles, CA, [10]Crump Institute for Molecular Imaging, University of California, Los Angeles, Los Angeles, CA, [11]Molecular Biology Institute, University of California, Los Angeles, Los Angeles, CA, [12]Department of Microbiology, Immunology, and Molecular Genetics, University of California, Los Angeles, Los Angeles, CA, [13]Department of Physiology, University of California, Los Angeles, Los Angeles, CA, [14]Department of Biological Chemistry, University of California, Los Angeles, Los Angeles, CA

B1368/P2393 **RBM8a regulates neural progenitor proliferation.** C. McSweeney[1], D. Zou[1], A. Sebastian [1], I. Albert[1], Y. Mao[1]; [1]Biology, Penn State University, State College, PA

B1369/P2394 **The translational landscape during human neuronal differentiation at transcript isoform resolution.** S.N. Floor[1,2], J. Blair[1], H. Bateup[1], D. Hockemeyer[1], J.A. Doudna[1,2]; [1]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, [2]Howard Hughes Medical Institute, Berkeley, CA

B1370/P2395 **Pigment Epithelium-Derived Factor (PEDF) Peptide Promotes the Expansion of Hepatic stem/Progenitor Cells via ERK and STAT3-Dependent Signaling.** Y. Tsao[1]; [1]Ophthalmology, Mackay Memorial Hospital, Taipei, Taiwan

B1371/P2396 **Pluripotent stem cell self-renewal on a ligand-rich hydrogel matrix with tunable stiffness.** A.J. Price[1], E. Huang[2], A.R. Dunn[1,2]; [1]Biophysics, Stanford University, Stanford, CA, [2]Chemical Engineering, Stanford University, Stanford, CA

B1400/P2397 **Regulating the cell fate specification of pluripotent stem cells.** S. Chetty[1]; [1]Psychiatry and Behavioral Sciences, and the Institute for Stem Cell Biology and Regenerative Medicine, Stanford University, Stanford, CA

B1401/P2398 **Fibroblast Growth Factor 2 enhances musculoskeletal differentiation potential of human adipose-derived stem cells.** Y. Won[1], S. Lim[1], H. Cho[1], E.K. Lee[1], C. Kim[1], E. Lee[2], Y. Son[1]; [1]Genetic Engineering, Kyung Hee University, Yongin, Korea, South, [2]mpedance Imaging Research Center, Kyung Hee University, Seoul, Korea, South

B1402/P2399 **Maternal fructose exposure impairs angiogenic activity of endothelial progenitor cells and reduces blood flow recovery after critical limb ischemia in rat offspring.** S. Leu[1], K.L. Wu[1], Y. Tain[1,2], W. Lee[3], J.Y. Chan[1]; [1]Institute for Translational Research in Biomedicine, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan, [2]Department of Pediatrics, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan, [3]Department of Urology, Kaohsiung Chang Gung Memorial Hospital, Kaohsiung, Taiwan

B1403/P2400 **Role of MARVELD1 in the reprogramming of mouse fibroblasts.** Y. Chen[1], H. Zhang[1], F. Han[1], Y. Li[1]; [1]Harbin Institute of Technology, School of life science and technology, Harbin, China

B1404/P2401 **Stem cell self-renewal and clonal aging determine clone sizes and their fluctuations in granulopoiesis.** T. Chou[1], S. Xu[1]; [1]Biomathematics, UCLA, Los Angeles, CA

B1405/P2402 **Dermal stem cells activation helps to promote skin elasticity.** C. Nizard[1], A. Lemestr[2], c. Plaza[2], C. Capallere[2], R. Chabert[2], I. Imbert[2], J. Botto[2], N. Garcia[2], M. Dumas[1], E. Leblanc[1], S. Schnebert[1], B. Bavouzet[1], N. Domloge[2]; [1]Life Science Department, LVMH Recherche, Saint jean de braye, France, [2]Affiliate of Ashland Inc., Ashland Specialty Ingredient, Sophia-Antipolis, France

B1406/P2403 **CD271 identifies an early keratinocyte stem cell progeny and modulates regenerative capacity in 3D reconstructed skin models.** A. Marconi[1], F. Truzzi[1], R. Lotti[1], M. Quadri[1], E. Palazzo[1], C. Nizard[2], S. Schnebert[2], M. Dumas[2], C. Pincelli[1]; [1]Laboratory of Cutaneous Biology, Department of Surgical, Medical, Dental and Morphological Sciences, University of Modena and Reggio Emilia, Modena, Italy, [2]Life Sciences, LVMH Recherche, Saint Jean De Braye, France

B1407/P2404 **Low-level exposure to manganese disrupts morphology and intracellular signaling in cultured adult neural stem cells.** A.S. Carpenter[1], A. Ramirez[1], A.B. Parsons-White[1], N. Spitzer[1]; [1]Biological Sciences, Marshall University, Huntington, WV

B1408/P2405 **Low-level silver nanoparticle exposure alters cytoskeletal dynamics via intracellular signaling pathways.** B.N. Forren[1], K.D. Brown[1], R.J. Cooper[1], M.N. Menking-Hoggatt[1], N. Spitzer[1]; [1]Biological Sciences, Marshall University, Huntington, WV

B1409/P2406 **Niche Regulation of Satellite Cell Quiescence by Classical Cadherins.** A.J. Goel[1], R.S. Krauss[1]; [1]Developmental and Regenerative Biology, Icahn School of Medicine at Mount Sinai, New York, NY

Host-Pathogen/Host-Commensal Interactions 2

B1411/P2407 **Biomechanical Alterations of Endothelial Cells Induced by *Listeria monocytogenes*.** E.E. Bastounis[1], J.A. Theriot[1,2,3]; [1]Biochemistry, Stanford University, School of Medicine, Stanford, CA, [2]Microbiology and Immunology, Stanford University, School of Medicine, Stanford, CA, [3]Howard Hughes Medical Institute, Stanford University, School of Medicine, Stanford, CA

B1412/P2408 **Th bacterial pathogen Listeria monocytogenes exploits the human exocyst complex to promote cell-to-cell spread.** G.C. Dowd[1], K. Ireton[1]; [1]Microbiology and Immunology, University of Otago, Dunedin, New Zealand

B1413/P2409 **Modeling *Listeria monocytogenes* cell-to-cell spread.** F.E. Ortega[1,2], E.F. Koslover[3], J.A. Theriot[1,2,4]; [1]Biochemistry, Stanford School of Medicine, Stanford, CA, [2]Howard Hughes Medical Institute, Stanford, CA, [3]Physics, University of California, San Diego, San Diego, CA, [4]Microbiology and Immunology, Stanford School of Medicine, Stanford, CA

B1414/P2410 ***Chlamydia trachomatis* inclusion membrane protein CT192 interacts with dynactin to modulate centrosome positioning and parasitophorous vacuole fusion events.** J. Sherry[1], C. Elwell[1], R. Bastidas[2], M. Weber[3], T. Hackstadt[3], R.H. Valdivia[2], J.N. Engel[1,4]; [1]Department of Medicine, University of California, San Francisco, San Francisco, CA, [2]Department of Molecular Genetics and Microbiology, Duke University, Durham, NC, [3]Host Parasite Interactions Section, Laboratory of Bacteriology, Rocky Mountain Laboratories, NIAID, NIH, Hamilton, MT, [4]Department of Microbiology and Immunology, University of California, San Francisco, San Francisco, CA

B1415/P2411 **Molecular basis of the *Chlamydia trachomatis* effector IncE interaction with sorting nexin 5 to escape pathogen restriction.** C. Elwell[1], N. Czudnochowski[1], K. Mirrashidi[1], J. Johnson[2,3], J. Von Dollen[2,3], J. Sherry[1], N. Krogan[2,3,4], O. Rosenberg[1], J. Engel[1,5]; [1]Department of Medicine,, University of California, San Francisco, San Francisco, CA, [2]California Institute for Quantitative Biosciences, University of California, San Francisco, San Francisco, CA, [3]Department of Cellular and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA, [4]Gladstone Institutes, University of California, San Francisco, San Francisco, CA, [5]Department of Microbiology and Immunology, University of California, San Francisco, San Francisco, CA

B1416/P2412 ***Neisseria meningitidis* type IV pili act as extracellular scaffolds for plasma membrane remodeling.** A. Charles-Orszag[1,2], M. Sachse[3], J. Krijnse-Locker[3], G. Dumenil[1]; [1]Pathogenesis of Vascular Infections Unit, INSERM, Pasteur Institute, Paris, France, [2]Paris Descartes University, Paris, France, [3]Ultrapole, Pasteur Institute, Paris, France

B1417/P2413 **Association of hypertension in mycobacteria-induced endoplasmic reticulum dysfunction.** S. Cho[1,2], J. Lee[1,2], J. Choi[1,2], S. Jo[1,2], S. Oh[1,2], S. Kim[1,2], D. Go[1,2], Y. Lim[1,2], C. Song[1,2]; [1]Department of Medical Science, Chungnam National University, College of Medicine, Daejeon, Korea, South, [2]Department of Microbiology, Chungnam National University, College of Medicine, Daejeon, Korea, South

B1418/P2414 **A novel clan of cytotoxic leukocidins in *Vibrios*.** A. Ray[1,2], L. Kinch[2], M. De Souza Santos[1], N.V. Grishin[2,3,4], K. Orth[1,2,3], D. Salomon[1]; [1]Molecular Biology, UT Southwestern Medical Center, Dallas, TX, [2]Howard Hughes Medical Institute, UT Southwestern Medical Center, Dallas, TX, [3]Biochemistry, UT Southwestern Medical Center, Dallas, TX, [4]Biophysics, UT Southwestern Medical Center, Dallas, TX

B1419/P2415 **Investigating the effects of antifungals on *Candida glabrata* cell wall and cell membrane mutants.** Y.Y. Chew[1], H.C. Lin[1], J.H. Gan[1], C.F. Chin[1], F.M. Yeong[1]; [1]Department of Biochemistry, Yong Loo Lin School of Medicine, National University of Singapore, Singapore, Singapore

B1420/P2416 **Delivery of parasite RNA transcripts into infected epithelial cells during Cryptosporidium infection and its impact on host gene transcription.** Y. Wang[1], A. Gong[1], S. Ma[1], J. Chen[1], J.K. Strauss-Soukup[2], X. Chen[1]; [1]Department of Medical Microbiology and Immunology, Creighton University School of Medicine, Omaha, NE, [2]Department of Chemistry, Creighton University College of Arts and Sciences, Omaha, NE

B1421/P2417 **Infection of macrophages with *Cryptococcus neoformans* alters inflammatory NF-κB signaling via translational interference.** L.M. Sircy[1], J.B. Hayes[1], L.E. Heusinkveld[1], K.D. Cunningham[2], E.E. McClelland[1], D.E. Nelson[1]; [1]Department of Biology, Middle Tennessee State University, Murfreesboro, TN, [2]Department of Chemistry, Middle Tennessee State University, Murfreesboro, TN

B1422/P2418 **Macrophage selenoproteins restrict intracellular replication of *Francisella tularensis*.** R.L. Markley[1], D.R. Williamson[1], B. Katkere[1], K.K. Dewan[1], A.E. Shay[1], B.A. Carlson[2], K.S. Prabhu[1], G.S. Kirimanjeswara[1]; [1]The Department of Veterinary and Biomedical Sciences, Pennsylvania State University, University Park, PA, [2]National Cancer Institute, National Institutes of Health, Bethesda, MD

B1423/P2419 **The intracellular fungal pathogen Histoplamsa capsulatum alters phagosome maturation to survive within host macrophages.** A.L. Cohen[1], N. Van Prooyen[1], M.C. Bassik[2], A. Sil[1]; [1]Microbiology and Immunology, University of California at San Francisco, San Francisco, CA, [2]Genetics, Stanford University School of Medicine, Stanford, CA

B1424/P2420 **Interplay of the Microbiome and Innate Immune System in Tissue Regeneration.** C.P. Arnold[1], S. Merryman[1], A. Harris-Arnold[1], C. Seidel[1], S. McKinney[1], A. Sánchez Alvarado[1]; [1]Stowers Institute of Medical Research, Kansas City, MO

B1425/P2421 **Invasion Dynamics in the Fly Gut Microbiota.** B. Obadia[1], T. Guvener[1], V. Zhang[1], W.B. Ludington[1]; [1]Molecular Cell Biology, UC Berkeley, Berkeley, CA

B1426/P2422 **Functional multi 'omics' uncover a novel organelle with both prokaryotic and eukaryotic proteins that weaponizes parasites of Drosophila.** M.E. Heavner[1,2], J. Ramroop[1], G. Ramrattan[1], G. Dolios[3], J. Crissman[4], M. Scarpati[5], J. Kwiat[5], E.A. Miller[6], W. Qiu[1], R. Wang[3], S. Singh[2,5], S. Govind[1,2]; [1]Biology, The City University of New York, New York, NY, [2]Biochemistry, The Graduate Center of CUNY, New York, NY, [3]Genetics and Genomic Sciences, Icahn School of Medicine at Mount Sinai, New York, NY, [4]Biological Sciences, Columbia University, New York, NY, [5]Biology, The City University of New York, Brooklyn, NY, [6]MRC Laboratory of Molecular Biology, Cambridge University, Cambridge, United Kingdom

B1427/P2423 **Direct visualization of phagocytes acting as Trojan horses and their contribution to brain invasion by the environmental yeast *Cryptococcus neoformans*.** F.H. Santiago-Tirado[1], M.D. Onken[2], R.S. Klein[3], J.A. Cooper[2], T.L. Doering[1]; [1]Molecular Microbiology, Washington University School of Medicine, St. Louis, MO, [2]Biochemistry Molecular Biophysics, Washington University School of Medicine, St. Louis, MO, [3]Medicine, Washington University School of Medicine, St. Louis, MO

B1428/P2424 **Toll-like receptor (TLR) expression profile and biological effects of selective TLR-ligands on stem cells from human exfoliated deciduous teeth.** T. Chino[1], R. Yu[1], B.D. Zeitlin[1]; [1]Biomedical Sciences, University of the Pacific Dugoni School of Dentistry, San Francisco, CA

B1429/P2425 **Novel human targets of *L pneumophila* effector protein AnkX identified by NAPPA protein arrays.** B.P. Romero Duenas[1], S.C. Allgood[1], R.R. Noll[1], X. Yu[2], J. Qiu[3], M. Machner[4], J. LaBaer[3], R. Neunuebel[1]; [1]Biological Sciences, University of Delaware, Newark, DE, [2]Beijing Proteome Research Center, National Center for Protein Sciences-Beijing, Beijing Institute of Radiation Medicine, Beijing, China, [3]Virginia G. Piper Center for Personalized Diagnostics, Biodesign Institute, Arizona State University, Tempe, AZ, [4]Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD

Immune System

B1431/P2426 **TRIM72 regulates complement phagocytosis in alveolar macrophage via facultative recycling of CRIg.** N. Nagre[1], X. Cong[1], C. Terrazas[2], J.M. Schreiber[1], A. Satoskar[2], X. Zhao[1]; [1]Physiological Sciences, Eastern Virginia Medical School, Norfolk, VA, [2]Departments of Pathology and Microbiology, Wexner Medical Center, The Ohio State University, Columbus, OH

B1432/P2427 **Assessing the Function of Pulmonary and Monocytic Cells upon Exposure to Ultrafine Black Carbon.** M.E. Salinas[1,2], K.M. Garza[1]; [1]Biological Sciences, University of Texas- El Paso, El Paso, TX, [2]Environmental Science Engineering, University of Texas- El Paso, El Paso, TX

B1433/P2428 **Regulation of Thymic Stromal Lymphopoietin Production by small molecule inhibitor as a therapeutic strategy to treat atopic dermatitis.** H.E. Lee[1], G. Yang[1], J. Oh[1], J. Lee[1]; [1]College of Pharmacy, The Catholic University of Korea, Bucheon, Korea, South

B1434/P2429 **The immunosuppressive effect of mild electrical stimulation via NFAT pathway is a promising therapeutic approach for inflammation.** M. Piruzyan[1], M. Suico[1], T. Shuto[1], H. Kai[1]; [1]Department of Molecular Medicine, Kumamoto University, Kumamoto, Japan

B1435/P2430 **Interleukin-22 supports osteoclast differentiation by stimulating COX-2-dependent RANKL production from osteoblast precursors.** E. Lee[1], H. Yang[1], S. Kim[1], B. Choi[1], E. Kim[1], K. Han[1], J. Park[1], M. Shin[1], Y. Kim[2], E. Chang[1]; [1]Department of Biomedical Sciences, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea, South, [2]Department of Rheumatology, University of Ulsan College of Medicine, Asan Medical Center, Seoul, Korea, South

B1436/P2431 **Concomitant expression of microRNA218-2-3p and SLIT3 by toll-like receptor 4 stimulation inhibits osteoclastogenesis by directly suppressing RANK expression in osteoclast precursors.** J. Park[1], E. Kim[1], E. Lee[1], B. Choi[1], S. Kim[1], K. Han[1], M. Shin[1], H. Yang[1], Y. Kim[2], E. Chang[1,3]; [1]Department of Biomedical Sciences, University of Ulsan College of Medicine, Seoul, Korea, South, [2]Department of Rheumatology, University of Ulsan College of Medicine, Seoul, Korea, South, [3]Cell Dysfunction Research Center, Asan Medical Center, Seoul, Korea, South

B1437/P2432 **Pentraxin 3 promotes atherosclerosis by inducing macrophage chemotaxis and adipogenesis through neuropeptide Y signaling.** M. Shin[1], B. Choi[1], E. Lee[1], S. Kim[1], J. Park[1], E. Kim[1], K. Han[1], H. Yang[1], Y. Kim[2], E. Chang[1,3]; [1]Department of Biomedical Sciences, University of Ulsan College of Medicine, Seoul, Korea, South, [2]Department of Rheumatology, University of Ulsan College of Medicine, Seoul, Korea, South, [3]Cell Dysfunction Research Center, Asan Medical Center, Seoul, Korea, South

B1438/P2433 **Anti-atopic effect of Artemisia capillaris extracts by solid-state fermentation of Ganoderma lucidum on a chemical-induced dermatitis model.** H. Son[1], S. Lee[1], K. Kim[1], W. Kim[1], J. Heo[2], J. Kim[3], S. Lee[1]; [1]Food Science and Biotechnology, Kyungpook National Univ., Daegu, Korea, South, [2]Medical genomics, Keimyung Univ., Daegu, Korea, South, [3]FarmBios, Daegu, Korea, South

B1439/P2434 **The Role of Thymic Nurse Cells (TNCs) as an Intrathymic Source of Interleukin (IL-) 12 and Mediator of IL-12 Induced Apoptosis among Double Positive Thymocytes.** S. Miller[1], F. Davis[2], S. Henley[2], J. White[2], M. Martinez[3]; [1]Pathobiology, Tuskegee University, Tuskegee, AL, [2]Integrative Biosciences, Tuskegee University, Tuskegee, AL, [3]Biology, Tuskegee University, Tuskegee, AL

B1440/P2435 **Effects of minocycline against *Propionibacterium acnes*-induced inflammation in human keratinocytes.** T. Sawant[1], M. Hermsmeier[1], D. Lac[1], X. Chen[1], A. Yamamoto[1], Y. Huang[1], K. Chan[1], U. Nagavarapu[1]; [1]BioPharmX, Inc., Menlo Park, CA

B1441/P2436 **Tracking Immune Cells After Tissue Damage Via X-Ray Irradiation in *Manduca sexta*, to Understand the Regenerative Ability of Insect Immune Cells.** R. Bhaskar[1]; [1]Biology, San Francisco State University, San Francisco, CA

B1442/P2437 **Tributyltin Alters Interleukin 1 beta and Interleukin 6 Production and mRNA expression from Human Immune Cells.** S. Brown[1], M. Boules[1], N. Hamza[2], M. Whalen[2]; [1]Biological Sciences, Tennessee State University, Nashville, TN, [2]Chemistry, Tennessee State University, Nashville, TN

B1443/P2438 **The Selective Serotonin Reuptake Inhibitor Fluoxetine Promotes Apoptosis in Neutrophil-Like HL-60 Cells.** J. Daseke[1], M.L. Petreaca[1]; [1]Biology, DePauw University, Greencastle, IN

B1444/P2439 **Gamma-glutamyl transferase metabolizes LTC4 triggering cytokine release from macrophages.** M.H. Hanigan[1], N. Wakeham[1]; [1]Cell Biology, University of Oklahoma Health Sciences Center, Oklahoma City, OK

B1445/P2440 **Profiling of immunity biomarkers in whole blood.** A.A. Chenchik[1], A. Komarov[1], M. Makhanov[1], P. Diehl[1], C. Frangou[1]; [1]Cellecta, Inc., Mountain View, CA

B1446/P2441 **Distribution of Dopamine Neurons in the Male Native Thai Chicken.** Y. Chaiseha[1], B. Kamkrathok[1]; [1]School of Biology, Suranaree University of Technology, Nakhon Ratchasima, Thailand

B1447/P2442 **Immunohistochemical and hepatic gene expression changes in response to tacrolimus.** T. Akhtar[1], N. Sheikh[1]; [1]Zoology, University of the Punjab, Q-A Campus, Lahore, Pakistan

B1448/P2443 **New ex vivo tests on human whole blood adapted to a global evaluation of the anti-inflammatory and immunomodulatory effects of ingredients.** J. Franchi[1], S. Schnebert[1], K. Pays[1], N. Amalric[2]; [1]RD, LVMH RESEARCH, Saint Jean de Braye, France, [2]Synelvia SAS, Labège, France

B1449/P2444 **Analysis of Fc gamma receptor function in CRISPR edited macrophages.** J.G. Kerkvliet[1], L.M. Martinez[1], A.D. Hoppe[1]; [1]Chemistry and Biochemistry, South Dakota State University, Brookings, SD

B1450/P2445 **Fast dynamics of FcγR microclusters during frustrated phagocytosis.** S. Kurilova[1,2], B.L. Scott[1,2], A.D. Hoppe[1,2]; [1]BioSNTR, South Dakota State University, Brookings, SD, [2]Chemistry and Biochemistry, South Dakota State University, Brookings, SD

Defining Therapeutic Targets and New Therapeutics 2

B1451/P2446 **Protective effects of medicinal bean extracts against nonalcoholic fatty liver disease.** Y. Kim[1], A. Im[1], K. Song[2]; [1]KM Convergence Research Division, Korea Institute of Oriental Medicine, Daejeon, Korea, [2]Mibyeong Research Center, Korea Institute of Oriental Medicine, Daejeon, Korea

B1452/P2447 **ID1 and ID3 downstream transcription regulators in BMP4 signaling inhibits TGFβ2 induced fibrosis in TM cells.** A.A. Mody[1,2], A.F. Clark[1,2], R.J. Wordinger[1]; [1]Visual Science, University of North Texas Health Science Centre, Fort Worth, TX, [2]North Texas Eye Research Institute, Fort Worth, TX

B1453/P2448 **Small molecule inhibitors of the Dishevelled-CXXC5 interaction are new therapeutic candidates for osteoporosis.** H. Kim[1,2], S. Choi[1,2], E. Ro[1,2], K. Choi[1,2]; [1]Department of Biotechnology, Yonsei University, Seoul, Korea, South, [2]Translational Research Center for Protein Function Control, Yonsei University, Seoul, Korea, South

B1454/P2449 **Ellagic acid and its promotion in osteoblast differentiation and bone mineralization.** B. Santos[1], B. Cabrera Vicens[1], N. Gist[1], A. Awuah[1], J.Y. Belcher[1]; [1]Science, Cabrini University, Radnor, PA

B1455/P2450 **Study of adenosine deaminase acting on RNA (ADAR) isoforms towards genetic code restoration.** A. Md Thoufic Anam[1,2], S. Hitoshi[2], T. Tsukahara[2]; [1]Department of Veterinary and Animal Sciences, University of Rajshahi, Rajshahi, Bangladesh, [2]School of Materials Science, Japan Advanced Institute of Science and Technology, 1-1 Asahidai, Nomi, Ishikawa, Japan

B1456/P2451 **Olesoxime orchestrates an interplay between mitochondria and microtubules that favors oligodendrocyte differentiation.** K. Magalon[1], M. Le Grand[2], B. El Waly[1], M. Moulis[3], R.M. Pruss[4], T. Bordet[4], M. Cayre[1], P. Belenguer[3], M. Carré[2], P. Durbec[1]; [1]CNRS, IBDM, Aix-Marseille University, Marseille, France, [2]INSERM, CRO2, Aix-Marseille University, Marseille, France, [3]CNRS, CBD, Toulouse University, Toulouse, France, [4]TROPHOS, Marseille, France

B1457/P2452 **Combination of Dehydroepiandrosterone plus triamcinolone acetonide inhibits the cell proliferation and induces morphological changes related to cell death in a fibroblast cell line.** G. Gutierrez-Iglesias[1], A. Parra-Barrera[1], A.J. Sotelo-Camero[1], N. Gutiérrez-Iglesias[1], E. Mera-Jiménez[1], J.R. Cáceres Cortés[1], C.C. Calzada-Mendoza[1]; [1]Posgrado, Instituto Politécnico Nacional, Mexico City, Mexico

B1458/P2453 ***c-Kit* Mutation Prevents Cancellous Bone Loss during Calcium Deprivation in *Kit$^{W\text{-}sh/W\text{-}sh}$* Mice.** S. Lotinun[1,2], S. Poolthong[3]; [1]Physiology and STAR on Craniofacial and Skeletal Disorders, Chulalongkorn University, Bangkok, Thailand, [2]Oral Medicine, Infection and Immunity, Harvard School of Dental Medicine, Boston, MA, [3]Operative Dentistry, Chulalongkorn University, Bangkok, Thailand

B1459/P2454 **Modulation of acetaminophen-induced inflammasomes activation by globular adiponectin in rat primary hepatocytes.** E. Kim[1], N. Tilija Pun[1], P. Raut[1], A. Khakurel[1], H. Oh[1], A. Shrestha[1], P. Park[1]; [1]pharmacy, YeungNam University, GyeongSanSi, Korea, South

B1460/P2455 **Dietary compound chrysin inhibits neovascularization with increased formation of acellular capillaries in diabetic retina.** M. Kang[1], Y. Kang[1], E. Lee[1]; [1]Department of Food science and Nutrition, Hallym University, Chuncheon, Korea, South

B1461/P2456 **Trabecular meshwork stem cells regenerate laser-damaged TM tissue and reduce intraocular pressure.** Y. Du[1,2], H. Yun[1], Y. Zhou[1], J.S. Schuman[3]; [1]Ophthalmology, University of Pittsburgh School of Medicine, Pittsburgh, PA, [2]Developmental Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA, [3]NYU Langone Eye Center, New York University School of Medicine, New York, NY

B1462/P2457 **High Content Analysis Identifies Kinetin in Restoration of a Function of Mutant Huntingtin Protein in Huntington's Disease.** L.E. Bowie[1], T. Maiuri[1], S. Patel[1], M. Gabriel[2], D.W. Litchfield[2], S. Sipione[3], R. Truant[1]; [1]Biochemistry, McMaster University, Hamilton, ON, [2]Biochemistry, Western University, London, ON, [3]Pharmacology, University of Alberta, Edmonton, AB

B1463/P2458 **CRISPR/Cas9 Genome-Wide gRNA Library for Target Identification.** D. Tedesco[1], P. Diehl[1], M. Makhanov[1], S. Baron[1], C. Frangou[1], A.A. Chenchik[1]; [1]Cellecta, Inc., Mountain View, CA

B1464/P2459 **Characterizing the source of immunoglobulins in prostate secretion.** J.F. Silva[1], M.F. Biancardi[2], D.R. Stach-Machado[1], H.F. Carvalho[1], O.A. Sant'Anna[3]; [1]Structural and Functional Biology, State University of Campinas, Campians, Brazil, [2]Histology, Embryology and Cell Biology, Federal University of Goias, Goiania, Brazil, [3]Immunochemistry, Butantan Institute, Sao Paulo, Brazil

B1465/P2460 **The Mechanism of Action of Molecular Iodine on MCF10A Cells from Fibrocystic Breast Tissue.** Z.Z. Xu[1], X. Chen[1], N. Yam[1], K. Chan[1], U. Nagavarapu[1]; [1]RD, BioPharm X, Menlo Park, CA

Muscle Structure, Function, and Disease

B1466/P2461 **Neuropeptide Y induces hematopoietic stem/progenitor cell mobilization by regulating matrix metalloproteinase-9 activity through Y1 receptor in osteoblasts.** H. Jin[1], M. Park[2], N. Kim[2], J. Lee[2], J. Bae[2]; [1]College of Veterinary Medicine, Kyungpook National University, Daegu, Korea, [2]School of Medicine, Kyungpook National University, Daegu, Korea

B1467/P2462 **Inhibition of fibroblast activation to the myofibroblast phenotype in neonatal rat cardiac fibroblasts using a small molecule aldehyde trap.** S.G. Macdonald[1], F. Sachse[2], C. Hunter[2], H. Duffy[3], V. Cullen[1], S.L. Young[1]; [1]Research and Development, Aldeyra Therapeutics, Lexington, MA, [2]Cardiovascular Research Division, University of Utah, Salt Lake City, UT, [3]Principal, Creative Innovation Consulting, Auburndale, MA

B1468/P2463 **Construction of the multidrug-sensitive yeast strain for elucidating the mechanism of the readthrough activity of (+)-negamycin and its analogues.** K. Hamada[1], A. Taguchi[1], M. Kobayashi[1], K. Takayama[1], T. Usui[2], Y. Hayashi[1]; [1]Department of Medicinal Chemistry, Tokyo University of Pharmacy and Life Sciences, Tokyo, Japan, [2]Faculty of Life and Environmental Science, University of Tsukuba, Tsukuba, Japan

B1469/P2464 **Rapid phenotypic assessment for mutations involved in human diseases: Uncovering a novel model for cardiac arrhythmia in the nematode C. elegans.** Y.M. Clovis[1], A. Webb[1], C. Turner[1], K.E. McCormick[1], S.R. Lockery[1]; [1]RD, NemaMetrix Inc., Eugene, OR

B1470/P2465 **Coordination of nuclear movement by bocksbeutel (Drosophila emerin).** T.R. Mandigo[1], M.R. Hussey[1], E.S. Folker[1]; [1]Biology, Boston College, Chestnut Hill, MA

B1471/P2466 **Structural basis for the effective myostatin inhibitory activity of the minimum peptide originated from mouse myostatin prodomain.** K. Takayama[1], T. Asari[1], A. Nakamura[1], Y. Saga[1], T. Shimada[1], A. Taguchi[1], Y. Hayashi[1]; [1]Department of Medicinal Chemistry, Tokyo University of Pharmacy and Life Sciences, Hachioji, Tokyo, Japan

B1472/P2467 **Ex1, a potential exercise mimetic, rejuvenated skeletal muscle via PGC-1α induction.** J. Bae[1,2], H. Jeong[1,2], A. Jo[1,2], J. Shin[1,2], J. Kang[1,2]; [1]Department of Molecular Cell Biology, Sungkyunkwan University School of Medicine, Suwon, Korea, South, [2]Samsung Biomedical Research Institute, Suwon, Korea, South

B1473/P2468 **Coenzyme Q10 as a antioxidant supplement therapy for dystrophic muscle cells.** D.S. Mizobuti[1], C.C. de Lourenço[1], A. Macedo[1], T.A. Hermes[1], E. Minatel[1]; [1]BIOLOGIA ESTRUTURAL E FUNCIONAL, UNICAMP, CAMPINAS, Brazil

B1474/P2469 **Investigation of a new hypoxia model to induce cardiomyocyte proliferation in zebrafish.** F. Frech[1], J. Sanchez[2], B. Schoffstall[1]; [1]Department of Biology, Barry University, Miami Shores, FL, [2]Physician Assistant Program, Methodist University, Fayetteville, NC

B1475/P2470 **Diacerhein effects on inflammatory and oxidative stress pathways in the diaphragm muscle of mdx mice.** R.D. Mâncio[1], T.A. Hermes[1], I.F. Rupcic[1], E. Minatel[1]; [1]BIOLOGIA ESTRUTURAL E FUNCIONAL, UNICAMP, CAMPINAS, Brazil

B1476/P2471 **The contribution of flightin to cellular and thick filament biomechanics.** J.O. Vigoreaux[1], B.C. Tanner[2], N. Gasek[1], S. Chakravorty[3]; [1]Biology, University of Vermont, Burlington, VT, [2]Integrative Physiology and Neuroscience, Washington State University, Pullman, WA, [3]Metabolic Disease Research Program, Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore, Singapore

B1477/P2472 **Targeting mechanisms that regulate Sarcomere formation, homeostasis and function using a Nemaline Myopathy model.** M. Balakrishnan[1], S. Yu[2], S.M. Chin[3], B. Goode[3], M.K. Baylies[4]; [1]Developmental Biology, Weill Graduate School of Biomedical Sciences, Cornell Medical School, New York, NY, [2]Developmental Biology, Gerstner Graduate School, Memorial Sloan Kettering Cancer Center, New York, NY, [3]Department of Biology, Brandeis University, Waltham, MA, [4]Developmental Biology, Sloan Kettering Institute, Memorial Sloan Kettering Cancer Center, New York, NY

B1478/P2473 **Identification of novel HSPB1 binding proteins in skeletal muscle.** Y. Kato[1], Y. Kokaji[1], A. Kushiya[1], K. Yoshino[2], A. Takeuchi[3], M. Yamanoue[1], Y. Shirai[1], S. Ueda[1]; [1]Agrobioscience, Kobe University, Kobe, Japan, [2]Biosignal Research Center, Kobe University, Kobe, Japan, [3]Analytical Laboratory, Kobe Pharmaceutical University, Kobe, Japan

B1479/P2474 **Limb-Girdle Muscular Dystrophy 2L Is Associated With a Defect in Phospholipid Scrambling Mediated by ANO5.** J.M. Whitlock[1], K. Yu[1], Y. Cui[1], H.C. Hartzell[1]; [1]Cell Biology, Emory University, Atlanta, GA

B1480/P2475 **The E2F Pathway Regulates Metabolism in the Post-Natal Heart and Defines a Novel Biomarker of Dilated Cardiomyopathy: BDH1.** J.L. Major[1], A. Dewan[1], M. Salih[1], B. Tuana[1,2]; [1]Cellular and Molecular Medicine, University of Ottawa, Ottawa, ON, [2]Heart Institute, University of Ottawa Heart Institute, Ottawa, ON

B1481/P2476 **Retinoic acid signaling promotes cardiomyocyte survival in cardiac development and repair.** F. Da Silva[1], A. Schedl[1], J. Ryler[1]; [1]Institut de Biologie Valrose, University of Nice Sophia Antipolis, Nice, France

B1482/P2477 **Ethanol treatment reduces myoblast fusion in culture.** O.M. Kielbasa[1], C. Brough[1]; [1]Biology Program, Department of Science and Mathematics, Alvernia University, Reading, PA

B1483/P2478 **A new model for how the actomyosin complex within myofibrils disassemble during muscle wasting upon fasting, aging and human disease suggests a two-phase highly regulated process.** A. Volodin[1], I. Kosti[1], A.L. Goldberg[2], S. Cohen[1]; [1]Biology, Technion Institute of Technology, Haifa, Israel, [2]Cell biology, Harvard Medical School, Boston, MA

B1484/P2479 **mTOR-dependent regulation of CyclinD3 expression by R-spondin controls a transition from proliferation to myogenic differentiation of skeletal muscle stem cells.** X. Han[1], T.T. Tran[2], J. Sah[2], J. Yoon[2]; [1]Center for Molecular Medicine, Maine Medical Center Research Institute, Scarborough, ME, [2]Soonchunhynag Institute of Medi-Bio Science, Cheonan, Korea, South

B1485/P2480 **Astragalin Inhibits cigarette smoking-driven Infiltration of inflammatory cells in OVA-challenged Mice.** Y. Kim[1], Y. Choi[2], Y. Kang[1]; [1]Department of Food Science and Nutrition, Hallym University, Chuncheon, Kangwon-do, Korea, South, [2]Nutritioal Product RD Team, Maeil Innovation Center, Gyeonggi-do, Korea, South

B1486/P2481 **Evolutionary adaptations in developmental pathways underlie regenerative scar-free wound repair in African Spiny Mice.** C.M. Brewer[1,2], B. Nelson[3], X. Dong[1], P. Wakenight[3], A. Mckenna[4], J. Shendure[4], K. Millen[3,5], M.W. Majesky[1,2,5]; [1]Center for Developmental Biology and Regenerative Medicine, Seattle Children's Research Institute, Seattle, WA, [2]Pathology, University of Washington, Seattle, WA, [3]Center for Integrative Brain Research, Seattle Children's Research Institute, Seattle, WA, [4]Genome Sciences, University of Washington, Seattle, WA, [5]Pediatrics, University of Washington, Seattle, WA

B1487/P2482 **Cardiac β-AR, oxidative stress and MT1 are modified by GCSF in mice with heart damage induced by repeated β-adrenergic stimulation with isoproterenol.** B. Nieto-Lima[1,2], L. Pineda-Benítez[2], G. Zarco-Olvera[3], C. Huesca-Gómez[2], V. Guarner-Lans[2], A. Cano-Martínez[2]; [1]Posgrado en Ciencias Biológicas, Universidad Nacional Autónoma de Mexico, Mexico city, Mexico, [2]Department of Physiology, Instituto Nacional de Cardiología Ignacio Chávez, Mexico city, Mexico, [3]Department of pharmacology, Instituto Nacional de Cardiología Ignacio Chávez, Mexico city, Mexico