cell biology 2016
ascb annual meeting
san francisco, california · dec 3-7

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Poster Board Assignments

The ASCB has assigned all poster boards with the letter "B" followed by a three or four digit number to correspond with the aisle number and poster board number:

Example 1:
Your poster has been assigned to "B340"
B=Board; 300=Aisle in which the board is located; B140=Board number on which to place your poster.

Example 2:
Your poster has been assigned to "B1134"
B=Board; 1100=Aisle in which the board is located; B1034=Board number on which to place your poster.

Please note Board Numbers B1400-B1495 are to the right of aisle 1300.

Online Poster/Abstract Viewing

From Thursday, December 1, through Wednesday, December 7, registered meeting participants will be able to visit a password-protected website to search and view abstracts, uploaded posters, and slides. This will allow participants who miss posters or presentations they were hoping to see view them, and connect with the presenter. Participants will be able to contact the presenter with any questions directly through this website. To search and view the abstracts/posters visit: http://www.ascb.org/amabstract. A login and password was sent on to all attendees registered by November 21. This information is also provided to all meeting participants when they pick up their badge in the Registration area.

NOTES

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

Poster Set Up
Saturday 5:30–6:00 pm

Posters Displayed
Saturday 6:00–8:00 pm
Sunday 7:30 am–5:30 pm

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

Poster Tear Down
Sunday 5:30–6:00 pm

Board Numbers	Session Titles
B200-B228	Science Education 1
B230-B250	Light and Electron Microscopy in New Imaging Technologies
B251-B271	New Technologies for Cell Biology 1
B273-B293	Actin and Actin-Associated Proteins 1
B294-B299; B300-B311	Regulation of Actin Dynamics 1
B313-B330	Kinesins 1
B332-B347	Microtubule Dynamics and Its Regulation 1
B350-B371	Ciliary Signaling and Ciliopathies
B373-B389; B400-B406	Cytokinesis 1
B407-B419	Kinetochore Assembly and Functions 1
B420-B432	Centrosome Assembly and Functions 1
B433-B454	Chromosome Organization
B455-B471	Spindle Assembly 1
B473-B489; B500-B511	Cancer Therapy 1
B512-B530	Oncogenes and Tumor Suppressors 1
B531-B548	Invasion and Metastasis
B549-B567	Tumor Microenvironment 1
B900-B913	Regulatory and Non-Coding RNAs
B914-B920	RNA Localization, Transport, Stability, and Modification
B922-B941	The Nuclear Envelope and Nuclear Pore Complexes 1
B943-B971	Endocytic Trafficking 1
B972-B989; B1000-B1001	ER and Golgi Transport
B1002-B1014	Rab GTPases
B1016-B1043	Cell Signaling and Polarity
B1045-B1067	Neuronal Morphogenesis and the Cytoskeleton
B1069-B1088	Establishing and Maintaining Organelle Structure 1
B1100-B1118	Mitochondria, Chloroplasts, and Peroxisomes 1
B1119-B1139	Lipids and Membrane Microdomains 1
B1140-B1165	Signaling from the PM/Cytoplasm to the Nucleus
B1200-B1216	Signaling Scaffolds and Microdomains
B1218-B1241	Mechanotransduction 1
B1242-B1247	Intermediate Filaments
B1249-B1265	Cell-Cell Junctions 1
B1266-B1289	Integrins and Cell-ECM Interactions
B1301-B1323	Cell Death
B1324-B1343	Chaperones, Protein Folding, and Quality Control 1
B1345-B1361	Physical Approaches to Cell Biology
B1362-B1368; B1400-B1404	Systems and Synthetic Biology, and Tissue Engineering
B1406-B1423	Germ Cells, Gametogenesis, and Fertilization
B1424-B1445	Cell-Cell Interactions in Tissue Development and Morphogenesis
B1446-B1457	Cell Fate Determination 1
B1459-B1473	Prokaryotic Cell Biology
B1475-B1493	Defining Therapeutic Targets and New Therapeutics 1

2016 ASCB 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.
- 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.

Science Education 1

B200/P1 **An Art-Driven Approach to Scientific Learning.** C.L. Garr[1], H. Wilson[1], C. Budzinski[1], V.A. Segarra[1]; [1]Biology, High Point University, High Point, NC

B201/P2 **Share your expertise and enthusiasm with teachers: Organize a workshop to build cheap, homemade microscopes.** B. Goldstein[1], J.L. Song[2], J. Gallo-Fox[3], K. Yoshino[4]; [1]Biology Department, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Department of Biological Sciences, University of Delaware, Newark, DE, [3]Human Development and Family Studies, University of Delaware, Newark, DE, [4]Grin City Collective and Grinnell College, Grinnell, IA

B202/P3 **Amgen BioTalents: a Strategic Alliance Program between Academia and Industry to Integrate Science and Engineering Students into Learning Biomanufacturing Concepts.** R. Buxeda[1], L. Saliceti-Piazza[2]; [1]Department of Biology, University of Puerto Rico, Mayaguez, Mayaguez, PR, [2]Department of Chemical Engineering, University of Puerto Rico, Mayaguez, Mayaguez, PR

B203/P4 **Analysis of student participation and impact of discussion sections in a high-enrollment upper-division genetics course.** M.E. Crowder[1]; [1]Molecular and Cellular Biology, University of California Davis, Davis, CA

B204/P5 **Learning Assistants in the Cell Biology Classroom.** A.K. Wilson[1]; [1]Biological Sciences, Benedictine University, Lisle, IL

B205/P6 **What's in a name? The importance of student perceptions of an instructor knowing their names in a high enrollment biology classroom.** K.M. Cooper[1], B. Haney[1], S.E. Brownell[1], A. Krieg[1]; [1]School of Life Sciences, Arizona State University, Tempe, AZ

B206/P7 **Coming out in class: Challenges and benefits of active learning in a biology classroom for LGBTQIA students.** K.M. Cooper[1], S.E. Brownell[1]; [1]School of Life Sciences, Arizona State University, Tempe, AZ

B207/P8 **Show Me the Data! *What* You Teach is as Important as *How* You Teach.** A.M. Campbell[1], B.S. Finby[2]; [1]Biology, Davidson College, Davidson, NC, [2]High School, Charlotte Latin School, Charlotte, NC

B208/P9 **Infusing Metacognition during the Process of Science in an Introductory Cell and Molecular Biology Course.** L.L. Dahlberg[1], S.R. Lee[1], B.L. Wiggins[2], T. Bloom[1], M. Colton[1], D.S. Leaf[1]; [1]Biology Department, Western Washington University, Bellingham, WA, [2]Department of Biology, University of Washington, Seattle, WA

B209/P10 **Three-Week Cell Biology Laboratory Exercise: Signaling Influences Subcellular Localization of TFEB-GFP.** A.T. Bryant[1], M. Volk[1], P.S. Sickler[1], S.M. Ferguson[2], S. Walsh[1]; [1]Biology, Rollins College, Winter Park, FL, [2]Cell Biology, Yale University, New Haven, CT

B210/P11 **Exploration of Human Pancreatic Cancer by Undergraduates as Entry Point into Next-Generation Sequence Analysis.** T. Grainger[1], T. Touissant[1], J. Russell[1], L.P. Hammonds-Odie[1]; [1]School Of Science and Technology, Georgia Gwinnett College, Lawrenceville, GA

B211/P12 **MelaNOma: An interactive online resource for improving student knowledge application in genetics.** K. Yuen[1], M.E. Crowder[2]; [1]Biotechnology, University of California, Davis, Davis, CA, [2]Molecular and Cellular Biology, University of California, Davis, Davis, CA

B212/P13 **Teaching metric system to community college STEM students.** L. Jayant[1], C. Priano[1]; [1]Science, Borough of Manhattan Community College, New York, NY

B213/P14 **Use of computer graphics to supplement the learning of biology protocols.** F. Norflus[1]; [1]Biology, Clayton State University, Atlanta, GA

B214/P15 **Using on-line text materials to improve study skills.** C. Priano[1], L. Jayant[1]; [1]Science, Borough of Manhattan Community College, New York, NY

B215/P16 **The Breathe, Eat, Touch Project: Using an environmental health framework to augment interdisciplinary STEM learning.** K.K. Bernd[1], K.K. Foley[2], C.D. Hauser[3]; [1]Biology, Davidson College, Davidson, NC, [2]Social Sciences and Health Policy, Wake Forest University, Winston Salem, NC, [3]Chemistry, Davidson College, Davidson, NC

B216/P17 **Microscopy for all: Lessons from large scale Foldscope deployment around the world.** M. Coyle[1], M. Prakash[2], J. Cybulski[1], S. Bhamla[2], A. Foldscope Users[1]; [1]Foldscope Instruments, San Francisco, CA, [2]Bioengineering, Stanford University, Stanford, CA

B217/P18 **Enhancing Student Engagement in Biology Courses: Using Tablet Technologies to Increase Learning.** M. Stein[1]; [1]Biology, California State University, Northridge, Northridge, CA

B218/P19 **Paperfuge: An ultra-low cost, hand-powered centrifuge inspired by the mechanics of a whirligig toy.** S. Bhamla[1], B. Benson*[2], C. Chai*[2], G. Katsikis[1], A. Johri[1], M. Prakash[1]; [1]Bioengineering , Stanford University, Stanford, CA, [2]Undergraduate, Massachusetts Institute of Technology, Cambridge, MA

B219/P20 **Using the online macromolecular museum, case studies, and a new assessment tool to engage students in hands-on learning about the biology of sickle cell anemia.** S.K. Levi[1], D.J. Marcey[2]; [1]Biology, Oakton Community College, Des Plaines, IL, [2]Biology, California Lutheran University, Thousand Oaks, CA

B220/P21 **Introducing Single-Use Mammalian Cell Culture Bioreactor Technologies Into the Biomanufacturing Classroom.** J. DeKloe[1]; [1]Biotechnology, Solano College, Vacaville, CA

B221/P22 **Introducing Freshman Students to Cutting Edge Scientific Research: Discovery and the Use of Hela cells.** J.A. Jordan[1], R. McFarlane[1], P. Melvin[1], J.E. Morgan[1]; [1]Biology, Clayton State University, Morrow, GA

B222/P23 **Assessment of 3D molecular visualization tools in biology education.** M. Volek[1], R. Sarac[1]; [1]Department of Biological Sciences, Purdue University Northwest - Hammond Campus, Hammond, IN

B223/P24 **Annotation of Protein-Coding in Drosophila biarmipes Contig6.** J.M. Yonke[1], T. Sadikot[1]; [1]Biology, Washburn University, Topeka, KS

B224/P25 **Analysis and Annotation of Genomic Elements within Contig47 of Drosophila elegans.** G.K. Cork[1], T. Sadikot[1]; [1]Biology Department, Washburn University, Topeka, KS

B225/P26 **Aspirnaut™: Maximizing STEM achievement for students from diverse backgrounds by holistic, long-term commitment to scientific development.** K.H. Oliver[1], A.L. Fidler[1,2], B.G. Hudson[3,4,5,6], J. Hudson[7]; [1]Nephrology and Hypertension, Vanderbilt University Medical Center, Nashville, TN, [2]Biology, Tennessee State University, Nashville, TN, [3]Pathology, Microbiology and Immunology, Vanderbilt University, Nashville, TN, [4]Cell and Developmental Biology, Vanderbilt University, Nashville, TN, [5]Medicine, Vanderbilt University Medical Center, Nashville, TN, [6]Biochemistry, Vanderbilt University, Nashville, TN, [7]Clinical Anesthesiology and Pediatrics, Vanderbilt University Medical Center, Nashville, TN

B226/P27 **A bioinformatics curriculum that teaches gene structure is associated with learning gains in beginning college students.** L.V. Paliulis[1], M.M. Laakso[2], M.S. Santisteban[3], W. Leung[4], S.C. Elgin[4]; [1]Biology Department, Bucknell University, Lewisburg, PA, [2]Department of Biology, Eastern University, St. Davids, PA, [3]Department of Biology, University of North Carolina at Pembroke, Pembroke, NC, [4]Department of Biology, Washington University, St. Louis, MO

B227/P28 **Infusion of Bioinformatics into Biology Courses at Prairie View A&M University (PVAMU).** E.C. Regisford[1], D. Ritter, PhD[2], L. Carson[3], Q. Moore[1], D. Vaden[1], P. Drummond[1], Y. Jung[3]; [1]Biology, Prairie View AM University, Prairie View, TX, [2]Genome sequencing Center, Baylor College of Medicine, Houston, TX, [3]Cooperative Agriculture Research Center, Prairie View AM University, Prairie View, TX

B228/P29 **Training Module in Assuring Data Reproducibility.** A.M. Medina-Lopez, B.S.[1,2], H. Shinogle-Decker, B.S.[1,2], N. Martinez-Rivera, Ph.D.[1,2], E. Rosa-Molinar, Ph.D.[1,2]; [1]Department of Pharmacology and Toxicology and Neuroscience Graduate Program, The University of Kansas, Lawrence, KS, [2]Microscopy and Analytical Imaging Resource Core Laboratory, The University of Kansas, Lawrence, KS

Light and Electron Microscopy in New Imaging Technologies

B230/P30 **Development of cryogenic correlated light electron microscopy methods to study mechanisms of intracellular trafficking and their relationships to the secretory pathway.** S.D. Carter[1], S.K. Mageswaran[1], Z.J. Farino[2], J.I. Mamede[3], T.J. Hope[3], J. Frank[4,5], Z. Freyberg[2], G.J. Jensen[1,6]; [1]Division of Biology, California Institute of Technology, Pasadena, CA, [2]Department of Psychiatry and Cell Biology, University of Pittsburgh, Pittsburgh, PA, [3]School of Medicine, Northwestern University, Chicago, CA, [4]Columbia University, HHMI; Department of Biochemistry and Molecular Biophysics, New York, NY, [5]Department of Biological Sciences, Columbia University, New York, NY, [6]California Institute of Technology, Howard Hughes Medical Institute (HHMI), Pasadena, CA

B231/P31 **Disclosing novel structure-function insights on hepatic microarchitecture through large volume correlative fluorescence and in situ block face scanning electron microscopy.** G. Shami[1], D. Cheng[1], M. Huynh[2], F. Braet[1,2]; [1]School of Medical Sciences - Discipline of Anatomy and Histology, The University of Sydney, Sydney, Australia, [2]Australian Centre for Microscopy and Microanalysis, The University of Sydney, Sydney, Australia

B232/P32 **FerriTag: A Genetically Encoded Inducible Tag for Correlative Light Electron Microscopy.** N.I. Clarke[1], S.J. Royle[1]; [1]Centre for Mechanochemical Cell Biology, Warwick Medical School, University of Warwick, Coventry, United Kingdom

B233/P33 **Development of a new software tool for multiple targeting and fully automated volume acquisitions in a Correlative Light and Electron Microscopy workflow for cell cultures.** J. Serra Lleti[1], A. Steyer[1], N. Schieber[1], M. Holtstrom[2], D. Unrau[2], R. Kirmse[3], Y. Schwab[1]; [1]Cell Biology and Biophysics, European Molecular Biology Laboratory (EMBL), Heidelberg, Germany, [2]Fibics Inc, Ottawa, ON, [3]Carl Zeiss Microscopy GmbH, Jena, Germany

B234/P34 **Automated High-throughput correlative light and electron microscopy.** A.M. Steyer[1], J.M. Serra Lleti[1], N.L. Schieber[1], C. Tischer[1,2], V. Hilsenstein[1,2], B. Neumann[1,2], R. Kirmse[3], D. Unrau[4], J.M. Lucocq[5], R. Pepperkok[1,2], Y. Schwab[1]; [1]Cellbiology Biophysics, EMBL, Heidelberg, Germany, [2]Advanced Light Microscopy Facility, EMBL, Heidelberg, Germany, [3]Carl Zeiss Microscopy GmbH, Jena, Germany, [4]Fibics, Ottawa, Canada, [5]University of St. Andrews, Saint Andrews, United Kingdom

B235/P35 **Using Focused-Ion Beam Milling for Cryo-Electron Tomography to Build Molecular Atlas of a Sporangium.** K. Khanna[1], E. Villa[1], K. Pogliano[1]; [1]Biological Sciences, University of California, San Diego, La Jolla, CA

B236/P36 **Deciphering protein organization and dynamics at various scales using single-objective Selective Plane Illumination Microscope (soSPIM).** R. Galland[1,2], G. Grenci[3], C. Butler[1,2], V. Studer[1,2], V. Viasnoff[3,4], J. Sibarita[1,2]; [1]Interdisciplinary Institute for Neuroscience, Université de Bordeaux, Bordeaux, France, [2]IINS - UMR 5297, CNRS, Bordeaux, France, [3]MechanoBiology Institute, National University of Singapore, Singapore, Singapore, [4]UMI 3639, CNRS, Singapore, Singapore

B237/P37 **Whole-slide Imaging Approach to Assessing Allogenic Transplantation of hESC-CMs using Histological Analysis and Immunofluorescence.** M. Kaze[1], J. Lee[1], H. Aaron[1], M. Calvert[2]; [1]Cancer Research Laboratory Molecular Imaging Center, University of California, Berkeley, CA, [2]Histology and Light Microscopy Core, Gladstone Institutes, San Francisco, CA

B238/P38 **An optimized image analysis-based approach to quantification of liver pathology.** J. Abad[1], X. Liang[2], M. Calvert[1]; [1]Histology and Light Microscopy Core, Gladstone Institutes, San Francisco, CA, [2]Bioengineering, UCSF, San Francisco, CA

B239/P39 **Imaging of three-dimensional single molecule dynamics with cellular context: Antibody trafficking and interaction with cell membrane and sorting endosomes.** D. Kim[1,2], S. You[1,2], E.S. Ward[2,3], R.J. Ober[1,2]; [1]Biomedical Engineering, Texas AM University, College Station, TX, [2]Molecular and Cellular Medicine, Texas AM Health Science Center, College Station, TX, [3]Microbial Pathogenesis and Immunology, Texas AM Health Science Center, College Station, TX

B240/P40 **Visualizing enzymatic and cellular activities during tissue morphogenesis using ex vivo two-photon FRET microscopy.** C. Yeh[1], C. Chiu[1], J. Yu[2], C. Szymanski[3], C. Guo[2], S. Lu[4], Y. Wang[4], C. Chuong[1]; [1]Pathology, University of Southern California, Los Angeles, CA, [2]Bioengineering, California Institute of Technology, Pasadena, CA, [3]Thorlabs, Inc., Newton, NJ, [4]Bioengineering, University of California, San Diego, San Diego, CA

B241/P41 **Targeting Exogenous β-Defensin to the Endolysosomal Compartment via a Biotic Guided Missile System.** C.R. Morales[1], F.L. Carvelli[1], Y. Libin[1]; [1]Anatomy and Cell Biology, McGill University, Montreal, QC

B242/P42 **4-Color Multiplexed Imaging of Sub-Diffraction Limited Cellular Structures on Inexpensive Microscopes and High Content Imaging Platforms Enabled by Expansion Microscopy.** R.N. Ghosh[1]; [1]Protein and Cell Analysis, Thermo Fisher Scientific, Pittsburgh, PA

B243/P43 **Identification and characterization of prion like behaviors using Amphifluoric FRET.** T. Khan[1], R. Halfmann[1,2]; [1]Stowers Institute for Medical Research, Kansas City, MO, [2]Department of Molecular and Integrative Physiology, University of Kansas Medical Center, Kansas City, KS

B244/P44 **A combined imaging and software approach for analyzing C. elegans embryo development.** R. Christensen[1], A. Bokinsky[2], A. Santella[3], Y. Wu[1], J. Marquina[4], I. Kovacevic[3], A. Kumar[1], E. McCreedy[2], W. Mohler[5], D.A. Colón-Ramos[4], Z. Bao[3], H. Shroff[1]; [1]National Institute of Biomedical Imaging and Bioengineering, National Institutes of Health, Bethesda, MD, [2]Center for Information Technology, National Institutes of Health, Bethesda, MD, [3]Developmental Biology Program, Sloan-Kettering Institute, New York, NY, [4]Department of Cell Biology, Yale University, New Haven, CT, [5]Department of Genetics and Developmental Biology, University of Connecticut Health Center, Farmington, CT

B245/P45 **Characterization of stem cells differentiation using Quantitative Phase Imaging.** S. Aknoun[1], S. Kawamata[2], T. Yamamoto[2], B. Wattellier[1]; [1]PHASICS S.A, Saint Aubin, France, [2]Foundation for Biomedical Research and Innovation, Division of Cell Therapy., Kobe, Hyogo, Japan

B246/P46 **Permeabilization activated reduction in fluorescence: A novel method to measure kinetics of protein interactions with intracellular structures.** J.L. Hawthorne[1], P.P. Singh[1], C.A. Davis[1], O.A. Quintero[1]; [1]Department of Biology, University of Richmond, Richmond, VA

SUNDAY

B247/P47 **LITE sheet microscopy: great NA, less bleaching.** T. Fadero[1], P.S. Maddox[1]; [1]Biology, UNC-Chapel Hill, Chapel Hill, NC

B248/P48 **Spectral imaging and computational analysis reveals the systems level organelle interactome.** A.M. Valm[1], S. Cohen[1], W.R. Legant[2], J. Melunis[3], U. Hershberg[3,4], E. Wait[5], A.R. Cohen[5], M.W. Davidson[6], E. Betzig[2], J. Lippincott-Schwartz[1,2]; [1]NICHD, NIH, Bethesda, MD, [2]Janelia Research Campus, HHMI, Ashburn, VA, [3]School of Biomedical Engineering; Science and Health Systems, Drexel University, Philadelphia, PA, [4]Department of Microbiology and Immunology; College of Medicine, Drexel University, Philadelphia, PA, [5]Dept. of Electrical and Computer Engineering; College of Engineering, Drexel University, Philadelphia, PA, [6]National High Magnetic Feild Laboratory, Florida State University, Tallahassee, FL

B249/P49 **Light-controlled PI3K activation mimics TRPV1 potentiation during inflammation.** A. Stratiievska[1], L.A. Naves[2], R. Yang[1], A. Pazevic[1], S.E. Gordon[1], M. Munari[1]; [1]Department of Physiology and Biophysics, University of Washington School of Medicine, Seattle, WA, [2]Federal University of Minas Gerais, Belo Horizonte, Brazil

B250/P50 **Ionic liquid application for TEM observation of liposomes.** M. Wayama[1], M. Konomi[2], E. Nakazawa[3]; [1]Science System Product Division, Hitachi High-Technologies Corporation, Ibaraki, Japan, [2]Science Systems Sales Marketing Division, Hitachi High- Technologies Corporation, Tokyo, Japan, [3]Product Customer Support Strategy Division, Hitachi High-Technologies Corporation, Tokyo, Japan

New Technologies for Cell Biology 1

B251/P51 **Genetically encoded fluorogenic protease reporters visualize spatiotemporal dynamics of apoptosis in vivo.** X. Shu[1]; [1]Cardiovascular Research Institute, Department of Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA

B252/P52 **Live single-cell laser tag.** L. Binan[1,2], J. Mazzafferri[1], K. Choquet[3,4], L. Lorenzo[5], Y. De Koninck[4,6], E. Affar[1,2], I. Ragoussis[3,7,8], C. Kleinman[3,4], S. Costantino[1,2]; [1]research center, Hopital maisonneuve rosemont, Montréal, QC, [2]Ophtalmology, Université de Montréal, Montréal, QC, [3]Department of Human Genetics, University McGill, Montréal, QC, [4]Lady Davis Institute for Medical Research, Jewish General Hospital, Montréal, QC, [5]Institut Universitaire en Santé Mentale de Québec, Québec, QC, [6]Université Laval, Department of Psychiatry, Québec, QC, [7]Genome Quebec Innovation Centre, Montréal, QC, [8]Department of Sciences, King Abdulaziz University, Jeddah, Saudi Arabia

B253/P53 **The physical organization of the human induced pluripotent stem cell: developing assays for image-based integration of intracellular structures.** S.M. Rafelski[1]; [1]Allen Institute for Cell Science, Seattle, WA

B254/P54 **Optogenetic modulation of Raf and AKT activity in preconditioning and postconditioning PC12 cells against oxidative stress.** Q. Ong[1], K. Zhang[2], S. Guo[1], L. Duan[1], E. Collier[1], B. Cui[1]; [1]Department of Chemistry, Stanford University, Stanford, CA, [2]Department of Biochemistry, University of Illinois, Urbana-Champaign, Urbana, IL

B255/P55 **Highly localized, rapid and reversible optogenetic regulation of protein activity in subcellular compartments.** L. Benedetti[1,2,3,4], M. Messa[1,2,3,4], E.B. Kromann[2,5], H. Wheeler[1,2,3,4], J. Bewersdorf[2,5,6,7], P. De Camilli[1,2,3,4,6]; [1]Department of Neuroscience, Yale University School of Medicine, New Haven, CT, [2]Department of Cell Biology, Yale University School of Medicine, New Haven, CT, [3]Program in Cellular Neuroscience, Neurodegeneration and Repair, Yale University School of Medicine, New Haven, CT, [4]Howard Hughes Medical Institute, Yale University School of Medicine, New Haven, CT, [5]Department of Biomedical Engineering, Yale University, New Haven, CT, [6]Kavli Institute for Neuroscience, Yale University School of Medicine, New Haven, CT, [7]Nanobiology Institute, Yale University, New Haven, CT

B256/P56 **New applications for fluorescent lipids as metabolic tracers in the larval zebrafish.** V.H. Quinlivan-Repasi[1,2], M.H. Wilson[1], J. Ruzicka[3], S.A. Farber[1,2]; [1]Embryology, Carnegie Institution for Science, Baltimore, MD, [2]Biology, The Johns Hopkins University, Baltimore, MD, [3]Thermo Scientific, Somerset, NJ

B257/P57 **Normalization of Functional Cellular Metabolic Data using Cell Counting.** Y. Kam[1], P.G. Held[2], T. Cumbo[1], P. Swain[1], J.E. Clayton[2], P. Banks[2], B.P. Dranka[1]; [1]Agilent Technologies, Lexington, MA, [2]BioTek Instruments, Winooski, VT

B258/P58 **Antibodypedia – The Wiki of Antibodies.** T.L. Alm[1], K. von Feilitzen[1], M. Uhlén[1]; [1]School of Biotechnology, KTH Royal Institute of Technology, Stockholm, Sweden

B259/P59 **Genomic integrity of human induced pluripotent stem cells after CRISPR/Cas-9 fluorescent tag knock-in.** R. Gunawardane[1]; [1]Allen Institute for Cell Science, Seattle, WA

B260/P60 **Immortal fetal liver macrophages as a new model for studying macrophage function.** M.I. Lebedev[1,2], P. Swaminathan[1,3], J.G. Kerkvliet[1,4], L.M. Martinez[1,4], X. Ge[1,5], A. Fennell[1,3], A.D. Hoppe[1,4]; [1]BioSNTR, Brookings, SD, [2]Biology and Microbiology, South Dakota State University, Brookings, SD, [3]Agronomy, Horticulture, and Plant Science, South Dakota State University, Brookings, SD, [4]Chemistry and Biochemistry, South Dakota State University, Brookings, SD, [5]Mathematics and Statistics, South Dakota State University, Brookings, SD

B261/P61 **Dynamics of Translation of Single mRNA Molecules In Vivo.** X. Yan[1], T.A. Hoek[2], R.D. Vale[1], M.E. Tanenbaum[2]; [1]Cellular and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA, [2]Hubrecht Institute, Utrecht, Netherlands

B262/P62 **Single-cell quantification of ATP concentrations inside mammalian cells by an improved fluorescent ATP indicator.** H. Yaginuma[1], Y. Okada[1]; [1]QBiC, RIKEN, Suita, Japan

B263/P63 **Multiplexing strategies using confocal microscopy.** V. Ibarra[1], J. Webster[2], M.S. Johnson Sagolla[2], H. Koeppen[2], C.M. Chalouni[2]; [1]Illinois Institute of technology, Chicago, IL, [2]Pathology labs, Genentech, South San Francisco, CA

B264/P64 **Analysis of cellular mechanisms that may regulate the thymus developmental program using CLARITY clearing of whole organs.** E.J. Baker[1], N.R. Manley[1], B.G. Condie[1], E.R. Richie[2]; [1]Department of Genetics, University of Georgia, Athens, GA, [2]Department of Carcinogenesis, University of Texas, M.D. Anderson Cancer Center, Science Park Research Division, Smithville, TX

B265/P65 **Real-Time Multi-Colony Observation at the Single-Cell Level with On-Demand Perturbation via a Microfluidic Examination Trap.** J. Helton[1], R. Kannan[1], V. Yeh[1]; [1]MilliporeSigma, Hayward, CA

B266/P66 **Comparative assessment of fluorescent proteins for in vivo imaging in an animal model system.** J.K. Heppert[1], D. Dickinson[1], A.M. Pani[1], C.D. Higgins[1], B. Goldstein[1]; [1]Biology, The University of North Carolina at Chapel Hill, Chapel, United States

B267/P67 **Deep learning automates the quantitative analysis of individual cells in live-cell imaging experiments.** D. Van Valen[1], T. Kudo[1], K. Lane[1], D. Macklin[1], N. Quach[1], M. DeFelice[1], I. Maayan[1], Y. Tanouchi[1], E. Ashley[2,3], M.W. Covert[1]; [1]Bioengineering, Stanford University, Stanford, CA, [2]Cardiovascular Medicine, Stanford University, Stanford, CA, [3]Genetics, Stanford University, Stanford, CA

B268/P68 **Live 5D hyper-spectral fluorescence imaging of developing zebrafish.** F. Cutrale[1], V. Trivedi[2], L.A. Trinh[1], C. Chiu[3], J.M. Choi[1], M.S. Artiga[1], S.E. Fraser[1]; [1]Translational Imaging Center, Molecular and Computational Biology, University of Southern California, Los Angeles, CA, [2]Division of Biology and Biological Engineering, California Institute of Technology, Pasadena, CA, [3]Lawrence J. Ellison Institute for Transformative Medicine, Center for Applied Molecular Medicine, University of Southern California, Los Angeles, CA

B269/P69 **Engineering a Light Activated Caspase to use Temporally and Locally in vivo.** A.D. Smart[1,2,3,4,5], N.D. Thomsen[2,3], R.A. Pache[6,7], T. Kortemme[6,7], G.W. Davis[4,5], J.A. Wells[2,3]; [1]Neuroscience Graduate Program, University of California San Francisco, San Francisco, CA, [2]Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA, [3]Cellular and Molecular Pharmacology, University of California San Francisco, San Francisco, CA, [4]Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA, [5]Kavli Institute for Fundamental Neuroscience, University of California San Francisco, San Francisco, CA, [6]California Institute for Quantitative Biomedical Research, University of California San Francisco, San Francisco, CA, [7]Bioengineering and Therapeutic Sciences, University of California San Francisco, San Francisco, CA

B270/P70 **Optogenetics Tools for Noninvasive Manipulation and Observation of Excitable Cells in the Embryonic Chick.** S. Fromherz[1], J. Whitaker[2], A. Frassato[2], L. DeRossett[2], A.A. Sharp[2,3]; [1]Biology, Saginaw Valley State University, University Center, MI, [2]Physiology, Southern Illinois University, Carbondale, IL, [3]Anatomy, Southern Illinois University, Carbondale, IL

B271/P71 **Combined chemical and optical control of T-cell signaling using a synthetic antigen receptor.** M.J. Harris[1], J.R. James[1]; [1]Department of Medicine, University of Cambridge, Cambridge, United Kingdom

Actin and Actin-Associated Proteins 1

B273/P72 **Phosphorylation of Sharpin acts as a molecular switch to control Linear Ubiquitination Assembly Complex (LUBAC) and Arp2/3 function.** U. Butt[1,2], M.H. Khan[1,2], g. jacquemet[1,3], M.J. Humphries[3], J. Pouwels[1]; [1]Centre for Biotechnology, University of Turku, Turku, Finland, [2]Turku Doctoral Programme of Molecular Medicine, University of Turku, Turku, Finland, [3]Wellcome Trust Centre for Cell-Matrix Research, Faculty of Life Sciences, University of Manchester, Manchester, United Kingdom

B274/P73 **The Sharpin interactome reveals a role for Sharpin in lamellipodium formation through the Arp2/3 complex.** M.H. Khan[1], S. Salomaa[1], g. jacquemet[1,2], T. Deguchi[1], e. kremneva[3], P. Lappalainen[3], M.J. Humphries[2]; [1]Turku Centre for Biotechnology, University of Turku, Turku, Finland, [2]Faculty of Life Sciences, Wellcome Trust Centre for Cell-Matrix Research, University of Manchester, Manchester, United Kingdom, [3]Institute of Biotechnology, University of Helsinki, Helsinki, Finland

B275/P74 **Deficiency of Ubiquitin-like Protein Ubl4A Impairs Cell Migration.** H. Zhang[1], Y. Zhao[1], R. Bonomo[1], A. Mañas[1], J. Xiang[1]; [1]Department of Biology, Illinois Institute of Technology, Chicago, IL

B276/P75 **Loss of a Novel Branched Actin Checkpoint in Cancer Cells.** N. Molinie[1], S.N. Rubtsova[1], A. Gautreau[1]; [1]CNRS UMR7654, Ecole Polytechnique, Palaiseau, France

B277/P76 **Unraveling the role Arp2/3 complex subunit 1b during spermatogenesis: An *in vivo* RNAi approach in adult rat.** A.V. Kumar[1], K.D. Dumasia[1], N.H. Balasinor[1]; [1]Dept. of Neuroendocrinology, National Institute for Research in Reproductive Health, Mumbai, India

B278/P77 **Functional involvement of actin-nucleating factor, Arp2/3 complex, in regulation of MTOC-TMA assembly during Xenopus oocyte maturation.** Y. Yamagishi[1,2], H. Abe[2]; [1]JSPS, Tokyo, Japan, [2] Nanobiol., Grad. Sch. of Advanced Integration Sci., Chiba Univ, Chiba, Japan

B279/P78 **ACD-crosslinked actin oligomers target WH2-domain proteins to disrupt the actin cytoskeleton.** D.B. Heisler[1,2], B. Williams[2], K. Shafer[2], E. Kudryashova[2], D.S. Kudryashov[1,2]; [1]Ohio State Biochemistry Program, Ohio State University, Columbus, OH, [2]Department of Chemistry and Biochemistry, Ohio State University, Columbus, OH

B280/P79 **Conditional knock out of N-WASP expression in keratinocytes caused epidermal hyperplasia in mice.** P. Kalailingam[1], H. Tan[1], T. Thanabalu[1]; [1]School of Biological Sciences, Nanyang Technological University, Singapore, Singapore

B281/P80 **Characterization of CARMIL-GAP, a Dictyostelium CARMIL isoform harboring a GTPase activating domain for Rac.** G. Jung[1], J.A. Hammer[1]; [1]CBPC, NHLBI, NIH, Bethesda, MD

B282/P81 **Exploring a cellular inhibitor which links between the formin INF2 and human diseases.** M. A[1]; [1]Biochemistry, Dartmouth College, Hanover, NH

B283/P82 **Characterization of a deafness-associated mutant of human DIAPH1.** T. Jabeen[1], C.L. Vizcarra[1]; [1]Chemistry, Barnard College, New York, NY

B284/P83 **Interplay between filopodia and focal adhesions through the formin FMNL3.** L.E. Young[1], E.G. Heimsath[2], H.N. Higgs[1]; [1]Biochemistry, Dartmouth College, Hanover, NH, [2]Cell Biology and Physiology, UNC, Chapel Hill, NC

B285/P84 **Ena/VASP- and Formin-mediated filopodia formation is facilitated by Fascin.** C. Suarez[1], J.D. Winkelman[2], A.J. Harker[3], A.N. Morganthaler[1], D.R. Kovar[1,3]; [1]Department of Molecular Genetics and Cell Biology, The University of Chicago, Chicago, IL, [2]Institute for Biophysical Dynamics, The University of Chicago, Chicago, IL, [3]Department of Biochemistry and Molecular Biology, The University of Chicago, Chicago, IL

B286/P85 **FMNL formins are required for lamellipodial force generation.** F. Kage[1,2], M. Winterhoff[3], V. Haas[1,2], J.M. Müller[4], T. Thalheim[5], A. Freise[2], S. Bruehmann[3], J. Kollasser[1], J. Block[1], G. Dimchev[1,2], M. Geyer[6], C.H. Brakebusch[7], T.E. Stradal[1], M. Carlier[8], M. Sixt[4], J. Käs[5], J. Faix[3], K. Rottner[1,2]; [1]Molecular Cell Biology, Helmholtz Centre for Infection Research, Braunschweig, Germany, [2]Molecular Cell Biology, Technical University Braunschweig, Braunschweig, Germany, [3]Institute for Biophysical Chemistry, Hannover Medical School, Hannover, Germany, [4]Institute of Science and Technology, Klosterneuburg, Austria, [5]Institut für experimentelle Physik, Leipzig University, Leipzig, Germany, [6]Institute of Innate Immunity, University of Bonn, Bonn, Germany, [7]BRIC, University of Copenhagen, Copenhagen, Germany, [8]Cytoskeleton Dynamics and Motility, National Centre for Scientific Research, Paris, France

B287/P86 **Single molecule imaging reveals that Spire and the formin Capu interact at barbed ends to antagonize capping protein and promote actin filament growth.** R. Jaiswal[1], C.L. Vizcarra[2], M.E. Quinlan[2], B.L. Goode[1]; [1]Biology, Brandeis University, Waltham, MA, [2]Chemistry and Biochemistry and Molecular Biology Institute, University of California Los Angeles, Los Angeles, CA

B288/P87 **Formin-generated actomyosin arcs propel T cell receptor microcluster movement at the immune synapse.** S. Murugesan[1], J. Hong[1], J. Yi[1], D. Li[2], J. Beach[1], L. Shao[2], X. Wu[1], E. Betzig[2], J.A. Hammer[1]; [1]Cell Biology and Physiology Center, The National Institutes of Health, Bethesda, MD, [2]HHMI, Janelia Research Campus, Ashburn, VA

B289/P88 **Dissecting the roles of anillin-DIAPH3 interaction in regulating actin cytoskeleton.** A. Chen[1], A.R. Wilde[1]; [1]Biochemistry, University of Toronto, Toronto, ON

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B290/P89 **A population of the formin FMNL3 exists as endosomally-associated intracellular particles.** L.E. McCormick[1], L.E. Young[1], H.N. Higgs[1]; [1]Biochemistry and Cell Biology, Geisel School of Medicine at Dartmouth College, Hanover, NH

B291/P90 **Adenomatous polyposis coli (APC)-mediated actin nucleation is required for directed cell migration.** M. Angeles Juanes-Ortiz[1], R. Jaiswal[1], A. Badache[2], B.L. Goode[1]; [1]Biology, Brandeis University, Waltham, MA, [2]Centre de Recherche en Cancerologie de Marseille, Institut Paoli-Calmettes, MARSEILLE, France

B292/P91 **An alternative splice isoform of the formin FMNL1 contributes to cancer cell adhesion and migration independent of the actin-binding ability of the FH2 domain.** E.W. Miller[1], S.D. Blystone[1]; [1]Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY

B293/P92 **Modulation of actin architecture by formins regulates adherens junction maturation.** B. Hissa[1], R.M. Harmon[1], Y.M. Beckham[1], M.L. Gardel[1]; [1]Physics Department, University of Chicago, Chicago, IL

Regulation of Actin Dynamics 1

B294/P93 **Dissecting the role of RhoA, -B and -C during host-pathogen interaction.** J. Halfen[1], J. Kollasser[1], L. Gröbe[2], P. Hagendorff[3], R. Geffers[3], A. Steffen[1], C.H. Brakebusch[4], K. Rottner[5], T.E. Stradal[1]; [1]Cell Biology, Helmholtz Centre for Infection Research, Braunschweig, Germany, [2]Flow Cytometry and Cell Sorting, Helmholtz Centre for Infection Research, Braunschweig, Germany, [3]Genome Analytics, Helmholtz Centre for Infection Research, Braunschweig, Germany, [4]Biotech Research and Innovation Centre, University of Copenhagen, Copenhagen, Denmark, [5]Molecular Cell Biology, Technical University Braunschweig, Braunschweig, Germany

B295/P94 **Reciprocal activities of RhoA and Rac2/Cdc42 regulate macrophage actin polymerization during catabolism of aggregated LDL.** R.K. Singh[1], I. Grosheva[1], A.M. Brumfield[1], F.R. Maxfield[1]; [1]Department of Biochemistry, Weill Cornell Medical College, New York, NY

B296/P95 **Identification of cancer-associated mutations in p190RhoGAP affecting its localization and function.** F. Biname[1,2], A. Bidaud-Meynard[1,2], L. Magnan[1,2], L. Piquet[1,2], B. Montibus[1,2], A. Chabadel[3], F. Saltel[1,2], V. Lagrée[1,2], V. Moreau[1,2]; [1]Univ. Bordeaux, Bordeaux, France, [2]INSERM U1053, Bordeaux, France, [3]Aix-Marseille Université, Marseille, France

B297/P96 **IQGAP1 orchestrates multivesicular endosomal dynamics in epithelial cells.** V. Schweikhard[1], E.B. Samson[1], D. Tsao[1], J. Zimak[1], T. McLaughlin[1], J.S. Orange[2], E.M. Mace[2], M.R. Diehl[1]; [1]Bioengineering, Rice University, Houston, TX, [2]Center for Human Immunobiology, Baylor College of Medicine Texas Children's Hospital, Houston, TX

B298/P97 **Vav2 associates with ERBB by means of its SH2 domain but requires additional signaling from the Insulin-like Growth Factor I receptor to drive migration in cancer cells: Analysis of Vav2 interactome.** J. McKinzie[1], I. Prabakaran[1], T. Beer[2], H. Tang[2], A. Lim[1], M.A. Guvakova[1]; [1]Surgery, University of Pennsylvania, Philadelphia, PA, [2]Proteomics and Metobolomics Facility, The Wistar Institute, Philadelphia, PA

B299/P98 **Mechanisms of cell-intrinsic adaptation in response to Adams-Oliver Syndrome gene DOCK6 disruption.** B. Cerikan[1], R. Shaheen[2], G.P. Colo[3], C. Gläßer[1], S. Hata[1], K. Knobeloch[4], F.S. Alkuraya[2], R. Fässler[3], E. Schiebel[1]; [1]ZMBH, University of Heidelberg, Heidelberg, Germany, [2]Genetics, King Faisal Specialist Hospital and Research Center, Riyadh, Saudi Arabia, [3]Molecular Medicine, Max Planck Institute of Biochemistry, Martinsried, Germany, [4]Institute of Neuropathology, Faculty of Medicine, University of Freiburg, Freiburg, Germany

B300/P99 **Evidence that an INF2-related formin limits the accumulation of actin filaments in epithelial cells of *C. elegans*.** A. Hegsted[1], F. Wright[2], S. Votra[1], D.W. Pruyne[1]; [1]Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY, [2]Pharmacology, SUNY Upstate Medical University, Syracuse, NY

B301/P100 **Mechanosensitive inhibition of formin facilitates contractile ring assembly in fission yeast.** D. Zimmermann[1], K.E. Homa[1], G.M. Hocky[2], L.W. Pollard[3], G.A. Voth[2], M.J. Lord[3], K.M. Trybus[3], D.R. Kovar[1,4]; [1]Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL, [2]Department of Chemistry, James Franck Inst. for Biophysical Dynamics and Computation Inst., University of Chicago, Chicago, IL, [3]Molecular Physiology and Biophysics, University of Vermont, Burlington, VT, [4]Biochemistry and Molecular Biology, University of Chicago, Chicago, IL

B302/P101 ***Drosophila* Formin Homology Domain-Containing Protein (FHOD) nucleates and bundles actin filaments but does not affect elongation.** A.A. Patel[1], Z.A. Oztug Durer[2,3], A.P. van Loon[1], M.E. Quinlan[2,4]; [1]Molecular Biology Interdepartmental Doctoral Program, University of California, Los Angeles, Los Angeles, CA, [2]Department of Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles, CA, [3]Department of Medical Biochemistry, Acibadem University School of Medicine, Istanbul, Turkey, [4]Molecular Biology Institute, University of California, Los Angeles, Los Angeles, CA

B303/P102 **Biochemical characterization of murine Delphilin, a neuron specific formin.** W.T. Silkworth[1], K.L. Kunes[1], A. Kim[1], D. Park[1], M.E. Quinlan[1,2]; [1]Department of Chemistry and Biochemistry, University of California, Los Angeles, Los Angeles, CA, [2]Molecular Biology Institute, University of California, Los Angeles, Los Angeles, CA

B304/P103 **β2 integrins mediate the formation of a focal adhesion-like cytoskeleton and signaling platform during phagocytosis.** V. Jaumouillé[1], T. Liu[2], E. Betzig[2], C.M. Waterman[1]; [1]National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD, [2]Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA

B305/P104 **Cofilin drives rapid turnover to fluidize entangled F-actin solutions.** P.M. McCall[1,2], D.R. Kovar[3,4], M.L. Gardel[1,2,5]; [1]Physics, University of Chicago, Chicago, IL, [2]James Franck Institute, University of Chicago, Chicago, IL, [3]Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL, [4]Biochemistry and Molecular Biology, University of Chicago, Chicago, IL, [5]Institute for Biophysical Dynamics, University of Chicago, Chicago, IL

B306/P105 **WASP maintains cell polarity by preventing aberrant accumulation of active Rac.** C. Amato[1], A.J. Davidson[2], P.A. Thomason[1], S. Barratt[1], S. Ismail[1], R.H. Insall[1]; [1]CRUK Beatson Institute, Glasgow, United Kingdom, [2]University of Bristol, Bristol, United Kingdom

B307/P106 **Calcium Signaling Induces Arp2/3-mediated Actin Polymerization in the Nucleus to Trigger a Gene Expression Profile Required for T Lymphocyte Activation.** N. Tsopoulidis[1], C. Baarlink[2], R. Grosse[2], O.T. Fackler[1]; [1]Department of Infectious Diseases, Integrative Virology, University Hospital Heidelberg, Heidelberg, Germany, [2]Institute of Pharmacology, Biochemical-Pharmacological Center, University of Marburg, Marburg, Germany

B308/P107 **Coordination of Arp2/3 and VASP in the dual protrusion revealed by machine learning analysis of protrusion velocities.** C. Wang[1], H. Choi[1], S. Kim[1], K. Lee[1]; [1]Biomedical Engineering, Worcester Polytechnic Institute, Worcester, MA

B309/P108 **ADF/Cofilin are necessary to establish, shape, and maintain auditory stereocilia bundles.** J.K. McGrath[1], B.J. Perrin[1]; [1]Biology, Indiana University - Purdue University Indianapolis, Indianapolis, IN

B310/P109 **Myosin-based contraction and oriented filament elongation synergize to build and maintain highly aligned filament arrays during cytokinesis in *C. elegans*.** Y. Li[1], W.M. Mcfadden[1], E.M. Munro[1]; [1]BSD, the University of Chicago, Chicago, IL

B311/P110 **Spatiotemporal regulation of Arp2/3 complex-mediated actin filament assembly by SH3 domain- and PRM-mediated protein interactions.** Y. Sun[1], D.G. Drubin[1]; [1]MCB, University of California at Berkeley, Berkeley, CA

Kinesins 1

B313/P111 **Polarized dendritic transport in neurons relies on kinesin-1 autoinhibition.** M.T. Kelliher[1,2], Y. Yue[3], A. Ng[1], A.A. Hoskins[1], K.J. Verhey[3], J. Wildonger[1]; [1]Biochemistry, University of Wisconsin-Madison, Madison, WI, [2]Integrated Program in Biochemistry, University of Wisconsin-Madison, Madison, WI, [3]Department of Cell and Developmental Biology, University of Michigan Medical School, Ann Arbor, MI

B314/P112 **The Molecular Motor KIF1A Transports the TrkA Neurotrophin Receptor and Is Essential for Sensory Neuron Survival and Function.** Y. Tanaka[1], S. Niwa[1], M. Dong[1], A. Farkhondeh[1], L. Wang[1], R. Zhou[1], N. Hirokawa[1,2]; [1]Dept Cell Biol & Anat, Univ Tokyo Grad Sch Med, Tokyo, Japan, [2]Center of Excellence in Genome Medicine Research, King Abdulaziz University, Jeddah, Saudi Arabia

B315/P113 **Kif1B interacts with KBP to promote axon elongation by localizing a microtubule regulator to growth cones.** C. Drerup[1], S. Lusk[1], A. Nechiporuk[1]; [1]Cell, Developmental Cancer Biology, Oregon Health Science University, Portland, OR

B316/P114 **The molecular mechanism that regulates a neuronal kinesin UNC-104/KIF1A in synaptic formation.** S. Niwa[1], D. Lipton[2], S.Y. Lu[2], L. Tao[2], M. Morikawa[3], C. Zhao[4], H. Lu[4], N. Hirokawa[3], K. Shen[2]; [1]Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, Sendai, Japan, [2]Department of Biology, Stanford University, Stanford, CA, [3]Department of Cell Biology, University of Tokyo, Tokyo, Japan, [4]School of Chemical Biomolecular Engineering, Georgia Institute of Technology, Atlanta, GA

B317/P115 **Phosphorylation of KLC1 regulates the velocity of APP transport through JIP1 interaction.** K. Chiba[1], K. Chien[2], R.J. Davis[3], Y. Okada[4,5], A.C. Nairn[6], M. Kinjo[7], R. Wang[2], T. Suzuki[1]; [1]Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo, Japan, [2]Department of Genetics and Genomic Sciences, Icahn School of Medicine at Mount Sinai, New York, NY, [3]Program in Molecular Medicine, University of Massachusetts Medical School, Worcester, MA, [4]Laboratory for Cell Polarity Regulation, RIKEN Quantitative Biology Center, Suita, Japan, [5]Department of Physics, Graduate School of Science, The University of Tokyo, Tokyo, Japan, [6]Department of Psychiatry, Yale University School of Medicine, New Haven, CT, [7]Faculty of Advanced Life Science, Hokkaido University, Sapporo, Japan

B318/P116 **Multiple phosphorylations of Alcadeinα regulates interaction with kinesin-1.** Y. Sobu[1], S. Hata[1], T. Suzuki[1]; [1]Laboratory of Neuroscience, Graduate School of Pharmaceutical Sciences, Hokkaido University, Sapporo, Japan

B319/P117 **A systematic approach to characterize the vesicles moved by different kinesins.** R. Yang[1], Z. Bostick[1], J. Luisi[1], G. Banker[1], M. Bentley[1]; [1]Jungers Center for Neurosciences Research, Oregon Health Science University, Portland, OR

B320/P118 **The fast reattachment rate of kinesin-2 enhances its performance in multi-motor transport.** Q. Feng[1], W.O. Hancock[1,2]; [1]Molecular Cellular Integrative Biological Sciences, Pennsylvania State University, State College, PA, [2]Biomedical Engineering, Pennsylvania State University, State College, PA

B321/P119 **The regulation of KIF3 motor complex by phosphorylation.** K. Chen[1]; [1]School of Biological Sciences, Nanyang Technological University, Singapore, Singapore

B322/P120 **Microtubule Gliding Powered by Membrane-bound Kinesin-1 Motors.** R. Jiang[1], S. Park[2], G. Chen[2], S. Majd[3], W.O. Hancock[1,2]; [1]Intercollege Program in Physiology, The Pennsylvania State University, University Park, PA, [2]Department of Biomedical Engineering, The Pennsylvania State University, University Park, PA, [3]Department of Biomedical Engineering, University of Houston, Houston, TX

B323/P121 **Effect of membrane coupling on multiple-kinesin transport.** J. Lopes[1], D.E. Chapman[2], L. Hirst[1], J. Xu[1]; [1]Physics, UC Merced, Merced, CA, [2]Developmental and Cell Biology, UC Irvine, Irvine, CA

B324/P122 **Microtubule Defects Influence Kinesin-Based Transport In Vitro.** W.H. Liang[1], Q. Li[1], S.J. King[2], J. Xu[1]; [1]Physics, UC Merced, Merced, CA, [2]Burnett School of Biomedical Sciences, U Central Florida, Orlando, FL

B325/P123 **Quantitative Determination of the Probability of Multiple-Motor Transport in Bead-Based Assays.** Q. Li[1], S.J. King[2], A. Gopinathan[1], J. Xu[1]; [1]Physics, University of California, Merced, CA, [2]Burnett School of Biomedical Sciences, University of Central Florida, Orlando, FL

B326/P124 **Cargo transport by teams of Kinesin-1 motors is slowed down by macromolecular crowding.** G. Nettesheim[1], G. Jaffe[1], S.J. King[2], G.T. Shubeita[1,3]; [1]Physics, The University of Texas at Austin, Austin, TX, [2]Burnett School of Biomedical Sciences, University of Central Florida, Orlando, FL, [3]Physics, New York University Abu Dhabi, Abu Dhabi, United Arab Emirates

B327/P125 **Interrogating The Effect of Single Motor Mutations On Emergent Transport Properties For Molecular Motor Ensembles: An Exact Approach.** S. Bhaban[1], D. Materassi[2], M. Li[3], T.S. Hays[3], M.V. Salapaka[1]; [1]Electrical Engineering, University of Minnesota, Minneapolis, MN, [2]Electrical Engineering Computer Science, University of Tennessee, Knoxville, TN, [3]Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN

B328/P126 **Ciliary and cytoplasmic kinesin-2 motors take hand-over-hand steps to support unexpectedly long run lengths on axonemes and microtubules.** G. Merck[1], W. Stepp[1], Z. Ökten[1]; [1] Physik-Department E22, Technische Universität München, Garching, Germany

B329/P127 **Cooperative Transport by Populations of Fast and Slow Kinesins Reveals Important Family-dependent Motor Characteristics.** G. Arpag[1,2], S.R. Norris[2], K.J. Verhey[3], W.O. Hancock[4], E. Tuzel[1]; [1]Physics, Worcester Polytechnic Institute, Worcester, MA, [2]Cell and Developmental Biology, Vanderbilt University, Nashville, TN, [3]Cell and Developmental Biology, University of Michigan, Ann Arbor, MI, [4]Biomedical Engineering, Pennsylvania State University, University Park, PA

B330/P128 **The unusual character of active diffusion along cytoskeletal filaments.** M. Vershinin[1,2], O. Osunbayo[2]; [1]Physics Astronomy, University of Utah, Salt Lake City, UT, [2]Biology, University of Utah, Salt Lake City, UT

Microtubule Dynamics and Its Regulation 1

B332/P129 **Self-repair promotes microtubule rescue.** C. Aumeier[1], L. Schaedel[1], J. Gaillard[1], K. John[2], L. Blanchoin[1], M. Théry[3]; [1]CEA/INRA/CNRS/Université Grenoble-Alpes, CytoMorpho Lab, Biosciences Biotechnology Institute of Grenoble, Grenoble, France, [2]CNRS / Université Grenoble-Alpes, Laboratoire Interdisciplinaire de Physique, Saint-Martin-d, France, [3]INSERM/Université Paris Diderot, CytoMorpho Lab, Hopital Saint Louis, Institut Universitaire d'Hematologie, Paris, France

B333/P130 **Mechanistic analysis of microtubule dynamics and mechanochemistry.** E.A. Geyer[1], J.W. Driver[2], M. Bailey[2], C.L. Asbury[2], L.M. Rice[1]; [1]Biochemistry and Biophysics, University of Texas Southwestern Medical Center, Dallas, TX, [2]Biophysics and Physiology, University of Washington, Seattle, WA

B334/P131 **Carboxy-terminal tail of β-tubulin regulates dynamic instability.** C.P. Fees[1], J.K. Moore[1]; [1]Cell and Development, University of Colorado Denver Anschutz Medical Campus, Aurora, CO

B335/P132 **Mechanisms of kinetic stabilization by the drugs paclitaxel and vinblastine.** B.T. Castle[1], S.M. McCubbin[2], L.S. Prahl[1], J.N. Bernens[1], D.S. Sept[2], D.J. Odde[1]; [1]Biomedical Engineering, University of Minnesota, Minneapolis, MN, [2]Biomedical Engineering, University of Michigan, Ann Arbor, MI

B336/P133 **Dose-dependent effect of microtubule inhibitors on microtubule dynamics: quantitative analysis.** A.S. Serikbaeva[1], S. Kauanova[1], A. Tvorogova[2], I.A. Vorobjev[1,2]; [1]School of Science and Technology, Department of Biology, Nazarbayev University, Astana, Kazakhstan, [2]Department of Cell Biology and Histology, Faculty of Biology, A.N. Belozersky Institute of Physico-Chemical Biology, Moscow, Russia

B337/P134 **Mitotic arrest induced by anti-microtubule drugs is poorly related to inhibition of cell growth in normal and cancer cells.** A. Kakpenova[1], S. Bekbayev[2], S. Kauanova[1], A. Balabiyev[1], A. Tvorogova[3], I.A. Vorobjev[1,2,3]; [1]National Laboratory Astana, Nazarbayev University, Astana, Kazakhstan, [2]School of Science and Technology, Nazarbayev University, Astana, Kazakhstan, [3]Faculty of Biology, M.V. Lomonosov Moscow State University, Department of Cell Biology and Histology, A.N. Belozersky Institute of Physico-Chemical Biology, Moscow, Russia

B338/P135 **Reconstitution of three-phase microtubule polymerisation dynamics.** T. Moriwaki[1], G. Goshima[1]; [1]Division of Biological Science, Graduate School of Science, Nagoya University, Nagoya, Japan

B339/P136 **CLASP1 regulates EC branch formation and directed cell migration by promoting slow MT growth dynamics.** N.M. Myer[1], K.A. Myers[1]; [1]Biological Sciences, University of the Sciences in Philadelphia, Philadelphia, PA

B340/P137 **TACC3, a microtubule plus-end tracking protein, affects neural crest migration in embryonic development.** E.A. Bearce[1], E.L. Rutherford[1], A. Francl[1], L. Carandang[1], M. Evans[1], L. Lowery[1]; [1]Biology, Boston College, Chestnut Hill, MA

B341/P138 **The unique and collective functions of TACC family members in regulating microtubule plus-end dynamics in vivo.** E.L. Rutherford[1], L. Carandang[1], P. Ebbert[1], M. Evans[1], C. Lucaj[1], L. Lowery[1]; [1]Department of Biology, Boston College, Chestnut Hill, MA

B342/P139 **Centriolar CPAP/SAS-4 imparts slow processive microtubule growth.** A.B. Aher[1], A. Sharma[2], N. Brown[3], D. Frey[2], E. Katrukha[1], R. Jaussi[2], I. Grigoriev[1], M. Croisier[4], R. Kammerer[2], A. Akhmanova[1], P. Gonczy[3], M. Steinmetz[2]; [1]Faculty of Science, Utrecht University, Cell Biology, Utrecht, Netherlands, [2]Department of Biology and Chemistry, Paul Scherrer Institut, Laboratory of Biomolecular Research, Villigen, Switzerland, [3]School of Life Sciences, Swiss Federal Institute of Technology (EPFL), Swiss Institute for Experimental Cancer Research (ISREC), Lausanne, Switzerland, [4]Swiss Federal Institute of Technology (EPFL), Bio-EM Facility, Lausanne, Switzerland

B343/P140 **Profilin directly regulates microtubule dynamics and microtubule-actin crosstalk using residues mutated in ALS.** J.L. Henty-Ridilla[1], B.L. Goode[1]; [1]Biological Sciences, Brandeis University, Waltham, MA

B344/P141 **The effect of cypin on microtubule dynamics in live Xenopus cells.** J.T. Bowers[1], L. Hayrapetian[1], L. Lowery[1]; [1]Department of Biology, Boston College, Chestnut Hill, MA

B345/P142 **Mechanistic insight into the powerful microtubule destabilizing activity of UNC-45A: a novel microtubule-associated protein.** A. Moonyham[1], C. Coombes[1], Y. Iizuka[1], M. McClellan[1], M.K. Gardner[1], M. Bazzaro[1]; [1]Masonic Cancer Center, University of Minnesota, Minneapolis, MN

B346/P143 **Regulation of microtubules by dynamin-2 in HeLa cells.** M. Nakagushi[1], K. Hamao[1]; [1]Department of Biological Science, Graduate School of Science, Hiroshima University, Higashi-Hiroshima, Japan

B347/P144 **A novel function of kinesin-1: changing microtubule conformation that accelerates successive kinesin binding.** T. Shima[1,2], Y. Okada[1,2]; [1]RIKEN QBiC, Osaka, Japan, [2]Graduate School of Science, The University of Tokyo, Tokyo, Japan

Ciliary Signaling and Ciliopathies

B350/P146 **IFT20 collaborates with RING finger E3 ubiquitin ligases c-Cbl and Cbl-b to control and modulate PDGFRα signaling.** F. Schmid[1], K.B. Schou[1], M.J. Vilhelm[1], L. Breslin[2], L.A. Larsen[3], J.S. Andersen[3], L.B. Pedersen[1], S.T. Christensen[1]; [1]Department of Biology, University of Copenhagen, Copenhagen, Denmark, [2]Department of Biochemistry and Molecular Biology, University of Southern Denmark, Odense, Denmark, [3]Department of Cellular and Molecular Medicine, University of Copenhagen, Copenhagen, Denmark

B351/P147 **A Novel Role of Sonic Hedgehog Signaling in Differentiated Human Airway Epithelia.** S. Mao[1,2,3], A. Shah[4], L.R. Reznikov[5], T. Moninger[2,3], L.S. Ostedgaard[2,3], M.J. Welsh[1,2,3]; [1]Molecular physiology and biophysics, University of Iowa, Iowa City, IA, [2]Internal Medicine, University of Iowa Hospitals and Clinics, Iowa City, IA, [3]Howard Hughes Medical Institute, Iowa City, IA, [4]University of Chicago, Chicago, IA, [5]Department of Physiological Sciences, University of Florida, Iowa City, IA

B352/P148 **Ciliary Hedgehog signaling controls fatty degeneration of skeletal muscle.** D. Kopinke[1], J.F. Reiter[1]; [1]Biochemistry, UCSF, San Francisco, CA

B353/P149 **Molecular mechanisms to manipulate calcium/ cAMP dynamics in initiating osteocyte mechanotransduction.** E.R. Moore[1], Y. Yang[1], Y. Zhu[1], C.R. Jacobs[1]; [1]Biomedical Engineering, Columbia University, New York, NY

B354/P150 **Intraciliary calcium oscillations initiate vertebrate left-right asymmetry.** S. Yuan[1], L. Zhao[2], M. Brueckner[1,2], Z. Sun[2]; [1]Pediatrics, Yale University School of Medicine, New Haven, CT, [2]Genetics, Yale University School of Medicine, New Haven, CT

B355/P151 **The screen and identity of CHD□congenital heart disease□ candidate genes.** J. Li[1], R. Hu[1], H. Tang[1], H. Wang[1], Y. Cao[1]; [1]School of Life Sciences and Technology, Tongji University, Shanghai, China

B356/P152 **Evolutionary proteomics uncovers conserved ciliary signaling pathways involved in human ciliopathies.** M. Abdedin Sigg[1], T. Menchen[2], V.L. Jensen[2], J. Johnson[1], N. Krogan[1], F. Rentzsch[3], M.R. Leroux[2], H. Omran[4], J.F. Reiter[1]; [1]UCSF, San Francisco, CA, [2]Simon Fraser University, Burnaby, BC, [3]Sars International Centre for Marine Molecular Biology, Bergen, Norway, [4]Universitätsklinikum Münster, Münster, Germany

B357/P153 **A calmodulin gene is required for acid-induced deflagellation in *Chlamydomonas reinhardtii*.** Q. Wu[1], Y. Liang[1], J. Pan[1,2]; [1]MOE Key Laboratory of Protein Sciences, Tsinghua-Peking Center for Life Sciences, School of Life Sciences, Tsinghua University, Beijing, China, [2]Laboratory for Marine Biology and Biotechnology, Qingdao National Laboratory for Marine Science and Technology, Qingdao, China

B358/P154 **Localization of ciliary GPCRs to distinct populations of neurons in the olfactory bulb.** J.C. McIntyre[1]; [1]Neuroscience, Center for Smell and Taste, University of Florida, Gainesville, FL

B359/P155 **Centrosome Amplification Disrupts Renal Development and Causes Cystic Kidney Disease.** K. Shim[1], L. Dionne[1], M. Hoshi[1], V. Marthiens[2], A. Knoten[1], R. Basto[2], S. Jain[1], M.R. Mahjoub[1]; [1]Dept of Medicine (Nephrology), Washington University, St Louis, MO, [2]Institue Curie, Paris, France

B360/P156 **CRISPR-Cas9 mediated knockout of ciliary genes to study polycystic kidney disease.** S.J. Jerman[1], Z. Sun[1]; [1]Genetics, Yale University School of Medicine, New Haven, CT

B361/P157 **Smyd2 is a novel regulator of ADPKD, ARPKD and Joubert Syndrome as well as ciliopathy.** X. Li[1], L.X. Fan[1], J.X. Zhou[1], J.P. Calvet[1], X. Li[1]; [1]Kidney Institute, University of Kansas Medical Center, Kansas City, KS

B362/P158 **Assessing the Impact of Primary Cilia loss on Epithelial Phenotype and Function in a Human Renal Proximal Tubular Epithelial cell line.** M. Higgins[1], T. McMorrow[1]; [1]Conway Institute, University College Dublin, Dublin, Republic of Ireland

B363/P159 **Effects of conditional disruption of primary cilia in POMC expressing cells on feeding behavior and body weight.** S.E. Engle[1], L. Whitehouse[1], R. Bansal[1], N.F. Berbari[1]; [1]Department of Biology, Indiana University Purdue University Indianapolis, Indianapolis, IN

B364/P160 **Genome-wide siRNA screening identifies deubiquitinase as a therapeutic candidate for the ciliopathies.** I. Tsai[1,2], N. Katsanis[1,2]; [1]Department of Cell Biology, Duke University, Durham, NC, [2]Center for Human Disease Modeling, Duke University, Durham, NC

B365/P161 **Identifying Pathways that Regulate Flagellar Assembly.** B. Jack[1,2], P. Avasthi[3,4]; [1]Chemistry, Rockhurst University, Kansas City, MO, [2]K-INBRE Summer Scholarship Program, Kansas University Medical Center, Kansas City, KS, [3]Anatomy and Cell Biology, Kansas University Medical Center, Kansas City, KS, [4]Ophthalmology, Kansas University Medical Center, Kansas City, KS

B366/P162 **Investigating the role of ERK-mediated actin phosphorylation in ciliary dynamics.** 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

B367/P163 **Promotion of molecular assembly by a flagellar nucleoside diphosphate kinase.** X. Zhu[1], Y. Maizy[1], Y. Liu[1], P. Yang[1]; [1]Department of Biological Sciences, Marquette University, Milwaukee, WI

B368/P164 **Application of CRISPR/Cas9-Based Functional Genomic Screening to Cilium-Dependent Hedgehog Signaling.** D.K. Breslow[1,2], S. Hoogendoorn[3], A.R. Kopp[2], D.W. Morgens[4], J.K. Chen[3,5], M.V. Nachury[2]; [1]Molecular, Cellular Developmental Biology, Yale University, New Haven, CT, [2]Molecular Cellular Physiology, Stanford University, Stanford, CA, [3]Chemical Systems Biology, Stanford University, Stanford, CA, [4]Genetics, Stanford University, Stanford, CA, [5]Developmental Biology, Stanford University, Stanford, CA

B369/P165 **Mechanisms of signal-dependent exit from cilia.** F. Ye[1], A.R. Nager[1], M.V. Nachury[1]; [1]Molecular and Cellular Physiology, Stanford University, Stanford, CA

B370/P166 **Investigating the mechanism of Sonic hedgehog signaling across a polarized epithelium.** E. Kolenbrander[1], T. Stearns[2,3]; [1]Department of Developmental Biology, Stanford University, Stanford, CA, [2]Department of Biology, Stanford University, Stanford, CA, [3]Department of Genetics, Stanford University, Stanford, CA

B371/P167 **Measuring Calcium Dynamics in the Primary Cilium of Mammalian Cells in Culture.** W.C. Salmon[1,2], P.G. Czarnecki[2,3], J.V. Shah[2,3]; [1]W.M. Keck Imaging Facility, Whitehead Institute, Cambridge, MA, [2]Department of Systems Biology, Harvard Medical School, Boston, MA, [3]Renal Division, Brigham and Women's Hospital, Boston, MA

Cytokinesis 1

B373/P168 **FLIRTing with cell division during development to study the spatiotemporal regulation of protein function in vivo.** S. Sundaramoorthy[1], T. Davies[1], Y. Zhuravlev[1], S. Hirsch[1], M. Shirasu-Hiza[2], J. Dumont[3], J.C. Canman[1]; [1]Pathology and Cell biology, Columbia University Medical Center, New York, NY, [2]Genetics and Development, Columbia University Medical Center, New York, NY, [3]Cell division and Reproduction, Institut Jacques Monod, Paris, France

B374/P169 **Aberrant cytokinesis signaling and mechanics in epothilone-treated Xenopus eggs.** C.M. Field[1,2], T.J. Mitchison[1,2]; [1]Systems Biology, Harvard Medical School, Boston, MA, [2]Marine Biological Laboratory, Woods Hole, MA

B375/P170 **Spindle pole localization of CK1 is necessary for mitotic checkpoint function.** Z.C. Elmore[1], K.L. Gould[1]; [1]Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B376/P171 **Localization of LET-99 by a PAR-independent mechanism and its role in aster positioned cytokinesis.** K.L. Price[1], L.S. Rose[1]; [1]Molecular and Cellular Biology, UC Davis, Davis, CA

B377/P172 **Sperm astral microtubules may be required to interact with the cell cortex for proper nuclear centering, capture of the female pronucleus, and proper localization of embryonic determinants.** S.P. Ruvolo[1], M. Johnathan[1], A. McDougall[2], D.R. Burgess[1]; [1]Biology, Boston College, Chestnut Hill, MA, [2]Laboratoire de Biologie du Développement de Villefranche-sur-mer, Sorbonne Universités, Villefranche sur-mer, France

B378/P173 **Cytokinesis requires the temporal and spatial regulation of PAR-5 and ZEN-4 by the conserved RNA binding protein ATX-2.** M.M. Gnazzo[1], E.E. Uhlemann[1], A. Villarreal[1], E. Dominguez[1], M. Shiayama[2], A.R. Skop[1]; [1]Genetics, University of Wisconsin, Madison, WI, [2]Program in Molecular Medicine, University of Massachusetts Medical School, Worcester, MA

B379/P174 **The role of Kinesin-6 KIF20B in cytokinesis in a human cell line.** K.M. Janisch[1], S. Lim[1], J.M. Dardick[1], K.C. McNeely[1], N.D. Dwyer[1]; [1]Cell Biology, University of Virginia, Charlottesville, VA

B380/P175 **Multicellular context contributes to cell type specific protection against cytokinesis failure.** T. Davies[1], N. Romano Spica[1], Y. Zhuravlev[1,2], M. Shirasu-Hiza[2], J. Dumont[3], J.C. Canman[1]; [1]Department of Pathology and Cell Biology, Columbia University, New York, NY, [2]Department of Genetics and Development, Columbia University, New York, NY, [3]Institut Jacques Monod, Paris, France

B381/P176 **The non-canonical Anillin ANI-2 stabilizes midbody components and maintains membrane integrity of the primordial germ cells during *C. elegans* embryogenesis.** E. Goupil[1], J. Labbé[1]; [1]Institut de Recherche en Immunologie et en Cancérologie, Université de Montréal, Montréal, QC

B382/P177 **Loss of the Kinesin-6 Kif20b causes abnormalities in cytokinesis and apoptosis in neural progenitor cells.** J.L. Neville[1], K.C. McNeely[1], N.D. Dwyer[1]; [1]Cell Biology, University of Virginia, Charlottesville, VA

SUNDAY

B383/P178 **The post-mitotic midbody is a novel regulator of cell proliferation.** E.M. Peterman[1], R. Prekeris[1]; [1]Cell and Developmental Biology, University of Colorado - Anschutz Medical Campus, Aurora, CO

B384/P179 **A Potential Role for Midbodies in Developing Tissues of *C. elegans*.** X. Bai[1], B. Chen[2], R. Simmons[1], C. Turpin[1], L. Uehlein[1], D. Mitchell[1], E. Betzig[2], J.N. Bembenek[1]; [1]BCMB, UT Knoxville, Knoxville, TN, [2]Janelia Research Campus, Ashburn, VA

B385/P180 **Molecular mechanisms generating genetic instability in polyploid cells with extra centrosomes.** M. Nano[1], D. Gogendeau[2], R. Basto[1]; [1]UMR144, CNRS, Institut Curie, Paris, France, [2]CEA, CNRS, Institute for Integrative Biology of the Cell (I2BC), Univ. Paris Sud, Université Paris-Saclay, France

B386/P181 **CoA Synthase Regulates Aurora A and mitotic fidelity via CBP-mediated TPX2 acetylation.** C. Lin[1], X. Tang[1], J. Wu[1], D. Qu[1], M. Kitagawa[2], W. Thompson[3], T. Yao[4], S. Lee[2], J. Chi[1]; [1]Department of Molecular Genetics and Microbiology, Duke University, Durham, NC, [2]Graduate Medical School, Duke-NUS, Singapore, Singapore, [3]Proteomics and Metabolomics Core Facility, Duke University, Durham, NC, [4]Department of Pharmacology and Cancer Biology, Duke University, Durham, NC

B387/P182 **Separase protease function is required for cytokinesis and membrane trafficking in addition to chromosome segregation.** X. Bai[1], J.N. Bembenek[1]; [1]Biochemistry and Cellular and Molecular Biology, the University of Tennessee, Knoxville, TN

B388/P183 **Mitochondria dynamics and functions during cytokinesis in early *Caenorhabditis elegans* embryos.** B. Hu[1], Y. Li[1], Y. Tse[1]; [1]Department of Biology, Southern University of Science and Technology, Shenzhen, China

B389/P184 **Inhibition of autophagy enhances cytokinesis arrest-mediated apoptosis via promoting Bak activation and mitochondria-dependent caspase cascade activation in human Jurkat T cells.** Y. Kim[1,2], K. Kim[1], M. Kim[1], J. Park[1], D. Jun[1], J. Kim[3], Y. Kim[1]; [1]School of Life Science and Biotechnology, College of Natural Science, Kyungpook National University, Daegu, 41566, Korea, South, [2]Daegu Science High School, Daegu, 42110, Korea, South, [3]Department of Biological Sciences, Andong National University, Andong, 36729, Korea, South

B400/P185 **Quantitative fitness analysis of cell-to-cell heterogeneity in aneuploid populations.** A.R. Nelliat[1], H. Tsai[2], R. Li[1,2]; [1]Department of Chemical and Bimolecular Engineering, Johns Hopkins University, Baltimore, MD, [2]Department of Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD

B401/P186 **PRC1-labeled overlap microtubule bundles are associated with kinetochores in metaphase and contribute to their segregation in anaphase.** B. Polak[1], P. Risteski[1], R. Buđa[1], K. Vukušić[1], A. Milas[1], N. Pavin[2], I.M. Tolic[1]; [1]Division of Molecular Biology, Ruder Boskovic Institute, Zagreb, Croatia, [2]Department of Physics, Faculty of Science, University of Zagreb, Zagreb, Croatia

B402/P187 **TPXL-1 mediates aster-based clearing of contractile ring proteins from the cell poles during cytokinesis.** E. Zanin[1], K. Oegema[2]; [1]Dep. II, Zell- und Entwicklungsbiologie D02.009B, Biocenter - LMU Munich, Planegg-Martinsried, Germany, [2]UCSD, Dept. 0660, CMM-East 3080, Ludwig Institute for Cancer Research, La Jolla, CA

B403/P188 **Bga1 is a novel regulator for the localization of the β-glucan synthase Bgs1 in fission yeast.** R. Davidson[1], J. Pontasch[1], J. Wu[1]; [1]Molecular Genetics, The Ohio State University, Columbus, OH

B404/P189 **Roles of the novel coiled-coil protein Rng10 in septum formation during fission yeast cytokinesis.** Y. Liu[1], I. Lee[1,2], M. Sun[3], C.A. Lower[1], J. Ma[3], J. Wu[1,4]; [1]Molecular Genetics, The Ohio State University, Columbus, OH, [2]Department of Pediatric Oncology, Dana-Farber Cancer Institute, Boston, MA, [3]Surgery, Davis Heart and Lung Research Institute, Columbus, OH, [4]Biological Chemistry and Pharmacology, The Ohio State University, Columbus, OH

B405/P190 **Silver nanoparticle exposure leads to binucleation through cytokinesis failure in retinal epithelial cells.** E. Garcia[1], C. Alms[2], C. Kelly[1], A. Smith[1], L. Marr[3], D. Cimini[1]; [1]Biological Sciences and Biocomplexity Institute, Virginia Tech, Blacksburg, VA, [2]University of Maryland, Baltimore County, Baltimore, MD, [3]Environmental and Civil Engineering, Virginia Tech, Blacksburg, VA

B406/P191 **Roles of an Unc-13/Munc13 family protein Ync13 in fission yeast cytokinesis.** Y. Zhu[1], J. Hyun[1], V. Purde[1], J. Wu[1]; [1]Molecular Genetics, The Ohio State University, Columbus, OH

Kinetochore Assembly and Functions 1

B407/P192 **Monitoring Aurora B kinase activity in response to changes in kinetochore-microtubule attachment stability during mitosis.** J.A. DeSimone[1,2], D.A. Compton[1,2]; [1]Norris Cotton Cancer Center, Lebanon, NH, [2]Biochemistry and Cell Biology, Geisel School of Medicine at Dartmouth, Hanover, NH

B408/P193 **Overexpression of Aurora B reduces its kinase activity.** E.M. Britigan[1], A.L. Lasek[2], L. Wang[3], A. Audhya[3,4], M.E. Burkard[2,4], A. Roopra[4,5], B.A. Weaver[1,4]; [1]Cell and Regenerative Biology, University of Wisconsin, Madison, WI, [2]Medicine, University of Wisconsin, Madison, WI, [3]Biomolecular Chemistry, University of Wisconsin, Madison, WI, [4]Carbone Cancer Center, University of Wisconsin, Madison, WI, [5]Neuroscience, University of Wisconsin, Madison, WI

B409/P194 **Sli15/INCENP Spindle Association Promotes Chromosome Biorientation Independently of Clustering-Mediated Ipl1/Aurora B Kinase Activation.** S. Fink[1], K.L. Turnbull[2], A.B. Desai[2], C.S. Campbell[1]; [1]Chromosome Biology, Max F Perutz Laboratories, University of Vienna, Vienna, Austria, [2]Cellular and Molecular Medicine, Ludwig Cancer Research, University of California San Diego, San Diego, CA

B410/P195 **TIP60-elicited acetyl-phosphorylation cross-talk ensures accurate chromosomal segregation.** X. Liu[1], F. Mo[1], X. Zhuang[1], X. Yao[1]; [1]Anhui Key Laboratory of Cellular Dynamics and Chemical Biology, University of Science & Technology of China, Hefei, China

B411/P196 **The C-terminal domain of topoisomerase II alpha has a non-catalytic function in Aurora B recruitment to inner centromeres during mitosis.** H. Edgerton[1], M. Johansson[1], D. Keifenheim[1], S. Mukherjee[1], J.M. Chacon[1], J. Bachant[2], M.K. Gardner[1], D.J. Clarke[1]; [1]Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN, [2]Cell Biology and Neuroscience, University of California, Riverside, Riverside, CA

B412/P197 **Mitotic noncoding RNA processing promotes kinetochore and spindle assembly in *Xenopus*.** A.W. Grenfell[1], M. Strzelecka[1,2], R. Heald[1]; [1]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, [2]Qiagen, Hilden, Germany

B413/P198 **Polo and the response to DNA damage during mitosis.** C. Landmann[1,2], E. Montembault[1,2], A. Royou[1,2]; [1]Institut Européen de Chimie et Biologie, Bordeaux, France, [2]Institut de Biochimie et Génétique Cellulaire, Bordeaux, France

B414/P199 **Myosin phosphatase targeting subunit 1 (MYPT1) mediates the antagonistic actions of Cyclin A/Cdk1 and Plk1 on k-MT attachment stability to promote efficient error correction in early mitosis.** A.G. Dumitru[1], S.F. Rusin[1], A. Kettenbach[1,2], D. Compton[1,2]; [1]Biochemistry Cell Biology, Dartmouth Geisel School of Medicine, Hanover, NH, [2]Norris Cotton Cancer Center, Dartmouth Geisel School of Medicine, Lebanon, NH

B415/P200 **Synthetic lethal genetic interactions in spindle assembly checkpoint (SAC)-deficient human cells.** J.A. Raaijmakers[1], R. Van Heesbeen[1], V. Blomen[2], L. Janssen[1], F.V. Diemen[2], T. Brummelkamp[2], R.H. Medema[1]; [1]Division of Cell Biology, The Netherlands Cancer Institute, Amsterdam, Netherlands, [2]Division of Biochemistry, The Netherlands Cancer Institute, Amsterdam, Netherlands

B416/P201 **A new toolbox for the fly Sciara - a new/old model system that disobeys the rules for chromosome movement on spindles.** S.A. Gerbi[1], Y. Yamamoto[1], J. Urban[1], J. Bateman[2]; [1]BioMed Division; Department of Molecular Biology, Cell Biology and Biochemistry, Brown University, Providence, RI, [2]Department of Biology, Bowdoin College, Brunswick, ME

B417/P202 **Ensuring transmission of the centromere through meiosis and early development.** S.Z. Swartz[1], I.M. Cheeseman[1]; [1]Whitehead Institute for Biomedical Research, Cambridge, MA

B418/P203 **Centromere maintenance through error correction of CENP-A deposition during DNA replication.** Y. Nechemia-Arbely[1], K.H. Miga[2], M. McMahon[1], O. Shoshani[1], D. Fachinetti[1], A. Lee[1], B. Ren[1], D.W. Cleveland[1]; [1]Cellular and Molecular Medicine, Ludwig Institute for Cancer Research, UCSD, LA JOLLA, CA, [2]Center for Biomolecular Science Engineering, UCSC, Santa Cruz, CA

B419/P204 **The *Drosophila* orthologue of the INT6 onco-protein regulates mitotic microtubule dynamics and kinetochore structure.** F. Renda[1,2], C. Pellacani[2,3], A. Strunov[4,5], E. Bucciarelli[3], V. Naim[2,6], G. Bosso[2], E. Kiseleva[4,5], S. Bonaccorsi[2], D.J. Sharp[7], A. Khodjakov[1], M. Gatti[2,3,4], M.P. Somma[3]; [1]Wadsmorth Center, New York State Department of Health, Albany, NY, [2]Department of Biology and Biotechnology “Charles Darwin”, Sapienza, University of Rome, Rome, Italy, [3]Institute of Molecular Biology and Pathology - IBPM CNR, Rome, Italy, [4]Institute of Molecular and Cellular Biology, Siberian Branch of RAS, Novosibirsk, Russia, [5]Institute of Cytology and Genetics, Siberian Branch of RAS, Novosibirsk, Russia, [6]Université Paris-Saclay, UMR 8200 CNRS, Gustave Roussy, Villejuif Cedex, France, [7]Department of Physiology and Biophysics, Albert Einstein College of Medicine, Bronx, NY

Centrosome Assembly and Functions 1

B420/P205 **Interaction and phosphorylation of SAS-5 by ZYG-1 may be important in centriole assembly.** P. Sankaralingam[1], K. OConnell[1]; [1]National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Bethesda, MD

B421/P206 **Plk4 phosphorylates Ana2 to block association and inhibit centriole duplication.** T.A. McLamarrah[1], D.W. Buster[1], C. Boese[1], N. Hollingsworth[1], G.J. Brian[2], N.M. Rusan[2], C. Brownlee[1], G.C. Rogers[1]; [1]Cancer Biology, University of Arizona, Tucson, AZ, [2]National Heart, Lung and Blood Institute, NIH, Bethesda, MD

B422/P207 **The Cullin4-DDB1 E3 Ubiquitin Ligase Complex regulates Plk4- dependent centriole duplication.** I.M. Hoffmann[1], A. Kratz[1], S. Freiss[1]; [1]Cell Cycle Control and Carcinogenesis, German Cancer Research Center, Heidelberg, Germany

B423/P208 **WBP11 is a novel regulator of centriole biogenesis.** E.M. Park[1], P. Scott[1], K. Clutario[1], J. Smith[1], A.J. Holland[1]; [1]Molecular Biology and Genetics, Johns Hopkins School of Medicine, Baltimore, MD

B424/P209 **Human microcephaly protein RTTN interacts with STIL and is required for assembly of full-length centrioles.** H. Chen[1,2], C. Wu[2,3], Y. Lin[2], W. Wang[3], T.K. Tang[2]; [1]Graduate Institution of Life Sciences, National Defense Medical Center, Taipei, Taiwan, [2]Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan, [3]National Yang-Ming University, Taipei, Taiwan

B425/P210 **Coordination between centrosomal linker dissolution and microtubule pathway drives centrosome separation at the onset of mitosis.** A. Pastor Peidro[1], M. Panic[1], S. Hata[1], E. Schiebel[1]; [1]ZMBH, University of Heidelberg, Heidelberg, Germany

B426/P211 **Cleavage of the SUN-domain protein Mps3 promotes centrosome separation in budding yeast meiosis.** H. Yu[1], B.A. Koch[1], H. Jin[1]; [1]Biological Science, Florida State University, Tallahassee, FL

B427/P212 **Characterizing the interaction between CK1δ/ε and GAPVD1.** R.X. Guillen[1], J. Chen[1], K.L. Gould[1]; [1]Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B428/P213 **Spatial control of centrosomes is required for germline development.** C.W. Shebelut[1], N.M. Rusan[2], E.R. Gavis[3], G. Deshpande[3], P. Schedl[3,4], D.A. Lerit[2,5]; [1]University of Virginia School of Medicine, Charlottesville, VA, [2]Cell Biology and Physiology Center, NHLBI, Bethesda, MD, [3]Department of Molecular Biology, Princeton University, Princeton, NJ, [4]Institute of Gene Biology, Russian Academy of Sciences, Moscow, Russia, [5]Department of Cell Biology, Emory University School of Medicine, Atlanta, GA

B429/P214 **Using laser ablation to examine centriole function in mitotic centrosome assembly.** T. Laos[1], G. Cabral[1], A. Dammermann[1]; [1]Max F. Perutz Laboratories, University of Vienna, Vienna, Austria

B430/P215 **Centrosome amplification in cancer occurs primarily by *de novo* overduplication and requires additional adaptations to overcome disrupted cell physiology.** R.A. Denu[1], M.E. Burkard[1]; [1]Medicine, University of Wisconsin-Madison, Madison, WI

B431/P216 **The molybdenum cofactor biosynthesis and tRNA thiolation are linked to the centrosome.** Y. Neukranz[1], S. Leimkuehler[1], R. Graef[1]; [1]Biochemistry and Biology, University of Potsdam, Potsdam, Germany

B432/P217 **INPP5E preserves genomic stability through regulation of mitosis.** E.A. Sierra Potchanant[1], D.M. Cerabona[1,2], Z. Abdul-Sater[1], Y. He[1], Z. Sun[1], J.R. Gehlhausen[1,2], G. Nalepa[1,2,3,4]; [1]Department of Pediatrics, Herman B. Wells Center for Pediatric Research, Indiana University School of Medicine, Indianapolis, IN, [2]Department of Biochemistry and Molecular Biology, Indiana University School of Medicine, Indianapolis, IN, [3]Department of Medical and Molecular Genetics, Indiana University School of Medicine, Indianapolis, IN, [4]Division of Pediatric Hematology-Oncology, Bone Marrow Failure Program, Riley Hospital for Children, Indianapolis, IN

Chromosome Organization

B433/P218 **Dissecting the role of microtubule detyrosination in kinetochore microtubule stability and error correction during mitosis.** L. Ferreira[1], M. Barisíc[2], B. Orr[1], H. Maiato[1]; [1]Institute for Innovation and Health Research of University of Porto, Porto, Portugal, [2]Cell Division Laboratory, Danish Cancer Society Research Centre, Copenhagen, Denmark

B434/P219 **Chromosome movement to one pole in the absence of kinetochore microtubules in *Mesostoma ehrenbergii* spermatocytes.** E. Fegaras[1], A. . Forer[1]; [1]Biology, York University, Toronto, ON

B435/P220 **Cleavage furrow ingression is not required for segregation of the amphitelically attached univalent X chromosome in the spittlebug *P. spumarius*.** K.D. Felt[1], M.B. Lagerman[1], N.A. Ravida[1], L.V. Paliulis[1]; [1]Biology Department, Bucknell University, Lewisburg, PA

B436/P221 **Asymmetric microtubule activity facilitates differential epigenetic inheritance in *Drosophila* male germline stem cell.** R. Ranjan [1], X. Chen[1]; [1]Department of Biology, Johns Hopkins University, Baltimore, MD

B437/P222 **H3.3 Serine 31 phosphorylation at pericentromeric heterochromatin regulates chromosome segregation.** C.A. Day[1], A.K. Langfald[1], S.R. Fadness[1], K.T. Vaughan[2], E.H. Hinchcliffe[1]; [1]Hormel Institute, University of Minnesota, Austin, MN, [2]Department of Biological Sciences, Universtiy of Notre Dame, Notre Dame, IN

B438/P223 **Mechanisms to maintain centromere stability in human cells.** S. Giunta[1], H. Funabiki[1]; [1]The Rockefeller University, New York, NY

B439/P224 **Successful inclusion of late-segregating chromosomes through channels in the nuclear envelope is dependent upon Aurora B-mediated HP1-chromatin dynamics.** B. Warecki[1], W. Sullivan[1]; [1]MCD Biology, University of California, Santa Cruz, Santa Cruz, CA

B440/P225 **DNA damage and mis-localization of Aurora B contribute to chromatin bridge formation.** M. Jo[1,2,3], J. Ahn[1,2,3], J. Lee[1,2,3]; [1]Biochemistry and Molecular Biology, Ajou University School of Medicine, Suwon, Korea, [2]Genomic Instability Research Center, Ajou University School of Medicine, Suwon, Korea, [3]Department of Biomedical Sciences, Graduate School of Ajou University, Suwon, Korea, South

B441/P226 **BAF forms a rigid shell around anaphase chromosomes to prevent micronucleation.** M. Samwer[1], P.S. Schmalhorst[2], M. Schneider[1], R. Höfler[1], D.W. Gerlich[1]; [1]Institute of Molecular Biotechnology of the Austrian Academy of Sciences (IMBA), Vienna, Austria, [2]Institute of Science and Technology Austria (IST Austria), Vienna, Austria

B443/P228 **Perturbing spindle formation dynamics by Plk4 overexpression can trigger fragile chromosome breakage.** M. Manil-Segalen[1], M. Łuksza[1], J. Kanaan[1], V. Marthiens[2], S.I. Lane[3], K.T. Jones[3], R. Basto[2], M. Verlhac[1]; [1]Center for Interdisciplinary Research in Biology (CIRB), College de France, CNRS, INSERM, PSL Research University, Paris, France, [2]Centre de Recherche, Institut Curie, Paris, France, [3]Centre for Biological Sciences, Faculty of Natural and Environmental Sciences, University of Southampton, Southampton, United Kingdom

B444/P229 **What drives chromosomal instability in high-grade serous ovarian cancer?** N. Tamura[1], N. Shaikh[1], J.R. McGuinness[1], D. Bowtell[2], F. Balkwill[3], E. Petermann[4], S.E. McClelland[1]; [1]Department of Molecular Oncology, Barts Cancer Institute, Queen Mary University of London, London, United Kingdom, [2]Peter MacCallum Cancer Centre, Melbourne, Australia, [3]Centre for Cancer and Inflammation, Barts Cancer Institute, Queen Mary University of London, London, United Kingdom, [4]Institute of Cancer and Genomic Sciences, University of Birmingham, Birmingham, United Kingdom

B445/P230 **Microtubule dynamics and chromosome-associated cohesin counterbalance to determine the rates of cohesion fatigue.** H. Sapkota[1,2], E. Wasiak[1], J. Daum [1], G. Gorbsky[1,2]; [1]Cell Cycle and Cancer Biology, Oklahoma Medical Research Foundation, Oklahoma City, OK, [2] Dept. of Cell Biology, University of Oklahoma Health Sciences Center, Oklahoma City, OK

B446/P231 **Investigating the role of DNA condensation in chromosome segregation.** K.R. Salmon[1], D.A. Compton[1]; [1]Biochemistry and Cell Biology, Geisel School of Medicine at Dartmouth, Hanover, NH

B447/P232 **Investigating the role of Condensins in mitotic chromosome architecture using quantitative super-resolution microscopy.** N. Walther[1], B. Koch[1], M. Kueblbeck[1], Y. Cai[1], M.J. Hossain[1], A.Z. Politi[1], M. Lampe[2], J. Ries[1], J. Ellenberg[1]; [1]Cell Biology Biophysics Unit, European Molecular Biology Laboratory (EMBL), Heidelberg, Germany, [2]Advanced Light Microscopy Facility, European Molecular Biology Laboratory (EMBL), Heidelberg, Germany

B448/P233 **Condensin loading onto DNA reconstituted in vitro.** I.A. Shaltiel[1], S. Bisht[1], Y. Frosi[1,2], C.H. Haering[1]; [1]Cell Biology Biophysics, European Molecular Biology Laboratory, Heidelberg, Germany, [2]p53 Laboratory, A*Star Biomedical Sciences Institute, Singapore, Singapore

B449/P234 **Resolution of mitotic defects induced by carcinogen treatment in cancer and noncancer cells.** R.G. Hartling[1], N.J. Quintyne[1]; [1]Department of Biology, State University of New York at Fredonia, Fredonia, NY

B450/P235 **3D-CLEM reveals that a major portion of mitotic chromosomes is not chromatin.** D.G. Booth[1,2], A. Beckett[3], O. Molina[1], I. Samejima[1], V. Larionov[4], N. Kouprina[4], I. Prior[3], W.C. Earnshaw[1]; [1]Wellcome Trust Center for Cell Biology, University of Edinburgh, Edinburgh, United Kingdom, [2]Center for Regenerative Medicine, University of Edinburgh, Edinburgh, United Kingdom, [3]Translational Medicine, University of Liverpool, Liverpool, United Kingdom, [4]National Cancer Institute, National Institutes of Health, Bethesda, MD

B451/P236 **Contributions of Esco1 and Esco2 to cohesion establishment.** E. Lima Da Silva[1], R. Alomer[1,2], K. Piekarz[1,2], J. Chen[1], S. Rankin[1,2]; [1]Cell Cycle and Cancer Biology, Oklahoma Medical Research Foundation, Oklahoma City, OK, [2]Cell Biology, University of Oklahoma Health Sciences Center, Oklahoma City, OK

B452/P237 **Dynamics of the DNA Damage Response module during mitosis.** P. Pierre-elies[1,2], A. Royou[1,2]; [1]Institut de Biochimie et Génétique Cellulaires, Bordeaux, France, [2]Institut Européen de Chimie et Biologie, Pessac, France

B453/P238 **From transient endoreplication to mitosis: a new route to CIN in p53 positive cells.** S. Chen[1,2], S.E. Yde[2], J.Y. Zhang[2], B.R. Calvi[2], C.E. Walczak[1,2]; [1]Medical Science, Indiana University Bloomington, Bloomington, IN, [2]Biology Department, Indiana University Bloomington, Bloomington, IN

B454/P239 **Structure-Function Analysis of Esco1 and Effects on Cohesion Dynamics.** D.E. Bender[1,2], E.M. Lima Da Silva[2], J. Chen[2], S. Rankin[1,2]; [1]Cell Biology, Oklahoma University Health Science Center, Oklahoma City, OK, [2]Cell Cycle and Cancer Biology, Oklahoma Medical Research Foundation, Oklahoma City, OK

Spindle Assembly 1

B455/P240 **Kinetochore Microtubules indirectly link Chromosomes and Centrosomes in *C. elegans* Mitosis.** S. Redemann[1], J. Baumgart[2], N. Lindow[3], S. Fürthauer[4], E. Nazockdast[4], A. Kratz[3], S. Prohaska[3], J. Brugués[2,5], M.J. Shelley[4], T. Müller-Reichert[1]; [1]Experimental Centre Medical Faculty, TU Dresden, Dresden, Germany, [2]Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, [3]Zuse Institute, Berlin, Germany, [4]The Courant Institute of Mathematical Science, New York, United States, [5]Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany

B456/P241 **Seeking stable equilibrium? The evolution of centrosome and chromosome number in newly formed tetraploid cells.** N.C. Baudoin[1], I. Quintanilla[2], M. Giam Xue Lin[3], D. Cimini[1], G.I. Rancati[3], J. Nicholson[1], K. Soto[1], J. Camps[2]; [1]Department of Biological Sciences and Biocomplexity Institute, Virginia Tech, Blacksburg, VA, [2]Gastrointestinal and Pancreatic Oncology Group, Institut d'Investigacions Biomèdiques August Pi i Sunyer (IDIBAPS), Hospital Clínic de Barcelona, Barcelona, Spain, [3]Institute of Medical Biology, Agency for Science, Technology and Research (ASTAR), Singapore, Singapore

B457/P242 **Monotelic end-on kinetochore attachment is sufficient to impose inter-kinetochore tension.** s. cabello[1], c. reyes[1], s. tournier[1], Y. Gachet[1]; [1]LBCMCP, Centre de Biologie Intégrative (CBI), Université de Toulouse, CNRS, TOULOUSE, France

B458/P243 **Feedback and spatial organization of the Ran pathway by spindle microtubules.** D. Oh[1,2,3], C. Yu[3], D.J. Needleman[1,2,3]; [1]John A. Paulson School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, [2]FAS Center for Systems Biology, Harvard University, Cambridge, MA, [3]Department of Molecular and Cellular Biology, Harvard University, Cambridge, MA

B459/P244 **A decreasing gradient in metaphase centromere tension leads to a graded, multi-level cellular response in mitosis.** S. Mukherjee[1], D.G. Tank[1], Q. Yang[1], M.K. Gardner[1]; [1]Genetics, Cell Biology, and Development, University of Minnesota, Twin Cities, MN

B460/P245 **Collective organization of microtubules by minus end directed motor proteins.** P.J. Foster[1,2], S. Fürthauer[3,4], B. Laderman[2,5], S.C. Ems-McClung[6], C.E. Walczak[6], M.J. Shelley[4,7], D.J. Needleman[1,2,3]; [1]John A. Paulson School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, [2]FAS Center for Systems Biology, Harvard University, Cambridge, MA, [3]Department of Molecular and Cellular Biology, Harvard University, Cambridge, MA, [4]Courant Institute of Mathematical Science, New York University, New York, NY, [5]Department of Physics, Harvard University, Cambridge, MA, [6]Medical Sciences, Indiana University, Bloomington, IN, [7]Center for Computational Biology, Simons Foundation, New York, NY

B461/P246 **The Role of Actin-Microtubule Crosslinker Shortstop in Cell Division.** E.B. Dewey[1], A. Parra[1], C.A. Johnston[1]; [1]Department of Biology, University of New Mexico, Albuquerque, NM

B462/P247 **Germline precursor cells exhibit enhanced spindle assembly checkpoint activity that is dependent on PAR polarity regulators.** A.R. Gerhold[1], P.S. Maddox[2], J. Labbé[1]; [1]Université de Montréal, Institute for Research in Immunology and Cancer, Montréal, QC, [2]Department of Biology, University of North Carolina, Chapel Hill, Chapel Hill, NC

B463/P248 **Investigating mitotic spindle size regulation by importin α.** C.W. Brownlee[1], M.D. Vahey[1], D.A. Fletcher[1], R. Heald[1]; [1]Molecular and Cell Biology, University of California, Berkeley, Berkeley, United States

B464/P249 **Meiotic drive depends on spindle asymmetry induced by cortical proximity.** T. Akera[1], L. Chmatal[1], K. Yang[1], C. Janke[2], R.M. Schultz[1], M.A. Lampson[1]; [1]Biology, University of Pennsylvania, Philadelphia, PA, [2]Signaling, Neurobiology and Cancer, Institut Curie, Orsay, France

B465/P250 **ATP depletion during mitotic arrest induces mitotic slippage, through APC/C^{Cdh1} dependent cyclinB1 degradation.** J. Ahn[1,2,3], J. Lee[1,2,3]; [1]Biochemistry and Molecular Biology, Ajou University, Suwon, Korea, South, [2]Biomedical Sciences, Ajou University, Suwon, Korea, South, [3]Genomic instability Research Center, Ajou University, Suwon, Korea, South

B466/P251 **Kip2p is required for maintenance of normal spindle dynamics and cell cycle progression.** B. Augustine[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

B467/P252 **Tiny Yeast Comet 1 (Tyc1) inhibits both Cdc20 and Cdh1-dependent APC/C activity *in vitro* and interacts directly with APC/C.** H. Chen[1], Y. Chu[1], T. Chen[1], Y. Wu[1], W. Tsai[1], Y. Ding[1], A. Huang[1], L. Wang[1], S.C. Schuyler[1,2]; [1]Department of Biomedical Sciences, College of Medicine, Chang Gung University, Kweishan, Taoyuan, Taiwan, [2]Department of Colorectal Surgery, Chang Gung Memorial Hospital, Kweishan, Taoyuan, Taiwan

B468/P253 **Peptides derived from the Mitotic Arrest-Deficient 2 (Mad2)-binding motif of Cell Division Cycle 20 (Cdc20) disrupt Anaphase-Promoting Complex (APC) enzyme activity.** S.C. Schuyler[1,2], Y. Ding[1], Y. Chu[1], H. Chen[1], T. Chen[1], Y. Wu[1], W. Tsai[1], Y. Liao[1]; [1]Department of Biomedical Sciences, College of Medicine, Chang Gung University, Kweishan, Taoyuan, Taiwan, [2]Department of Colorectal Surgery, Chang Gung Memorial Hospital, Kweishan, Taoyuan, Taiwan

B469/P254 **NDP52 integrates astral microtubule plus-end dynamics to cortical actin filament length control to ensure an accurate spindle orientation.** H. Yu[1,2,3], B. Qin[1,2], X. Yao[1,2,3]; [1]Anhui Key Laboratory of Cellular Dynamics Chemical Biology, Hefei, China, [2]Laboratory for Organelle Dynamics Plasticity Control, University of Science Technology of China School of Life Sciences, Hefei, China, [3]Hefei National Laboratory for Physical Sciences at Nanoscale, Hefei, China

B470/P255 ***C. elegans* male meiotic spindles are distinct from other centrosomal spindles.** G. Fabig[1], J. Brugués[2], D.S. Chu[3], T. Müller-Reichert[1]; [1]Medical Faculty "Carl Gustav Carus", TU Dresden, Dresden, Germany, [2]MPI-CBG, Dresden, Germany, [3]Department of Biology, SFSU, San Francisco, CA

B471/P256 **Tiny Yeast Comet 1 (*TYC1*) encodes a budding yeast protein identified by homology to human p31^{Comet} that induces a microtubule poison sensitivity phenotype when over-expressed.** C. Lin[1], A. Huang[1], L. Wang[1], S.C. Schuyler[1,2]; [1]Department of Biomedical Sciences, College of Medicine, Chang Gung University, Kweishan, Taoyuan City, Taiwan, [2]Department of Colorectal Surgery, Chang Gung Memorial Hospital, Kweishan, Taoyuan, Taiwan

Cancer Therapy 1

B473/P257 **The role of emerin in coupling Wnt/β-catenin signalling to genomic instability in cancer.** P. Ghanbari[1], M. Wheeler[1], A. Stubenvoll[1], T. Braun[1], R. Savai[2]; [1]Dept. Development and Remodelling of the Heart, Max-Planck-Institute for Heart and Lung Research, Bad Nauheim, Germany, [2]Dept. Molecular Mechanisms in Lung Cancer, Max Planck Institute for Heart and Lung Research, Bad Nauheim, Germany

B474/P258 **Effect of hyperlipidemia and application of lovastatin on lung carcinogenesis: an in vitro and in vivo study.** J. Wang[1], C. Wu[1]; [1]Pharmacy, Taipei Medical University, Taipei, BC

B475/P259 **Phosphatidylserine mediated phagocytosis of HeLa by Retinal Pigment Epithelium.** K. Suggs[1], C. Corbo[1], J. Blaize[1]; [1]Biological Sciences, Wagner College, Staten Island, NY

B476/P260 **Targeting of claudin proteins for tumor cell killing.** A. Becker[1], S.C. Hammer[2,3], M. Leskau[1], B.L. Schlingmann[4], A. Ngezahayo[1]; [1]Institute of Biophysics, Leibniz University Hannover, Hannover, Germany, [2]Small Animal Clinic, University of Veterinary Medicine Hannover, Hannover, Germany, [3]Division of Medicine, Hematology Oncology and Palliative Medicine, University of Rostock, Rostock, Germany, [4]Division of Pulmonary, Allergy, Critical Care and Sleep Medicine, Department of Medicine, Emory University, Atlanta, GA

B477/P261 **Depletion of γ-glutamylcyclotransferase inhibits cancer cell growth through cellular senescence induction.** K. Matsumura[1], S. Nakata[1], K. Taniguchi[1], H. Ii[1], E. Ashihara[2], S. Kageyama[3], A. Kawauchi[3], T. Yoshiki[1,3]; [1]Clinical oncology, Kyoto Pharmaceutical University, Kyoto, Japan, [2]Clinical and Translational Physiology, Kyoto Pharmaceutical University, Kyoto, Japan, [3]Urology, Shiga University of Medical Science, Shiga, Japan

B478/P262 **Interleukin-24 promotes tumor cell-specific apoptosis through cAMP-dependent protein kinase (PKA) pathway.** L.E. Persaud[1,2], M. Sauane[1,2]; [1]Biology, Herbert H. Lehman College, City University of New York, Bronx, NY, [2]Biology, The Graduate Center, City University of New York, Bronx, NY

B479/P263 **Inducing tumor cell apoptosis by a small molecule activating Bax.** A.M. Neely[1]; [1]Pharmacology and Toxicology, University of Louisville, Louisville, KY

B480/P264 **A novel peptide that activates the EphA2 receptor and decreases cell migration.** D.S. Alves[1], J.L. Morrell-Falvey[2], F.N. Barrera[1]; [1]BCMB, University of Tennessee, Knoxville, TN, [2]Biological and Nanoscale Systems BioSciences Division, Oak Ridge National Laboratory, Oak Ridge, TN

B481/P265 **Quercetin induces apoptosis in leukemia models, in part by suppressing class I histone deacetylases.** M.C. Alvarez De Prax[1], V. Maso[1], C.O. Torello[1], S.T. Saad[1]; [1]Hemocentro, Unicamp, Campinas, Brazil

B482/P266 **Histone Deacetylase (HDAC) Inhibition Induces IkB Kinase (IKK)-dependent IL-8 Expression in Ovarian Cancer Cells.** H.R. Gatla[1], Y. Zou[1], M.M. Uddin[1], B. Singha[1], A. Vancura[1], I. Vancurova[1]; [1]Biology, St. John's university, New York City, NY

B483/P267 **Bcl3 has a pro-survival and pro-inflammatory function in ovarian cancer cells.** Y. Zou[1], P. Bu[1], H.R. Gatla[1], M.M. Uddin[1], I. Vancurova[1]; [1]Biology, St. John's University, New York City, NY

B484/P268 **Cathepsin S expression is up-regulated by 5-HT7 receptor-dependent serotonin signaling in triple negative human breast cancer cells.** J. Gautam[1], J. Kim[1]; [1]College of Pharmacy, Yeungnam University, Gyeongsan, Korea, South

B485/P269 **Rosehip extracts (*Rosa canina*) prevent African American triple negative breast cancer cell migration and invasion by blocking MMP-1/2/9 expression and activity.** P.D. Cagle[1], P.M. Martin[2]; [1]EES/Biology, NC Agricultural and Technical State University, Greensboro, NC, [2]Biology, NC Agricultural and Technical State University, Greensboro, NC

B486/P270 **AU-1 from Agavaceae plants causes transient increase in p21/Cip1 expression in renal adenocarcinoma ACHN cells in a miR-34-dependent manner.** T. Fujino[1], A. Yokosuka[1], Y. Mimaki[1], M. Hayakawa[1]; [1]School of pharmacy, Tokyo university of pharmacy and life sciences, Hachioji, Japan

B487/P271 **Paclitaxel treatment of MDA-MB-231 breast cancer cells stabilizes cytoplasmic $p27^{Kip1}$ and reduces total intracellular stathmin.** S. Lobert[1], M.E. Graichen[1]; [1]School of Nursing, University of Mississippi Medical Center, Jackson, MS

B488/P272 **Prolonged mitotic arrest induced by Wee1 inhibition sensitized breast cancer cells to paclitaxel.** C.W. Lewis[1], Z. Jin[1], D. Macdonald[1], G.K. Chan[1]; [1]Oncology, University of Alberta, Edmonton, AB

B489/P273 **Proteasome inhibition induces IL_8 expression in triple negative breast cancer cells.** M.M. Uddin[1], H.R. Gatla[1], Y. Zou[1], I. Vancurova[1]; [1]Department of Biological Sciences, St. John's University, New York, NY

B500/P274 **BJ-1113, an aminopyridinol derivative, induces pancreatic cancer cell apoptosis through PI3K inhibition.** Y. Wang[1], Y. Lee[1], J. Gautam[1], M. Park[1], B. Jeong[1], J. Kim[1]; [1]College of Pharmacy, Yeungnam University, Gyeongsan, Korea, South

B501/P275 **Targeting endoplasmic reticulum-resident proteins for the treatment of B cell cancer.** C.A. Tang[1], J. Del Valle[2], C.A. Hu[1]; [1]The Wistar Institute, Philadelphia, PA, [2]Department of Chemistry, The University of South Florida, Tampa, FL

B502/P276 **Effects of *Ganoderma lucidum* extract (GLE) in triple-negative metastatic breast cancer migration and protein expression.** G. Ortiz-Soto[1], A. Acevedo-Díaz[2], T.J. Rios[1], Y. Loperena[1], L.A. Cubano[3], M.M. Martinez-Montemayor[1]; [1]Department of Biochemistry, Universidad Central del Caribe-School of Medicine, Bayamon, PR, [2]University Gardens High School, San Juan, PR, [3]Department of Anatomy and Cell Biology, Universidad Central del Caribe-School of Medicine, Bayamon, PR

B503/P277 **Microdose-induced drug-DNA adducts as biomarkers of chemotherapy resistance in bladder cancer.** M. Zimmermann[1,2], S. Wang[1], T. Lin[1], H. Zhang[1], M. Malfatti[3], G. Cimino[2], J. Keck[4], R. deVere White[5], K. Turteltaub[3], C. Pan[1,2,6], P.T. Henderson[1,2]; [1]Department of Internal Medicine, Division of Hematology and Oncology, University of California Davis, Sacramento, CA, [2]Accelerated Medical Diagnostics Incorporated, Berkeley, CA, [3]Biosciences and Biotechnology Division, Physical and Life Sciences Directorate, Lawrence Livermore National Laboratory, Livermore, CA, [4]The Jackson Laboratory, Bar Harbor, ME, [5]Department of Urology, University of California Davis, Sacramento, CA, [6]VA Northern California Healthcare System, Mather, CA

B504/P278 **Small-molecule destabilizing both β-catenin and Ras via binding of the Axin-RGS domain suppresses colorectal cancer.** W. Ryu[1,2], P. Cha[1,2], Y. Cho[1,2], S. Lee[1,2], W. Jeong[1,2], K. Choi[1,2]; [1]Translational Research Center for Protein Function Control, Yonsei university, Seoul, Korea, South, [2]Biotechnology, Yonsei university, Seoul, Korea, South

B505/P279 **Screening of Novel SHetA2 Analogs on Human Breast and Prostate Cancer Cells.** S.M. Francis[1], H. Zou[2], S. Liu[1], M.C. Louie[1,2], V. Rajagopalan[1]; [1]College of Pharmacy, Touro University California, Vallejo, CA, [2]Department of Natural Sciences and Mathematics, Dominican University of California, San Rafael, CA

B506/P280 **Modified Panax ginseng extract regulates autophagy by AMPK signaling in A549 human lung cancer cells.** J. Eunbi[1], S. Kang[1], I. Jang[1]; [1]Biocnovergence, Korea Basic Science Institute, Daejeon, Korea, South

B507/P281 **3,4,5'-Trismethoxybenzophenone exhibits antiviral and anticancer properties in vitro.** C.J. Patton[1], H. Kotturi[1]; [1]Biology, University of Central Oklahoma, Edmond, OK

B508/P282 **Analysing the Cytotoxic Effects of Oleuropein on A549 Human Lung Adenocarcinoma Cells.** E. COMLEKCI[1], H.M. Kutlu[1], D. Vejselova[1]; [1]Biology, Anadolu University, Eskisehir, Turkey

B509/P283 **RAI14 regulates proliferation/survival and migration of mutant KRas pancreatic cancer cells on fibronectin substrates.** J. Hong[1], Y. Adamian[1], K. Bhakta[1], M. Hoover[1], J.A. Kelber[1]; [1]Biology, California State University Northridge, Northridge, CA

B510/P284 **DNA damage response in neural cells following exposure to low and high LET radiation.** H. Wang[1], P. Saganti[1]; [1]Texas AM Chancellor's Research Initiative, Radiation Institute for Science and Engineering, Prairie View AM University, Prairie View, TX

B511/P285 **H10 peptide, a promising therapeutic and diagnosis tool to target Anterior Gradient protein 2 (AGR2) in cancer.** C. Garri[1], S. Howell[2], A. Ghaffarizadeh[1], E. Juarez[1], P. Macklin[1], D. Agus[1], K. Kani[1], R. Roberts[2]; [1]Lawrence J. Ellison Institute for Transformative Medicine, University of Southern California, Los Angeles, CA, [2]Department of Chemical Engineering, University of Southern California, Los Angeles, CA

Oncogenes and Tumor Suppressors 1

B512/P286 **The Y-located TSPY and its X-homologue are co-activator and co-repressor respectively for androgen receptor functions in human cancers and diseases.** Y.C. Lau[1,2], Y. Li[1,2], T. Kido[1,2]; [1]Medicine, University of California, San Francisco, San Francisco, CA, [2]VA Medical Center, San Francisco, CA

B513/P287 **Examining of Morphological Changes on B13 Treated Human Lung Adenocarcinoma Cells.** H.M. Kutlu[1], D. Vejselova[1]; [1]Biology, Anadolu University, Eskisehir, Turkey

B514/P288 **Identification of RAN binding protein 6 as EGFR feedback regulator and candidate tumor suppressor.** W. Hsieh[1,2], B. Oldrini[2,3], H. Erdjument-Bromage[4], P. Codega[2], I. Vivanco[5], D. Rohle[2], C. Campos[2], C.M. Bielski[6], B.S. Taylor[2,6,7], P. Tempst[4], M. Squatrito[3], I.K. Mellinghoff[1,2,8]; [1]Pharmacology, Weill Cornell Graduate School of Medical Sciences, New York, NY, [2]Human Oncology and Pathogenesis Program, Memorial Sloan Kettering Cancer Center, New York, NY, [3]Seve Ballesteros Foundation Brain Tumor Group, Spanish National Cancer Research Centre, Madrid, Spain, [4]Molecular Biology Program, Memorial Sloan Kettering Cancer Center, New York, NY, [5]Molecular Addiction Team, Division of Cancer Therapeutics, The Institute of Cancer Research, London, United Kingdom, [6]Epidemiology and

Biostatistics, Memorial Sloan Kettering Cancer Center, New York, NY, [7]Marie-Josee and Henry R. Kravis Center for Molecular Oncology, Memorial Sloan Kettering Cancer Center, New York, NY, [8]Neurology, Memorial Sloan Kettering Cancer Center, New York, NY

B515/P289 **Role of c-myc in the regulation of MAP kinase signaling and apoptosis.** C.T. Wales[1], R.A. Gristock[1], M.J. Jones[1], A.T. Jacobs[1]; [1]Pharmaceutical Sciences, University of Hawaii at Hilo, Hilo, HI

B516/P290 **Investigating Novel Roles for FOXO factors in *pten*-null Cancer Cells.** E. Martinez[1], V. Fanniel[1], L. Sanchez[1], N. Vazquez[1], R. Marks[1], A. Salinas[1], L. Sanchez[1], J. Hirschmann[1], A. Lopez[1], W. Innis[1], M.E. Keniry[1]; [1]Biology, University of Texas Rio Grande Valley, Edinburg, TX

B517/P291 **Characterization of the expression and function of LOX-1 (OLR-1) in human glioblastomas.** F.S. Rodriguez Vásquez[1], F. Espinoza[1], E. Peña[1], F. Gutierrez[1], N. Gutiérrez[1], M. González[1], J.R. Toledo[1]; [1]Pathophysiology, Universidad de Concepción, Concepción, Chile

B518/P292 **Aryl Hydrocarbon Receptor: an essential cog in Myc-driven cancers.** S. Ramanathan[1], N. Borenstein-Auerbach[1], Y. Hao[1], M. Lafita Navarro[1], N. Venkateswaran[1], M. Conacci-Sorrell[1]; [1]Cell Biology Department, UT Southwestern Medical Center, Dallas, TX

B519/P293 **Cyclin G2 promotes cell cycle arrest in breast cancer cells responding to fulvestrant and metformin and correlates with patient survival.** M. Zimmermann[1,2], A. Arachchige Don[2], M. Donaldson[1], T. Patriarchi[1], M.C. Horne[1,2]; [1]Pharmacology, University of California Davis, Davis, CA, [2]Pharmacology, University of Iowa, Iowa City, IA

B520/P294 **Mitochondrial Sirt3 supports cell proliferation by regulating glutamine-dependent oxidation in renal cell carcinoma.** E. Koh[1], J. Choi[1], Y. Lee[1], K. Kim[1]; [1]Department of Biochemistry and Molecular Biology, Institute of Genetic Science, Integrated Genomic Research Center for Metabolic Regulation, Yonsei University College of Medicine, Seoul, Korea, South

B521/P295 **VER155008 enhances lung cancer cells to TRAIL-induced cell death by CHOP-mediated DR5 and Redd1 upregulation.** H. Jin[1], S. Hong[2,3], I. Park[3], J. Lee[1]; [1]KIRAMS Radiation Biobank, Korea Institute of Radiological and Medical Sciences, Seoul, Korea, South, [2]Department of Translational Research, Korea Institute of Radiological and Medical Sciences, Seoul, Korea, South, [3]Division of Basic Radiation Bioscience, Korea Institute of Radiological and Medical Sciences, Seoul, Korea, South

B522/P296 **Modeling synovial sarcoma metastasis in the mouse: PI3'-lipid signaling and inflammation.** J.J. Barrott[1], A.J. Lazar[2], K.B. Jones[1]; [1]Orthopaedics and Oncological Science, Huntsman Cancer Institute, Salt Lake City, UT, [2]Pathology and Translational Molecular Pathology, MD Anderson, Houston, TX

B523/P297 **Impact of the corticosteroid, clobetasol, on Subclones of Vulvar carcinoma cell line, UMSCV-6.** M. Li[1], C.L. Okorie[1], J.E. Lewis[1]; [1]Biology, State University of New York at Geneseo, Geneseo, NY

B524/P298 **Clobetasol treatment of vulvar carcinoma cell lines, UMSCV-2 and UMSCV-4 show evidence of entering into quiescence as reflected by decreased cellular metabolism.** V. Mehta[1], M.B. Stevens[1], J.E. Lewis[1]; [1]Biology, State University of New York at Geneseo, Geneseo, NY

B525/P299 **Ha-Ras-induced cell softening and transformation requires caveolin-1 down-regulation and augmented secretion of Wnt5a-containing exosome.** M. Tang[1], H. Lin[1], H. Lin[1]; [1]Physiology, National Cheng Kung University, Tainan, Taiwan

B526/P300 **Interferon-induced transmembrane protein 1 (IFITM1) is required for the progression of colorectal cancer.** H. Kwon[1]; [1]SIMS, Soonchunhyang University, Choeonan, Korea, South

B527/P301 **Identification of Novel Parafibromin Protein Partners Using A Proteomic Approach.** P.R. Adikaram[1], J. Zhang[1], M. Pandey[1], W.F. Simonds[1]; [1]NIDDK, National Institutes of Health, Bethesda, MD

B528/P302 **A Drosophila model of HPV E6-induced malignancy reveals essential roles for Magi and the insulin receptor.** M. Padash Barmchi[1], M. Gilbert[2], M. Thomas[3], L. Banks[3], B. Zhang[1], V.J. Auld[2]; [1]Biological Sciences, University of Missouri, Columbia, MO, [2]Department of Zoology, University of British Columbia, Vancouver, BC, [3]Virology, International Centre for Genetic Engineering and Biotechnology, Trieste, Italy

B529/P303 **A novel role for Plk4: heterozygosity in mice acts as a genetic predisposition to hematological malignancy.** B.C. LaBute[1], D. Owen[1], J.W. Hudson[1]; [1]Biological Sciences, University of Windsor, Windsor, ON

B530/P304 **Differential Activation of P53 Downstream Genes in Malignant Melanoma Cells with Different Genetic Context.** H. Sun[1], C. Yu[1], Y. Yang[1]; [1]Biological Sciences, Emporia State University, Emporia, KS

Invasion and Metastasis

B531/P305 **Can we use cell shape as biomarker of cancer cell invasiveness?** E. Alizadeh[1], S.M. Lyons[2], K.A. Schuamberg[2], J. Mannheimer[2], J. Castle[3], Z.R. Bodmer[1,2], A. Prasad[1,2]; [1]Chemical and Biological Engineering, Colorado State University, Fort Collins, CO, [2]School of Biomedical Engineering, Colorado State University, Fort Collins, CO, [3]Department of Biology, Colorado State University, Fort Collins, CO

B532/P306 **Studying shape changes of cancer cell lines with different degrees of invasiveness on hydrophobic and hydrophilic substrates using multivariate methods.** J.I. Foss[1,2], E. Alizadeh[3], J. Castle[4], A. Prasad[1,3]; [1]Biomedical Engineering Department, Colorado State University, Fort Collins, CO, [2]Mechanical Engineering Department, Colorado State University, Fort Collins, CO, [3]Chemical and Biological Engineering Department, Colorado State University, Fort Collins, CO, [4]Department of Biology, Colorado State University, Fort Collins, CO

B533/P307 **Identification of A Polarized Ex(o)citing Machinery for Cancer Invasion: Lessons from Yeast to Man.** C.C. Rohena[1,2,3], N.N. Sun[1,2], N. Aznar[1,2], P. Ghosh[1,2]; [1]Cell and Molecular Medicine, University of California San Diego, La Jolla, CA, [2]Medicine, University of California San Diego, La Jolla, CA, [3]Moores Cancer Center, University of California San Diego, La Jolla, CA

B534/P308 **V-ATPase-mediated Activation of Cellular and Secreted Cathepsins: Exploring Their Role in Breast Cancer Metastasis.** A.M. Hinton[1]; [1]Biology, Denison University, Granville, OH

B535/P309 **A novel MT1-MMP cytoplasmic binding protein that interferes with invadopodia formation and function to attenuate matrix remodeling and tumor cell invasion.** L. Qiang[1], H. Cao[2,3], J. Chen[2,3], G. Razidlo[2,3], M.A. McNiven[2,3]; [1]Biochemistry and Molecular Biology Program, Mayo Graduate School, Rochester, MN, [2]Center for Digestive Diseases, Mayo Clinic, Rochester, MN, [3]Department of Biochemistry and Molecular Biology, Mayo Clinic, Rochester, MN

B536/P310 **Characterizing the roles of Rab40b in invadopodia dynamics.** E.S. Linklater[1], A. Jacob[1], R. Prekeris[1]; [1]Cell and Developmental Biology, University of Colorado - Anschutz Medical Campus, Aurora, CO

B537/P311 **Cellular polarization and motility during invasion is driven by a combination of LKB1 farnesylation and kinase activity.** S. Wilkinson[1,2], A.I. Marcus[2]; [1]Cancer Biology, Emory University, Atlanta, GA, [2]Hematology/Medical Oncology, Emory University, Atlanta, GA

B538/P312 **Defining the invasive biology of clinically relevant LKB1 mutations in lung cancer.** R. Commander[1], Y. Hou[2], J. Konen[1], S. Wilkinson[1], M. Gilbert-Ross[3], L. Cooper[2], A.I. Marcus[3]; [1]Cancer Biology, Emory University, Atlanta, GA, [2]Biomedical Informatics, Emory University, Atlanta, GA, [3]Hematology and Medical Oncology, Emory University, Atlanta, GA

B539/P313 **Beyond EMT: vimentin function in lung cancer metastasis.** A.M. Salgueiro[1], L.S. Havel[1], J. Shupe[1], A.E. Koyen[1], H.E. Grossniklaus[1], G. Sica[1], M. Gilbert-Ross[1], A.I. Marcus[1]; [1]Hematology and Medical Oncology, Emory University, Atlanta, GA

B540/P314 **Contributions of LIM Kinase 1 and 2 to invasive motility in glioblastoma.** J. Chen[1], B. Ananthanarayanan[1], S. Kumar[1,2]; [1]Department of Bioengineering, UC Berkeley, Berkeley, CA, [2]Department of Chemical and Biomolecular Engineering, UC Berkeley, Berkeley, CA

B541/P315 **Netrin-1 induced activation of Notch signaling regulates the motility of glioblastoma cells.** I. Ylivinkka[1,2], Y. Hu[1], H. Sihto[1], O. Tynninen[2,3], P. Chen[4], S. Hautaniemi[4], T. Nyman[5], P. Laakkonen[1], J.K. Keski-Oja[1,2]; [1]Translational Cancer Biology Research Program, University of Helsinki, Helsinki, Finland, [2]The Hospital District of Helsinki and Uusimaa, Helsinki, Finland, [3]Department of Pathology, Haartman Institute, University of Helsinki and Huslab, Helsinki, Finland, [4]Institute of Biomedicine and Genome-Scale Biology Research Program, University of Helsinki, Helsinki, Finland, [5]Research Program in Structural Biology and Biophysics, Institute of Biotechnology, University of Helsinki, Helsinki, Finland

B542/P316 **Functional assessment of Von Willebrand Factor expression by cancer cells of non-endothelial origin.** A. Mojiri[1], K. Stoletov[1], L. Willetts[1], M. Lorenzana Carrillo[1], R. Godbout[1], P. Jurasz[1], C. Sergi[1], D. Eisenstat[1], J. Lewis[1], N. Jahroudi[1]; [1]Medicine, University of Alberta, Edmonton, AB

B543/P317 **AMPKα2 enhances cell adhesion and migration properties in breast cancer cell lines.** M.M. Fox[1]; [1]Biology, Wingate University, Wingate, NC

B544/P318 **The role of the ARF GEF protein IQSEC1 splicing in prostate cancer invasion.** M. Nacke[1,2], E. Sandilands[1,2], A. Roman-Fernandez[1,2], D.M. Bryant[1,2]; [1]Beatson Institute for Cancer Research, Glasgow, United Kingdom, [2]University of Glasgow, Glasgow, United Kingdom

B545/P319 **Sustained cell blebbing for entotic cell-in-cell invasion requires dynamic MRTF-dependent Ezrin regulation.** L. Soto[1], M. Holst[1], C. Baarlink[1], R. Grosse[1]; [1]Pharmacology, University of Marburg, Marburg, Germany

B546/P320 **Basal extrusion of KRas^{G12V} cells is sufficient to drive their invasion from zebrafish epidermis.** G. Slattum[1,2], J. Fadul[1], D. Hedeen[1], A. Gardner[1], N. Redd[1], G.T. Eisenhoffer[1,3], J. Rosenblatt[1]; [1]Huntsman Cancer Institute, University of Utah, Salt Lake City, UT, [2]Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany, [3]Department of Genetics, MD Anderson Cancer Center, Houston, TX

B547/P321 **The carbonic anhydrase IX interactome reveals a critical role in invadopodia/ matrix metalloprotease 14-mediated tumor cell invasion.** M. Swayampakula[1], P.C. McDonald[1], M. Vallejo[1,2], É. Coyaud[3], S.C. Chafe[1], A. Westerback[1], J. Shankar[4], E.M. Laurent[3], Y. Lou[1], K.L. Bennewith[1], C.T. Supuran[5], I.R. Nabi[4], B. Raught[3], S. Dedhar[1,2]; [1]Department of Integrative Oncology, BC Cancer Research Centre, Vancouver, BC, [2]Department of Biochemistry and Molecular Biology, University of British Columbia, Vancouver, BC, [3]Princess Margaret Cancer Centre, Toronto, ON, [4]Department of Cellular and Physiological Sciences, University of British Columbia, Vancouver, BC, [5]Laboratorio di Chimica Bioinorganica, Universita degli Studi di Firenze, Florence, Italy

B548/P322 **GALA a new pathway regulating protein glycosylation and tumor development.** F.A. Bard[1]; [1]IMCB, A*STAR, Singapore, Singapore

Tumor Microenvironment 1

B549/P323 **Cellular Neighborhood Influences the Equilibria of Phenotypic States in a Heterogeneous Population.** C. Krishnamurthy[1], A. Paulson[2], Z.J. Gartner[1]; [1]Pharmaceutical Chemistry, University of California, San Francisco, San Francisco, CA, [2]Biomedical Sciences Program, University of California, San Francisco, San Francisco, CA

B550/P324 **Schwann cells activated by cancer cells induce cancer cell invasion.** S... Deborde[1], T.A. Omelchenko[2], A. Lyubchik[1], Y. Zhou[1], S. He[1], W. McNamara[1], N. Chernichenko[1], S. Lee[1], C. Chen[1], R. Bakst[1], E. Vakiani[1], S. He[1], A. Hall[2], R.J. Wong[1]; [1]Surgery, Memorial Sloan Kettering Cancer Center, New York, NY, [2]Cell Biology, Memorial Sloan Kettering Cancer Center, New York, NY

B551/P325 **WDR4-driven PML destruction fosters immunosuppressive and pro-metastatic lung tumor microenvironment.** Y. Wang[1], R. Chen[1]; [1]Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan

B552/P326 **Macrophage-dependent cytoplasmic transfer drives melanoma metastasis *in vivo*.** M. Roh-Johnson[1], A.N. Shah[1], R.E. Hernandez[2], C.B. Moens[1]; [1]Basic Sciences, Fred Hutchinson Cancer Research Center, Seattle, WA, [2]Pediatric Infectious Disease, Seattle Children's Hospital, Seattle, WA

B553/P327 **Macrophage vitamin-D receptor contributes to host defense against the growth of prostate cancer.** S. Yasmin-Karim[1], Y. Lee[2], W. Ngwa[1]; [1]Radiation Oncology, Harvard Medical School, Boston, MA, [2]Department of Urology, University of Rochester, Rochester, NY

B554/P328 **Suppression of ELK3 disturbs expression of cytokines related to the lymphangiogenesis in MDA-MB-231.** N. Oh[1], K. Park[1]; [1]Biomedical Science, Cha University, Seong-Nam si, Korea, South

B555/P329 **The expression of ELK3 in the lymphatic endothelial cells is associated with the metastasis of breast cancer.** J. Park[1], K. Park[1]; [1]Biomedical Science, Cha University, SeongNam Si, Korea, South

B556/P330 **Transcriptional complex composed of ER(α), GATA3, FOXA1 and Ell3 regulates IL-20 expression in breast cancer cells.** J. Lee[1], K. Park[1]; [1]Biomedical Science, CHA University, Sung-Nam si, Korea, South

B557/P331 **NF-κB signaling regulates cell-autonomous regulation of CXCL10 in breast cancer 4T1 cells.** W.J. Jin[1], B. Kim[1], H. Kim[1], J. Kim[2], Z.H. Lee[1]; [1]Cell and Developmental Biology, Seoul National University, School of Dentistry, Seoul, Korea, [2]Pediatric Dentistry, Seoul National University, School of Dentistry, Seoul, Korea

B558/P332 **An integrated platform for real-time dynamic culturing and analysis of hypoxia with single cell resolution.** A.J. Cappione[1]; [1]RD - Applications, MilliporeSigma, Danvers, MA

B559/P333 **Hypoxia and pressure induce prostate androgen receptor (AR) variant expression and contribute to development of castration-resistant metastatic prostate cancer.** Y. Li[1], B. Adams[1], T. Chow[1], L. Cassereau[1], B. Downey[1], J. Lim[1]; [1]Xcell Biosciences Inc., San Francisco, CA

B560/P334 **Mechanisms of transcriptional regulation under oxidative stress, a job for the nuclear structural protein NuMA.** S. Chittiboyina[1], S. Jayaraman[1], P.C. Abad[1], K.B. Hodges[1], J. Galan[2], W.A. Tao[2], S.A. Lelievre[1]; [1]Department of Basic Medical Sciences, Purdue University, West Lafayette, IN, [2]Department of Biochemistry, Purdue University, West Lafayette, IN

B561/P335 **Metformin enhanced chemoresistance of human malignant mesothelioma cells cultured in glucose deprived media.** S. Hwang[1], Y. Kim[1]; [1]Clinical pathology, Seoul national university, Seoul, Korea, South

B562/P336 **The role of TSAP6 in exosome secretion in ovarian carcinoma.** E.C. Broner[1], C.G. Trope[2], B. Davidson[2,3], T. Tavor Re'em [4], R. Reich[1]; [1]Institute of Drug Research, The Hebrew University of Jerusalem, Jerusalem, Israel, [2]The Medical Faculty, University of Oslo, Oslo, Norway, [3]Department of Pathology, Norwegian Radium Hospital, Oslo, Norway, [4]Pharmaceutical Engineering, Azrieli – College of Engineering, Jerusalem, Israel

B563/P337 **Exosomal NM23 Mediates Purinergic Regulation of Breast Cancer Angiogenesis.** S. Nordmeier[1], S. Duan[1], I.L. Buxton[1]; [1]Pharmacology, University of Nevada, Reno School of Medicine, Reno, NV

B564/P338 **Non coding RNA expression in ovarian carcinoma.** N. Filippov-Levi[1], Y. Smith[2], C.G. Trope[3], B. Davidson[3,4], R. Reich[1]; [1]Institute of Drug Research, The Hebrew University of Jerusalem, Jerusalem, Israel, [2]Genomic Data Analysis Unit, The Hebrew University of Jerusalem, Jerusalem, Israel, [3]The Medical Faculty, University of Oslo, Oslo, Norway, [4]Department of Pathology, Norwegian Radium Hospital, Oslo, Norway

B565/P339 **Specific exosome subtypes are generated in different endosomal compartments and selectively regulated by stress sensor mTORC1.** S. Fan[1], S.M. Perera[1], B. Kroeger[1], C. Alves[1], I. Stefana[1], J.F. Morris[1], C. Wilson[1], A.L. Harris[2], D. Goberahan[1]; [1]Department of Physiology, Anatomy and Genetics, Oxford University, Oxford, United Kingdom, [2]The Weatherall Institute of Molecular Medicine, Oxford University, Oxford, United Kingdom

B566/P340 **Exploring the role of microenvironmental fatty acids in prostate cancer metastasis.** W.A. Hofmann[1], I.V. Maly[1]; [1]Physiology and Biophysics, University at Buffalo-SUNY, Buffalo, NY

B567/P341 **The Microfluidic Intravital Window – an enabling technology for stable in vivo imaging and tumor microenvironment control.** L. Butt[1], L. Sfakis[1], M. Strohmayer[1], T. Masiello[1], A. Dhall[1], M. Hemachandra[1], S. Voiculescu[2], J. Pastoriza[2], Y. Wang[3,4,5], D. Entenberg[3,4,5], J.S. Condeelis[3,4,5], J. Castracane[1]; [1]Nanobioscience, SUNY Polytechnic Institute, Albany, NY, [2]5Department of Surgery, Albert Einstein College of Medicine, Bronx, NY, [3]Department of Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, [4]Integrated Imaging Program, Albert Einstein College of Medicine, Bronx, NY, [5]Gruss Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY

Regulatory and Non-Coding RNAs

B900/P342 **The bidirectional promoter of CatSper1 regulates a new lncRNA.** S.E. Jimenez[1], J. Hernandez[1], N.A. Oviedo[2]; [1]Genetics and Molecular Biology, Cinvestav, Mexico City, Mexico, [2]Unidad de Investigación Médica en Inmunología e Infectologia, Instituto Mexicano del Seguro Social (IMSS), Mexico City, Mexico

B901/P343 **Probing the Role of a Highly Expressed Long Non-Coding RNA in Hepatocellular Carcinoma.** A.T. Yu[1,2], J.H. Bergmann[1], C. Berasain[3], F. Rigo[4], D.L. Spector[1,2]; [1]Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, [2]Molecular Genetics Microbiology, Stony Brook University, Stony Brook, NY, [3]Gene Therapy and Hepatology, University of Navarra, Pamplona, Spain, [4]Ionis Pharmaceuticals, Carlsbad, CA

B902/P344 **microRNA regulation of Kupffer cell activation during alcoholic liver injury.** K. Mcdaniel[1,2], H.L. Francis[1,2], S.S. Glaser[1,2], G. Alpini[1,2], F. Meng[1,2]; [1]Central Texas Veteran Healthcare System, Temple, TX, [2]Digestive Disease Research Center, Baylor Scott White Healthcare, Texas AM HSC College of Medicine, Temple, TX

B903/P345 **MicroRNA changes throughout the maternal to zygotic transition in bovine *in vitro* fertilized embryos.** J.M. Cuthbert[1], K.L. White[1,2], Q. Meng[1], A.D. Benninghoff[1,2]; [1]Animal Dairy and Veterinary Sciences, Utah State University, Logan, UT, [2]School of Veterinary Medicine, Utah State University, Logan, UT

B904/P346 **Vascular Epigenetics by Regulatory Noncoding RNA [Angiotropin & microRNA]: Epigraphic Structure Relations in Angio- and Arteriogenesis Factors Wake up Genomic "Sleeping Beauty" [Dornroeschen].** J.H. Wissler[1], D.S. Dohle[2], E. Logemann[1]; [1]ARCONS Inst. Applied Research Didactics POB1327, 61231 Bad Nauheim jhw@arcons-research.de, Germany, [2]Clinics for Thoracic- and Cardiovascular Surgery, Room 2-86, Universitätsklinikum Westdeutsches Herzzentrum, D- 45147 Essen, Hufelandstr.55, Germany

B905/P347 **Investigation of MicroRNA Expression Profiles in the Susceptible Population to In-stent Restenosis.** C. Chen[1,2], C. Wu[1]; [1]College of Pharmacy, Taipei Medical University, Taipei, Taiwan, [2]Department of Pharmacy, Taipei Medical University Hospital, Taipei, Taiwan

B906/P348 **An unbiased shRNA-based genetic screen reveals disease mechanisms associated with GGGGCC expression and potential overlap with TDP-43.** L.D. Goodman[1], Y. Zhu[2], M. Lan[2], D.P. Cerza[2], N.M. Bonini[2]; [1]Neuroscience Graduate Group, University of Pennsylvania, Philadelphia, PA, [2]Department of Biology, University of Pennsylvania, Philadelphia, PA

B907/P349 **Loss of yeast Npl3 results in significantly higher TERRA levels in telomerase-null cells.** M. Tingey[1], B. Amos[1], A. Sweetman[1], J.K. Jones[1], J.Y. Lee-Soety[1]; [1]Biology, Saint Joseph's University, Philadelphia, PA

B908/P350 **Transgenerational gene silencing by extracellular RNA.** A.M. Jose[1]; [1]Cell Biology and Molecular Genetics, University of Maryland, College Park, MD

B909/P351 **Determination of the HTLV-1 pro-pol frameshift site RNA secondary structure.** E.A. Finke[1], K.D. Mouzakis[1]; [1]Chemistry, Fort Lewis College, Durango, CO

B910/P352 **The ASBEL-TCF3 complex is required for the tumorigenicity of colorectal cancer cells.** K. Taniue[1], Y. Takeda[1], T. Akiyama[1]; [1]Laboratory of Molecular and Genetic Information, Institute of Molecular and Cellular Biosciences, The University of Tokyo, Tokyo, Japan

B911/P353 **Investigating the role of centromeric transcription in the maintenance of human centromeres.** M.G. Olson[1], D.M. Sturgill[1], D. Wangsa[2], T. Ried[2], D. Quenet[1,3], Y. Dalal[1]; [1]Laboratory of Receptor Biology and Gene Expression, National Cancer Institute, Bethesda, MD, [2]Genetics Branch, National Cancer Institute, Bethesda, MD, [3]Department of Medicine, University of Vermont, Burlington, VT

B912/P354 **A broad role for YBX1 in defining the small non-coding RNA composition of extracellular vesicles.** M.J. Shurtleff[1,2], Y. Qin[3], J. Yao[3], M.M. Temoche-Diaz[1,4], A. Lambowitz[3], R.W. Schekman[1,2]; [1]Howard Hughes Medical Institute, Berkeley, CA, [2]Molecular and Cellular Biology, UC Berkeley, Berkeley, CA, [3]Institute for Cellular and Molecular Biology, University of Texas, Austin, TX, [4]Plant and Microbial Biology, UC Berkeley, Berkeley, CA

B913/P355 **Role of microRNAs in Bone Morphogenetic Protein-Induced Dendritic Growth in Primary Rat Sympathetic Neurons.** K. Pravoverov[1], P.J. Lein[2], V. Chandrasekaran[1]; [1]Biology, Saint Mary's College of CA, Moraga, CA, [2]Molecular Biosciences, University of California at Davis, Davis, CA

RNA Localization, Transport, Stability, and Modification

B914/P356 **Quantitative image analysis of mRNA-mitochondrial distance in budding yeast reveals the mechanism of co-translational protein import into mitochondria.** T. Tsuboi[1], M. Viana[1], E. Tutucci[2], R.H. Singer[2], S.M. Rafelski[1]; [1]Department of Developmental Cell Biology, University of California, Irvine, Irvine, CA, [2]Department of Anatomy Structural Biology, Albert Einstein College of Medicine, Bronx, NY

B915/P357 **mRNA decay is regulated via the spatial sequestration of the conserved 5´-3´ exoribonuclease Xrn1 at a specific microdomain of the yeast plasma membrane.** K. Vaškovičová[1], T. Awadová[1], M. Opekarová[1], P. Veselá[1], M. Balážová[2], J. Malinsky[1]; [1]Microscopy Unit, Institute of Experimental Medicine CAS, Prague, Czech Republic, [2]Department of Membrane Biochemistry, Institute of Animal Biochemistry and Genetics SAS, Ivanka pri Dunaji, Slovakia

B916/P358 **The research progress of RNA m6A modification.** C. Wan[1], B. Peng[1]; [1]School of Life Sciences and Technology, Tongji University, Shanghai, China

B917/P359 **The effects of Dsk1 and Kic1 protein kinases on poly(A)-binding protein in mRNA export.** M. Tomy[1], Z. Tang[1]; [1]W.M. Keck Science Department, Claremont McKenna, Pitzer, and Scripps Colleges, Claremont, CA

B918/P360 **Spatial control of translational repression and polarized cell growth.** I. Nuñez[1], M. Rodriguez Pino[1], C. Chen[1], F. Verde[1]; [1]Molecular and Cellular Pharmacology, University of Miami Miller School of Medicine, Miami, FL

B919/P361 **Coilp1, a pseudogene-encoded protein, contributes to the biogenesis of regulatory RNPs.** A.R. Poole[1], M.D. Hebert[1]; [1]Biochemistry, University of Mississippi Medical Center, Jackson, MS

B920/P362 **Spatial regulation of clock associated mRNA in *Neurospora crassa*.** B.M. Bartholomai[1], A.S. Gladfelter [2], J.J. Loros[3], J.C. Dunlap[1]; [1]Department of Molecular and Systems Biology, Geisel School of Medicine at Dartmouth, Hanover, NH, [2]Department of Biology, University of North Carolina, Chapel Hill, NC, [3]Department of Biochemistry and Cell Biology, Geisel School of Medicine at Dartmouth, Hanover, NH

The Nuclear Envelope and Nuclear Pore Complexes 1

B922/P363 **The impact of myonuclei in neuromuscular junction development.** M. Perillo[1], J.P. Forero[1], E.S. Folker[1]; [1]Biology, Boston College, Boston, MA

B923/P364 **PKC-mediated phosphorylation of nuclear lamins at a single serine residue influences nuclear size.** L.J. Edens[1], D.L. Levy[1]; [1]Molecular Biology, University of Wyoming, Laramie, WY

B924/P365 **3D modeling of the nucleoplasmic reticulum (NR) in mouse embryonic stem (ES) cells.** K. Yi[1], F. Guo[1], C. Zhao[1], M. McClain[1], T. Parmely[1]; [1]EM core, Stowers Institute for Medical Research, Kansas City, MO

B925/P366 **Phosphoinositides and their enzymes regulate interactions between nuclear envelope, cytoskeleton and chromatin.** L.L. Fabian[1], J.A. Brill[1,2]; [1]Cell Biology, Hospital for Sick Children, Toronto, ON, [2]Molecular Genetics, University of Toronto, Toronto, ON

B926/P367 **Interactions between SUN and KASH proteins in vivo during nuclear migration, nuclear anchorage, and the developmental switch between moving and stationary nuclei.** N. Cain[1], D.A. Starr[1]; [1]Molecular and Cellular Biology, University of California, Davis, Davis, CA

B927/P368 **A Novel KASH-LESS Variant of Nesprin1 Forms Long Filaments that Associate with the Rootletin Network of Mouse Photoreceptors.** C. Potter[1], W. Zhu[1], A. Kolesnikov[1], V. Kefalov[1], T. Doggett[1], E. Betleja[2], M.R. Mahjoub[2], D. Hodzic[1]; [1]Department of Ophthalmology and Visual Sciences, Washington University School of Medicine, St Louis, MO, [2]Department of Medicine, Renal Division, Washington University School of Medicine, St Louis, MO

B928/P369 **Metaphase chromosome alignment dictates nuclear envelope disassembly in *C. elegans* zygote.** M.M. Rahman[1], O. Cohen-Fix[1]; [1]LCMB, NIDDK, Bethesda, MD

B929/P370 **Chromatin organization and replication in mature striated muscle rely on mechanical coupling through intact LINC-complex.** S. Wang[1], U. C. P.[1], K. Fridman[1], B. Markus[2], T. Volk[1]; [1]Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel, [2]G-INCPM / Mantoux Institute for Bioinformatics, Weizmann Institute of Science, Rehovot, Israel

B930/P371 **Expression of Leukemia-Associated Nup98 Fusion Proteins Generates an Aberrant Nuclear Envelope Phenotype.** B. Fahrenkrog[1], N. Martins[1], A. Mendes[1], N. Nilles[1], V. Martinelli[1], G. Fruhmann[2], J. Schwaller[2]; [1]Institute of Molecular Biology and Medicine, Universite Libre de Bruxelles, Gosselies, Belgium, [2]Department of Biomedicine, University Children's Hospital, Basel, Switzerland

B931/P372 **Nucleus-nucleus interactions are regulated by two distinct genes linked to Emery-Dreifuss Muscular Dystrophy and Centronuclear Myopathy.** M.A. Collins[1], T.R. Mandigo[1], J.M. Camuglia[1], E.S. Folker[1]; [1]Department of Biology, Boston College, Chestnut Hill, MA

B932/P373 **Mechanical LINC between nucleus and cytoskeleton regulates βcatenin nuclear access.** G. Uzer[1,2], G. Bas[1], B. Sen[2], J. Rubin[2]; [1]Department of Mechanical Biomedical Engineering, Boise State University, Boise, ID, [2]Medicine, University of North Carolina, Chapel Hill, Chapel Hill, NC

B933/P374 **Interaction of nesprin-2 with both actin and microtubules is required for efficient collective, but not single cell migration.** R. Zhu[1,2], S. Antoku[2], G.G. Gundersen[2]; [1]Integrated Program in Cellular, Molecular and Biomedical Studies, Columbia University, New York, NY, [2]Department of Pathology and Cell Biology, Columbia University, New York, NY

B934/P375 **ESCRT-III proteins CHMP7 and CHMP4B mediate nuclear membrane repair during interphase.** P. Isermann[1], C.M. Denais[1], R.M. Gilbert[1], J. Lammerding[1]; [1]Weill Institute for Cell and Molecular Biology Meinig School of Biomedical Engineering, Cornell University, Ithaca, NY

B935/P376 **ESCRT III Repairs Nuclear Envelope Rupture During Confined Cell Migration to Limit DNA Damage and Cell Death.** M. Raab[1], M. Gentili[2], H. De Belly[1], H.R. Thiam[1], R. Attia[1], P. Vargas[1], F. Lautenschlaeger[1], R. Voituriez[3], A. Jimenez[1], A. Lennon-Dumenil[2], N. Manel[2], M. Piel[1]; [1]Subcellular Structure and cellular Dynamics, Institut Curie, Paris, France, [2]Immunology and Cancer, Institut Curie, Paris, France, [3]Laboratoire de Physique Théorique de la Matière Condensée, Université Pierre et Marie Curie, Paris, France

B936/P377 **Differential SUN protein oligomerization in living cells revealed by fluorescence fluctuation spectroscopy and brightness analysis.** C.A. Saunders[1], J. Hennen[2], Z. Jahed[3], B. Burke[4], M. Mofrad[3], J.D. Mueller[2], G. Luxton[1]; [1]Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN, [2]Physics and Astronomy, University of Minnesota, Minneapolis, MN, [3]Bioengineering, University of California, Berkeley, Berkeley, CA, [4]Institute of Medical Biology, A-Star, Singapore, Singapore

B937/P378 **Using microfluidic encapsulation of *Xenopus laevis* embryonic cytoplasm to identify nuclear size scaling mechanisms.** P. Chen[1], D.L. Levy[2], J.S. Oakey[2], D.L. Levy[1]; [1]Department of Molecular Biology, University of Wyoming, Laramie, WY, [2]Department of Chemical Engineering, University of Wyoming, Laramie, WY

B938/P379 **The role of Jaw1 in maintaining nuclear shape.** T. Kozono[1], K. Tadahira[2], M. Nakano[3], T. Dohi[3], T. Tonozuka[2], A. Nishikawa[2]; [1]Dep. FESS., Tokyo University of Agriculture and Technology, Tokyo, Japan, [2]Dep. Appl. Biol. Sci., Tokyo University of Agriculture and Technology, Tokyo, Japan, [3]Res. Inst., National Center for Global Health and Medicine, Tokyo, Japan

B939/P380 **When size matters: Regulation of the nuclear size by DHRS7 in prostate cancer.** A. Rizzotto[1], E. Schirmer[1]; [1]Wellcome Trust Centre for Cell Biology, University of Edinburgh, Edinburgh, United Kingdom

B940/P381 **Samp1, a RanGTP binding transmembrane protein in the inner nuclear membrane.** B. Vijayaraghavan[1], M. Jaffer Ali[1], R.A. Figueroa[1], E. Hallberg[1]; [1]Department of Neurochemistry, Stockholm University, Stockholm, Sweden

B941/P382 **Mechanical control of nuclear blebbing and micronuclei in hepatocellular carcinoma cells.** K. Mandal[1], R.G. Wells[2], P.A. Janmey[1]; [1]Institute for Medicine and Engineering, Pennsylvania University, Philadelphia, PA, [2]Gastroenterology, and Pathology and Laboratory Medic, Pennsylvania University, Philadelphia, PA

Endocytic Trafficking 1

B943/P383 **The post-translational modification of microtubules mediates receptor signaling.** M. Kobayashi[1], Y. Suzuki[1], Y. Sato[1]; [1]Department of Vascular Biology, IDAC, Tohoku University, Sendai, Miyagi, Japan

B944/P384 **Novel motor-independent function of the dynein light chain in clathrin mediated endocytosis.** K.B. Farrell[1], S. McDonald[1], C. Worcester[1], O.B. Peersen[1], S.M. Di Pietro[1]; [1]Department of Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO

B945/P385 **Nonmuscle Myosin II regulates membrane dynamics of endocytic proteins and receptor-ligand complex during clathrin mediated endocytosis in epithelial cells.** K.L. Otterpohl[1], S.B. Ortmeier[1], R.G. Hart[1], J. Liu[2], I. Chandrasekar[1,3]; [1]Children's Health Research Center, Sanford Research, Sioux Falls, SD, [2]Department of Nanoscience and Nanoengineering, South Dakota School of Mines and Technology, Rapid City, SD, [3]Department of Pediatrics, USD Sanford School of Medicine, Sioux Falls, SD

B946/P386 **Actin- and microtubule-based motors contribute to clathrin-independent endocytosis in yeast.** D.C. Prosser[1], T.K. Woodard[1], B. Wendland[1]; [1]Biology, The Johns Hopkins University, Baltimore, MD

B947/P387 **Molecular mechanisms of ATP-stimulated Pannexin 1 internalization.** A.K. Boyce[1], L.A. Swayne[1]; [1]Division of Medical Sciences, University of Victoria, Victoria, BC

B948/P388 **Ankyrin-B is a PI3P effector that promotes polarized α5β1-integrin recycling through recruiting RabGAP1L to early endosomes.** F. Qu[1,2], D. Lorenzo[1,2], S.J. King[1,3], R. Brooks[1,3], J.E. Bear[1,3], V. Bennett[1,2]; [1]Howard Hughes Medical Institute, Chevy Chase, MD, [2]Biochemistry and Cell Biology, Duke University, Durham, NC, [3]Cell Biology and Physiology, The University of North Carolina at Chapel Hill, Chapel Hill, NC

B949/P389 **Reconstitution of endocytic actin networks on supported lipid bilayers.** E.H. Stoops[1], M. Wojcik[2], S. Low-Nam[2], J.T. Groves[2], K. Xu[2], D.G. Drubin[1]; [1]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, [2]Chemistry, University of California, Berkeley, Berkeley, CA

B950/P390 **Characterization of the Dynamic Clathrin-Coated Pit Proteome.** M. DeNies[1], A. Nesvizhskii[2,3], S. Schnell[2,4], A.P. Liu[5,6]; [1]Cell and Molecular Biology Graduate Program, University of Michigan, Ann Arbor, MI, [2]Department of Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor, MI, [3]Department of Pathology, University of Michigan, Ann Arbor, MI, [4]Department of Molecular and Integrative Physiology, University of Michigan, Ann Arbor, MI, [5]Mechanical Engineering, University of Michigan, Ann Arbor, MI, [6]Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI

B951/P391 **High-throughput superresolution imaging of clathrin- and actin-mediated endocytosis in yeast.** M. Mund[1], A. Picco[2], M. Kaksonen[2], J. Ries[1]; [1]Cell Biology and Biophysics, European Molecular Biology Laboratory, Heidelberg, Germany, [2]Department of Biochemistry, University of Geneva, Geneva, Switzerland

B952/P392 **Reprogramming of clathrin-mediated endocytosis dynamics during cellular differentiation.** D. Dambournet[1], S. Hong[1], M.S. Akamatsu[1], A.T. Cheng[1], D. Hockemeyer[1], D.G. Drubin[1]; [1]MCB, UC Berkeley, Berkeley, CA

B953/P393 **Vps4 is required for clathrin-mediated endocytosis mutant viability and cargo trafficking from the plasma membrane.** K. Hoban[1], S. Lux[1], J. Poprawski[1], Y. Zhang[1], D.C. Prosser[1], C. Norris[1], B. Wendland[1]; [1]Department of Biology, Johns Hopkins University, Baltimore, MD

B954/P394 **Multisite phosphorylation of Dynamin 1 functions at the crossroads of endocytosis and receptor mediated signaling pathways.** S. Srinivasan[1], C.J. Burckhardt[1], P. Chen[1], N. Bendris[1], C.R. Reis[1], M. Mettlen[1], G. Danuser[1], S.L. Schmid[1]; [1]Department of Cell Biology, UT Southwestern Medical Center, Dallas, TX

B955/P395 **Distinct regulation of EGFR and ErbB2 signaling by clathrin coated pits.** J. Abousawan[1], K. Patel[1], S. Lucarelli[1], C.N. Antonescu[1]; [1]Chemistry and Biology, Ryerson University, Toronto, ON

B956/P396 **Selective regulation of EGFR signaling and endocytosis by phospholipase C and calcium.** R.C. Delos Santos[1], S. Bautista[1], L.N. Bone[1], R.M. Dayam[1], R.J. Botelho[1], C.N. Antonescu[1,2]; [1]Chemistry and Biology, Ryerson University, Toronto, ON, [2]Keenan Research Centre for Biomedical Science of St. Michael's Hospital, Toronto, ON

B957/P397 **The Retromer Complex Regulates APP Trafficking & Synaptic Growth at the *Drosophila* NMJ.** R.B. Walsh[1], M.A. Zunitch[1], A.N. Becalska[1], J. Gittzus[1], A.A. Rodal[1]; [1]Biology, Brandeis University, Waltham, MA

B958/P398 **Acute increase of α-synuclein dimers inhibits synaptic vesicle endocytosis at a vertebrate central synapse.** A.T. Medeiros[1], L. Soll[1], I. Tessari[2], L. Bubacco[2], J.R. Morgan[1]; [1]Eugene Bell Center for Regenerative Biology and Tissue Engineering, Marine Biological Laboratory, Woods Hole, MA, [2]Department of Biology, University of Padova, Padova, Italy

B959/P399 **Disease-associated α-synuclein splice variant 112 exhibits enhanced binding to phospholipids.** L. Soll[1], J.R. Morgan[1]; [1]Eugene Bell Center for Regenerative Biology and Tissue Engineering, Marine Biological Laboratory, Woods Hole, MA

B960/P400 **Molecular Investigations Into the Presynaptic Functions of Synucleins.** K.J. Vargas[1,2], N. Schrod[3], T. Davis[1,2], R. Fernandez-Busnadiego[2,4,5], Y.V. Taguchi[2,4], U. Laugks[3], V. Lucic[3], S.S. Chandra[1,2,6]; [1]Department of Neurology, Yale University, New Haven, CT, [2]Program in Cellular Neuroscience, Neurodegeneration and Repair, Yale University, New Haven, CT, [3]Max Planck Institute of Biochemistry, Martinsried, CT, [4]Department of Cell Biology, Yale University, New Haven, CT, [5]Howard Hughes Medical Institute, Yale University, New Haven, CT, [6]Department of Neuroscience, Yale University, New Haven, CT

SUNDAY

B961/P401 **Neuron-enriched endosomal protein of 21kD (NEEP21) is a type II transmembrane protein.** B. Comuzzi[1], F. Zahra[1], C. Yap[2], B. Winckler[2], E. Norstrom[1]; [1]Biological Sciences, DePaul University, Chicago, IL, [2]Cell Biology, University of Virginia, Charlottesville, VA

B962/P402 **Identification of Novel Regulators of ß1-integrin Endocytosis.** P. Sahgal[1], A. Arjonen[1], J.H. Alanko[1], M. Pietilä[1], J. Ivaska[1]; [1]Turku Centre for Biotechnology, University of Turku, Turku, Finland

B963/P403 **Cargo induced recruitment of endocytic adaptor Sla1 and the role of Sla1-Clathrin binding in endocytic progression.** T.O. Tolsma[1], L.M. Cuevas[1], S.M. Di Pietro[1]; [1]Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO

B964/P404 **Catching the tubule – Analyzing the role of the PtdIns3P-binding protein WDFY2 in retrograde endocytic transport.** M. Sneeggen[1,2], K.O. Schink[1,2], E.M. Haugsten[1,2], N.M. Pedersen[1,2], C. Campsteijn[1,2], H. Stenmark[1,2]; [1]Centre for Cancer Biomedicine, Faculty of Medicine, Oslo, Norway, [2]Department of Molecular Cell Biology, Institute for Cancer Research, Oslo, Norway

B965/P405 **Genetic dissection of early endosomal recycling highlights a TORC1-independent role for Rag GTPases.** C. MacDonald[1], R. Piper[1]; [1]Molecular Physiology & Biophysics, University of Iowa, Iowa City, IA

B966/P406 **Pro-inflammatory cytokines and oxide nitric production in murine macrophage J774A.1 cell line during the internalization of outer membrane vesicles (OMV) from Escherichia coli JC8031.** A.F. Buitrago[1,2], A.F. Leal[1,3], A.L. Muñoz[1], J.D. Valderrama[1], M.E. Forero[1]; [1]Universidad Antonio Nariño, Bogota D.C, Colombia, [2]Universidad El Bosque, Bogota D.C, Colombia, [3]Universidad Nacional de Colombia, Bogota D.C, Colombia

B967/P407 **Monoubiquitination of syntaxin 3 leads to targeting into the apical endosomal/exosomal pathway: role in cargo recruitment.** A.J. Giovannone[1], E. Reales-Rodriguez[2], P. Bhattaram[3], A. Fraile-Ramos[4], T. Weimbs[1]; [1]Molecular, Cellular, Developmental Bio., University of California, Santa Barbara, Santa Barbara, CA, [2]Department of Cell Biology, Yale School of Medicine, New Haven, CT, [3]Department of Cell Biology, Cleveland Clinic, Lerner Research Institute, Cleveland, OH, [4]Centro de Biologia Molecular Severo Ochoa, Universidad Autonoma de Madrid, Madrid, Spain

B968/P408 **Regulation of membrane trafficking during glucose starvation.** H. Hong[1], J.Y. Martinez-Marquez[2], L. Gal[3], M. Schuldiner[3], M.C. Duncan[1,2]; [1]Cellular and Molecular Biology, University of Michigan, Ann Arbor, MI, [2]Cell and Developmental Biology, University of Michigan, Ann Arbor, MI, [3]Department of Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel

B969/P409 **Cell adhesion changes the localization of Lyn tyrosine kinase.** T. Morinaga[1,2], N. Yamaguchi[2], M. Tagawa[1], N. Yamaguchi[2]; [1]Division of Pathology and Cell Therapy, Chiba Cancer Center Research Institute, Chiba, Japan, [2]Laboratory of Molecular Cell Biology, Graduate School of Pharmaceutical Sciences, Chiba University, Chiba, Japan

B970/P410 **Annexin A2 facilitates endocytic trafficking of antisense oligonucleotides.** S. Wang[1], H. Sun[1], M. Tanowitz[1], S.T. Crooke[1], X. Liang[1]; [1]Core research, Ionis Pharmaceuticals, Carlsbad, CA

B971/P411 **Quantitative analysis of endocytic protein accumulation during mammalian clathrin-mediated endocytosis.** M. Akamatsu[1], D.G. Drubin[1]; [1]Molecular and Cellular Biology, University of California, Berkeley, Berkeley, CA

ER and Golgi Transport

B972/P412 ***TRAPPC11* mutations lead to a diverse set of disorders with muscular dystrophy as a common feature.** M. Sacher[1,2], M.P. Milev[1], K. Prematilake[1], A. Larson[3], S. Moore[4], K. Köhler[5], A. Hübner[5], C. Jimenez-Mallabrera[6]; [1]Biology, Concordia University, Montreal, QC, [2]Anatomy and Cell Biology, McGill University, Montreal, QC, [3]Pediatrics, Children's Hospital of Colorado, Aurora, CO, [4]Pathology, University of Iowa, Iowa City, IA, [5]Children, Dresden University of Technology, Dresden, Germany, [6]Neuromuscular Unit, Hospital Sant Joan de Déu, Barcelona, Spain

B973/P413 **Tango1 increases general secretory capacity in *Drosophila* by maintaining size of ER exit sites and proximity to Golgi.** M. Liu[1], Z. Feng[1], H. Ke[1], Y. Liu[1], W. Cui[1], T. Sun[1], J. Dai[1], J.C. Pastor-Pareja[1]; [1]School of Life Sciences, Tsinghua University, Beijing, China

B974/P414 **Regulation of COPII vesicle trafficking by O-GlcNAcylation.** B.J. Bisnett[1], N.J. Cox[1,2], B.M. Condon[1,2], T.R. Meister[1], T.J. Smith[1], M. Boyce[1]; [1]Biochemistry, Duke University, Durham, NC, [2]Pharmacology and Cancer Biology, Duke University, Durham, NC

B975/P415 **COPII sorts cargo into spatially distinct ER domains prior to fission of Golgi-bound transport carriers.** O. Shorn[1], I. Nevo-Yassaf[1], T. Aviad[1], J. Shepchelovich[1], E. Perlson[2], G.H. Patterson[3], C. Kaether[4], K. Hirschberg[1]; [1]Pathology, Tel-Aviv University Sackler School of Medicine, Tel Aviv, Israel, [2]Physiology and Pharmacology, Tel-Aviv University Sackler School of Medicine, Tel Aviv, Israel, [3]Section on Biophotonics, NIBIB, National Institutes of Health, Rockville, MD, [4]Leibniz Institute for Age Research, Fritz Lipmann Institute, Jena, Germany

B976/P416 **Sphingomyelin organization controls the shape and function of the Golgi membranes.** F. Campelo[1], J. van Galen[2,3], V. Malhotra[2,3,4], M. Garcia-Parajo[1,4]; [1]ICFO-Institut de Ciencies Fotoniques, Castelldefels, Barcelona, Spain, [2]Cell and Developmental Biology, Centre for Genomic Regulation (CRG), Barcelona, Spain, [3]Universitat Pompeu Fabra, Barcelona, Spain, [4]Institució Catalana de Recerca i Estudis Avançats (ICREA), Barcelona, Spain

B977/P417 **Localization of golgin-160 at the Golgi is dynamic.** C.E. Gilbert[1], E. Sztul[2], C.E. Machamer[1]; [1]Department of Cell Biology, Johns Hopkins School of Medicine, Baltimore, MD, [2]Department of Cell, Developmental, and Integrative Biology, University of Alabama at Birmingham School of Medicine, Birmingham, AL

B978/P418 **The Arf-GEFs Gea1 and Gea2 use auto-regulation and protein interactions to make decisions about initiating vesicle formation at the Golgi complex.** M.A. Gustafson[1], J.C. Fromme[1]; [1]MBG/WICMB, Cornell University, Ithaca, NY

B979/P419 **Morphology and Protein Composition of the GLUT4 Perinuclear Sorting Compartment in Insulin-Responsive Cell Types Affects the Kinetics of GLUT4 Trafficking.** A. Brumfield[1], N. Chaudhary[1], D. Molle[1], T.E. McGraw[1]; [1]Biochemistry, Weill Cornell Medical College, New York, NY

B980/P420 **Deletion of the Conserved Oligomeric Golgi subunits impairs protein trafficking and results in dramatically enlarged endosomal/lysosomal compartments.** J.B. Blackburn[1], I.D. Pokrovskaya[1], P. Fisher[2], D. Ungar[2], V.V. Lupashin[1]; [1]Cellular Physiology, University of Arkansas for medical sciences, Little Rock, AR, [2]Department of Biology, University of York, York, United Kingdom

B981/P421 **Multiple ER / Golgi SNARE transmembrane domains are dispensable for trafficking but required for SNARE recycling.** L. Chen[1], S. Lau[1], D.K. Banfield[1]; [1]Division of Life Science, The Hong Kong University of Science and Technology, Hong Kong, Hong Kong

B982/P422 **A regulatable secretory cargo for yeast.** J.C. Casler[1], E. Papanikou[1], J.J. Barrero[1], I. Fitzgerald[1], B.S. Glick[1]; [1]Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL

B983/P423 **Novel interactions of clathrin adaptors at the TGN in yeast.** J.Y. Martinez-Marquez[1], M.C. Duncan[1]; [1]Cell and Developmental Biology, University of Michigan, Ann Arbor, MI

B984/P424 **Thrombospondin 4 reduces amyloid deposition in a mouse model of Alzheimer's disease.** M. Maillet[1], J.D. Molkentin[1]; [1]Molecular Cardiovascular Biology, Cincinnati Children's Hospital, Cincinnati, OH

B985/P425 **Analysis of GOLPH3 knocking-down on protein glycosylation, trafficking and function in cells T98G of glioblastoma multiforme.** C.L. Arriagada Momberg[1], V. Cavieres[1], A. Gonzalez[1], P.V. Burgos[1], G.A. Mardones[1]; [1]Department of Physiology, Universidad Austral de Chile, Valdivia, Chile

B986/P426 **Unraveling the mechanism of ER-associated organelle fission.** G. Voeltz[1], M. Phillips[1], P.J. Chitwood[1]; [1]MCD Biology, University of Colorado, Boulder, CO

B987/P427 **ACBD3 facilitates Golgi retention of KDELR and regulates its retrograde transport.** Y. Qian[1], X. Yue[1], M. Bao[1], S. Li[1], I. Lee[1]; [1]SIAIS, Shanghai Tech University, Shanghai, China

B988/P428 **Neurodegeneration-associated TREM2 mutants abortively cycle between the ER and Golgi.** D.W. Sirkis[1], R.E. Aparicio[1], R.W. Schekman[1]; [1]Molecular and Cell Biology, UC Berkeley, Berkeley, CA

B989/P429 **Procollagen I exits the endoplasmic reticulum in large COPII coated vesicles.** L. Yuan[1], A. Gorur[1], S.J. Kenny[2], S. Baba[1], K. Xu[2], R.W. Schekman[1]; [1]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, [2]Chemistry, University of California, Berkeley, Berkeley, CA

B1000/P430 **Lack of N-glycosylation of Pannexin 2 triggers aggregation in the endoplasmic reticulum without ablating its capacity to traffic to the cell surface.** R.E. Sánchez-Pupo[1], D. Johnston[1], S. Penuela[1]; [1]Department of Anatomy and Cell Biology, Schulich School of Medicine and Dentistry, The University of Western Ontario, London, ON

B1001/P431 **The role of SAR1 paralogs in packaging of large lipoprotein cargos.** D.B. Melville[1,2], S. Studer[1], R. Schekman[1,2]; [1]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, [2]Howard Hughes Medical Institute, Berkeley, CA

Rab GTPases

B1002/P432 **Rab6 Prevents the Stalling of Cargo Protein Transport Between Medial and Trans Golgi Cisternae.** L. Dickson[1], S. Liu[1], E. Islek[1], B. Storrie[1]; [1]Physiology and Biophysics, University of Arkansas for Medical Sciences, Little Rock, AR

B1003/P433 **The role of phosphorylation on the function of Rab7.** O. Skorobogata[1], G. Modica[1], S. Lefrancois[1,2]; [1]Institut nationale de la recherche scientifique – Institut Armand-Frappier, Laval, QC, [2]Department of Anatomy and Cell Biology, McGill University, Montreal, QC

B1004/P434 **Cdk5-dependent phosphorylation of GRAB, a guanine nucleotide exchange factor for Rab8, regulates axon outgrowth by directing Rab8A to Rab11A-positive endosomes.** K. Furusawa[1], A. Asada[1], P. Urrutia[2,3], C. Gonzalez-Billaul[2,3], M. Fukuda[4], S. Hisanaga[1]; [1]Biological Sciences, Tokyo Metropolitan University, Hachioji, Japan, [2]Biology, Universidad de Chile, Nunoa, Chile, [3]Geroscience Center for Brain Health and Metabolism, Santiago, Chile, [4]Developmental Biology and Neurosciences, Tohoku University, Sendai, Japan

B1005/P435 **A Novel and Direct Interaction Between Large and Small GTPases: A Rab10-Dynamin-2 Complex Mediates Autophagic Lipid Droplet Breakdown.** Z. Li[1,2,3], K. Drizyte[1,2,3], C.A. Casey[4], M.A. McNiven[1,3]; [1]Center for Digestive Diseases, Mayo Clinic, Rochester, MN, [2]Biochemistry and Molecular Biology Program, Mayo Graduate School, Rochester, MN, [3]Department of Biochemistry and Molecular Biology, Mayo Clinic, Rochester, MN, [4]Department of Internal Medicine, University of Nebraska Medical Center, Omaha, NE

B1006/P436 **The GTPase, RAB-10, regulates the dynamics of autophagy.** N.J. Palmisano[1], A. Melendez[1], B. Grant[2]; [1]Biology, The Graduate Center, City University of New York, New York, NY, [2]Molecular Biology and Biochemistry, Rutgers University, Piscataway, NJ

B1007/P437 **Rab17 sumoylation and GTPase activity regulate at least two steps in hepatic transcytosis.** A.C. Striz[1], P.L. Tuma[1]; [1]Biology, The Catholic University of America, Washington, DC

B1008/P438 **Modularity of Exocytic Trafficking Conferred by a Rab GEF and GAP Regulatory Loop.** B. Wu[1], A. Ghosh[2], R. Radhakrishnan[2], W. Guo[1]; [1]Biology, University of Pennsylvania, Philadelphia, PA, [2]Bioengineering, University of Pennsylvania, Philadelphia, PA

B1009/P439 **Intersectin couples endo- and exocytosis of epidermal growth factor receptor through DENND2B.** M.S. Ioannou[1], J.J. Morein[1], M. Fotouhi[1], S. Tse[1], N. Nossova[1], G. Kulasekaran[1], T. Han[1], E. Mannard[1], P.S. McPherson[1]; [1]Neurology and Neurosurgery, Montreal Neurological Institute, McGill University, Montreal, QC

B1010/P440 **The recruitment and activation of a Rab GTPase in lysosome-related organelle biogenesis.** G.J. Hermann[1], O. Foster[1], K. Peloza[1], L. Harper[1], J. Brandt[1], M. Harp[1], C. Morris[1]; [1]Biology, Lewis Clark College, Portland, OR

B1011/P441 **Rabomic analysis of membrane traffic of G protein-coupled receptors.** C. Li[1], W. Huang[1], G. Wu[1]; [1]Pharmacology and Toxicology, Medical College of Georgia, Augusta University, Augusta, GA

B1012/P442 **RAB27B requirement for stretch-regulated exocytosis in bladder umbrella cells.** M.G. Dalghi[1], L. Gallo[1], D.R. Clayton[1], W.G. Ruiz[1], P. Khandelwal[1], G. Apodaca[1]; [1]Department of Medicine, Renal-Electrolyte Division, University of Pittsburgh, Pittsburgh, PA

B1013/P443 **Regulation of iPLA2 Activity and Localization by Rab5.** Y. Shi[1], D. Chung[2], C.Y. Chung[1,2]; [1]School of Pharmaceutical Science and Technology, Tianjin University, Tianjin, China, [2]Pharmacology, Vanderbilt University School of Medicine, Nashville, United States

B1014/P444 **TRAPPIII functions at the Golgi complex and in autophagy.** A. Joiner[1], L. Thomas[1], J.C. Fromme[1]; [1]Molecular Biology and Genetics, Cornell University, Ithaca, NY

Cell Signaling and Polarity

B1016/P445 **The developmental polarity and morphogenesis of a single cell.** D. Bonazzi[1], A. Haupt[2], J. Julien[3], H. Tanimoto[2], R. Seddiki[2], M. Romao[4], D. Delacour[2], D. Salort[5], M. Piel[4], A. Boudaoud[6], N. Minc[2]; [1]Pathogenesis of Vascular Infections, Institut Pasteur, Paris, France, [2]Institut Jacques Monod, Paris, France, [3]Max Planck Institute for Dynamics and Self-Organization, Göttingen, Germany, [4]Institut Curie, Paris, France, [5]UMR 7238 CNRS, Université Pierre et Marie Curie, Paris, France, [6]ENS CNRS, Laboratoire Joliot-Curie, Lyon, France

B1017/P446 **Cdc42p Localization Regulates Yeast Cell Fusion.** J.A. Smtih[1], M.D. Rose[1]; [1]Molecular Biology, Princeton University, Princeton, NJ

B1018/P447 **Role of Cdc42 GAP Rga4 in altering the morphological fate of S. pombe daughter cells.** M. Rodriguez Pino[1], I. Nuñez[1], M. Das[2], D. Vavylonis[3], F. Verde[1]; [1]Cellular and Molecular Pharmacology, University of Miami, Miami, FL, [2]Biochemistry and Cellular and Molecular Biology, University of Tennessee, Knoxville, TN, [3]Department of Physics, Lehigh University, Bethlehem, PA

B1019/P448 **Scaffold-mediated gating of Cdc42 signaling flux contributes to GTPase nanoclustering.** D.W. McCusker[1]; [1]IECB, Bordeaux, France

B1020/P449 **Cortical contractility induces clustering of PAR proteins for embryonic polarization.** S. Wang[1], T.Y. Low[1], Y. Nishimura[2], W. Yu[3], F. Motegi[1,2,4]; [1]Temasek Life-sciences Laboratory, Singapore, Singapore, [2]Mechanobiology Institute, Singapore, Singapore, [3]Institute of Molecular Cell Biology, A*STAR, Singapore, Singapore, [4]Department of Biological Sciences, National University of Singapore, Singapore, Singapore

B1021/P450 **Unraveling PAR polarity protein interactions with single-cell biochemistry.** D.J. Dickinson[1,2], B. Goldstein[1,2]; [1]Biology, University of North Carolina, Chapel Hill, NC, [2]Lineberger Comprehensive Cancer Center, University of North Carolina, Chapel Hill, NC

B1022/P451 **Nanoscopic E-Cadherin organization in Drosophila embryo is regulated by Crumbs-dependent junctional repartition of Par-3.** P. Salis[1], V. Aksenova[1], B. Truong Quang[2], P. Lenne[1], T. Lecuit[1], A. Le Bivic[1]; [1]Institut de biologie du développement de Marseille (IBDM), Marseille, France, [2]MRC Laboratory for Molecular Cell Biology, University College London, London, United Kingdom

B1023/P452 **A pattern-formation mechanism that bases on mechanochemical feedback drives the dynamics of PAR polarity establishment in *C. elegans* zygotes.** P. Gross[1,2], K. Kumar[3,4], J.S. Bois[5], N.W. Goehring[6], C. Hoege[1], F. Julicher[3], S.W. Grill[1,2,3]; [1]MPI-CBG, Dresden, Germany, [2]BIOTEC, Dresden, Germany, [3]MPI-PKS, Dresden, Germany, [4]ICTS, Bangalore, India, [5]Department of Chemistry and Biochemistry, UCLA, Los Angeles, United States, [6]Francis Crick Institute, London, United Kingdom

B1024/P453 **Competition among PAR-3 clusters for cytoplasmic monomers can stabilize PAR-3 asymmetries in the absence of mutual inhibition.** C.F. Lang[1], A. Anneken[2], E.M. Munro[1,2]; [1]Committee on Genetics, Genomics, and Systems Biology, University of Chicago, Chicago, IL, [2]Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL

SUNDAY

B1025/P454 **A novel role for Cdc42 effectors Gic1/2 in cell polarity.** C.N. Daniels[1], D.J. Lew[1]; [1]Molecular Cancer Biology, Duke University, Durham, NC

B1026/P455 **Disruption of cell polarity, but not adhesion, alters Notch-mediated proliferation and differentiation in endometrial cancer.** A.B. Gladden[1], E.R. Williams[1], R.R. Broaddus[2]; [1]Genetics, The University of Texas MD Anderson Cancer Center, Houston, TX, [2]Pathology, The University of Texas MD Anderson Cancer Center, Houston, TX

B1027/P456 **Active anti-inflammatory function of normal polarized epithelia and "polarity complex" proteins.** R. Forteza[1], A. Mashukova[2], P.J. Salas[1]; [1]Cell Biology, Univ. of Miami Miller School of Medicine, Miami, FL, [2]Physiology, Nova Southeastern University, Fort Lauderdale, FL

B1028/P457 **Investigating the Mechanisms of Contact Inhibition in Mammalian Epithelia.** M. Fomicheva[1], I.G. Macara[1]; [1]CDB, Vanderbilt University, Nashville, TN

B1029/P458 **Identification of Crumbs family protein functions in MDCK cells, using CRISPR gene editing.** C. Yang[1], I.G. Macara[1]; [1]Cell & Developmental Biology, Vanderbilt University, Nashville, TN

B1030/P459 **Defining the network of proteins driving apical-basal polarity establishment in early Drosophila development.** T.T. Bonello[1], M. Peifer[1]; [1]Biology, University of North Carolina, Chapel Hill, NC

B1031/P460 **A novel delivery-based positive feedback loop drives epithelial apical membrane morphogenesis in *Drosophila*.** F. Nunes de Almeida[1], R.F. Walther[1], E. Vlassaks[1], F. Pichaud[1]; [1]MRC Laboratory for Molecular Cell Biology, University College London, London, United Kingdom

B1032/P461 **Substance P directly induces M2 polarization of tissue macrophage through PI3K/AKT/mTOR pathway even in the presence of IFN-gamma, distinct from IL-4/13 and IL-10-mediated M2a and M2c macrophages.** J. Lim[1], S. Kim[1], W. Ahn[1], E. Chung[1], Y. Son[1]; [1]Genetic Engineering, Kyung Hee University, Yong In, Korea, South

B1033/P462 **Suppressing ERK1/2 phosphorylation of TAN Line Component FHOD1 rescues defective nuclear movement in fibroblasts expressing muscular dystrophy lamin A mutants.** S. Antoku[1], W. Wu[2], C. Östlund[2], H.J. Worman[2], G.G. Gundersen[1]; [1]Department of Pathology and Cell Biology, Columbia University, New York, NY, [2]Department of Medicine, Columbia University, New York, NY

B1034/P463 **N-glycosilation of the β_2-subunit and the apical polarity of the sodium pump in retinal pigment epithelia.** T. Lopez Murillo[1], M. Roldan Gutierrez[1], L. Shoshani[1]; [1]Physiology, Cinvestav-IPN, Mexico City, Mexico

B1035/P464 **Epithelial Membrane Protein 2 regulates APC-mediated 3D morphogenesis and apical-basal polarity.** A.C. Lesko[1,2,3], C.G. Ahlers[1,2], J.R. Prosperi[1,2,3]; [1]Biochemistry and Molecular Biology, Indiana University School of Medicine-South Bend, South Bend, IN, [2]Harper Cancer Research Institute, University of Notre Dame, Notre Dame, IN, [3]Biological Sciences, University of Notre Dame, Notre Dame, IN

B1036/P465 **The RhoG exchange factor SGEF forms a ternary complex with two members of the SCRIBBLE polarity complex, Scribble and Dlg1.** S. Awadia[1], T.R. Arnold[2], F. Huq[2], T. Hou[3], Y. Sun[3], P. Massimi[4], L. Banks[4], E. Fuentes[3], A.L. Miller[2], R. Garcia-Mata[1]; [1]Department of Biological Sciences, University of Toledo, Toledo, OH, [2]Department of Molecular, Cellular, and Developmental Biology, University of Michigan, Ann Arbor, MI, [3]Department of Biochemistry, University of Iowa, Iowa City, IA, [4]ICGEB, Trieste, Italy

B1037/P466 **Ezrin activation by LOK phosphorylation involves a PIP_2-dependent coincidence detection mechanism in a multi-step reaction.** T. Pelaseyed[1], R. Viswanatha[1], J.J. Filter[1], M.L. Goldberg[1], A.P. Bretscher[1]; [1]Department of Molecular Biology and Genetics, Cornell University, Ithaca, NY

B1038/P467 **A Novel Element in the Cytoplasmic domain of the Type I TGFβ Receptor Mediates Basolateral Targeting in Polarized Epithelial Cells.** X. Yin[1], M. Andrianifahanana[1], J. Kang[1], Y. Wang[2], M. Jung[1], D. Hernandez[1], E.B. Leof[1]; [1]Thoracic Diseases Research Unit, Department of Pulmonary and Critical Care Medicine, Mayo Clinic Rochester, Rochester, MN, [2]Department of Medicine, Georgia Regents University, Augusta, GA

B1039/P468 **Dynamics of Rga1, a Cdc42 GTPase-activating protein, at the old and current cell division sites in budding yeast.** K.E. Miller[1], W.C. Lo[2], M.E. Lee*[1], H.O. Park[1,3]; [1]Molecular Cellular Developmental Biology Program, The Ohio State University, Columbus, OH, [2]Department of Mathematics, City University of Hong Kong, Kowloon, Hong Kong, [3]Department of Molecular Genetics, The Ohio State University, Columbus, OH

B1040/P469 **Mating yeast cells concentrate the pheromone receptor and its G protein as polarized crescents at the default polarity site that then track to the eventual chemotropic site.** X. Wang[1], D.E. Stone[1]; [1]Biological Sciences, University of Illinois at Chicago, Chicago, IL

B1041/P470 **Patterning the cytoplasm: the interconnected roles of PAR-1 and MEX-5.** J. Smith[1], A.W. Folkmann[1], G. Seydoux[1]; [1]Department of Molecular Biology and Genetics, Johns Hopkins University School of Medicine/HHMI, Baltimore, MD

B1042/P471 **Like mother, like daughter: Inheritance of growth sites determines cell shape.** J. Rich[1], M. Das[1]; [1]Biochemistry and Cellular and Molecular Biology, University of Tennessee, Knoxville, TN

B1043/P472 **Regulation of RNA granule assembly by phosphorylation of an intrinsically-disordered protein scaffold.** H. Schmidt[1], D. Calidas[1], D. Rasoloson[1], G. Seydoux[1]; [1]HHMI, Department of Molecular Biology & Genetics, Johns Hopkins Medical School, Baltimore, MD

Neuronal Morphogenesis and the Cytoskeleton

B1045/P473 **A human spinocerebellar ataxia type 5 mutation in β-III-spectrin causes high-affinity actin binding in cells and decreases dendritic arborization by reducing spectrin localization in dendrites.** A.W. Avery[1], M.E. Fealey[2], D.D. Thomas[2], T.S. Hays[1]; [1]Genetics, Cell Biology and Development, University of Minnesota, Minneapolis, MN, [2]Biochemistry, Molecular Biology and Biophysics, University of Minnesota, Minneapolis, MN

B1046/P474 **ARFGEF2/ARF1/RhoA/mDia1 regulates dendrite development through Golgi polarization in hippocampal neurons.** E. Hong[1], J. Kim[1], J. Kim[2], D. Lim[3], J. Kim[1]; [1]Department of Microbiology and Molecular Biology, Chungnam National University, Daejeon, Korea, South, [2]Korea Research Institute of Bioscience and Biotechnology, Daejeon, Korea, South, [3]Department of Biological Sciences, KAIST, Daejeon, Korea, South

B1047/P475 **Adaptor complex 2 controls dendrite morphology via mTORC1-dependent expression of GluA2.** A. Koscielny[1], A.R. Malik[1], E. Liszewska[1], J. Zmorzynska[1], A. Tempes[1], B. Tarkowski[1], J. Jaworski[1]; [1]International Institute of Molecular and Cell Biology, Warsaw, Poland

B1048/P476 **Kif20b: a mitotic kinesin with post-mitotic functions in neuronal polarization and axon extension.** K.C. McNeely[1], T.D. Cupp[1], J.L. Neville[1], K.M. Janisch[1], N.D. Dwyer[1]; [1]Cell Biology, University of Virginia School of Medicine, Charlottesville, VA

B1049/P477 **N-terminal and central domains of APC differentially and cooperatively sculpt optic axonal arbors in Xenopus tadpoles.** T.M. Elul[1], A. Sohal[1], T. Jin[1]; [1]Basic Sciences, COM, Touro University California, Vallejo, CA

B1050/P478 **Axonal growth and guidance responses regulated by NADPH oxidase-derived reactive oxygen species.** H.S. Roeder[1], D.M. Suter[1]; [1]Department of Biological Sciences, Purdue University, West Lafayette, IN

B1051/P479 **Investigating a novel role for SAX-3/Robo and SLT-1/Slit in mediating axon outgrowth termination in *C. elegans*.** A. Thomas[1], D. Coto[1], V. Jimenez[1], Z. Kieu[1], J. Zaroli[1], T. Duong[1], C. Vargas[1], W. Wung[1], K. Benedetti[1], J. Park[1], M. VanHoven[1]; [1]Biological Sciences, San Jose State University, San Jose, CA

B1052/P480 **TRIM9 and TRIM67: master regulators of developing and adult-born neurons.** S. Menon[1], E. Cousins[1], B. Major[1], S.L. Gupton[1]; [1]Cell Biology and Physiology, University of North Carolina, Chapel Hill, Chapel Hill, NC

B1053/P481 **Differentiation of Mouse Embryonic Stem Cells into Purkinje Neurons.** C.J. Alexander[1], J.A. Hammer[1]; [1]CBPC, Nation Heart, Lung, and Blood Institute, Bethesda, MD

B1054/P482 **Functional analysis of shootin1 in neuronal migration and formation of the olfactory bulb.** T. Minegishi[1], Y. Uesugi[1], W. Yoshida[1], N. Inagaki[1]; [1]Biological Science, Nara Institute of Science and Technology, Ikoma, Japan

B1055/P483 **Differential Expression of Piccolo Splice Isoforms During Mouse Cerebellar Development.** K.J. Cruz[1], S.D. Fenster[1]; [1]Biology, Fort Lewis College, Durango, CO

B1056/P484 **Independent modes of ganglion cell translocation ensure correct lamination of the zebrafish retina.** J. Icha[1], C. Grunert[1], M.R. Martins[1], C. Norden[1]; [1]Norden lab, Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany

B1057/P485 **Microtubule Organization Determines Axonal Transport Dynamics.** S. Yogev[1], R. Cooper[2], R. Fetter[1], M. Horowitz[3], K. Shen[1]; [1]Department of Biology, Howard Hughes Medical Institute, Stanford, Stanford, CA, [2]Department of Electrical Engineering, Stanford, Stanford, CA, [3]Department of Electrical Engineering and Computer Science, Stanford, Stanford, CA

B1058/P486 **An experimentally driven coarse-grained computational model of the axonal cytoskeleton.** M. Soheilypour[1], M. Peyro[1,2], M. Krieg[3], R. Fetter[3], M.B. Goodman[3], 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, [3]Department of Molecular and Cellular physiology, Stanford University, Stanford, CA

B1059/P487 **Distribution patterns of zebrafish neuronal intermediate filaments, inaa and inab.** M. Liao[1], C. Chien[1]; [1]Anatomy and Cell Biology, National Taiwan University, Taipei, Taiwan

B1060/P488 **Intermediate filament mediated phospho-regulation of Doublecortin during neuronal development.** C.J. Bott[1], C. Yap[1], B. Winckler[1]; [1]Cell Biology, University of Virginia, Charlottesville, VA

B1061/P489 **Neuronal Activity Modulates the Phosphorylation State of Tau in Dendrites, Leading to Altered Microtubule Dynamics and Changes in Synaptic Plasticity.** D.P. McVicker[1], E.W. Dent[1]; [1]Neuroscience, University of Wisconsin, Madison, WI

B1062/P490 **Role of MTCL1, a microtubule crosslinking and stabilizing protein, in the formation of axon initial segment.** T. Satake[1], A. Suzuki[1]; [1]Molecular Cellular Biology Laboratory, Yokohama City University Graduate School of Medical Life Science, Yokohama, Japan

B1063/P491 **14-3-3epsilon regulates neurite formation.** T. Wachi-Toyooka[1,2], B. Cornell[1], K. Watanabe[2], K. Toyooka[1]; [1]Neurobiology and Anatomy, Drexel University College of Medicine, Philadelphia, PA, [2]Tokyo Nishi Tokushukai Hospital, Tokyo, Japan

B1064/P492 **Monitoring Microtubule Dynamics at Synaptic Contacts in Neurons Challenged with Oligomeric Aβ1-42.** X. Qu[1], F. Bartolini[1]; [1]Department of Pathology and Cell Biology, Columbia University, New York, NY

B1065/P493 **Formin-mediated Microtubule Hyperstabilization is Necessary for Amyloid-β Synaptotoxicity.** X. Qu[1], F. Yuan[1], C. Corona[1], S. Pasini[1], M. Pero[1], G.G. Gundersen[1], M.L. Shelanski[1], F. Bartolini[1]; [1]Department of Pathology and Cell Biology, Columbia University, New York, NY

B1066/P494 **Environmental complexity and food availability affect the proliferation of neuroblasts in the brain of crickets (Acheta domesticus).** G.M. Downing[1], C.A. Moffatt[1]; [1]Biology, San Francisco State University, San Francisco, CA

B1067/P495 **Opposing functions of the F-BAR proteins CIP4 and FBP-17 in neuronal membrane protrusion, tubulovesicle formation and neurite outgrowth.** K.L. Taylor[1], B. Huynh[1], R. Taylor[1], K. Richters[1], E.W. Dent[1]; [1]Neuroscience, University of Wisconsin Madison, Madison, WI

Establishing and Maintaining Organelle Structure 1

B1069/P496 **LEM2 recruits CHMP7 to anaphase chromatin discs in mammalian cells.** D. LaJoie*[1], M. Gu[2], W.I. Sundquist[2], A. Frost[3], K.S. Ullman[1]; [1]Oncological Sciences, University of Utah, Salt Lake City, UT, [2]Biochemistry, University of Utah, Salt Lake City, UT, [3]Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

B1070/P497 **Membrane binding by CHMP7 coordinates ESCRT-III dependent nuclear envelope reformation.** J.G. Carlton[1], Y. Olmos[1], A. Perdrix-Rosell[1]; [1]Cancer Studies, KCL, London, United Kingdom

B1071/P498 **Lem2p (LEM2) and Cmp7p (CHMP7) function in ESCRT-dependent nuclear envelope remodeling in fission yeast.** M. Gu[1], O.S. Chen[1], M.S. Ladinsky[2], P.J. Bjorkman[2], W.I. Sundquist[1], A. Frost[1,3]; [1]Biochemistry, University of Utah, Salt Lake City, UT, [2]Division of Biology and Biological Engineering, California Institute of Technology, Pasadena, CA, [3]Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

B1072/P499 **Molecular motors and cytoskeleton dynamics control the maturation and secretion of a lysosome-related organelle.** L. Ripoll[1], X. Heiligenstein[1], L. Domingues[1], I. Hurbain[1,2], M.K. Dennis[3,4], M.S. Marks[3,4], E. Coudrier[5], G. Raposo[1,2], C. Delevoye[1,2]; [1]Structure and Membrane Compartments, Institut Curie, PSL Research University, CNRS, UMR144, Paris, France, [2]Cell and Tissue Imaging Facility (PICTIBiSA), Institut Curie, PSL Research University, CNRS, UMR144, Paris, France, [3]Department of Pathology and Laboratory Medicine, Children Hospital of Philadelphia, Philadelphia, PA, [4]Department of Pathology and Laboratory Medicine and Department of Physiology, University of Pennsylvania, Philadelphia, PA, [5]Molecular Mechanisms of Intracellular Transport, Institut Curie, PSL Research University, CNRS, UMR144, Paris, France

B1073/P500 **Role of lysosome alterations in bladder cancer progression.** C. De Barros Santos[1,2], F. Radvanyi[1], B. Goud[1,2], K. Schauer[1]; [1]UMR144, Institut Curie, PSL Research University, CNRS, Paris, France, [2]UPMC, Paris, France

B1074/P501 **Heparin-α-glucosaminide N-acetyltransferase gene inactivation affects the lysosomal integrity of epididymal epithelial cells and the morphology of spermatozoa in adult mice.** C.R. Morales[1], F.L. Carvelli[1], A. Pshezhetsky[1], L. Hermo[1]; [1]Anatomy and Cell Biology, McGill University, Montreal, QC

B1075/P502 **Actin contractility promotes unique Golgi organization in pancreatic beta cells for efficient insulin packaging.** X. Zhu[1], R. Hu[1], G. Gu[1], I. Kaverina[1]; [1]Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN

B1076/P503 **Spatial Proteomic Profiling of the Golgi Apparatus by Indirect Immunofluorescent Microscopy.** P. Thul[1], R. Pepperkok[2], E. Lundberg[1]; [1]Cell Profiling, Science for Life Laboratory (KTH), Stockholm, Sweden, [2]Advanced Light Microscopy Facility, European Molecular Biology Laboratory, Heidelberg, Germany

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B1077/P504 **MxA-reticulum is a novel organelle distinct from the standard reticulon 4-based endoplasmic reticulum.** P.B. Sehgal[1], H. Yuan[1], F. Liang[2], C. Petzold[2], K. Dancel-Manning[2]; [1]Cell Biology Anatomy, and Medicine, New York Medical College, Valhalla, NY, [2]OCS Microscopy Core, Langone-NYU School of Medicine, New York, NY

B1078/P505 **The morphology of the endoplasmic reticulum is influenced by cytoplasmic volume in Xenopus laevis.** R. Mukherjee[1], D.L. Levy[1], J.S. Oakey[2], K. Nelson[2]; [1]Molecular Biology, University of Wyoming, Laramie, WY, [2]Chemical Engineering, University of Wyoming, Laramie, WY

B1079/P506 **Proximity-specific ribosome profiling reveals efficient co-translational ER targeting in the absence of SRP.** E.A. Costa[1], J.S. Weissman[1]; [1]Cellular and Molecular Pharmacology, University of California San Francisco, San Francisco, CA

B1080/P507 **The Cell Atlas: Creation of an image-based atlas of the subcellular distribution of the human proteome.** E. Lundberg[1], C. AitBlal[1], T.L. Alm[1], L. Björk[1], A. Bäckström[1], F. Danielsson[1], J. Fall[1], M. Hjelmare[1], D. Mahdessian[1], R. Schutten[1], M. Skogs[1], C. Stadler[1], D.P. Sullivan[1], P. Thul[1], M. Wiking[1], C.F. Winsnes[1], L. Åkesson[1], M. Uhlén[1]; [1]Proteomics and Nanobiotechnology, Science for Life Laboratory (KTH), Stockholm, Sweden

B1081/P508 **Profiling the human cytoplasmic proteome.** D. Mahdessian[1], M. Wiking[1], L. Åkesson[1], F. Danielsson[1], C. AitBlal[1], D.P. Sullivan[1], P. Thul[1], C. Gnann[1], A. Bäckström[1], J. Fall[1], R. Schutten[1], L. Björk[1], M. Hjelmare[1], M. Skogs[1], C. Stadler[1], M. Uhlén[1], E. Lundberg[1]; [1]Science for Life Laboratory, Royal Institute of Technology (KTH), Stockholm, Sweden

B1082/P509 **Tetraspanins as novel regulators of secretory granule biogenesis.** C.J. Ma[1,2], J.A. Brill[1,2,3]; [1]Institute of Medical Science, University of Toronto, Toronto, ON, [2]Cell Biology Program, The Hospital for Sick Children, Toronto, ON, [3]Department of Molecular Genetics, University of Toronto, Toronto, ON

B1083/P510 ***S*-nitrosylation of Laforin inhibits its phosphatase activity and is implicated in Lafora disease.** A. Satoh[1], R. Toyota[1], R. Imajo[1], Y. Honjo[2]; [1]Biotechnology, Okayama University, Okayama, Japan, [2]2Research Institute for Radiation Biology and Medicine, Hiroshima University, Hiroshima, Japan

B1084/P511 **Compromised phagosome maturation underlies defective rod outer segment clearance in cultured iPSC-derived RPE cells from Smith-Lemli-Opitz Syndrome patients.** S.J. Fliesler[1,2], S. Ramachandra Rao[1,2], N. Mas Gomez[3], B.A. Pfeffer[1,2], A. Rowsam[1], C.H. Mitchell[3]; [1]Ophthalmology and Biochemistry, SUNY-University at Buffalo, Buffalo, NY, [2]Research Service, VA Western NY Healthcare System, Buffalo, NY, [3]Anatomy Cell Biology, University of Pennsylvania, Philadelphia, PA

B1085/P512 **Depletion of ARMS enhances oxidative stress-mediated autophagy activity primed for differential response in a cell context-dependent way.** Y. Liao[1], P. Huang[2]; [1]Dermatology, College of Medicine, National Taiwan University, Taipei, Taiwan, [2]Pathology, College of Medicine, National Taiwan University, Taipei, Taiwan

B1086/P513 **Planar mitotic spindle rotation event precedes proneural cell fate selection in the early *Drosophila* embryo.** N.L. Gaytan[1], B. Riggs[1]; [1]Biology, San Francisco State University, San Francisco, CA

B1087/P514 **Acute hyperglycemia alters cell structure of *beta*-2-tanycytes from the median eminence.** F.A. Martinez[1], M. Cifuentes[2], K. Salazar[1], N. Jara[1], C. Albarran[1], F.J. Nualart[1]; [1]Departmen of cell Biology and Center for Advanced Microscopy CMA BIOBIO, University of Concepción, Concepción, Chile, [2]Department of Cell Biology, Genetics and Physiology, and CIBER-BBN., University of Málaga, Málaga, Spain

B1088/P515 **Better than Membranes at the Origin of Life?** H.G. Hansma[1]; [1]Physics, University of California, Santa Barbara, CA

Mitochondria, Chloroplasts, and Peroxisomes 1

B1100/P516 **COPI dependent vesicular transport controls peroxisome membrane biogenesis.** J. Freitag[1], J. Lam[1], R.W. Schekman[1]; [1]Department of Molecular and Cell Biology, University of California at Berkeley, Berkeley, CA

B1101/P517 **Structural and Biochemical Basis for Mitochondrial Dynamics by the Protein Miro.** K.P. Smith[1], P.J. Focia[2], Y. Zhang[3], J.L. Klosowiak[1], D.M. Freymann[2], S.E. Rice[1]; [1]Cell Molecular Biology, Northwestern University, Feinberg School of Medicine, Chicago, IL, [2]Biochemistry Molecular Genetics, Northwestern University, Feinberg School of Medicine, Chicago, IL, [3]Chemistry, Northwestern University, Weinberg College of Arts Sciences, Evanston, IL

B1102/P518 **Unique functional properties of the Mitofusin proteins.** S.C. Hoppins[1]; [1]Biochemistry, University of Washington, Seattle, WA

B1103/P519 **MIEF1/2 functions in coordination with Mff to regulate the balance of mitochondrial dynamics in mammals.** R. Yu[1], T. Liu[1], S. Jin[2], C. Ning[1], U. Lendahl[2], M. Nistér[1], J. Zhao[1]; [1]Oncology-Pathology, Karolinska Institutet, Stockholm, Sweden, [2]Cell and Molecular Biology, Karolinska Institutet, Stockholm, Sweden

B1104/P520 **Visualization of the inner mitochondrial membrane during mitochondrial division by 4D structured illumination microscopy.** C.M. Termini[1,2], H. Rakusova[1,3], S.C. Lewis[1,4], J. Nunnari[1,4]; [1]Marine Biological Laboratory, Woods Hole, MA, [2]Pathology, University of New Mexico, Albuquerque, NM, [3]McGill University, Quebec, Canada, [4]Molecular and Cellular Biology, University of California, Davis, Davis, CA

B1105/P521 **A conserved membrane bending activity of Mic60 is necessary for cristae formation.** D. Tarasenko[1], M. Barbot[1], D.C. Jans[2], B. Kroppen[1], G. Heim[3], W. Möbius[4,5], S. Jakobs[2,6], M. Meinecke[1,7,8]; [1]Department of Cellular Biochemistry, University Medical Center Göttingen, Göttingen, Germany, [2]Department of Neurology, University Medical Center Göttingen, Göttingen, Germany, [3]Electron Microscopy Facility, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany, [4]Department of Neurogenetics, Max Planck Institute of Experimental Medicine, Göttingen, Germany, [5]Center Nanoscale Microscopy and Molecular Physiology of the Brain (CNMPB), Göttingen, Germany, [6]Department of NanoBiophotonics, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany, [7]European Neuroscience Institute Göttingen, Göttingen, Germany, [8]Göttinger Zentrum für Molekulare Biowissenschaften, Göttingen, Germany

B1106/P522 **Peroxisomes are essential for germ cell development.** A. Brauns[1,2]; [1]Institute of Anatomy and Experimental Morphology, University Medical Center Hamburg-Eppendorf (UKE), Hamburg, Germany, [2]Department of Anatomy and Cell Biology, Department of Anatomy and Justus Liebig-University, Gießen, Germany

B1107/P523 **Purification and isolation of inner mitochondrial membranes from mammalian and Xenopus oocytes for electrophysiological interrogation.** L. Gabelev[1]; [1]MCB, UC Berkeley, Berkeley, CA

B1108/P524 **Num1 anchors mitochondria to the plasma membrane via two domains with different lipid binding specificities.** H.A. Ping[1], L.M. Kraft[1], W. Chen[1], A. Nilles[1], L.L. Lackner[1]; [1]Molecular Biosciences, Northwestern University, Evanston, IL

B1109/P525 **MIC60 regulates PINK1 activation and Parkin recruitment to damaged mitochondria through the cAMP/PKA signaling pathway.** S. Akabane[1], M. Uno[1], S. Shimazaki[1], T. Oka[1]; [1]Life Science, Rikkyo University, Tokyo, Japan

B1110/P526 **Dose Dependent Effects of Dimethyl Sulfoxide on the Mitochondria of Hepatocellular Carcinoma Cells.** R.G. Aktas[1], H. Isan[1], E.B. Caliskan[2], O.E. Tok[3], M.S. Aydin[3], O.T. Kaya[4]; [1]Cancer and Stem Cell Research Center, School of Medicine, Maltepe University, Istanbul, Turkey, [2]School of Medicine, Istanbul University, Istanbul, Turkey, [3]Histology Embryology, School of Medicine, Bezm-i Alem Vakif University, Istanbul, Turkey, [4]Histology Embryology, School of Medicine, Marmara University, Istanbul, Turkey

B1111/P527 **Poldip2 is an oxygen-sensitive mitochondrial protein that controls oxidative/glycolytic metabolism balance.** F.I. Paredes Diaz[1], K. Sheldon[1], G. Torres[1], A. San Martin[1]; [1]Cardiology, Emory University, Atlanta, GA

B1112/P528 **Estrogen receptor alpha 36 is mostly localized in mitochondria in human uterine smooth muscle and leiomyoma cells.** Y. Yan[1], L. Yu[1], L. Castro[1], D. Dixon[1]; [1]Molecular Pathogenesis Group, National Toxicology Program Laboratory (NTPL), Division of the NTP (DNTP), National Institute of Environmental Health Sciences, NIH, DHHS, Research Triangle Park, NC

B1113/P529 **Down-regulation of glucose transport and metabolism by high extracellular glucose concentration in vascular smooth muscle cells.** A. Perez[1], M. Brenet[1], C.X. Bittner[2], F. Barros[2], C. Villanueva[1], C. Gonzalez[1], C.B. Gonzalez[1]; [1]Department of Physiology, Universidad Austral de Chile, Valdivia, Chile, [2]Centro de Estudios Cientificos, Valdivia, Chile

B1114/P530 **Intracellular Calcium Modulates Mitochondrial Shape and Activity in Podocytes.** E. Dobrinskikh[1], S.I. Al-Juboori[2], L. Lewis[1], P. Zerfas[3], J. Blaine[1]; [1]Department of Medicine, University of Colorado Denver, Aurora, CO, [2]Department of Electrical Engineering, University of Colorado Denver, Aurora, CO, [3]Electron Core Microscopy Facility, NIH, Bethesda, MD

B1115/P531 **Mitochondrial damage affects cell growth and cell cycle progression by PINK1/Parkin.** D.P. Sideris[1], A.M. Pickrell[1], N. Giagtzoglou[2], C. Wang[1], R.J. Youle[1]; [1]NINDS, National Institutes of Health, Bethesda, MD, [2]Pathway Discovery, Biogen Inc, Cambridge, MA

B1116/P532 **Effects of pink1, buffy, deBcl, and presenilin (psn) genes on mitochondrial health in Drosophila melanogaster.** W.K. Abdel Qader[1], K. Hammock[1], K. Duty[1], H. Chung[1]; [1]Biology, University of West Florida, Pensacola, FL

B1117/P533 **Mitochondrial heme distribution: Impact of heterologous heme-binding proteins in mitochondrial sub compartments to probe heme transport.** M. Jeong[1], D. Winge[1]; [1]Departments of Medicine and Biochemistry, University of Utah Health Sciences Center, Salt Lake City, UT

B1118/P534 **Investigating effects of *Presenilin* on mitochondrial health.** K. Hammock[1], K. Duty[1], W.K. Abdel Qader[1], B. Mershon[1], A. Sakhichand[1], A. Barajas[1], A. Ejikemeuwa[1], H. Chung[1]; [1]Biology, University of West Florida, Pensacola, FL

Lipids and Membrane Microdomains 1

B1119/P535 **TMEM24, a lipid transporter at ER-PM contacts, regulates pulsatile insulin secretion.** M. Messa[1,2,3,4], J.A. Lees[1], E.W. Sun[1,2,3,4], H. Wheeler[1,2,3,4], F. Torta[5], M.R. Wenk[5], K.M. Reinisch[1], P. De Camilli[1,2,3,4,6]; [1]Department of Cell Biology, Yale University School of Medicine, New Haven, CT, [2]Howard Hughes Medical Institute, Yale University School of Medicine, New Haven, CT, [3]Program in Cellular Neuroscience, Neurodegeneration and Repair, Yale University School of Medicine, New Haven, CT, [4]Department of Neuroscience, Yale University School of Medicine, New Haven, CT, [5]Department of Biochemistry, Yong Loo Lin School of Medicine, National University of Singapore, Singapore, Singapore, [6]Kavli Institute for Neuroscience, Yale University School of Medicine, New Haven, CT

B1120/P536 **RASSF4 regulates PIP2 and formation of ER-plasma membrane junctions.** Y. Chen[1], C. Chang[1], J. Liou[1]; [1]Physiology, UT Southwestern, Dallas, TX

B1121/P537 **Control of plasma membrane lipid homeostasis by the extended synaptotagmins.** Y. Saheki[1,2,3,4,5,6], X. Bian*[2,3,4,5,6], C.M. Schauder*[3], Y. Sawaki[2,3,4,5,6], M.A. Surma[7], C. Klose[7], F. Pincet[8], K.M. Reinisch[3], P. De Camilli[2,3,4,5,6]; [1]Lee Kong Chian School of Medicine, Nanyang Technological University, Singapore, Singapore, [2]Department of Neuroscience, Yale University School of Medicine, New Haven, CT, [3]Department of Cell Biology, Yale University School of Medicine, New Haven, CT, [4]Howard Hughes Medical Institute, Yale University School of Medicine, New Haven, CT, [5]Kavli Institute for Neuroscience, Yale University School of Medicine, New Haven, CT, [6]Program in Cellular Neuroscience, Neurodegeneration and Repair, Yale University School of Medicine, New Haven, CT, [7]Lipotype GmbH, Dresden, Germany, [8]Laboratoire de Physique Statistique, Ecole Normale Supérieure de Paris, Université Pierre et Marie Curie, Université Paris Diderot, Centre National de la Recherche Scientifique, Paris, France

B1122/P538 **Endosome-ER contacts control actin nucleation and retromer function through VAP-dependent regulation of PI4P.** R. Dong[1,2,3,4], Y. Saheki[1,2,3,4], S. Swarup[4], L. Lucast[1,2,3,4], J.W. Harper[5], P. De Camilli[1,2,3,4,6]; [1]Department of Neuroscience, Yale University School of Medicine, New Haven, CT, [2]Department of Cell Biology, Yale University School of Medicine, New Haven, CT, [3]Howard Hughes Medical Institute, Yale University School of Medicine, New Haven, CT, [4]Program in Cellular Neuroscience, Neurodegeneration and Repair, Yale University School of Medicine, New Haven, CT, [5]Department of Cell Biology, Harvard Medical School, Boston, MA, [6]Kavli Institute for Neurosciences, Yale University School of Medicine, New Haven, CT

B1123/P539 **Molecular mechanisms of lateral diffusion barriers function in the yeast ER.** R. Prasad[1], A. Sliwa-Gonzalez[1], J. Saarikangas[1], Y. Barral[1]; [1]Institute of Biochemistry, ETH Zürich, Zurich, Switzerland

B1124/P540 **Hallmarks of reversible phase separation in living, unperturbed cell membranes.** S. Rayermann[1], G.E. Rayermann[1], A.J. Merz[2], S.L. Keller[1]; [1]Chemistry, University of Washington, Seattle, WA, [2]Biochemistry, University of Washington, Seattle, WA

B1125/P541 **Polyunsaturated fatty acids remodel membranes to potentiate osteogenic differentiation of mesenchymal stem cells.** K.R. Levental[1], M.A. Surma[2], A. Skinkle[3], J.H. Lorent[1], Y. Zhou[1], C. Klose[2], J.T. Chang[1], J.F. Hancock[1], I. Levental[1]; [1]Integrative Biology and Pharmacology, McGovern Medical School at the University of Texas Health Science Center, Houston, TX, [2]Lipotype, GmbH, Dresden, Germany, [3]Rice University, Houston, TX

B1126/P542 **Identifying the role of *Candida albicans* vacuolar ATP binding cassette transporter in cellular homeostasis and virulence.** N.K. Khandelwal[1], D. Sanglard[2], A.K. Mondal[1], R. Prasad[3]; [1]School of Life Sciences, Jawaharlal Nehru University, New Delhi, India, [2]Institute of Microbiology, University of Lausanne and University Hospital Center, Lausanne, Switzerland, [3]Amity Institute of Integrative Sciences and Health, Amity University Haryana, Gurgaon, India

B1127/P543 **The Biophysical and Biochemical Polarization of the Epithelial Plasma Membrane.** A. Skinkle[1], B. Diaz-Rohrer[2], I. Levental[2]; [1]Department of Biosciences, Rice University, Houston, TX, [2]Department of Integrative Biology and Pharmacology, McGovern Medical School at the University of Texas Health Science Center, Houston, TX

B1128/P544 **Remodeling of the postsynaptic plasma membrane during neural development.** K. Tulodziecka[1], B.B. Diaz-Rohrer[1], M.M. Farley[2], R.B. Chan[3], G. Di Paolo[3], K.R. Levental[1], N.M. Waxham[2], I. Levental[1]; [1]Department of Integrative Biology Pharmacology, McGovern Medical at the University of Texas Health Science Center, Houston, TX, [2]Department of Neurobiology Anatomy, McGovern Medical at the University of Texas Health Science Center, Houston, TX, [3]Department of Pathology and Cell Biology, Columbia University Medical Center, New York, NY

B1129/P545 **Antidepressant action in neural plasma membranes.** Y. Liu[1], U. Perez-Salas[1,2], M.M. Rasenick[3], S.L. Veatch[4]; [1]Department of Physics, University of Illinois at Chicago, Chicago, IL, [2]Argonne National Laboratory, Argonne, IL, [3]Department of Physiology and Biophysics, University of Illinois at Chicago, Chicago, IL, [4]Department of Biophysics, University of Michigan, Ann Arbor, MI

B1130/P546 **Perturbation of complex sphingolipid synthesis increases drug resistance in S. cerevisiae.** P.K. Hanson[1], H.N. Daniel[1]; [1]Biology Department, Birmingham-Southern College, Birmingham, AL

B1131/P547 **A Genetic Screen for Mutants with Supersized Lipid Droplets in Caenorhabditis elegans.** S. Li[1], S.O. Zhang[1]; [1]School of Life Sciences, Capital Normal University, Beijing, China

B1132/P548 **Lipid droplets are central organelles for meiosis II progression during yeast sporulation.** T. Hsu[1], R. Chen[1], Y. Cheng[2], C. Wang[2]; [1]Institute of Molecular Biology, Academia Sinica, Nankang, Taipei, Taiwan, [2]Institute of Plant and Microbial Biology, Academia Sinica, Nankang, Taipei, Taiwan

B1133/P549 **Water-soluble polysaccharides obtained from barley alleviates obesity and dyslipidemia in high-fat diet fed mice.** E. Lee[1], S. Jeong[1], H. Hong[2], C. Cho[2]; [1]Traditional Alcoholic Beverage Research Team, Korea Food Research Institute, Seongnam-si, Korea, South, [2]Traditional Food Research Center, Korea Food Research Institute, Seongnam-si, Gyeonggi-do, Korea, South

B1134/P550 **Role of membrane contact sites in formation of lipid domains during stress.** A. Toulmay[1], A. Murley[2], R. Sarsam[2], J. Yamada[2], J. Nunnari[2], W. Prinz[1]; [1]LCMB, NIDDK, NIH, Bethesda, MD, [2]Department of Molecular and Cellular Biology, University of California, Davis, Davis, CA

B1135/P551 **Dissecting the roles of PLA_2-mediated tubules and STARD4 in intracellular cholesterol transport.** A.L. Munlyn[1], A.Y. Tarren[1], H. Beaman[1], E.B. Cluett[1]; [1]Biology, Ithaca College, Ithaca, NY

B1136/P552 **Methylglyoxal levels increased in hypercholesterolemic rabbits.** L. Simon[1], P. Chantarasinlapin[2], A. Funes[1], T. Saez[1], M. Veisaga[3], M.A. Barbieri[3,4,5], M.W. Fornes[1]; [1]Laboratorio de Investigaciones Andrológicas de Mendoza, Universidad Nacional de Cuyo, Mendoza, Argentina, [2]Department of Dietetics and Nutrition, Florida International University, Miami, FL, [3]Biomolecular Sciences Institute, Florida International University, Miami, FL, [4]Fairchild Tropical Botanic Garden, Fairchild Tropical Botanic Garden, Miami, FL, [5]Department of Biological Sciences, Florida International University, Miami, FL

B1137/P553 **GSK3-family Kinases regulate Lipin 1 nuclear localization and lipid homeostasis.** L.J. Chan[1], J. McQueen[1,2], T.R. Peterson[3], T.K. Poon[1], M. Briggs[1], C.D. Roskelley[1], V. Measday[2], D.M. Sabatini[3], C.J. Loewen[1]; [1]Cellular and Physiological Sciences, University of British Columbia, Vancouver, BC, [2]Wine Research Centre, University of British Columbia, Vancouver, BC, [3]Biology, Whitehead Institute for Biomedical Research, Cambridge, MA

B1138/P554 **Polarized release of T-cell-receptor-enriched microvesicles at the immunological synapse.** K. Choudhuri[1]; [1]Microbiology Immunology, University of Michigan Medical School, Ann Arbor, MI

B1139/P555 **Depletion of plasma membrane $PI(4,5)P_2$ promotes store-operated calcium entry.** J.B. Jensen[1], E.J. Dickson[2], B. Hille[1]; [1]Physiology and Biophysics, University of Washington, Seattle, WA, [2]Physiology and Membrane Biology, University of California, Davis, CA

Signaling from the PM/ Cytoplasm to the Nucleus

B1140/P556 **The phenotypic conversion of VSMCs is mediated by prostaglandin D2 via ERK signaling pathway.** H. Lee[1], J. Ha[1], Y. Kim[1], S. Jin[1], F. Vafaeinik[1], J. Jang[1], S. Bae[1]; [1]Pharmacology, Pusan National University School of Medicine, Yangsan-si, Korea

B1141/P557 **Actomyosin contractility modulates Wnt signaling through adherens junction stability.** E.T. Hall[1], E. Hoesing[1], E.M. Verheyen[1]; [1]Molecular Biology and Biochemistry, Simon Fraser University, Burnaby, BC

B1142/P558 **Chromatin modifies the decoding of NF-κB signals to regulate transcription.** V.C. Wong[1], A.K. Chavali[2], R.E. Lee[3], W. Mothes[4], S. Gaudet[5,6], K. Miller-Jensen[1,2]; [1]Department of Molecular, Cellular, and Developmental Biology, Yale University, New Haven, CT, [2]Department of Biomedical Engineering, Yale University, New Haven, CT, [3]Department of Computational and Systems Biology, University of Pittsburgh, Pittsburgh, PA, [4]Department of Microbial Pathogenesis, Yale University School of Medicine, New Haven, CT, [5]Department of Cancer Biology and Center for Cancer Systems Biology, Dana-Farber Cancer Institute, Boston, MA, [6]Department of Genetics, Harvard Medical School, Boston, MA

B1143/P559 **Comparative forward genetic screens in haploid human cells reveal new regulatory mechanisms in WNT signaling.** A.M. Lebensohn[1], R. Dubey[1], L.R. Neitzel[2], O. Tacchelly-Benites[3], E. Yang[3], C.D. Marceau[4], E.M. Davis[5], B.B. Patel[1], Z.B. Nejad[1], Y. Ahmed[3], E. Lee[2], J.E. Carette[4], R. Rohatgi[1]; [1]Departments of Biochemistry and Medicine, Stanford University School of Medicine, Stanford, CA, [2]Department of Cell and Developmental Biology, Vanderbilt University Medical Center, Nashville, TN, [3]Department of Genetics and the Norris Cotton Cancer Center, Geisel School of Medicine at Dartmouth College, Hanover, NH, [4]Department of Microbiology and Immunology, Stanford University School of Medicine, Stanford, CA, [5]Department of Molecular, Cellular, and Developmental Biology, University of Colorado at Boulder, Boulder, CO

B1144/P560 **The transcription factor Fra-1 acts as a linear integrator of ERK activity amplitude and duration.** T.E. Gillies[1], M. Pargett[1], B. Sparta[1], M. Minguet Sànchez[1], J. Albeck[1]; [1]MCB, University of California Davis, Davis, CA

B1145/P561 **Identifying the biological roles of a short variant of Large Tumor Suppressor Kinase 1 (Lats1) in growth control.** Y. Matsui[1], Y. Zhang[1], E.M. Lesko[2], Z. Lai[1,2]; [1]Biology, The Pennsylvania State University, University Park, PA, [2]Biochemistry and Molecular Biology, The Pennsylvania State University, University Park, PA

B1146/P562 **Expression of Wnts in pancreatic islet cells of prediabetic and normal mice.** C.B. Collares-Buzato[1], D.A. Maschio[1], H.C. Barbosa-Sampaio[2]; [1]Department of Biochemistry and Tissue Biology, University of Campinas, Campinas, Brazil, [2]Department of Structural and Functional Biology, University of Campinas, Campinas, Brazil

B1147/P563 **Nox2 contributes to RANKL-induced osteoclast differentiation by upregulating NFATc1 expression.** I. Kang[1], C. Kim[1]; [1]pharmacology, Inha University, Incheon, Korea, South

B1148/P564 **Carbon monoxide enhances the differentiation and polarization of murine macrophages.** R. Kim[1], I. Kang[1], Y. Kwon[1], C. Kim[1]; [1]Pharmacology, Inha University School of Medicine, Incheon, Korea

B1149/P565 **Effects of Osthole and Klotho on Advanced Glycation End Products-Induced Hypertrophic Growth in Human Renal Tubular Cells.** J. Huang[1]; [1]Biomedicine and Healthcare, Chung Hwa University of Medical Technology, Tainan, Taiwan

B1150/P566 **Regulation of p53 and NF-kB by DGKzeta.** T. Tanaka[1], K. Goto[1]; [1]Anatomy and Cell Biology, Yamagata University School of Medicine, Yamagata, Japan

B1151/P567 **TI-1-162, a hydroxy indenone derivative inhibiting NF-κB, ameliorates colitis by suppression of TNF-α expression.** P. Gurung[1], S. Banskota[1], E. Lee[1], Y. Lee[1], M. Park[1], J. Kim[1]; [1]College of Pharmacy, Yeungnam University, Gyeongsan, Korea, South

B1152/P568 **The necessity of TRPM2-mediated Ca^{2+} signals in the exercise-induced expression of slow muscle fibers.** S. Lee[1], B. Kim[1], D. Park[1], U. Kim[1]; [1]Department of Biochemistry, National Creative Research Laboratory for Ca2+ Signaling Network, Chonbuk National University Medical School, Jeonju, Korea

B1153/P569 **Semaphorin Receptor Function in Hedgehog Signal Transduction.** J.M. Pinskey[1], R.J. Giger[1], B.L. Allen[1]; [1]Cell and Developmental Biology, University of Michigan, Ann Arbor, MI

B1154/P570 **Anti-inflammatory effects of an improved pyrrole-based microtubule-depolymerizing compound on RAW264.7 macrophages.** E.C. Li[1], A. Gonye[1], S.P. Gilmore[1], J.T. Gupton[2], K. Fischer-Stenger[1]; [1]Department of Biology, University of Richmond, Richmond, VA, [2]Department of Chemistry, University of Richmond, Richmond, VA

B1155/P571 **Investigating the role of angiomotin in directing mechanosensitive neural stem cell differentiation.** P.H. Kang[1], M. Kang[1], D. Schaffer[1,2,3], S. Kumar[1,3,4]; [1]Bioengineering, University of California, Berkeley, Berkeley, CA, [2]Helen Wills Neuroscience Institute, University of California, Berkeley, Berkeley, CA, [3]Chemical and Biomolecular Engineering, University of California, Berkeley, Berkeley, CA, [4]Physical Biosciences, Lawrence Berkeley National Laboratory, Berkeley, CA

B1156/P572 **Human cytomegalovirus actively modulates the aryl hydrocarbon receptor-signaling pathway to enhance the production of progeny virus.** P. Naseri Nosar[1], J. Hwang[1], T.E. Shenk[1]; [1]Department of Molecular Biology, Princeton University, Princeton, NJ

B1157/P573 **Netrin-3 Peptide (C-19) is a Chemorepellent and a Growth Inhibitor in *Tetrahymena thermophila*.** M.S. Merical[1], K.W. Ward[1], L.G. Parks[1], H.G. Kuruvilla[1]; [1]Science and Mathematics, Cedarville University, Cedarville, OH

B1158/P574 **Neogenin Facilitates the Induction of Hepcidin Expression by Hemojuvelin in the Liver.** N. Zhao[1], J. Maxson[1], R. Zhang[1], M. Wahedi[1], C.A. Enns[1], A. Zhang[1]; [1]Cell, Developmental & Cancer Biology, Oregon Health Science University, Portland, OR

B1159/P575 **A pyrrole-based microtubule-depolymerizing compound reduces pro-inflammatory signaling in RAW264.7 macrophages.** S.P. Gilmore[1], S. Espinosa de Los Reyes[1], K. Fischer-Stenger[1], A. Gonye[1], O.A. Quintero[1], J.T. Gupton[2], E. Lis[1]; [1]Biology, University of Richmond, University of Richmond, VA, [2]Chemistry, University of Richmond, University of Richmond, VA

B1160/P576 **Regulation of Interferon Signaling by a Calcium-induced miRNA in Primary Human Salivary Gland Epithelial Cells.** S. Jang[1], M. Tandon[1], P. Perez Riveros[1], C. Zheng[1], I. Alevizos[1]; [1]NIDCR, NIH, Bethesda, MD

B1161/P577 **Localized confocal image analyses reveal a rate-limiting step of ERK signal transduction processes.** K. Mouri[1], Y. Okada[1,2]; [1]QBiC, RIKEN, Osaka, Japan, [2]Department of Physics, Graduate School of Science, University of Tokyo, Tokyo, Japan

B1162/P578 **Cav1 orchestrates glucocorticoid-mediated inhibition of keratinocyte migration and cutaneous wound healing.** I. Jozic[1], L. Liang[1], A.P. Sawaya[2], G.D. Glinos[1], I. Pastar[1], M. Tomic-Canic[1,2,3]; [1]Wound Healing and Regenerative Medicine Research Program, Department of Dermatology and Cutaneous Surgery, University of Miami Miller School of Medicine, Miami, FL, [2]Cellular and Molecular Pharmacology Graduate Program in Biomedical Sciences, University of Miami Miller School of Medicine, Miami, FL, [3]John P. Hussman Institute for Human Genomics, University of Miami Miller School of Medicine, Miami, FL

B1163/P579 **Digestion of apoptotic adipocytes by macrophages occurs via lysosomal exocytosis and is mediated by TLR2 and MyD88.** V.C. Barbosa-Lorenzi[1], A.S. Haka[1], F.R. Maxfield[1]; [1]Biochemistry, Weill Cornell Medical College, New York, NY

B1164/P580 **The unfolded protein response (UPR) provides gain amplification to brain-derived neurotrophic factor (BDNF) signaling in cortical mouse neurons.** P. Mardones[1,2], R. Vidal[1,2,3,4], G. Martinez[1,2,3], C. Hetz[1,2,3,4,5,6]; [1]Biomedical Neuroscience Institute, University of Chile, Santiago, Chile, [2]Institute of Biomedical Sciences, University of Chile, Santiago, Chile, [3]Center for Geroscience, Brain Health and Metabolism, Santiago, Chile, [4]Neurounion Biomedical Foundation, Santiago, Chile, [5]Buck Institute for Research on Aging, Novato, CA, [6]Department of Immunology and Infectious Diseases, Harvard School of Public Health, Boston, MA

B1165/P581 **Gamma Secretase Activity is Necessary for Bone Morphogenetic Protein-7-Induced Dendritic Growth in Embryonic Rat Sympathetic Neurons.** K. Karunungan[1], S. Thapa[1], P.J. Lein[2], V. Chandrasekaran[1]; [1]Biology, Saint Mary's College of CA, Moraga, CA, [2]Molecular Biosciences, University of California at Davis, Davis, CA

Signaling Scaffolds and Microdomains

B1200/P582 **Proteomic analysis of GRB2 signaling networks in HER2-positive breast cancer.** A. Beigbeder[1,2,3], F. Chartier[1,3], N. Bisson[1,2,3,4]; [1]Division of Oncology, Centre de Recherche du CHU de Québec, Québec, QC, [2]Cancer Research Centre, Université Laval, Québec, QC, [3]Québec Network for Research on Protein Function, Engineering, and Applications (PROTEO), Université Laval, Québec, QC, [4]Department of Molecular Biology, Medical Biochemistry and Pathology, Université Laval, Québec, QC

B1201/P583 **Endosomal reactive oxygen species act as signaling mediators for the activation of Akt/PKB signaling pathway.** S. Park[1], D. Kang[1]; [1]Life Science, Ewha Womans University, Seoul, Korea, South

B1202/P584 **Identification of non-overlapping functions between adaptor proteins NCK1 and NCK2.** K. Jacquet[1,2,3], U. Dionne[1,2,3], N. Bisson[1,2,3,4]; [1]Cancer Research Center, Quebec city, QC, [2]PROTEO, Quebec city, QC, [3]Oncology Department, CHU de Quebec Research Center, Quebec city, QC, [4]Molecular Biology, Medical Biochemistry, and Pathology, Laval University, Cancer Research Center, Quebec city, QC

B1203/P585 **The scaffold protein RACK1 regulates preformed mediator release in mast cells and affects F-actin dynamics.** E.G. Freitas Filho[1], C. Oliver[1], M.C. Jamur[1]; [1]Cell and Molecular Biology and Pathogenic Bioagents, Ribeirão Preto Medical School, University of São Paulo, Ribeirão Preto, Brazil

B1204/P587 **The Tetraspanin CD82 Regulates Hematopoietic Stem Cell Interactions with the Bone Marrow Microenvironment.** C.A. Saito Reis[1], K.D. Marjon[1], E.M. Pascetti[1], K.L. Karlen[1], R.J. Dodd[1], C.M. Termini[1], J.M. Gillette[1]; [1]Pathology, University of New Mexico Health Science Center, Albuquerque, NM

B1205/P586 **CD82 Membrane Organization Regulates the Spatiotemporal Dynamics of PKCα Signaling.** C.M. Termini[1], K.A. Lidke[2], J.M. Gillette[1]; [1]Pathology, University of New Mexico Health Sciences Center, Albuquerque, NM, [2]Physics and Astronomy, University of New Mexico, Albuquerque, NM

B1206/P588 **Size-dependent protein segregation triggers macrophage phagocytosis.** M.H. Bakalar[1], A.M. Joffe[1], M. Podolski[1], E.M. Schmid[1], D.A. Fletcher[1]; [1]Department of Bioengineering & Biophysics Program, University of California, Berkeley, Berkeley, CA

B1207/P589 **Correlation of Cyclic AMP levels with the Expression of AKAP150 and Calcineurin in Mitogen-Stimulated Immortalized Rat Schwann Cell Culture.** M. Blazaskie[1], A. Rehrig[1], G. Emmett[2], A. Nale[2], J. Stephens[2], A.L. Asirvatham[1]; [1]Biology, Misericordia University, Dallas, PA, [2]Physics, Misericordia University, Dallas, PA

B1208/P590 **Differential Expression of AKAP95, Krox-20 and Cyclin D3 in Mitogen-stimulated Immortalized Rat Schwann Cell Culture.** A. Rehrig[1], M. Blazaskie[1], A.L. Asirvatham[1]; [1]Biology, Misericordia University, Dallas, PA

B1209/P591 **Regulation of the nuclear PKA holoenzyme.** T. Clister[1,2], V. Sample[2], J. Zhang[1,2]; [1]Pharmacology, University of California, San Diego, La Jolla, CA, [2]Pharmacology, Johns Hopkins University, Baltimore, MD

B1210/P592 **PLK1 spatial synchronization and activity during mitosis.** E.G. Colicino[1], H. Hehnly[1]; [1]Cell and Developmental Biology, State University of New York Upstate Medical University, Syracuse, NY

B1211/P593 **Ligand-induced growth and compaction of CD36 nanoclusters induce Fyn signaling.** J.M. Githaka[1], A.R. Vega[2], M.A. Baird[3], M.W. Davidson[3], K. Jaqaman[2], N. Touret[1]; [1]Biochemistry, University of Alberta, Edmonton, AB, [2]Biophysics, UT Southwestern Medical Center, Dallas, TX, [3]National High Magnetic Field Laboratory, Florida State University, Tallahassee, FL

B1212/P594 **Fission yeast Cdr2 nodes promote growth-dependent inactivation of the cell cycle regulator Wee1.** C. Allard[1], J.B. Moseley[1]; [1]Biochemistry and Cell Biology, Geisel School of Medicine at Dartmouth College, Hanover, NH

B1213/P595 **A Diffusion Trap at the Caulobacter Cell Poles Leads to Spatially Resolved Transcription.** K. Lasker[1], A. von Diezmann[2], D.G. Ahrens[1], T.H. Mann[1], W.E. Moerner[2], L. Shapiro[1]; [1]Developmental Biology, Stanford University, Stanford, CA, [2]Chemistry, Stanford University, Stanford, CA

B1214/P596 **In Vitro Reconstitution of T Cell Receptor–Mediated Segregation of the CD45 Phosphatase.** C.B. Carbone[1,2], N. Kern[1,2], R. Fernandes[2,3], K.C. Garcia[2,3], R.D. Vale[1,2]; [1]Cellular and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA, [2]Howard Hughes Medical Institute, San Francisco, CA, [3]Molecular Physiology, Stanford University, Stanford, CA

B1215/P597 **The role of VEGF and molecular scaffolds in the mobility of VEGFR-2 on the endothelial cell surface.** B. Da Rocha-Azevedo[1], S. Lee[1], M. Kittisopikul[1], T. Kim[1], K. Jaqaman[1]; [1]Biophysics, UT Southwestern Medical Center, Dallas, TX

B1216/P598 **Activation time distribution of membrane recruitment process revealed by first-passage analysis of full-length SOS.** W. Huang[1], S. Alveraz[1], Y. Lee[1], Y. Kondo[2], J.K. Chung[1], H. Lam[1], J. Kuriyan[1,2], J.T. Groves[1]; [1]Department of Chemistry, University of California, Berkeley, Berkeley, CA, [2]Department of Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA

Mechanotransduction 1

B1218/P599 **Activating the nuclear piston mechanism to generate intracellular pressure during tumor cell 3D migration.** R.J. Petrie[1], H.M. Harlin[1], K.M. Yamada[2]; [1]Biology, Drexel University, Philadelphia, PA, [2]National Institute of Dental and Craniofacial Research, National Institutes of Health, Bethesda, MD

B1219/P600 **As the beating heart stiffens in development, so does the nuclear lamina.** S. Cho[1], S. Majkut[1,2], A. Abbas[1], K. Vogel[1], M. Tewari[1], J. Irianto[1], C. Chen[3], B.L. Prosser[3], D.E. Discher[1]; [1]Molecular Cell Biophysics Laboratory, University of Pennsylvania, Philadelphia, PA, [2]Department of Physics Astronomy, University of Pennsylvania, Philadelphia, PA, [3]Department of Physiology, Penn Muscle Institute, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA

B1220/P601 **New insight into the interplay of actomyosin contractility and LINC complex in regulation of nuclear shape and high-speed tumor cell motility using precisely sized collagen I/fibronectin1D nanofibers.** V.P. Sharma[1,2], J. Williams[3], E. Leung[2], J. Sanders[3], R.J. Eddy[2], J. Castracane[3], J.S. Condeelis[1,2]; [1]Gruss Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, [2]Anatomry and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, [3]Colleges of Nanoscale Science and Engineering, SUNY Polytechnic Institute, Albany, NY

B1221/P602 **Molecular insights into LINC complex proteins SUN1 and SUN2.** Z. Jahed[1], D. Fadavi[1], G. Luxton[2], M. Mofrad[1]; [1]Bioengineering, University of California, Berkeley, CA, [2]College of Biological Sciences, University of Minnesota, Minneapolis, MN

B1222/P603 **Mechanical response of nesprin-2G to cytoskeletal forces regulates LINC complex-dependent mechanotransdution.** H. Shams[1], M. Mofrad[1], G. Luxton[2]; [1]Bioengineering, University of California, Berkeley, Berkeley, CA, [2]College of Biological Sciences, University of Minnesota, Saint Paul, MN

B1223/P604 **Optogenetic Control of Traction Forces, Cell-Cell Forces and Mechanotransduction.** L. Valon[1], A. Marín-Llauradó[1], T.P. Wyatt[2,3], G. Charras[3,4], X. Trepat[1,5,6]; [1]Institute for Bioengineering of Catalonia, Barcelona, Spain, [2]Laboratory for Molecular Cell Biology, University College London, London, United Kingdom, [3]London Centre for Nanotechnology, London, United Kingdom, [4]Department of Cell and Developmental Biology and Institute for the Physics of Living Systems, University College London, London, United Kingdom, [5]University of Barcelona, Barcelona, Spain, [6]ICREA, Barcelona, Spain

B1224/P605 **Multiparametric analysis of cell morphology shows that beta-PIX, Cdc42, Rac1, and PAK2 drive YAP activation in breast epithelial cells.** J.E. Sero[1], C. Bakal[1]; [1]Cancer Biology, Institute of Cancer Research, London, United Kingdom

B1225/P606 **YAP-independent mechanotransduction of mammary epithelial cells in 3D culture model of cancer invasion.** J.Y. Lee[1], J. Chang[2], S. Nam[1], O. Chaudhuri[1]; [1]Mechanical Engineering, Stanford University, Stanford, CA, [2]Genetics, Stanford University, Stanford, CA

B1226/P607 **Substratum stiffness and Wnt3a synergistically regulate cell proliferation via YAP/TAZ.** S. Han[1], C.M. Nelson[1,2]; [1]Molecular Biology, Princeton University, Princeton, NJ, [2]Chemical and Biological Engineering, Princeton University, Princeton, NJ

B1227/P608 **Matrix Mechanics Controls FHL2 Movement to the Nucleus to Activate *p21/CDKN1A* Expression.** N. Nakazawa[1], A.R. Sathe[1], G. Shivashankar[1,2,3], M.P. Sheetz[1,3,4]; [1]Mechanobiology Institute, National University of Singapore, Singapore, Singapore, [2]FIRC Institute of Molecular Oncology, Milan, Italy, [3]Biological Science, National University of Singapore, Singapore, Singapore, [4]Biological Science, Columbia University, New York, NY

B1228/P609 **Stretch-dependent Akt activation and nuclear localization in epithelial cells.** M.L. Ewald[1], D.J. Renner[1], S. Yamada[1]; [1]Biomedical Engineering, University of California, Davis, Davis, CA

B1229/P610 **Interplay between Rho-GEF Solo and keratin filaments is crucial for mechanotransduction in epithelial cells.** S. Fujiwara[1,2], H. Abiko[2], K. Ohashi[2], K. Mizuno[2]; [1]Department of Mechanical Science and Bioengineering, Graduate School of Engineering Science, Osaka University, Osaka, Japan, [2]Department of BioMolecular Sciences, Graduate School of Life Sciences, Tohoku University, Sendai, Japan

B1230/P611 **Spatial Regulation of RhoA Reveals Zyxin-mediated Elasticity of Stress Fibers.** P.W. Oakes[1,2], E. Wagner[3], C.A. Brand[4], D. Probst[4], M. Linke[4], U.S. Schwarz[4], M. Glotzer[3], M.L. Gardel[2]; [1]Department of Physics, University of Rochester, Rochester, NY, [2]Institute for Biophysical Dynamics, James Franck Institute and Department of Physics, University of Chicago, Chicago, IL, [3]Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL, [4]Institute for Theoretical Physics and BioQuant, Heidelberg University, Heidelberg, Germany

B1231/P612 **Identifying the activator of PLC-1 in *Caenorhabditis elegans* ovulation.** A.D. Cecchetelli[1], C.G. Clifford[1], E.J. Cram[1]; [1]Biology, Northeastern University, Boston, MA

B1232/P613 **Contact Guidance requires spatial control of leading edge protrusion.** G.R. Ramirez-SanJuan[1,2,3,4], P.W. Oakes[1,3,4,5], M.L. Gardel[1,3,4]; [1]Physics, University of Chicago, Chicago, IL, [2]Graduate Program in Biophysical Sciences, University of Chicago, Chicago, IL, [3]Institute for Biophysical Dynamics, University of Chicago, Chicago, IL, [4]James Frank Institute, University of Chicago, Chicago, IL, [5]Physics, University of Rochester, Rochester, NY

B1233/P614 **High hydrostatic pressure induces cytoskeletal organization and signal transduction.** M. Morimatsu[1], A. Fujita[1], K. Takahashi[1], K. Naruse[1]; [1]Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Okayama, Japan

B1234/P615 **Distinct subcellular signaling pathways between Pyk2, Src, and FAK by mechanical force and inflammatory cytokines.** Q. Wan[1], H. Yokota[1,2], S. Na[1,2]; [1]Biomedical Engineering, Purdue University, West Lafayette, IN, [2]Biomedical Engineering, Indiana University-Purdue University Indianapolis, Indianapolis, IN

B1235/P616 **Biomechanical forces modulate epithelial competence and regeneration patterning during wound-induced hair neogenesis.** H. Harn[1,2,3], P. Chiu[2], C. Lin[2], H. Chen[4], C. Wu[2,5], M. Tang[2,3], C. Chuong[1,2], M.W. Hughes[2]; [1]Department of Pathology, University of Southern California, Los Angeles, CA, [2]International Laboratory of Wound Repair and Regeneration, National Cheng Kung University, Tainan, Taiwan, [3]Department of Physiology, National Cheng Kung University, Tainan, Taiwan, [4]Department of Mechanical Engineering, National Chung Hsing University, Taichung, Taiwan, [5]Department of Cell Biology and Anatomy, National Cheng Kung University, Tainan, Taiwan

B1236/P617 **Membrane tension acts through PLD2 and mTORC2 to limit actin network assembly during neutrophil migration.** A. Diz-Muñoz[1,2,3], K. Thurley[4], S. Chintamen[3], S.J. Altschuler[4], L.F. Wu[4], D.A. Fletcher[1], O.D. Weiner[3]; [1]Bioengineering, UC Berkeley, Berkeley, CA, [2]CBB, EMBL, Heidelberg, Germany, [3]CVRI, UCSF, San Francisco, CA, [4]Pharmaceutical Chemistry, UCSF, San Francisco, CA

B1237/P618 **Functional and genetic dissection of mechanosensory organs of *Drosophila*.** C. Guan[1,2], N. Scholz[3], M. Nieberler[1], M.C. Göpfert[4], C.F. Schmidt[2], R.J. Kittel[1], T. Langenhan[3]; [1]Neurophysiology, Institute of Physiology, Würzburg, Germany, [2]Biophysics, Third Institute of Physics, Göttingen, Germany, [3]Department of General Biochemistry, Institute of Biochemistry, Leipzig, Germany, [4]Cellular Neurobiology, Schwann-Schleiden Research Centre, Göttingen, Germany

B1238/P619 **Control of JAK/STAT signaling by caveolae mechanotransduction.** N. Tardif[1], C. Blouin[1], R. Ruez[1], C. Viaris de Lesegno[1], C. Lamaze[1]; [1]CNRS UMR 3666 Inserm U1143 Team membrane dynamics and mechanics of intracellular signaling, Institut Curie, PSL research university, Paris, France

B1239/P620 **Calcium sparks controlling cell mechanosensing.** A.Y. Moalim[1], S.V. Plotnikov[1]; [1]Department of Cell and Systems Biology, University of Toronto, Toronto, ON

B1240/P621 **Identification and characterization of the sole Drosophila alpha-tubulin acetylase dTAT.** C. Yan[1], F. Weng[2], Y. Peng[1], K. Luedke[1], C. Williams[1], G. de la Rosa[1], B. Jenkins[3], J. Wildonger[3], Y. Xiang[2], S. Rogers[4], J.Z. Parrish[1]; [1]Biology, University of Washington, Seattle, WA, [2]Neurobiology, University of Massachusetts Medical School, Worcester, MA, [3]Biochemistry, University of Wisconsin, Madison, WI, [4]Biology, University of North Carolina, Chapel Hill, NC

B1241/P622 **Investigating the morphology and cytoskeletal organization of zebrafish keratocytes *in vivo*.** A.S. Kennard[1], J.A. Theriot[1,2,3]; [1]Biophysics Program, Stanford University, Stanford, CA, [2]Biochemistry, Stanford University, Stanford, CA, [3]Howard Hughes Medical Institute, Stanford University, Stanford, CA

Intermediate Filaments

B1242/P623 **Drafting the intermediate filament proteome.** M. Wiking[1], C. AitBlal[1], L. Björk[1], A. Bäckström[1], F. Danielsson[1], J. Fall[1], C. Gnann[1], M. Hjelmare[1], D. Mahdessian[1], R. Schutten[1], M. Skogs[1], C. Stadler[1], D.P. Sullivan[1], P. Thul[1], C.F. Winsnes[1], L. Åkesson[1], M. Uhlén[1], E. Lundberg[1]; [1]Affinity Proteomics, Science for Life Laboratories (KTH), Solna, Sweden

B1243/P624 **Absence of the Intermediate Filament Synemin Causes Abnormalities in Cardiac and Skeletal Muscle.** K.P. Garcia-Pelagio[1,2], L. Chen[2], R.J. Bloch[2]; [1]Physics Department, School of Sciences, Universidad Nacional Autonoma de Mexico, Mexico City, Mexico, [2]Physiology Department, School of Medicine, University of Maryland, Baltimore, MD

B1244/P625 **Head domains of intermediate filament proteins form cross-β polymers and interact with the low-complexity domain of the Fused in Sarcoma (FUS) RNA binding protein.** E. Mori[1], Y. Lin[1], M. Kato[1], S. Xiang[1], L. Wu[1], I. Kwon[2], S.L. McKnight[1]; [1]Department of Biochemistry, UT Southwestern Medical Center, Dallas, TX, [2]Department of Anatomy and Cell Biology, Sungkyunkwan University School of Medicine, Suwon, South

B1245/P626 **Filaments formed by the translation initiation factor eIF2B: high-resolution insights into a survival strategy.** G. Marini[1], E. Nüske[1], S. Alberti[1], G. Pigino[1]; [1]Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany

B1246/P627 **Intermediate filaments EXC-2/IFC-2 and IFA-4 Maintain Tube Structure of the Excretory Canal of the Nematode *C. elegans*.** H. Al Hashimi[1], M. Buechner[1]; [1]Molecular Biosciences, University of Kansas, Lawrence, KS

B1247/P628 **Vimentin regulates Notch signaling during angiogenesis.** D. Antfolk[1,2], M. Sjöqvist[1,2], F. Cheng[1,2], K. Isoniemi[1,2], C. Duran[3], A. Rivero-Muller[1,2], C. Antila[1,2], R. Niemi[1,2], S. Landor[1,2], C. Bouten[4], K.J. Bayless[3], J.E. Eriksson[1,2], C. Sahlgren[1,2,4]; [1]Turku Centre for Biotechnology, Turku, Finland, [2]Department of Biosciences, Abo Akademi University, Turku, Finland, [3]3Department of Molecular Cellular Medicine, Texas AM University Health Science Center, College Station, TX, [4]Department of Biomedical Engineering, Technical University of Eindhoven, Eindhoven, Netherlands

SUNDAY

Cell-Cell Junctions 1

B1249/P629 **Activation of Adenosine Receptors in Endothelial Cells Increases Connexin 43 Gap Junction Plaques: Analysis of Dynamic Changes in Connexin 43 Synthesis and Localisation.** A. Bader[1], A. Klett[1], K. Schmitt[1], A. Ngezahayo[1,2]; [1]Institute of Biophysics, Leibniz University Hannover, Hannover, Germany, [2]Center for Systems Neuroscience, University of Veterinary Medicine Hannover, Hannover, Germany

B1250/P630 **The dileucine motifs in the carboxy tail of connexin32 control its assembly into gap junctions.** A. Ray[1], P. Katoch[1], N. Jain[1], P.P. Mehta[1]; [1]Biochemistry and Molecular Biology, University of Nebraska Medical Center, Omaha, NE

B1251/P631 **Connexin 43 regulates cell cycle and invasion in non-neoplastic breast epithelium.** S.F. Fostok[1], D.B. Bazzoun[1,2], F.A. Yassine[1], S.A. Lelievre[2,3], R.S. Talhouk[1]; [1]Department of Biology, American University of Beirut, Beirut, Lebanon, [2]Department of Basic Medical Sciences, Purdue University, West Lafayette, IN, [3]Purdue University Center for Cancer Research, Purdue University, West Lafayette, IN

B1252/P632 **Development of a Biological Assay for Assessing aCT-1 Function.** K. Hancock[1,2], R. Gourdie[2], J. Jourdan[2]; [1]School of Medicine, Virginia Tech Carilion, Roanoke, VA, [2]Research Institute, Virginia Tech Carilion, Roanoke, VA

B1253/P633 **Analysis of the oligomerization behavior of concatemeric connexins.** P. Schadzek[1], D. Hermes[1], A. Ngezahayo[1,2]; [1]Institute of Biophysics, Leibniz University Hannover, Hannover, Germany, [2]Center for System Neurosciences (ZSN), Hannover, Germany

B1254/P634 **Dynamic imaging and visualization of connexin/cytoplasmic organelle interactions.** C.L. Bell[1], M.A. Stuckey[1], M.E. Bisher[1], S.A. Murray[1]; [1]Cell Biology, University of Pittsburgh, Pittsburgh, PA

B1255/P635 **Flares of active RhoA locally reinforce tight junctions.** R.E. Stephenson[1], T. Higashi[1], B. Coy[1], T.R. Arnold[1], A.L. Miller[1]; [1]Molecular, Cellular, and Developmental Biology, University of Michigan, Ann Arbor, MI

B1256/P636 **Luminal content of small intestine from prediabetic mice induces epithelial barrier disruption in Caco-2 monolayers *in vitro*.** C.B. Collares-Buzato[1], R.B. Oliveira[1], V.A. Matheus[1], L.P. Canuto[1]; [1]Department of Biochemistry and Tissue Biology, University of Campinas, Campinas, Brazil

B1257/P637 **Structural Dynamics of Tight Junctions Modulate the Epithelial Barrier Properties.** A. Tervonen[1], T. Ihalainen[2], D. García León[3], S. Nymark[1], J. Hyttinen[1]; [1]Electronics and Communications Engineering and BioMediTech, Tampere University of Technology, Tampere, Finland, [2]BioMediTech, University of Tampere, Tampere, Finland, [3]Advanced Development in Arrhythmia Mechanisms and Therapy Group, Spanish Cardiovascular Research Center Foundation, Madrid, Spain

B1258/P638 **Scribble is required for tricellular junction complex formation in Drosophila.** Z. Sharifkhodaei[1], M. Gilbert[1], V.J. Auld[1]; [1]Zoology, University of British Columbia, Vancouver, BC

B1259/P639 **EpCAM cleavage by matriptase regulates intestinal epithelial function.** C. Wu[1], X. Feng[1], M.C. Udey[1]; [1]Dermatology Branch, National Cancer Institute, Bethesda, MD

B1260/P640 **The recruitment and function of Anillin at cell-cell junctions.** K.M. Dinshaw[1], T.R. Arnold[1], C.C. Reyes[1], A.L. Miller[1]; [1]Molecular, Cellular, and Developmental Biology, University of Michigan, Ann Arbor, MI

B1261/P641 **Regulation of epithelial barrier function by a TJ-associated actin-binding protein.** S. Konishi[1,2], M. Uji[2], T. Mizuno[2], K. Tateishi[2], H. Kanoh[2], T. Yano[2], A. Tamura[2], S. Tsukita[2]; [1]Respirat, Med, Grad, Sch, of Med, Kyoto Univ., Kyoto city, Japan, [2]Lab, of Biol, Sci,, Grad, Sch, of Frontier, Biosci, and Grad, Sch, of Med, Osaka Univ., Osaka City, Japan

B1262/P642 **Overexpression of AQP5 in epithelial cells decreases intercellular adhesion.** F.H. Login[1], H.H. Jensen[2], J.J. Morgen[1], G.A. Pedersen[1], J.S. Koffman[2,3], J. Palmfeldt[1], P. Bross[1], M. Parsons[4], L.N. Nejsum[1,3]; [1]Department of Clinical Medicine, Aarhus University, Aarhus, Denmark, [2]Department of Molecular Biology and Genetics, Aarhus University, Aarhus, Denmark, [3]Interdisciplinary Nanoscience Center, Aarhus University, Aarhus, Denmark, [4]King's College, London, United Kingdom

B1263/P643 **TJ-MAP4 up-regulate MLC-phosphorylation by binding to MLC, ZO1 and tubulin at tight junction.** H. Kanoh[1,2], T. Yano[2], M. Uji[2], A. Tamura[2], S. Tsukita[2]; [1]Graduate School of Biostudies, Kyoto university, Kyoto, Japan, [2]Graduate School of Frontier Biosciences and Graduate School of Medicine, Osaka university, Osaka, Japan

B1264/P644 **Identifying Novel Components of the Desmosome Proteome Essential for Maintaining Epidermal Integrity.** K.A. Badu-Nkansah[1]; [1]Deptartment of Cell Biology, Duke University School of Medicine, Durham, NC

B1265/P645 **Loss of Desmoplakin controls p38 MAPK-regulated breast and skin cancer cell migration.** E.I. Williams[1], A.D. Dubash[1]; [1]Biology, Furman University, Greenville, SC

Integrins and Cell-ECM Interactions

B1266/P646 **Actin retrograde flow actively aligns and orients ligand-engaged integrins in focal adhesions.** V. Swaminathan[1], J.K. Mathew[2], S. Mehta[3], P. Nordenfelt[4], T.I. Moore[5], K. Nobuyasu[6], D. Baker[6], R. Oldenbourg[3], T. Tani[3], S. Mayor[2], T.A. Springer[5], C.M. Waterman[1]; [1]Cell Biology and Physiology Center, NHLBI/NIH, Bethesda, MD, [2]National Center for Biological Sciences, Bangalore, India, [3]Marine Biological Sciences, Woods Hole, MA, [4]Division of Infection Medicine, Lund University, Lund, MD, [5]Program in Cellular and Molecular Medicine, Harvard University, Boston, MA, [6]Department of Biochemistry, University of Washington, Seattle, WA

B1267/P647 **Nanoscale architecture of the unique focal adhesions and actin cytoskeleton of human pluripotent stem cells.** C. Guzman[1], A. Stubb[1], J. Ivaska[1]; [1]Turku Centre for Biotechnology, University of Turku, Turku, Finland

B1268/P648 **Molecular Architecture of Adhesions Reflects Cellular Invasion Potential.** C.G. Galbraith[1], L. Voss[1,2], I.M. Gal[1], W.N. Voss[1], J.A. Galbraith[1]; [1]OCSSB/BME, OHSU, Portland, OR, [2]Biochemistry/Molecular Biology, Lewis Clark University, Portland, OR

B1269/P649 **Talin autoinhibition is important for regulating integrin-based cell-ECM adhesion *in vivo*.** A.M. Haage[1], K.E. Goodwin[1], A. Messenberg[1], A.B. Bogutz[2], L. Lefebvre[2], G. Tanentzapf[1]; [1]Cell Physiological Sciences, University of British Columbia, Vancouver, BC, [2]Medical Genetics, University of British Columbia, Vancouver, BC

B1270/P650 **SHARPIN modulates ligand-specific mechanosensing through regulation of integrin binding dynamics.** M. Lerche[1], E. Peuhu[1], A. Elosegui[2], P. Roca-Cusachs[2,3], J. Ivaska[1,4]; [1]University Of Turku, Centre for Biotechnology, Turku, Finland, [2]Institute for Bioengineering of Catalonia, Barcelona, Spain, [3]University of Barcelona, Barcelona, Spain, [4]Biochemistry and Food Chemistry, University of Turku, Turku, Finland

B1271/P651 **Vimentin regulates integrin-mediated cell migration by directly binding to integrin β subunits through Ser38 residue.** J. Kim[1], E. Kim[1], C. Yang[1,2], C. Kim[1]; [1]Department of Life Science, Korea University, Seoul, Korea, South, [2]School of Biological Science, Seoul National University, Seoul, Korea, South

B1272/P652 **Discoidin Domain Receptor 1 Enables Collagen Remodeling by Cell-Mediated Traction Forces.** N.M. Coelho[1], P.D. Arora[1], S. VanPutten[1], S. Boo[1], P. Petrovic[1], B. Hinz[1], C.A. McCulloch[1]; [1]Matrix Dynamics Group, Faculty of Dentistry, University of Toronto, Toronto, ON

B1273/P653 **Type IV Collagen stabilizes the connection of juxtaposed tissues at the B-LINK complex.** D.P. Keeley[1], D.R. Sherwood[1]; [1]Biology, Duke University, Durham, NC

B1274/P654 **Protein Interactions in the Core Adhesome and the Origins of Animal Multicellularity.** E.A. Carter[1], R.O. McCann[1]; [1]Basic Medical Sciences, Mercer University School of Medicine, Macon, GA

B1275/P655 **Hybrid computational modeling of collective cell durotaxis.** J. Escribano[1], R. Sunyer[2], P. Roca-Cusachs[2,3], X. Trepat[2,3], J.M. García Aznar[1]; [1]Mechanical Engineering, University of Zaragoza, Zaragoza, Spain, [2]Institute for Bioengineering of Catalonia, Barcelona, Spain, [3]University of Barcelona, Barcelona, Spain

B1276/P656 **The involvement of Lu/B-CAM spectrin binding motif in cell migration on LM-511.** N. Harashima[1]; [1]Clinical Biochemistry, Tokyo University of Pharmacy and Life Sciences, Hachioji, Japan

B1277/P657 **Role of focal adhesion kinase signaling in vascular smooth muscle cell migration, proliferation, and intimal hyperplasia.** J. Kim[1], H. Park[2], H. Kong[1], J.M. Murphy[2], D.D. Schlaepfer[3], E. Ahn[1], S. Lim[2]; [1]Mitchell Cancer Institute, University of South Alabama, Mobile, AL, [2]Biochemistry and Molecular Biology, University of South Alabama, Mobile, AL, [3]Moores Cancer Center, University of California, San Diego, La Jolla, CA

B1278/P658 **HAI-2-SPINT2 regulates HGF and CXCL12 secretion in stromal cells and increases cell adhesion.** F.M. Roversi[1,2], R.G. Rosa[1], G.P. Santos[1], A.D. Duarte[1], A. Longhini[1], S.T. Saad[1]; [1]Hematology and Hemotherapy Center, University of Campinas, Campinas, Brazil, [2]Universidade São Francisco, Bragança Paulista, Brazil

B1279/P659 **Effect of titanium surface topography on integrin signaling pathway and osteoblast genotype expression.** H.B. Lopes[1], C.N. ELIAS[2], P.T. OLIVEIRA[1], A.L. ROSA[1], M.M. Beloti[1]; [1]Cell Culture Laboratory, School of Dentistry of Ribeirão Preto, University of São Paulo, Ribeirão Preto, Brazil, [2] Materials Science Department, Military Institute of Engineering, Rio de Janeiro, Brazil

B1280/P660 **A plasmid-based MMP14-FAP biosensor for monitoring and measuring MMP14 activity in real-time.** A. Braun[1], K.A. Myers[1]; [1]Biology, University of the Sciences in Philadelphia, Philadelphia, PA

B1281/P661 **Procaspase-3 regulates the apoptotic threshold of the cell through modulation of fibronectin secretion.** D.B. Weir[1], L.H. Boise[2]; [1]Cancer Biology Graduate Program, Emory University, Atlanta, GA, [2]Hematology and Medical Oncology, Emory University, Atlanta, GA

B1282/P662 **Coordinated integrin activation by actin-dependent force during T cell migration.** P. Nordenfelt[1,2,3], H.L. Elliott[3], T.A. Springer[1]; [1]BCMP, Harvard Medical School, Boston, MA, [2]Infection Medicine, Lund University, Lund, Sweden, [3]Image and Data Analysis Core, Harvard Medical School, Boston, MA

B1283/P663 **Characterization of the interacting moieties of αX I domain and Receptors for Advanced Glycation End Products (RAGE).** S. Nham[1], B. Dolgorsuren[1]; [1]Science Education, Kangwon National University, Chuncheon, Korea, South

B1284/P664 **Extracellular Matrix Downregulation in the *Drosophila* Heart Preserves Contractile Function and Improves Lifespan.** A.O. Sessions[1], G. Kaushik[2], S. Parker[3], K. Raedschelders[3], R. Bodmer[4], A.J. Engler[2]; [1]Biomedical Sciences Program, University of California, San Diego, La Jolla, CA, [2]Bioengineering, University of California, San Diego, La Jolla, CA, [3]Advanced Clinical Biosystems, Cedars-Sinai Heart Institute, Los Angeles, CA, [4]Development, Aging, and Regeneration Program, Sanford Burnham Prebys Medical Discovery Institute, La Jolla, CA

B1285/P665 **Intracellular and extracellular calreticulin are required for extracellular matrix and integrin induction by a complex mechanism essential for tissue regeneration and wound healing.** U.M. Pandya[1], J. Daubriac[2], C. Jaramillo[2], C. Egbuta[2], A. Tellechea[2], L.I. Gold[1]; [1]Medicine and Pathology, New York University School of Medicine, New York, NY, [2]Medicine, New York University School of Medicine;Langone Medical Center, New York, NY

B1286/P666 **Spatiotemporal regulation of focal adhesions disassembly at the G2/M transition of the cell cycle.** H.R. Thiam[1], C.M. Waterman[1]; [1]National Heart Lung and Blood Institute, National Institute of Health, Bethesda, MD

B1287/P667 **MARVELD1 knockout mice exhibit Trophoblast cell hyperinvasion.** H. Zhang[1], Y. Chen[1], F. Han[1], Y. Li[1]; [1]Harbin Institute of Technology, School of life science and technology, Harbin, China

B1288/P668 **The integrin-associated kinase Abl2/Arg weakens endothelial cell-matrix adhesion and enhances barrier disruption in inflammatory edema.** E. Valent[1], J.M. Azevedo[1], J. van Bezu[1], E. Eringa[1], F.M. Hoevenaars[1], K. Nawaz[2], P.L. Hordijk[1], V.W. van Hinsbergh[1], G.P. van Nieuw Amerongen[1], C. Margadant[2], J. Aman[1]; [1]Department of Physiology, Institute for Cardiovascular Research, VU Medical Center, Amsterdam, Netherlands, [2]Molecular Cell Biology, Sanquin Research, Amsterdam, Netherlands

B1289/P669 **Integrin-linked interaction of oogonial stem cells with the extracellular matrix (ECM): implications for germline differentiation.** J.A. MacDonald[1], D.C. Woods[1], J.L. Tilly[1]; [1]Biology, Northeastern University, Boston, MA

Cell Death

B1301/P670 **What does Bax do if it is unable to go to mitochondria?** A. Mañas[1], S. Wang[2], H. Zhang[1], N. Maltsev[2], J. Xiang[1]; [1]Department of Biology, Illinois Institute of Technology, Chicago, IL, [2]Human Genetics Department, Computation Institute, University of Chicago, Chicago, IL

B1302/P671 **Carbon Black Exposure Induces Alterations in Mitochondrial Morphology in Human Lung Cells: A Software-Based Quantitative Analysis.** J.L. Brewster[1], J.D. Duff[1], B.K. Laferney[1], C.Y. Jones[1], P.M. Mcclatchey[2]; [1]Natural Science Division, Pepperdine University, Malibu, CA, [2]Department of Pharmacology, University of Colorado, Aurora, CO

B1303/P672 **Oxidation of vitamin C induces neuronal death and alterations in distribution of GLUT1/SVCT2 and mitochondrial size.** L. Ferrada[1], C. Albarran[1], K.A. Salazar [1], F.J. Nualart[1]; [1]Concepcion University, Center for advanced microscopy, CMA BIOBIO, Concepcion, Chile

B1304/P673 **Role of the prodomain of caspase-3 in apoptotic activity.** K.G. Ponder[1], L.H. Boise[2]; [1]Cancer Biology Graduate Program, Emory University, Atlanta, GA, [2]Hematology and Medical Oncology, Winship Cancer Institute of Emory University, Atlanta, GA

B1305/P674 **Caspase-independent granulosa cell death in Wistar rat's ovaries.** O.M. Echeverría[1], N. Torres[1], M.L. Escobar[1], G.H. Vázquez-Nin[1]; [1]Biología Celular, Facultad de Ciencias, Ciudad de México, Mexico

B1306/P675 **Mechanism of Pro-apoptotic Death Receptor 5 Activation by the Unfolded Protein Response.** M. Lam[1], A. Ashkenazi[2], P. Walter[1]; [1]Howard Hughes Medical Institute, Biochemistry, University of California at San Francisco, San Francisco, CA, [2]Genentech Inc, South San Francisco, CA

B1307/P676 **Phosphorylation of the RNA-induced silencing complex protein, TRBP, regulates PKR activity during cell stress.** E.E. Chukwurah[1], R.C. Patel[1]; [1]Department of Biological Sciences, University of South Carolina, Columbia, SC

B1308/P677 **Mycobacterial killing effect of M1-polarized macrophages by induction of endoplasmic reticulum stress-mediated apoptosis.** Y. Lim[1,2], J. Choi[1,2], J. Lee[1,2], S. Cho[1,2], S. Oh[1,2], S. Kim[1,2], D. Go[1,2], C. Song[1,2]; [1]Department of Medical Science, College of Medicine, Chungnam National University, Daejeon, Korea, [2]Department of Microbiology, College of Medicine, Chungnam National University, Daejeon, South

B1309/P678 **Luman contributes to brefeldin A-induced prion protein gene expression by interacting with the ERSE26 element.** M. Dery[1,2], A.C. LeBlanc[1,2]; [1]Lady Davis Institute for Medical Research, Jewish General Hospital, Montreal, QC, [2]Neurology and Neurosurgery, McGill University, Montreal, QC

B1310/P679 **Thioredoxin-1 inhibition promotes MLKL oligomerization and necroptosis.** E. Reynoso Moreno[1], Z. Wang, Ph.D.[1]; [1]Molecular Biology, University of Texas Southwestern Medical Center, Dallas, TX

B1311/P680 **Unsaturated carbonyl compounds in the gas phase of cigarette smoke induces cell death through intracellular Ca^{2+}-dependent PKC activation.** T. Higashi[1], Y. Mai[1], Y. Mazaki[1], T. Horinouchi[1], S. Miwa[1]; [1]Department of Cellular Pharmacology, Graduate School of Medicine, Hokkaido University, Sapporo, Japan

B1312/P681 **Effect of the phthalate, benzylbutylphthalate (BBzP), on neuron viability using Neuro 2a Cells.** V.L. Hernandez[1], H. Dowell[1], N. Bergstrom[1], A.K. Binder[1], L. Carnell[1]; [1]Biological Sciences, Central Washington University, Ellensburg, WA

B1313/P682 **Accentuation of glycolysis of vascular endothelial cell under the hypoxia by activation peptide of coagulation factor IX.** A. Mamiya[1], H. Kitano[1], Y. Fujiwara[1,2], T. Ishikawa[1], E. Yamamoto[1,2], C. Hidai[2]; [1]Oral Surgery, Nihon Univ., Tokyo, Japan, [2]Physiology, Nihon University, Tokyo, Japan

B1314/P683 **Prevention effect of the extract of Allium Tuberosum on vascular inflammation in tumor necrosis factor-α-induced human umbilical vein endothelial cells (HUVEC).** A. LEE[1]; [1]Division of Functional Food Research, Korea Food Research Institute, Seongnam, Korea, South

B1315/P684 **Effects of Cryo Preservation on Oxidative Stress and Antioxidant Enzyme Activity in Spermatozoa of Atlantic Salmon (Salmo salar).** E. Figueroa[1], M. Lee-Estevez[1], J. Risopatron[2], I. Valdebenito[3], R. Pinheiro de Souza [4], J.G. Farias[1]; [1]Chemical Engineering, Universidad de La Frontera, Temuco, Chile, [2]Center for Biotechnology in Reproduction, Universidad de La Frontera, Temuco, Chile, [3]School of Aquaculture, Universidad Católica de Temuco, Temuco, Chile, [4]Biochemical and Pharmaceutical Technology, University of São Paulo, Sao Paulo, Brazil

B1316/P685 **Mild Hyperthermia Induces Apoptosis in Metaphase-Arrested H-HeLa Cells but not in Interphase Cells.** J.R. Paulson[1], A.K. Kresch[2], P.W. Mesner[3]; [1]Chemistry, University of Wisconsin-Oshkosh, Oshkosh, WI, [2]Prevea St. Mary's Health Center, Green Bay, WI, [3]Biology, University of Wisconsin-Whitewater, Whitewater, WI

B1317/P686 **E2F6 Protects Against Stress Induced Apoptosis in Cardiomyocytes.** J.L. Major[1], B. Tuana[1,2], M. Salih[1]; [1]Cellular and Molecular Medicine, University of Ottawa, Ottawa, ON, [2]Heart Institute, University of Ottawa Heart Institute, Ottawa, ON

B1318/P687 **Nuclear localization of BLM-s by Ku70 to effect inactivation of BLM-s-mediated apoptosis.** M. Tsai[1], P. Huang[1]; [1]National Taiwan University, Graduate Institute of Pathology, College of Medicine, Taipei, Taiwan

B1319/P688 **Modulation of tunicamycin-induced ER stress and cell death by globular adiponectin in primary rat hepatocytes.** A. Khakurel[1], N. Tilija Pun[1], P. Raut[1], E. Kim[1], H. Oh[1], A. Shrestha[1], P. Park[1]; [1]College of Pharmacy, Yeungnam University, Gyeongsan, Korea, South

B1320/P689 **Estrogen-induced cytotoxicity and epigenetic regulation in Japanese eel follicle cells.** Y. Hsieh[1], T. Lin[1], Y. Wang[1]; [1]Institute of Fisheries Science, National Taiwan University, Taipei, Taiwan

B1321/P690 **The Parkinson's Disease Protein α-synuclein Alters the Microenvironment of the Endoplasmic Reticulum in Saccharmomyces cerevisiae.** T.J. McBride[1], N. Austriaco[1]; [1]Biology, Providence College, Providence, RI

B1322/P691 **Protective effects of Korean medicinal plants against oxidative stress-induced cell death in retinal pigment epithelium cells.** M. Kim[1]; [1]Research Group of Food Functionality, Korea Food Research Institute, Sungnam-si, Korea, South

B1323/P692 **HSPA13 Bifurcates TNFa-induced NF-kB and Death Responses.** C. GAO[1], X. Feng[1]; [1]Life Sciences Institute Zhejiang University, Hangzhou, China

Chaperones, Protein Folding, and Quality Control 1

B1324/P693 **The chaperone complex BAG3-HSPB8 as a novel target of CDK1-cyclin B in remodeling of mitotic actin-based structures that guide spindle orientation.** C. Luthold[1], H. Lambert[1], M. Fuchs[1], J.N. Lavoie[1,2]; [1]Axe oncologie, Hotel de Dieu de Quebec, Centre de recherche sur le cancer de l Université Laval, Quebec, Canada, [2]Biologie moléculaire, biochimie médicale et pathologie, Faculté de medecine, Université Laval, Quebec, Canada

B1325/P694 **Response of cultured mammalian cells to extreme cold shock and subsequent rewarming: expression of the eukaryotic chaperonin CCT and the cytoskeletal proteins.** A.M. Velho[1]; [1]School of Nursing, Canterbury Christ Church University, Canterbury, United Kingdom

B1326/P695 **Determining the essential binding partner of the yeast auxilin homolog Swa2 in [URE3] prion propagation.** E.E. Oliver[1], J.K. Hines[1]; [1]Chemistry, Lafayette College, Easton, PA

B1327/P696 **Mediating cellular desiccation tolerance with intrinsically disordered proteins.** T.C. Boothby[1,2], S. Piszkiewicz[2], A. Mehta[2], A.H. Brozena[3], H. Tapia[4], D.E. Koshland[4], B. Goldstein[1], G.J. Pielak[2]; [1]Biology, University of North Carolina at Chapel Hill, Chapel Hill, NC, [2]Chemistry, University of North Carolina at Chapel Hill, Chapel Hill, NC, [3]Chemical and Biomolecular Engineering, North Carolina State University, Raleigh, NC, [4]Biology, University of California, Berkeley, Berkeley, CA

B1328/P697 **TrkB activator LM22A enhances GAP43 phosphorylation to attenuate neuronal activity blockade-induced gephyrin misfolding.** W. Chien[1], C. Lee[1], Y. Lee[1]; [1]Physiology and Brain Research Center, National Yang-Ming University, Taipei, Taiwan

B1329/P698 **The Role of MAP Kinase Pathways in a Yeast Model of Huntington's Disease.** Y. Jiang[1], J. Genereaux[1], P. Lajoie[1]; [1]Anatomy and Cell Biology, University of Western Ontario, London, ON

B1330/P699 **A novel amyloid-specific proteostasis pathway mediated by Hsp30 results in cytosolic vitrification.** T.S. Kandola[1], J.J. Lange[1], R. Halfmann[1,2]; [1]Stowers Institute for Medical Research, Kansas City, MO, [2]Department of Molecular and Integrative Physiology, University of Kansas Medical Center, Kansas City, KS

B1331/P700 **Three complementary mechanisms of quality control ensure RNP granule functionality and dynamics.** D. Mateju[1], E. Boczek[1], J. Wang[1], A. Kopach[1], S. Maharana[1], A. Patel[1], H.O. Lee[1], M. Jahnel[1], S.W. Grill[1], A.A. Hyman[1], S. Alberti[1]; [1]Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany

B1332/P701 **Role of folding intermediates in initiating aggregation of the prion protein.** R. Moulick[1], R.R. Goluguri[1], J.B. Udgaonkar[1]; [1]National Centre for Biological Sciences, Tata Institute of Fundamental Research, Bengaluru, India

B1333/P702 **Reciprocal effects of Hsp40 expression in Hsp104-mediated prion elimination.** E. Kamiya[1], S.E. Berger[1], M.T. Astor[1], J.K. Hines[1]; [1]Chemistry, Lafayette College, Easton, PA

B1334/P703 **Variant-specific Hsp40 functions in Hsp104-mediated prion elimination: A potential role for 'Anti-prion DnaJ' (Apj1).** M.T. Astor[1], E. Kamiya[1], J.K. Hines[1]; [1]Chemistry, Lafayette College, Easton, PA

B1335/P704 **Evolutionary conservation**

of variant-dependent prion-promoting Hsp40 functions in plants. J.K. Hines[1], R.E. Brown[1]; [1]Chemistry, Lafayette College, Easton, PA

B1336/P705 **Protein aggregation as a means of dosage compensation.** S. Venkatesan[1], M. Wilkinson[2], R. Halfmann[1,3]; [1]Stowers Institute for Medical Research, Kansas City, MO, [2]Department of Molecular Biology, University of Kansas, Lawrence, KS, [3]Department of Molecular and Integrative Physiology, University of Kansas Medical Center, Kansas City, KS

B1337/P706 **Assessing the role of endoplasmic stress signaling pathways in chronological aging.** S.R. Chadwick[1], E.N. Fazio[2], P. Lajoie[1], M.L. Duennwald[3]; [1]Anatomy Cell Biology, University of Western Ontario, London, ON, [2]London Regional Cancer Program, London Health Sciences Centre, London, ON, [3]Pathology Laboratory Medicine, University of Western Ontario, London, ON

B1338/P707 **Cytosolic Proteostasis via Importing of Misfolded Proteins into Mitochondria.** L. Ruan[1], C. Zhou[2], E. Jin[1], A. Kucharavy[1], Y. Zhang[2], Z. Wen[2], L. Florens [2], R. Li[1]; [1]Cell Biology, Johns Hopkins University, Baltimore, MD, [2]Stowers Institute for Medical Research, Kansas City, MO

B1339/P708 **Specific serine phosphorylation of IRE-1 controls enhanced splicing of XBP-1 and RIDD.** C.A. Tang[1], S. Chang[1], A.W. Paton[2], J.C. Paton[2], D.I. Gabrilovich[1], H.L. Ploegh[3], J. Del Valle[4], C.A. Hu[1]; [1]The Wistar Institute, Philadelphia, PA, [2]Department of Molecular and Cellular Biology, University of Adelaide, Adelaide, Australia, [3]Whitehead Institute for Biomedical Research, Cambridge, MA, [4]Department of Chemistry, The University of South Florida, Tampa, FL

B1340/P709 **Yeast Bax Inhibitor (BXI1) Is Involved in Calcium Homeostasis of the ER in Saccharomyces cerevisiae.** L. McDonough[1], N. Austriaco[1]; [1]Biology, Providence College, Providence, RI

B1341/P710 **Reversible aggregation of pyruvate kinase regulates cell cycle restart after stress.** S. Saad[1,2], G. Cereghetti[2,3], Y. Feng[2,3], P. Picotti[2], R. Dechant[2,4], M. Peter[2,4]; [1]Life Science Zurich PhD Program, Molecular and Translational Biomedicine, Zurich, Switzerland, [2]ETH Zurich, Institute of Biochemistry, Zurich, Switzerland, [3]Life Science Zurich PhD Program, Molecular Life Science, Zurich, Switzerland, [4]Corresponding author, Zurich, Switzerland

B1342/P711 **License to Kill: The Clearance of Cytosolic Misfolded Proteins.** S. Comyn[1], M. Zhu[1], A. Rose[1], T. Mayor[1]; [1]Michael Smith Laboratories, University of British Columbia, Vancouver, BC

B1343/P712 **Dissecting Distinct Functional Outputs of Ire1 in *S. cerevisiae* and *S. pombe*.** W. Li[1], V. Okreglak[1], P. Kimmig[1,2], J. Peschek[1], P. Walter[1,3]; [1]Department of Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA, [2]Institute of Biochemistry, ETH Zurich, Zurich, Switzerland, [3]Howard Hughes Medical Institute, San Francisco, CA

Physical Approaches to Cell Biology

B1345/P713 **The liquid to gel transition in protein droplets.** L. Jawerth[1,2], M. Ijavi[2], E. Fischer-Friedrich[1,2], S. Saha[2], F. Julicher[1], A.A. Hyman[2]; [1]Biophysics, Max Planck Institute for the physics of complex systems, Dresden, Germany, [2]Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany

B1346/P714 **Molecular basis of low-density RNA/protein droplets revealed with ultra-fast fluorescence correlation spectroscopy.** M. Wei[1], S. Elbaum-Garfinkle[1], A.S. Holehouse[2], C.C. Chen[1], M. Feric[1], C.B. Arnold[3], R.D. Priestley[1], R.V. Pappu[2], C.P. Brangwynne[1]; [1]Chemical and Biological Engineering, Princeton University, Princeton, NJ, [2]Department of Biomedical Engineering, Washington University in St. Louis, St. Louis, MO, [3]Department of Mechanical and Aerospace Engineering, Princeton University, Princeton, NJ

B1347/P715 **Mechanisms underlying cargo transport through MT-MT intersections.** J. Bergman[1], A. Takshak[2], A. Kunwar[2], M. Vershinin[1,3,4]; [1]Biology Department, University of Utah, Salt Lake City, UT, [2]Biosciences and Bioengineering, Indian Institute of Technology Bombay, Mumbai, India, United States, [3]Physics Department, University of Utah, Salt Lake City, UT, [4]Center for Cell and Genome Science, University of Utah, Salt Lake City, UT

B1348/P716 **Rapid manipulating cellular activities by an ultrasound-chemical hybrid system.** C. Fan[1], W. Huang[2], Y. Huang[3], A.A. Lee[4], C. Wang[3], T. Ueno[5], T. . Wang[4], C. Yeh[1], Y. LIN[3]; [1]Department of Biomedical Engineering and Environmental Sciences, National Tsing Hua University, HsinChu City, Taiwan, [2]Department of Life Science, National Tsing Hua University, HsinChu City, Taiwan, [3]Institute of Molecular Medicine, National Tsing Hua University, HsinChu City, Taiwan, [4]Department of Chemistry, National Taiwan University, Taipei, Taiwan, [5]Graduate School of Pharmaceutical Sciences, University of Tokyo, Tokyo, Japan

B1349/P717 **Frequency Modulation of ERK activation dynamics rewires cell fate.** H. Ryu[1], M. Chung[1], M. Dobrzynski[2], D. Fey[3], Y. Blum[2], S. Lee[4], M. Peter[4], B. Kholodenko[3], N. Jeon[1], O. Pertz[2]; [1]School of Mechanical and Aerospace Engineering, Seoul National University, Seoul, Korea, [2]Institute of Cell Biology, University of Bern, Bern, Switzerland, [3]System Biology Ireland, University College Dublin, Dublin, Korea, [4]Institute of Biochemistry, ETH Zurich, Aurich, Switzerland

B1350/P718 **Using single cell proteomics to identify and classify protein-protein relationships.** K.M. Kovary[1], M. Teruel[1], M.L. Zhao[1]; [1]Chemical and Systems Biology, Stanford University, Stanford, CA

B1351/P719 **Profiling of cellular morphodynamic behavior based on spatiotemporal spectrum decomposition and clustering.** X. Ma[1], O. Dagliyan[2], K.M. Hahn[2], G. Danuser[1]; [1]Bioinformatics, University of Texas Southwestern Medical Center, Dallas, TX, [2]Pharmacology, University of North Carolina at Chapel Hill, Chapel Hill, NC

B1352/P720 **Diffusion of DNA-binding species in the nucleus: the transient anomalous subdiffusion model.** M.J. Saxton[1]; [1]Biochemistry & Molec Med, University of California, Davis, Davis, CA

B1353/P721 **Mapping of tissue strain during zebrafish gastrulation.** D. Bhattacharya[1,2,3], J. Zhong[1,2], A.J. Kabla[4], P.T. Matsudaira[1,2]; [1]Mechanobiology Institute, National University of Singapore, Singapore, Singapore, [2]Center for Bioimaging Sciences, National University of Singapore, Singapore, Singapore, [3]Singapore-MIT Alliance for Research and Technology, National University of Singapore, Singapore, Singapore, [4]Engineering Department, Mechanics and Materials Division, University of Cambridge, Cambridge, United Kingdom

B1354/P722 **Spontaneous Compartmentalization Selectively Entraps Intracellular Proteins under a Macromolecular Crowding Condition: Self-Emergence of Cell-Like Structure.** N. Nakatani[1], K. Tsumoto[2], K. Takiguchi[3], M. Hayashi[3], S. Tanaka[3], C.Y. Shew[4], K. Yoshikawa[1]; [1]Department of Life Physics, Doshisha University, Kyoto, Japan, [2]Graduate School of Engineering, Mie University, Mie, Japan, [3]Division of Biological Science, Nagoya University, Nagoya, Japan, [4]Department of Chemistry, College of Staten Island, City University of New York, New York, NY

B1355/P723 **Mitochondrial fluctuations as a measure of biomechanical properties of murine cells.** W. Xu[1], E. Alizadeh[1], J. Castle[2], A. Prasad[1]; [1]Chemical and Biological Engineering, Colorado State University, Fort Collins, CO, [2]Biology, Colorado State University, Fort Collins, CO

B1356/P724 **Design principles of robust**

vesiculation in clathrin-mediated endocytosis. J.E. Hassinger[1], G. Oster[2], D.G. Drubin[2], P. Rangamani[3]; [1]Biophysics, University of California, Berkeley, Berkeley, CA, [2]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, [3]Mechanical and Aerospace Engineering, University of California, San Diego, La Jolla, CA

B1357/P725 **Protective effect of DMSO on DNA double-strand break among different lesions: gamma-ray, photo-induced active oxygen and freezing.** M. Noda[1], Y. Yoshikawa[2], T. Imanaka[2], T. Mori[3], M. Furuta[3], T. Kenmotsu[1], T. Tsuruyama[4], K. Yoshikawa[1]; [1]Faculty of Life and Medical Sciences, Doshisha University, Kyotanabe, Japan, [2]Research Organization of Science and Technology, Ritsumeikan University, Kusatsu, Japan, [3]Osaka Prefecture University, Department of Quantum and Radiation Technology, Sakai, Japan, [4]Graduate School of Medicine, Pathological and Forensic Medical Researches, Kyoto, Japan

B1358/P726 **RNA gelation in repeat expansion disorders.** A. Jain[1], R.D. Vale[1]; [1]University of California, San Francisco, San Francisco, CA

B1359/P727 **The Role of Compressive Load on Adipogenic Differentiation of 3T3-L1 Cells.** A.C. Areias[1], C. Silvestri[1], D.R. Overby[1]; [1]Bioengineering, Imperial College London, London, United Kingdom

B1360/P728 **Boundary effects in FRAP recovery in the confined geometries of animal, plant and fungal cells.** J.L. Kingsley[1], J.P. Bibeau[2], C. Unsal[1], S.I. Mousavi[1], Z. Chen[3], X. Huang[3], L. Vidali[2], E. Tuzel[1]; [1]Department of Physics, Worcester Polytechnic Institute, Worcester, MA, [2]Department of Biology and Biotechnology, Worcester Polytechnic Institute, Worcester, MA, [3]Department of Electrical and Computer Engineering, Worcester Polytechnic Institute, Worcester, MA

B1361/P729 **Experimental and computational methodologies to measure intercellular forces during tissue development.** E. Criado-Hidalgo[1], Y. Yeh[1], R. Serrano[1], J.C. Del Alamo[1], J.C. Lasheras[1]; [1]Mechanical and Aerospace Engineering, University of California San Diego, San Diego, CA

Systems and Synthetic Biology, and Tissue Engineering

B1362/P730 **Biochemical modulation of a reconstituted protein oscillator.** S. Kretschmer[1,2], K. Zieske[1,3], P. Schwille[1]; [1]Cellular and Molecular Biophysics, Max-Planck-Institute of Biochemistry, Martinsried, Germany, [2]Graduate School of Quantitative Biosciences, Ludwig-Maximilians-Universität, München, Germany, [3]Department of Developmental Biology, Stanford University School of Medicine, Stanford, CA

B1363/P731 **Development of synthetic biological tools for use in technology-limited settings.** J.L. Luther[1], R.A. Miller[1], A.A. Weaver[2], H.V. Goodson[1], M. Lieberman[1]; [1]Chemistry and Biochemistry, University of Notre Dame, Notre Dame, IN, [2]Civil & Envr Engr & Earth Sciences, University of Notre Dame, Notre Dame, IN

B1364/P732 **Using optogenetics to uncover principles governing cell size scaling relationships in giant yeast.** C. Allard[1,2], F. Decker[1,3], O.D. Weiner[1,4], B.R. Graziano[1,4], J.E. Toettcher[1,5]; [1]Marine Biological Laboratory, Woods Hole, MA, [2]Department of Biochemistry, Dartmouth Medical School, Hanover, NH, [3]Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany, [4]Cardiovascular Research Institute, UCSF, San Francisco, CA, [5]Department of Molecular Biology, Princeton University, Princeton, NJ

B1365/P733 **Reconstituting the mammary stem cell niche.** L.M. Murrow[1], Z.J. Gartner[1,2]; [1]Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA, [2]Center for Systems and Synthetic Biology, University of California San Francisco, San Francisco, CA

B1366/P734 **3D confined tubular epithelia in microfluidic channels.** L. Alaimo[1], S. Gabriele[1]; [1]Mechanobiology and Soft Matter Group - Influx, UMons, Mons, Belgium

B1367/P735 **Role of Antibiotic Interactions in Modulating E. Faecalis Resistance Evolution.** Z. Dean[1], K. Wood[1,2]; [1]Department of Biophysics, University of Michigan at Ann Arbor, Ann Arbor, MI, [2]Department of Physics, University of Michigan at Ann Arbor, Ann Arbor, MI

B1368/P736 **Coordinated translational regulation in cellular quiescence.** S. Sun[1]; [1]Biology, New York University, NYC, NY

B1400/P737 **Optogenetic platform to probe spindle positioning and cytokinesis signaling *in vitro*.** J.G. Bermudez[1], M.C. Good[1]; [1]Bioengineering, University of Pennsylvania, Philadelphia, PA

B1401/P738 **Optogenetic Triggering of Protein Localization and Activity in a Synthetic Cell System.** R.M. Caldwell[1,2], D.G. Thai[1,2], J.G. Bermudez[2], M.C. Good[1,2]; [1]Department of Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA, [2]Department of Bioengineering, University of Pennsylvania, Philadelphia, PA

B1402/P739 **An artificial cell-like system for the study of symmetry breaking in living cells.** P. Torre[1], M. Good[1], J.G. Bermudez[1]; [1]Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

B1403/P740 **Development of epitope barcoding for high-throughput image-based genetic screening.** T. Kudo[1], M.W. Covert[2]; [1]Chemical and Systems Biology, Stanford University, Stanford, CA, [2]Bioengineering, Stanford University, Stanford, CA

B1404/P741 **Using Optogenetics to study Ras Activation in Lymphocytes at Single Cell Resolution.** J.D. Mclaurin[1], O.D. Weiner[1]; [1]Biochemistry & Biophysics, University of California San Francisco, San Francisco, CA

Germ Cells, Gametogenesis, and Fertilization

B1406/P742 **Calcineurin interacting protein regulates reproduction processes in C. elegans.** H. Jung[1], J. Ahnn[1], S. Lee[1], S. Durnaoglu[1]; [1]Life Science BK21Plus Biodefence, Hanyang University, Seoul, Korea, South

B1407/P743 **A Sterile 20 family kinase regulates oogenesis by tuning contractile ring proteins on germline intercellular bridges.** K.N. Rehain[1], A.C. Love[2], M. Werner[2], I. Macleod[3], J. Yates iii[3], A.S. Maddox[2]; [1]Curriculum in Genetics and Molecular Biology, University of North Carolina, Chapel Hill, NC, [2]Biology, University of North Carolina, Chapel Hill, NC, [3]Chemical Physiology, The Scripps Research Institute, La Jolla, CA

B1408/P744 **The sperm-derived TRP family channel TRP-3 induces a calcium rise in the fertilized oocyte in *C. elegans*.** J. Takayama[1], H. Okada[1], S. Onami[1]; [1]RIKEN QBiC, Kobe, Japan

B1409/P745 **A Lysosomal Switch Renews Germline Proteostasis in *C. elegans*.** A. Bohnert[1,2], C. Kenyon[1,2]; [1]Biochemistry Biophysics, University of California, San Francisco, San Francisco, CA, [2]Calico Life Sciences, South San Francisco, CA

B1410/P746 **Meiotic chromosome cohesion promotes germline immortality.** K. Billmyre[1,2], A. Doebley[1,2], S. Flibotte[3], M. Simon[1,2], D. Moerman[3], S. Ahmed[1,2]; [1]Genetics, University of North Carolina-Chapel Hill, Chapel Hill, NC, [2]Department of Biology, University of North Carolina-Chapel Hill, Chapel Hill, NC, [3]Department of Zoology, University of British Columbia, Vancouver, BC

B1411/P747 **Roles for retinoic acid receptor alpha (RARA) in male germ cells.** N. Peer[1], S. Law[1], K. Kim[1]; [1]School of Molecular Biosciences, Washington State University, Pullman, WA

B1412/P748 **Genetic dissection of Cyclin A/ Cdk1 regulation by Myt1 kinase during *Drosophila* male meiosis.** R. Varadarajan[1], R. Willms[1], S.D. Campbell[1]; [1]Biological Sciences, University of Alberta, Edmonton, AB

B1413/P749 **Determination of the role of Dreadlocks (Dock) in the growth of the germline ring canals in the developing *Drosophila melanogaster* egg chamber.** O. Crowe[1], L. Lewellyn[1]; [1]Biology, Butler University, Indianapolis, IN

B1414/P750 **Characterizing a Role for the Misshapen Kinase in the Growth of the Germline Ring Canals in the Developing Egg Chamber.** A.N. Kline[1], L. Lewellyn[1]; [1]Department of Biology, Butler University, Indianapolis, IN

B1415/P751 **The interaction between Piwi and c-Fos regulate ovarian germline stem cells and ovarian somatic stem cells in the Drosophila ovarian germline.** J.D. Klein[1], C. Qu[1], X. Yang[1], J.C. Peng[1]; [1]Developmental Neurobiology, St. Jude Children's Research Hospital, Memphis, TN

B1416/P752 **Cytoplasmic Gas6 is a key player for sperm chromatin decondensation in mammalian oocytes via Ndst-heparan sulfate (HS) pathway and mitochondrial overactivation.** K. Kim[1], E. Kim[1], S. Lee[1], J. Ko[1], K. Lee[1]; [1]Department of Biomedical Science, College of Life Science, CHA University, Pangyo, Korea, South

B1417/P753 **Estrogenic compounds impair primordial follicle formation by inhibiting the expression of proapoptotic *Hrk* in neonatal rat ovary.** H. Zhang[1,2], K. Nagaoka[1,2], K. Usuda[1,2], K. Nozawa[2], K. Taya[1], M. Yoshida[3], G. Watanabe[1,2]; [1]United Graduate School of Veterinarian Science, Gifu University, Gifu, Japan, [2], Department of Veterinary Medicine, Tokyo University of Agriculture and Technology, Tokyo, Japan, [3]Division of Pathology, National Institute of Health Sciences, Tokyo, Japan

B1418/P754 ***In vitro* development of marmoset ovarian follicles in the presence of anti-apoptotic factors.** S. Ku[1], Y. Kim[1], Y. Kim[2], J. Yun[3], B. Kang[3]; [1]Department of Obstetrics and Gynecology, Seoul National University College of Medicine, Seoul, Korea, South, [2]Department of Obstetrics and Gynecology, Korea University Medical College, Seoul, Korea, South, [3]Department of Experimental Animal Research, Biomedical Research Institute, Seoul National University Hospital, Seoul, Korea, South

B1419/P755 **Participation of deubiquitinating activity in porcine fertilization and zygotic development.** Y. Yi[1], P. Sutovsky[2]; [1]Division of Biotechnology, Chonbuk National University, Iksan, Korea, South, [2]Division of Animal Sciences, University of Missouri, Columbia, MO

B1420/P756 **Unconventional Endocannabinoid Signaling in Male Fertility and Beyond.** I. Björkgren[1], A.J. Modzelewski[1], S. Chen[1], M. Bogaczynska[1,2], M.R. Miller[1], P.V. Lishko[1]; [1]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, [2]HAN University of Applied Sciences, Nijmegen, Netherlands

B1421/P757 **Inactivation of the Sodium (Na+)/Hydrogen (H+) exchanger NHE5 to Determine its Roles in Sperm Physiology.** J.S. Powers[1], B. Wagner[1], B. McElderry[1], M. Amigo[1], G. VanNess[1], P.F. James[1]; [1]Biology, Miami University, Oxford, OH

B1422/P758 **Search of capacitation-related surface proteins in mouse sperm by differential fluorescent two-dimension electrophoresis.** O. Suzuki[1], M. Koura[1], K. Uchio-Yamada[1], M. Sasaki[1]; [1]Laboratory of Animal Models for Human Diseases, National Institutes of Biomedical Innovation, Health and Nutrition, Ibaraki-shi, Japan

B1423/P759 **A Somatic Temporal Switch In The Mode Of Wnt Signaling Controls Germline Development In Drosophila.** M. Upadhyay[1], M. Kuna[1], S. Tudor[1], P. Rangan[1]; [1]Biological Sciences/RNA Institute, University at Albany, SUNY, Albany, NY

Cell-Cell Interactions in Tissue Development and Morphogenesis

B1424/P760 **Self-organization of skin organoid with hair primordia formation *in vitro*.** M. Lei[1,2], L. Schumacher[3], Y. Lai[4], W. Juan[4], C. Yeh[2], P. Wu[2], T. Jiang[2], R. Baker[3], R. Widelitz[2], L. Yang[1], C. Chuong[2,4]; [1]College of Bioengineering, Chongqing University, Chongqing, China, [2]Department of Pathology, University of Southern California, Los Angeles, CA, [3]Mathematical Institute, University of Oxford, Oxford, United Kingdom, [4]Integrative Stem Cell Center, China Medical University, Taichung, Taiwan

B1425/P761 **Heterotypic cell interactions maintain the secretory acinar phenotype in submandibular salivary glands.** Z. Farajallah Hosseini[1], L.M. Sfakis[2], D.A. Nelson[1], J. Castracane[2], M. Larsen[1]; [1]Biological Sciences, State University of New York at Albany, Albany, NY, [2]Colleges of Nanoscale Sciences and Engineering, SUNY Polytechnic Institute, Albany, NY

B1426/P762 **The balance between N-cadherin and E-cadherin orchestrates major neuroectodermal cell fate choices.** C.D. Rogers[1], L. Sorrells Smith[1], M.E. Bronner[2]; [1]Biology, California State University Northridge, Northridge, CA, [2]Biology and Bioengineering, California Institute of Technology, Pasadena, CA

B1427/P763 **RhoGTPases and Mesenchymal-to-Epithelial Transitions: same legs (actin), but different shoes (cadherins vs. integrins).** C.P. Toret[1], P.C. Shivakumar[1], P. Lenne[1], A. Le Bivic[1]; [1]IBDM, AMU-CNRS, Marseilles, France

B1428/P764 **Promiscuous adhesion inhibits multicellular development in the choanoflagellate *S. rosetta*.** L.A. Wetzel[1], N. King[1]; [1]Molecular and Cell Biology, UC Berkeley, Berkeley, CA

B1429/P765 **Tight coupling between abscission timing and maintenance of permeability barrier during cytokinesis in epithelial tissues.** R. Le Borgne[1], E. Daniel[1], I. Kolotueva[1], V.J. Auld[2]; [1]Epithelia Dynamics and Mechanics, CNRS UMR 6290-Institute of Genetics and Development, Rennes, France, [2]Department of Zoology, Life Sciences Institute, University of British Columbia, Vancouver, Canada

B1430/P766 **The balance between cells with distinct spindle dynamic behaviors is maintained by negative feedback during airway tube morphogenesis.** Z. Tang[1], Y. Hu[2], K. Jiang[1], C. Zhan[1], W.F. Marshall[3], N. Tang[1]; [1] National Institute of Biological Sciences, Beijing, Beijing, China, [2]Zhou Pei-yuan Center for Applied Mathematics, Tsinghua University, Beijing, Beijing, China, [3]Department of Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

B1431/P767 **Biomechanical analysis of cell behaviors during neural plate convergent extension.** D.S. Vijayraghavan[1], J.H. Shawky[1], L.A. Davidson[1,2,3]; [1]Bioengineering, University of Pittsburgh, Pittsburgh, PA, [2]Developmental Biology, University of Pittsburgh, Pittsburgh, PA, [3]Computational and Systems Biology, University of Pittsburgh, Pittsburgh, PA

B1432/P768 **Oxidative stress polarizes junctions and the cytoskeleton to drive embryonic wound healing.** M.V. Hunter[1,2], R. Fernandez-Gonzalez[1,2,3,4]; [1]Cell and Systems Biology, University of Toronto, Toronto, ON, [2]Ted Rogers Centre for Heart Research, University of Toronto, Toronto, ON, [3]Institute of Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, [4]Developmental and Stem Cell Biology Program, Hospital for Sick Children, Toronto, ON

B1433/P769 **Rosettes pattern neuronal tissue during *C. elegans* embryogenesis.** K. Mastronardi[1], D. Wernike[2], K. Larocque[1], A.J. Piekny[1]; [1]Biology, Concordia University, Montreal, QC, [2]Oncology, Sainte-Justine Hospital Research Center, Montreal, QC

B1434/P770 **Regulation of cell shape change by local inhibition of CDC-42 at epithelial junctions.** Y. Zilberman[1], D. Anderson[1], J. Nance[1,2]; [1]Helen L. and Martin S. Kimmel Center for Biology and Medicine, NYU School of Medicine, Skirball Institute, New York, NY, [2]Department of Cell Biology, NYU School of Medicine, New York, NY

B1435/P771 **Cdo deficiency causes cardiomyopathy by abnormal intercellular communication of cardiomyocytes.** J. Pyun[1,2], M. Jeong[1,2], H. Kim[1,3], H. Cho[1,3], J. Kang[1,2]; [1]Samsung Biomedical Research Institute, Suwon, Korea, South, [2]Department of Molecular Cell Biology, Sungkyunkwan University School of Medicine, Suwon, Korea, South, [3]Department of Physiology, Sungkyunkwan University School of Medicine, Suwon, Korea, South

B1436/P772 **Robo has new roles in myoblast fusion, myonuclear positioning and muscle function.** M. Azevedo[1,2], M.K. Baylies[2,3,4]; [1]GABBA - Graduate Program in Areas of Basic and Applied Biology, Abel Salazar Biomedical Sciences Institute, University of Porto, Porto, Portugal, [2]Developmental Biology, Sloan Kettering Institute, Memorial Sloan Kettering Cancer Center, New York, NY, [3]Developmental Biology, Gerstner Graduate School, Memorial Sloan Kettering Cancer Center, New York, NY, [4]Developmental Biology, Weill Graduate School of Biomedical Sciences, Cornell Medical School, New York, NY

B1437/P773 **The small GTPase Arf6 regulates sea urchin morphogenesis.** N.A. Stepicheva[1], M. Dumas[1], P. Kobi[1], J.G. Donaldson[2], J.L. Song[1]; [1]Biological Sciences, University of Delaware, Newark, DE, [2]Cell Biology and Physiology Center, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD

B1438/P774 **Study the function of Yap/Taz in mouse cortical progenitors.** S. Kong[1]; [1]Pediatrics, University of Tennessee Health Science Center, Memphis, TN

B1439/P775 **Developmental and salinity related endopolyploidy in the model halophyte *Mesembryanthemum crystallinum*.** B.J. Barkla[1], T. Rhodes[1]; [1]Southern Cross Plant Science, Southern Cross University, Lismore, Australia

B1440/P776 **Biophysical approach to elucidate molecular links between PCP and adhesion/cytoskeleton dynamics.** N. Founounou[1], R. Farhadifar[2], M. Mlodzik[1]; [1]Developmental and Regenerative Biology, Icahn School of Medicine at Mount Sinai, New York, NY, [2]Department of Applied Physics, Center for Systems Biology, Harvard University, Cambridge, MA

B1441/P777 **An extremophile choanoflagellate harbors bacteria.** K.H. Hake[1], N. King[1]; [1]Molecular and Cell Biology, University of California Berkeley, Berkeley, CA

B1442/P778 **Interaction between Interferon Regulatory Factor 6 (IRF6) and NME1/2 coordinates innate immune response with changes in cell adhesion and polarity in oral epithelia.** T.C. Cox[1,2], B. Tamasas[1,3], E.Y. Chu[1,3], M. Parada[3], L.L. Cox[1,2]; [1]Center for Developmental Biology Regenerative Medicine, Seattle Children's Research Institute, Seattle, WA, [2]Pediatrics, University of Washington, Seattle, WA, [3]Oral Health Sciences, University of Washington, Seattle, WA

B1443/P779 **Elucidating the Role of *even-skipped* in Epithelial Sheet Morphogenesis.** S.M. Fogerson[1], R.D. Mortensen[1], D.P. Kiehart[1]; [1]Biology Department, Duke University, Durham, NC

B1444/P780 **Keratinocytes and Langerhans cells phagocytose axon debris in the skin.** J.P. Rasmussen[1], O. Hosseinzadeh[1], A. Repouliou[1], A. Sagasti[1]; [1]Molecular, Cell, and Developmental Biology Department, UCLA, Los Angeles, CA

B1445/P781 **Analysis of cell-cell interaction during optic fissure closure in the developing mouse eye.** A. Pathak[1], K. Hofstetter[1], J. Kuntz[1], D. Burnette[2], S. Fuhrmann[1]; [1]Department of Ophthalmology and Visual Sciences, Vanderbilt Eye Institute, Vanderbilt University Medical Center, Nashville, TN, [2]Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN

Cell Fate Determination 1

B1446/P782 **Amphiregulin is dispensable for redirection of non-mammary cells to a mammary stem cell fate in vivo.** A. George[1], C. Boulanger[1], C. Brisken[2], G.H. Smith[1]; [1]Basic Research Laboratory, National Cancer Institution, Bethesda, MD, [2]Molecular Oncology, Swiss Institute for Experimental Research, Lausanne, Switzerland

B1447/P783 **Differential regulation of epithelial and mesenchymal phenotypes during EMT by master transcriptional regulators.** K. Watanabe[1]; [1]Center for Life science technologies, Riken, Yokohama, Japan

B1448/P784 **Investigating the role of the SWI/SNF chromatin remodeling complex in the differentiation of the invasive phenotype.** J.J. Smith[1], A.Q. Kohrman[1], A. Herrera[1], W. Zhang[1], D.Q. Matus[1]; [1]Biochemistry & Cell Biology, SUNY - Stony Brook, Stony Brook, NY

B1449/P785 **Single cell analysis reveals a synergistic relationship between the cell cycle and fat cell differentiation.** M.L. Zhao[1], Z.B. Nejad[1], M. Chung[1], M. Teruel[1]; [1]Chemical and Systems Biology, Stanford University, Stanford, CA

B1450/P786 **Selective effect of Rin1 mutants on insulin signaling during pre-adipocyte differentiation.** Y. Huang[1], W. Zhang[1], M. Veisaga[2], M.A. Barbieri[3,4,5]; [1]Chemistry and Biochemistry, FIU, Miami, FL, [2]Biomolecular Science Institute, FIU, Miami, FL, [3]International Center for Tropical Botany, FIU, Miami, AL, [4]Fairchild Tropical Botanic Garden, Miami, FL, [5]Biological Science, FIU, Miami, FL

B1451/P787 **Meflin is a specific marker for mesenchymal stem cells (MSCs) whose expression is regulated by substrate stiffness.** A. Enomoto[1], N. Asai[1], T. Kobayashi[2], N. Nakamura[3], M. Takahashi[1]; [1]Department of Pathology, Nagoya University Graduate School of Medicine, Naogya, Japan, [2]Department of Physiology, Nagoya University Graduate School of Medicine, Nagoya, Japan, [3]Department of Internal Medicine, Aichi Gakuin University School of Dentistry, Nagoya, Japan

B1452/P788 **N6-methyladenosine epitranscriptomic control of human erythroid lineage specification.** D.A. Kuppers[1], S. Arora[1], A.R. Lim[1], L. Carter[1], R.S. Basom[1], J.J. Delrow[1], B. Torok-Storb[1], P. Paddison[1]; [1]Human Biology, Fred Hutchinson Cancer Research Center, Seattle, WA

B1453/P789 **Studying the Role of Id proteins In Kupffer Cell Development.** G. Mishra[1,2], E. Mass[3], I. Ballesteros[3], F. Geissmann[3,4]; [1]Biochemistry, Mount Holyoke College, South Hadley, MA, [2]Summer Undergraduate Research Program, Gerstner Sloan Kettering Graduate School of Biomedical Sciences, New York, NY, [3]Immunology Program, Memorial Sloan Kettering Cancer Center, New York, NY, [4]Weill Cornell Graduate School of Medical Sciences, New York, NY

B1454/P790 ***Numb* regulates somatic cell lineage commitment during early gonadogenesis.** Y. Lin[1], L. Barske[2], T. De Falco[3], B. Capel[1]; [1]Cell Biology, Duke University, Durham, NC, [2]Stem Cell, USC, Los Angeles, CA, [3]Reproductive Sciences, Cincinnati Children, Cincinnati, OH

B1455/P791 **Androgens Regulate Connexin26 to Connexin32 Switch in the Epididymis and Ventral Prostate.** C. Adam[1], D.G. Cyr[1]; [1]INRS-Institut Armand-Frappier, Laval, QC

B1456/P792 **Using synthetic enhancers to predict gene expression patterns in early Drosophila embryos.** A. Reimer[1], M. Child VI[2], M. Turner[1], N. Almeida[3], H.G. Garcia[2,4]; [1]Biophysics, UC Berkeley, Berkeley, CA, [2]Physics, UC Berkeley, Berkeley, CA, [3]Biology, St. Bonaventure University, St. Bonaventure, NY, [4]MCB, UC Berkeley, Berkeley, CA

B1457/P793 **Pattern Formation Across the Central Dogma in Development.** Y. Kim[1], J.P. Bothma[2], M. Norstad[2], H.G. Garcia[1,2,3]; [1]Biophysics Graduate Group, University of Berkeley at California, Berkeley, CA, [2]Department of Molecular and Cell Biology, University of Berkeley at California, Berkeley, CA, [3]Department of Physics, University of Berkeley at California, Berkeley, CA

Prokaryotic Cell Biology

B1459/P794 **Relative rates of surface and volume synthesis set bacterial cell size.** L.K. Harris[1], J.A. Theriot[1]; [1]Biochemistry, Stanford University, Stanford, CA

B1460/P795 **Shape-sensing by MreB filaments to orient peptidoglycan synthesis and produce rod shape in *Bacillus subtilis*.** S. Hussain[1,2], C. Wivagg[1,2], F. Wong[3], P. Szwedziak[4], T. Izoré[4], A. Amir[3], J. Löwe[4], E.C. Garner[1,2]; [1]Center for Systems Biology, Harvard University, Cambridge, MA, [2]Molecular and Cellular Biology, Harvard University, Cambridge, MA, [3]Department of Physics, Harvard University, Cambridge, MA, [4]Laboratory of Molecular Biology, Medical Research Council, Cambridge, United Kingdom

B1461/P796 **Coordination of FtsZ Ring Formation in Bacillus Subtilis.** P. Buske[1], R.D. Mullins[1]; [1]Cellular and Molecular Pharmacology, HHMI/UCSF, San Francisco, CA

B1462/P797 **Mechanistic insights of the Min Oscillator via cell-free reconstitution and imaging.** A.G. Vecchiarelli[1], K. Mizuuchi[1]; [1]National Institutes of Health, Bethesda, MD

B1463/P798 **FtsZ dynamics and the distribution of cell wall synthesis in bacterial cytokinesis.** G.R. Squyres[1], A. Bisson[1], Y. Hsu[2], E. Kuru[2], M. Van Nieuwenhze[2], Y. Brun[3], E.C. Garner[1]; [1]Department of Molecular and Cellular Biology, Harvard University, Cambridge, MA, [2]Department of Chemistry, Indiana University, Bloomington, IN, [3]Department of Biology, Indiana University, Bloomington, IN

B1464/P799 **Structural studies of actin-like filament a (AlfA) and Alf-A driven plasmid segregation.** G.D. Usluer[1], J.M. Kollman[1], E.J. Charles[2]; [1]Biochemistry, University of Washington, Seattle, WA, [2] Department of Cellular and Molecular Pharmacology, University of California, San Francisco, CA

B1465/P800 **Capsid Trafficking of *Pseudomonas* Phage 201Phi2-1 to the Phage Nucleus and the Role of the PhuZ Filament in Capsid Transportation.** V. Chaikeeratisak[1], K.T. Nguyen[1], M.L. Erb[1], A.D. Vavilina[1], M.E. Egan[1], J. Pogliano[1]; [1]Biology, University of California, San Diego, San Diego, CA

B1466/P801 **Single-cell analysis of the entrance and exit of cells from log phase growth reveals stochastic cellular decision-making.** S. Stylianidou[1], J. Cass[1], P.A. Wigins[1,2,3]; [1]Physics, University of Washington, Seattle, WA, [2]Bioengineering, University of Washington, Seattle, WA, [3]Microbiology, University of Washington, Seattle, WA

B1467/P802 **Architecture of a lipid transport system for the bacterial outer membrane.** G. Bhabha[1], G. Greenan[1], S. Ovchinnikov[2], J.S. Cox[1], R.D. Vale[1], D.C. Ekiert[1]; [1]University of California, San Francisco, San Francisco, CA, [2]University of Washington, Seattle, WA

B1468/P803 **Evolutionary divergence of CTP synthase polymerization-based regulation.** E.M. Lynch[1], D. Hicks[1], M. Shepherd[2], A. Maker[1], R. Barry[3], Z. Gitai[3], E.P. Baldwin[4], J.M. Kollman[1]; [1]Department of Biochemistry, University of Washington, Seattle, WA, [2]Department of Biology, McGill University, Montreal, QC, [3]Department of Molecular Biology, Princeton University, Princeton, NJ, [4]Department of Molecular and Cellular Biology, University of California Davis, Davis, CA

B1469/P804 **Resveratrol leads to oxidative cell damage in *Salmonella typhimurium*.** W. Lee[1], D. Lee[1]; [1]School of Life Sciences, Kyungpook National University, Daegu, Korea, South

B1470/P805 **Clathrin plays an important role in phagolysosome breakdown.** R.M. Dayam[1]; [1]Chem & Bio, Ryerson University, Toronto, ON

B1471/P806 **Hybrid promiscuous (Hypr) GGDEF enzymes produce cyclic AMP-GMP (3′, 3′-cGAMP).** Z.F. Hallberg[1], X.C. Wang[2], T.A. Wright[1], C.H. Chan[3], J. Yeo[1], O. Ad[1], B. Nan[4], D.R. Bond[3], M.C. Hammond[1,2]; [1]Chemistry, University of California, Berkeley, Berkeley, CA, [2]Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, [3]Microbiology, University of Minnesota, St. Paul, MN, [4]Biology, Texas AM, College Station, TX

B1472/P807 **Using fluorescent D-amino acids to probe the activity and regulation of cell wall hydrolases in the Gram-positive organism *Bacillus subtilis*.** S.A. Wilson[1], E.C. Garner[1]; [1]Molecular and Cellular Biology, Harvard University, Cambridge, MA

B1473/P808 **Intracellular Trafficking to the Phage Nucleus.** K.T. Nguyen[1], V. Chaikeeratisak[1], K. Khanna[1], A.F. Brilot[2], D. Agard[2], E. Villa[1], J. Pogliano[1]; [1]Biological Sciences, UC San Diego, La Jolla, CA, [2]Department of Biochemistry and Biophysics, UC San Francisco, San Francisco, CA

Defining Therapeutic Targets and New Therapeutics 1

B1475/P809 **Characterization of functional enhancement human mesenchymal stem cells using gene delivery systems.** J. Kim[1], J. Choi[1], H. Lew[2], S. Lee[3], G. Kim[1]; [1]Department of Biomedical Science, CHA University, Seongnam-si, Korea, South, [2]Department of Ophthalmology, CHA Bundang Medical Center CHA University, Seongnam, Korea, South, [3]Department of Oral Pathology, College of Dentistry, Kangnung National University, Gangneung Si, Korea, South

B1476/P810 **A Comparison of Angiotensin Converting Enzyme Inhibitor Therapy on Herpes Simplex Virus Type-1 Infected Cells.** A. Wofford[1], K. Harris[1], S. Thomas[1], C. Jackson[2], G.D. Griffin[3], C.N. Bradford[1]; [1]Biology, Tuskegee University, Tuskegee, AL, [2]Biology, Nashville State University, Nashville, TN, [3]Biology and Psychology, Hope College, Holland, MI

B1477/P811 **Development of novel bioconjugate to increase the bioavailability of vitamin A.** 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

B1478/P812 **Effects of a massaging device, based on an oscillating torque, upon the expression of some dermal proteins of human skin. Influence of frequency.** E. Caberlotto[1], Z. Miller[1], A. Poole[1], L. Ruiz[1], j. Genisson[2], M. Bernal[2], M. Tanter[2], M. Poletti[1], L. Tadlock[1]; [1]L'Oréal, Paris, France, [2]ESPCI, Institut Langevin, Paris, France

B1479/P813 **Female-Specific Role of Progranulin to Suppress Bone Formation.** L. Wang[1], T. Roth[1], R.A. Nissenson[1]; [1]Endocrine Unit, SF VA Medical Center, San Francisco, CA

B1480/P814 **Bone formation in calvarial defects treated with mesenchymal stem cells or osteoblasts derived from adipose tissue: microtomographic analysis.** G.P. Freitas[1], H.B. Lopes[1], A.L. Almeida[1], M.M. Beloti[1], A.L. Rosa[1]; [1]Cell Culture Laboratory, School of Dentistry of Ribeirão Preto, University of São Paulo, Ribeirão Preto, Brazil

B1481/P815 **The interaction between ataxin-3 and Rad23 regulates polyglutamine toxicity in *Drosophila* models of Spinocerebellar Ataxia Type 3.** J.R. Sutton[1], J.R. Blount[1], S.V. Todi[1]; [1]Pharmacology, Wayne State University School of Medicine, Detroit, MI

B1482/P816 **Role of microRNA and its target genes in Chronic Kidney Disease Patients as a Diagnostic Tool.** M.J. Khan[1], A. Khan[1], F.G. Noshahi[1], A. Naeem[1]; [1]Department of Biosciences, COMSATS Institute of Information Technology, Islamabad, Islamabad, Pakistan

B1483/P817 **Bone formation in calvarial defects of osteoporotic rats implanted with bioactive glass-ceramic associated with mesenchymal stem cells.** A.L. Almeida[1], A.T. De Souza[1], G.P. Freitas[1], H.B. Lopes[1], M. Crovace[2], O. Peitl-Filho[2], L.G. Souza[3], S. Siessere[3], M.M. Beloti[1], A.L. Rosa[1]; [1]Cell Culture Laboratory, School of Dentistry of Ribeirão Preto, University of Sao Paulo, RIBEIRAO PRETO, Brazil, [2]Vitreous Materials Laboratory, Department of Materials Engineering, Federal University of São Carlos, SÃO CARLOS, Brazil, [3]Department of Morphology, Physiology and Basic Pathology, School of Dentistry of Ribeirão Preto, University of Sao Paulo, Ribeirao Preto, Brazil

B1484/P818 **Participation of ERK1/2 in osteoblast and adipocyte differentiation of mesenchymal stem cells induced by distinct titanium surface topographies.** H.F. Silva[1], R.P. Abuna[1], H.B. Lopes[1], P.T. OLIVEIRA[1], A.L. Rosa[1], M.M. Beloti[1]; [1]School of Dentistry of Ribeirao Preto, University of Sao Paulo, Ribeirao Preto, Brazil

B1485/P819 **Bone Marrow Mesenchymal Stem Cells Accelerate the Restoration of Corneal Antioxidant Protective Mechanisms Decreased After Alkali Burns.** C. Cejka[1], V. Holan[1], P. Trosan[1], A. Zajicova[1], E. Javorkova[1], J. Cejkova[1]; [1]Department of Transplantation Immunology, Czech Academy of Sciences, Institute of Experimental Medicine, Prague 4, Czech Republic

B1486/P820 **TRIM72/CAV1 interaction determines repair influx and fibrogenesis outflux in pulmonary fibrosis.** X. Cong[1], N. Nagre[1], W. Huang[2], J. Herrera[3], J.M. Schreiber[1], M. Clements[4], L.L. Wellman[4], P.B. Bitterman[3], R.D. Hubmayr[5], X. Zhao[1,2]; [1]Department of Physiological Sciences, Eastern Virginia Medical School, Norfolk, VA, [2]College of Pharmacy, The Ohio State University, Columbus, OH, [3]Division of Pulmonary, Allergy, Critical Care and Sleep Medicine, University of Minnesota, Minneapolis, MN, [4]Biorepository, Eastern Virginia Medical School, Norfolk, VA, [5]Thoracic Diseases Research Unit, Mayo Clinic, Rochester, MN

B1487/P821 **Combinatory transplantation of BMSCs and EPCs with substance P improve the recovery from stroke by facilitating the pericyte-like coverage of BMSCs and restoring blood brain barrier.** M. Zhang[1], W. Ahn[1], S. Kim[1], Y. Son[1]; [1]Department of Genetic Engineering, Kyung Hee University, Yong In, Korea, South

B1488/P822 **Targeting primary cilia structure enhances intercellular signaling and whole bone adaptation.** M. Spasic[1], M.P. Duffy[1], C.R. Jacobs[1]; [1]Biomedical Engineering, Columbia University, New York, NY

B1489/P823 **SP treatment at acute phase of the ischemic stroke stimulates BBB reformation, reduces ischemic area, and improves functional recovery, possibly through regulation of M2-skewed monocytes from BM.** W. Ahn[1], M. Zhang[1], G. Chi[1], S. Kim[1], H. Hong[1], J. Lim[1], E. Chung[1], Y. Son[1]; [1]Department of genetic engineering, KyungHee University, Yongin-si, Korea, South

B1490/P824 **NCEH-1 modulates cholesterol metabolism and protects against α-synuclein toxicity in a *C. elegans* model of Parkinson's disease.** S. Zhang[1], S. Glukhova[1], K.A. Caldwell[1], G.A. Caldwell[1]; [1]Biological Sciences, The University of Alabama, Tuscaloosa, AL

B1491/P825 **Analgesic effects of β-PGG in an LPS-induced pain animal model.** K. Chun[1], J. Ra[2], S. Kim[2], M. Ju[2], H. Choi[2], S. Kim[3], S. Hong[3], S. Lee[2]; [1]Research and Development Center, Huons Co., Ltd, Ansan, Korea, South, [2]Food Science and Biotechnology, Kyungpook Natioinal University, Daegu, Korea, South, [3]Department of Anesthesiology, Kyungpook National University School of Medicine, Daegu, Korea, South

B1492/P826 **PPAR α, γ agonists and vascular statin enhance reverse cholesterol transport activity in sdLDL(small dense LDL) induced foam cells.** M. Mori[1], K. Shimizu[1], J. kasahara[1], K. Imai[1], M. Hikosaka[1], R. Motohashi[1], S. Kikuchi[1], M. Takahashi[1]; [1]CellBiological Pathology, Chiba Institute of Science, Choshi, Japan

B1493/P827 **A Multi-Omic Framework for Evaluating the Functional Impact of the Shared Genetic Landscape Across Common Autoimmune Diseases.** Y.R. Li[1], J. Li[1], R. Baldassano[1], H. Li[2], B.J. Keating[3], E.T. Prak[4], H. Hakonarson[1]; [1]Genetics, Children's Hospital of Philadelphia, Philadelphia, PA, [2]Biostatistics, University of Pennsylvania, Philadelphia, PA, [3]Surgery, University of Pennsylvania, Philadelphia, PA, [4]Pathology and Laboratory Medicine, University of Pennsylvania, Philadelphia, PA