



ASCB | EMBO
2017 meeting

Dec. 2-6, 2017 | Philadelphia, PA

Wednesday
December 6, 2017

7:30-11:30 am	Registration Open	Registration Area
8:30-11:05 am	<p>Minisymposium 21: Border Dynamics: Nuclear Envelope Organization and Remodeling</p> <p>Minisymposium 22: Cellular Metabolism</p> <p>Minisymposium 23: The Life of a Microtubule: Birth, Dynamics and Function</p> <p>Minisymposium 24: Membrane Shaping by Fusion and Fission</p> <p>Minisymposium 25: Visualization of Compartmentalized Signaling in Cancer</p>	<p>Room 114</p> <p>Room 120B</p> <p>Room 113B</p> <p>Room 118B</p> <p>Room 115B</p>
8:30-11:05 am	<p>Special Interest Subgroups</p> <p>Subgroup W: Neurite Formation: From Neurite Initiation to Outgrowth</p> <p>Subgroup X: Neuronal Cytoskeleton: A Complex Interplay of Cytoarchitecture and Dynamics</p>	<p>Room 119A</p> <p>Room 121B</p>
11:20 am - 12:20 pm	Symposium 6: Quality Control	Terrace Ballroom 3

Wednesday, December 6

● Minisymposium 21: Border Dynamics: Nuclear Envelope Organization and Remodeling

8:30-11:05 am

Room 114

- Co-Chairs: **Martin Beck**, European Molecular Biology Laboratory (EMBL), Germany; and **Ulrike Kutay**, ETH Zurich, Switzerland
- 8:30 am Introduction
- 8:35 am M209 In situ structural analysis of the nuclear pore complex. **M. Beck**¹; ¹Structural and Computational Biology Unit, European Molecular Biology Laboratory, Heidelberg, Germany
- 8:50 am M210 DNA-origami based platforms reveal mobility of FG-nups within nuclear pore complex-like architectures. **Q. Shen**¹, **P. Ellis**¹, **B. Akpinar**², **T.J. Melia**¹, **B. Hoogenboom**², **C. Lin**¹, **P. Lusk**¹; ¹Cell Biology, Yale School of Medicine, New Haven, CT, ²London Centre for Nanotechnology, London, United Kingdom
- 9:05 am M211 Transcription factor-mediated targeting of genes to the nuclear pore complex is the major pathway controlling peripheral localization of genes in budding yeast. **D. Brickner**¹, **M. LeBrun**¹, **C.R. Hinchliff**¹, **J.H. Brickner**¹; ¹Molecular Biosciences, Northwestern University, Evanston, IL
- 9:20 am M212 Lamin mutations linked to muscular disease result in mechanically-induced, progressive nuclear envelope rupture and DNA damage in muscle fibers. **A. Earle**¹, **T.J. Kirby**², **G.R. Fedorchak**¹, **P. Isermann**², **J. Lammerding**^{1,2}; ¹Biomedical Engineering, Cornell University, Ithaca, NY, ²Weill Institute for Cell and Molecular Biology, Cornell University, Ithaca, NY
- 9:35 am M213 Mechano-protection by lamin-A against DNA damage as the developing heart stiffens and strengthens. **S. Cho**¹, **S. Majkut**², **A. Abbas**¹, **K. Vogel**¹, **M. Vashisth**¹, **J. Irianto**¹, **M. Tewari**¹, **B.L. Prosser**³, **D.E. Discher**¹; ¹Molecular & Cell Biophysics Lab, University of Pennsylvania, Philadelphia, PA, ²Department of Physics & Astronomy, University of Pennsylvania, Philadelphia, PA, ³Department of Physiology, Pennsylvania Muscle Institute, University of Pennsylvania Perelman School of Medicine, Philadelphia, PA
- 9:50 am M214 Evolution of mitotic nuclear envelope dynamics through Lem2-ESCRT-III/Vps4 interaction. **G. Pieper**^{1,2}, **S. Sprenger**³, **D. Teis**³, **S. Oliferenko**^{1,2}; ¹Francis Crick Institute, London, United Kingdom, ²Randall Division of Cell and Molecular Biophysics, King's College London, London, United Kingdom, ³Division of Cell Biology, Medical University of Innsbruck, Innsbruck, Austria
- 10:05 am M215 Dual spindle formation around zygotic pro-nuclei explains parental genome separation. **J. Reichmann**¹, **B. Nijmeijer**¹, **J.M. Hossain**¹, **M. Eguren**¹, **I. Schneider**¹, **A.Z. Politi**¹, **L. Hufnagel**¹, **T. Hiiragi**², **J. Ellenberg**¹; ¹Cell Biology and Biophysics, The European Molecular Biology Laboratory (EMBL), Heidelberg, Germany, ²Developmental Biology, The European Molecular Biology Laboratory (EMBL), Heidelberg, Germany
- 10:20 am M216 Mixing of parental genomes after fertilization in *C. elegans* involves fusion and fenestration of pronuclear membranes. **M.M. Rahman**¹, **I. Chang**², **A.S. Harned**², **K. Narayan**², **O. Cohen-Fix**¹; ¹Laboratory of Cell Molecular Biology, National Institute of Diabetes Digestive & Kidney Diseases, Bethesda, MD, ²Center for Molecular Microscopy, Frederick National Laboratories for Cancer Research, Frederick, MD
- 10:35 am M217 The coordination of chromosome segregation and nuclear envelope assembly: implications for nuclear envelope integrity and genome stability. **S. Liu**^{1,2}, **M. Kwon**^{1,2}, **N. Yang**³, **A. Khodjakov**^{3,4}, **D. Pellman**^{1,2,5}; ¹Department of Pediatric Oncology, Dana-Farber Cancer Institute, Boston, MA, ²Department of Cell Biology, Harvard Medical School, Boston, MA, ³Wadsworth Center, New York State Department of Health, Albany, NY, ⁴Rensselaer Polytechnic Institute, Troy, NY, ⁵Howard Hughes Medical Institute, Boston, MA
- 10:50 am M218 Taking Apart the Nuclear Envelope during Open Mitosis. **U. Kutay**¹; ¹Institute of Biochemistry, ETH Zurich, Zurich, Switzerland

● Minisymposium 22: Cellular Metabolism

8:30-11:05 am

Room 120B

- Co-Chairs: **Nika Danial**, Dana-Farber Cancer Institute, Harvard Medical School; and **Russell DeBose-Boyd**, University of Texas Southwestern Medical Center
- 8:30 am Introduction
- 8:35 am M219 Geranylgeranyl-Regulated, ER-to-Golgi Transport of UBIAD1: Implications for Cholesterol Homeostasis and Schnyder Corneal Dystrophy. **R.A. DeBose-Boyd**¹; ¹Molecular Genetics, University of

		Texas Southwestern Medical Center, Dallas, TX
*8:50 am	M220	Genetic depletion of adipocyte creatine metabolism inhibits diet-induced thermogenesis and drives obesity. L. Kazak¹, G.Z. Lu¹, E.T. Chouchani¹, B.M. Spiegelman¹ ; ¹ Cancer Biology, Dana-Farber Cancer Institute, Boston, MA
9:05 am	M221	Molecular mechanisms of Scavenger Receptor SR-BI regulation: linking HDL binding to cholesterol transport. P.E. Marques¹, S. Nyegaard¹, R.F. Collins¹, W.S. Trimble¹, S. Grinstein¹ ; ¹ Cell Biology, The Hospital for Sick Children, Toronto, ON
9:20 am	M222	Mitochondrial Calcium Uniporter controls AMPK activity and lipid metabolism. D. Tomar^{1,2}, F. Jaña¹, Z. Dong^{1,2}, N. Nemani^{1,2}, S. Santhanam^{1,2}, A. Tripathi^{1,2}, E. Carvalho^{1,2}, S. Rajan^{1,2}, D.S. Wijesinghe³, R.S. Ahima⁴, M. Madesh^{1,2} ; ¹ Center for Translational Medicine, Temple University, Philadelphia, PA, ² Department of Medical Genetics Molecular Biochemistry, Temple University, Philadelphia, PA, ³ Department of Surgery, Virginia Commonwealth University, Richmond, VA, ⁴ Division of Endocrinology, Diabetes and Metabolism, Johns Hopkins University, Baltimore, MD
9:35 am	M223	Regulation of adipose tissue metabolism via non-proteolytic ubiquitination and mitochondria retrograde signaling. M.D. Cardamone¹, C.T. Cederquist¹, B. Tanasa^{2,3}, J. Huang¹, K. Mahdaviani⁴, C. Lentucci¹, W. Li^{2,5}, M.G. Rosenfeld², M. Liesa^{4,6}, V. Perissi¹ ; ¹ Biochemistry, Boston University, Boston, MA, ² Medicine, UCSD, La Jolla, CA, ³ Pediatrics, Stanford University, San Francisco, CA, ⁴ Medicine, Boston University, Boston, MA, ⁵ Biochemistry and Molecular Biology, UT Health McGovern Medical School, Houston, TX, ⁶ Medicine, UCLA, Los Angeles, CA
9:50 am	M224	Aerobic Respiration Enhanced by Mitochondrial Fusion Remodels Vacuolar Liquid-ordered Membrane Domain to Induce Micro-lipophagy for Cell Survival during Glucose Restriction. A.Y. Seo¹, F. Sarkleti², C.A. Larabell³, J. Lippincott-Schwartz¹ ; ¹ Janelia Research Campus, HHMI, Ashburn, VA, ² Institute of Molecular Biosciences, University of Graz, Graz, Australia, ³ Department of Anatomy, University of California San Francisco, San Francisco, CA
10:05 am	M225	Regulated assembly of a macromolecular complex of IMPDH during T cell activation. K.C. Duong-Ly¹, S.A. Anthony¹, A.L. Burrell², M.C. Johnson², Y. Kuo³, J.C. Simonet¹, P. Michener⁴, J. Soboloff⁵, G. Rall⁶, A. Andrews³, J.M. Kollman², J.R. Peterson¹ ; ¹ Cancer Biology, Fox Chase Cancer Center, Philadelphia, PA, ² Biochemistry, University of Washington, Seattle, WA, ³ Cancer Epigenetics, Fox Chase Cancer Center, Philadelphia, PA, ⁴ Biochemistry Molecular Biology, Drexel University College of Medicine, Philadelphia, PA, ⁵ Felt Institute for Cancer Research and Molecular Biology, Temple University School of Medicine, Philadelphia, PA, ⁶ Blood Cell Development and Function, Fox Chase Cancer Center, Philadelphia, PA
10:20 am	M226	Prolyl dihydroxylation of extra-ribosomal Rps23/uS12 regulates hypoxic adaptation in fission yeast. S.J. Clasen¹, W. Shao¹, H. Gu¹, P.J. Espenshade¹ ; ¹ Department of Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD
10:35 am	M227	Mutation of dgat2 uncouples lipolysis and lipoprotein synthesis in the zebrafish embryonic digestive organ resulting in excess ectopic lipid droplets. M.H. Wilson¹, J.H. Thierer^{1,2}, S.A. Farber^{1,2} ; ¹ Embryology, Carnegie Institution for Science, Baltimore, MD, ² Biology, The Johns Hopkins University, Baltimore, MD
10:50 am	M228	Metabolic control of beta-cell survival. N.N. Danial¹ ; ¹ Cancer Biology, Dana-Farber Cancer Institute, Harvard Medical School, Boston, MA

*Lawrence Kazak is the 2017 Merton Bernfield Awardee.

● Minisymposium 23: The Life of a Microtubule: Birth, Dynamics and Function

8:30-11:05 am

Room 113B

Co-Chairs: **Sabine Petry**, Princeton University; and **Ram Dixit**, Washington University in St Louis

8:30 am		Introduction
8:35 am	M229	The role of GCPs 4, 5, and 6 in microtubule nucleation. D. Farache¹, L. Emorine¹, L. Haren¹, A. Merdes¹ ; ¹ Centre Biologie Developpement, University Toulouse III / CNRS, Toulouse, France
8:50 am	M230	XMAP215 is a microtubule nucleation factor that functions synergistically with the gamma-tubulin ring complex. S. Petry¹, A. Thawani², R. Kadzik¹ ; ¹ Molecular Biology, Princeton University, Princeton, NJ, ² Chemical and Biological Engineering, Princeton University, Princeton, NJ
9:05 am	M231	A two-step mechanism for inactivation of MTOC function at the centrosome. J. Magecas¹, J.C. Zonka¹, J.L. Feldman¹ ; ¹ Department of Biology, Stanford, Stanford, CA
9:20 am	M232	EB1 and EB3 regulate microtubule minus end organization and Golgi morphology. C. Yang¹, J. Wu¹, C. Heus², I. Grigoriev¹, N. Liv², Y. Yao³, I. Smal³, E. Meijering³, J. Klumperman², Z. Qi⁴, A. Akhman-

		ova ¹ ; ¹ Cell Biology, Department of Biology, Utrecht University, Utrecht, Netherlands, ² Department of Cell Biology, University Medical Center Utrecht, Utrecht, Netherlands, ³ Departments of Medical Informatics and Radiology, Erasmus University Medical Center, Rotterdam, Netherlands, ⁴ Division of Life Science, The Hong Kong University of Science and Technology, Hong Kong, China
9:35 am	M233	Carboxy-terminal tail of β -tubulin regulates dynamic instability. C.P. Fees ¹ , J.K. Moore ¹ ; ¹ Cell and Development, University of Colorado Anschutz Medical Campus, Aurora, CO
9:50 am	M234	Mechanisms to localize and regulate katanin activity. G.M. Burkart ¹ , R.V. Dixit ¹ ; ¹ Biology, Washington University in St. Louis, St. Louis, MO
10:05 am	M235	Katanin spiral and ring structures shed light on power stroke for microtubule severing. E.A. Zehr ¹ , A. Szyk ¹ , G. Piszczek ² , E. Szczesna ¹ , X. Zuo ³ , A. Roll-Mecak ¹ ; ¹ Cell Biology and Biophysics, NIH, Bethesda, MD, ² Lung and Blood Institute, NIH, Bethesda, MD, ³ X-Ray Science Division, Argonne National Laboratory, Argonne, IL
10:20 am	M236	Structure, biochemistry, and activity of a CLASP family TOG. S. Majumdar ¹ , L.M. Rice ¹ ; ¹ Biophysics, UT Southwestern Medical Center, Dallas, TX
10:35 am	M237	Ndc80 complex as an intrinsic regulator of molecular friction at mitotic kinetochores. V.M. Demidov ¹ , S.K. Tripathy ¹ , F.I. Atullakhanov ² , E.L. Grishchuk ¹ ; ¹ Physiology, University of Pennsylvania, Perelman School of Medicine, Philadelphia, PA, ² Center for Theoretical Problems of Physicochemical Pharmacology, Moscow, Russia
10:50 am	M238	Profilin Directly Enhances Microtubule Growth Through Residues Mutated in Amyotrophic Lateral Sclerosis. J.L. Henty-Ridilla ¹ , M.A. Juanes ² , B.L. Goode ² ; ¹ Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY, ² Cell Biology, Brandeis University, Waltham, MA

● Minisymposium 24: Membrane Shaping by Fusion and Fission

8:30-11:05 am		Room 118B
Co-Chairs: Junjie Hu , Institute of Biophysics, Chinese Academy of Sciences; and Heidi M. McBride , McGill University		
8:30 am		Introduction
8:35 am	M239	FUSEXINS, a family of sexual, somatic and viral cell fusion proteins. C. Valansi ¹ , D. Moi ² , E. Leikina ³ , E. Matveev ¹ , M. Graña ⁴ , L.V. Chernomordik ³ , H. Romero ⁵ , P.S. Aguilar ² , B. Podbilewicz ¹ ; ¹ Biology, Technion- Israel Institute of Technology, Haifa, Israel, ² Laboratorio de Biología Celular de Membranas, Instituto de Investigaciones Biotecnológicas Dr. Rodolfo A. Ugalde (IIB), Buenos Aires, Argentina, ³ Section on Membrane Biology, Eunice Kennedy Shriver National Institute of Child Health and Human Development, Bethesda, MD, ⁴ Unidad de Bioinformática, Institut Pasteur Montevideo, Montevideo, Uruguay, ⁵ Ecología y Evolución, Universidad de la República, Montevideo, Uruguay
8:50 am	M240	Adhesion between membranes is a barrier to membrane fusion. S. Son ¹ , E.M. Schmid ¹ , M.D. Vahney ¹ , M.H. Bakalar ¹ , K. Chan ¹ , D.A. Fletcher ¹ ; ¹ Bioengineering, University of California, Berkeley, Berkeley, CA
9:05 am	M241	Redox-regulated C-terminus of Mitofusins reside within the mitochondrial intermembrane space. H.M. McBride ¹ ; ¹ Neurology and Neurosurgery, McGill University, Montreal, QC
9:20 am	M242	Mitofusin 1-mediated mitochondrial membrane fusion. J. Hu ¹ ; ¹ National Laboratory of Biomacromolecules, Institute of Biophysics, CAS, Beijing, China
9:35 am	M243	Structural Basis of Mitochondrial Receptor Binding and GTP-Driven Conformational Constriction by Dynamin-Related Protein 1. R. Kalia ^{1,2} , R.Y. Wang ¹ , A. Yusuf ¹ , P.V. Thomas ¹ , D.A. Agard ¹ , J.M. Shaw ² , A. Frost ^{1,2} ; ¹ Biochemistry and Biophysics, University of California San Francisco, San Francisco, CA, ² Biochemistry, University of Utah, Salt Lake City, UT
9:50 am	M244	Novel roles for Dynamin2 (Dnm2) during ER scission and autophagy. A. Martorell Riera ¹ , M. Iriondo Martinez ¹ , S. Itskanov ¹ , A.M. Van Der Blik ^{1,2,3} ; ¹ Department of Biological Chemistry, University of California Los Angeles, Los Angeles, CA, ² Molecular Biology Institute, University of California Los Angeles, Los Angeles, CA, ³ Johnson Comprehensive Cancer Center, University of California Los Angeles, Los Angeles, CA
10:05 am	M245	BAR scaffolds drive membrane fission by locally concentrating intrinsically disordered domains. W.T. Snead ¹ , W.F. Zeno ¹ , G.K. Kago ¹ , E.M. Lafer ² , J.C. Stachowiak ¹ ; ¹ Biomedical Engineering, The University of Texas at Austin, Austin, TX, ² Biochemistry and Structural Biology, The University of Texas Health Science Center at San Antonio, San Antonio, TX
10:20 am	M246	ESCRT membrane scission revealed by optical tweezers. J. Schöneberg ^{1,2,3} , S. Yan ^{1,2,4} , A.H. Bahrami ³ , M. Righini ⁵ , I. Lee ^{1,2} , M.R. Pavlin ^{2,6} , L. Carlson ^{1,2} , D.H. Goldman ^{1,2,4} , G. Hummer ^{3,7} , C. Bustamante ^{1,2,4,5,6,8,9} , J.H. Hurley ^{1,2,5,8} ; ¹ Molecular and Cell Biology, UC Berkeley, Berkeley, CA, ² California Institute for Quantitative Biosciences, UC Berkeley, Berkeley, CA, ³ Theoretical Biophysics, Max

- Planck Institute of Biophysics, Frankfurt a. M., Germany, ⁴Howard Hughes Medical Institute, UC Berkeley, Berkeley, CA, ⁵Department of Chemistry, UC Berkeley, Berkeley, CA, ⁶Biophysics Graduate Group, UC Berkeley, Berkeley, CA, ⁷Institute of Biophysics, Goethe University, Frankfurt/M, Germany, ⁸Molecular Biophysics and Integrated Bioimaging Division, Lawrence Berkeley National Laboratory, Berkeley, CA, ⁹Department of Physics, UC Berkeley, Berkeley, CA
- 10:35 am M247 Resolving ESCRT-III spirals at the intercellular bridge of dividing cells using 3D STORM imaging. **I. Goliand¹, T. Dadosh², N. Elia¹**; ¹Life Sciences, Ben Gurion University of the Negev, Beer Sheva, Israel, ²Faculty of Chemistry, Chemical research support, Weizmann Institute of Science, Rehovot, Israel
- 10:50 am M248 Recruitment dynamics of ESCRT-III and Vps4 to endosomes and implications for reverse membrane budding. **M. Alonso Y Adell¹, S. Migliano¹, S. Upadhyayula², Y. Bykov³, J.A. Briggs³, T. Kirchhausen², D. Teis¹**; ¹Biocenter/Division of Cell Biology, Medical University of Innsbruck, Innsbruck, Austria, ²Department of Cell Biology, Harvard Medical School, Boston, MA, ³Cell Biology and Biophysics Unit, European Molecular Biology Laboratory, Heidelberg, Germany

● Minisymposium 25: Visualization of Compartmentalized Signaling in Cancer

8:30-11:05 am

Room 115B

Co-Chairs: **Peter S. McPherson**, Montreal Neurological Institute, McGill University; and **Min Wu**, National University of Singapore

- 8:30 am Introduction
- 8:35 am M249 The lateral mobility of membrane-tethered KRAS4b revealed spatiotemporal complexity of signaling. **D. Goswami^{1,2,3,4}, D. Chen^{1,2,3,4}, J. Columbus^{1,2,3,4}, T.J. Turbyville^{1,2,3,4}**; ¹Frederick National Laboratory for Cancer Research, Frederick, MD, ²National Cancer Institute, Frederick, MD, ³Cancer Research Technology Program, Frederick, MD, ⁴Leidos Biomedical Research, Inc., Frederick, MD
- 8:50 am M250 Engineering Cell Sensing and Responses Using a GPCR-Coupled CRISPR-Cas System. **P.P. Dingal^{1,2,3}, N.H. Kipniss¹, L. Labanieh¹, Y. Gao⁴, L.S. Qi^{1,2,3}**; ¹Bioengineering, Stanford University, Stanford, CA, ²ChEM-H, Stanford University, Stanford, CA, ³Chemical & Systems Biology, Stanford University, Stanford, CA, ⁴Cancer Biology Program, Stanford University, Stanford, CA
- 9:05 am M251 Divergence in the temporal dynamics of Extracellular-signal regulated kinase (ERK) activity between subcellular compartments. **J.D. Keyes¹, A. Ganesan², J. Zhang^{1,2}**; ¹Pharmacology, University of California San Diego, San Diego, CA, ²Biomedical Engineering, The Johns Hopkins University School of Medicine, Baltimore, MD
- 9:20 am M252 Information content of the single cell cortical travelling waves. **D. Xiong^{1,2,3}, S. Xiao^{1,2}, C. Tong^{1,2}, M. Wu^{1,2,3}**; ¹Department of Biological Sciences, National University of Singapore, Singapore, Singapore, ²Centre for Bioimaging Sciences, National University of Singapore, Singapore, Singapore, ³Mechanobiology Institute, National University of Singapore, Singapore, Singapore
- 9:35 am M253 Intersectin-s interaction with the Rab13 exchange factor DENND2B facilitates recycling of epidermal growth factor receptor. **M.S. Ioannou¹, G. Kulasekaran¹, M. Fotouhi¹, J.J. Morein¹, C. Han¹, S. Tse¹, N. Nossova¹, T. Han¹, E. Mannard¹, P.S. McPherson¹**; ¹Neurology and Neurosurgery, Montreal Neurological Institute, McGill University, Montreal, QC
- 9:50 am M254 Engineered Allosteric Regulation of Protein Kinases by Light. **M. Shaaya¹, V. Huyot¹, V. Natarajan¹, A.V. Karginov¹**; ¹Cellular and Molecular Pharmacology, University of Illinois at Chicago, Chicago, IL
- 10:05 am M255 High resolution in vivo imaging of cancer cell extravasation. **T. Liu¹, V. Singh¹, E. Betzig¹, D.Q. Matus², B.L. Martin²**; ¹Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA, ²Biochemistry and Cell Biology, Stony Brook University, Stony Brook, NY
- 10:20 am M256 Oscillatory HIF-1 α induction promotes proliferation of hypoxic cells through a lactate dependent quorum autophagy response. **Kshitiz^{1,2}, J. Afzal², H. Chang¹, Y. Suhail², M. Hubbi², C. Dang^{2,3}, A. Levchenko¹**; ¹Biomedical Engineering, Yale University, New Haven, CT, ²Medicine, The Johns Hopkins Medical Institutions, Baltimore, MD, ³Abramson Cancer Center, University of Pennsylvania, Philadelphia, PA
- 10:35 am M257 Endocytosis and PTEN in Tumor Suppression. **M. Lee¹, A. Naguib¹, L.C. Trotman¹, N. El-Amine¹**; ¹Cancer Center, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY
- 10:50 am M258 Plasma Membrane PI(4,5)P2 Threshold Regulates Cell Migration Speed and Morphology. **M. Beshay¹, N. Bawazir¹, J. Notino¹, C. Janetopoulos¹**; ¹Biological Sciences, University of the Sciences in Philadelphia, Philadelphia, PA

● Special Interest Subgroups

8:30-11:05 am

The following member-organized sessions were selected by the ASCB Program Committee. All meeting attendees are welcome to participate. Meeting registration is required.

Subgroup W: Neurite Formation: From Neurite Initiation to Outgrowth

Room 119A

Organizer: **Kazuhiro Toyooka**, Drexel University College of Medicine

The formation of the human brain requires the well-regulated saltation of more than 100 billion neuronal cells, necessitating their specific connections. To accomplish this, neurite initiation is followed by the outgrowth of neurites to eventually develop into dendrites and an axon. Disruption of these processes results in aberrant connections and causes a wide range of developmental defects including mental abnormalities. Thus, there is no doubt that neurite initiation followed by neurite outgrowth is essential, and that actin and microtubules are important for these processes. In the subgroup we will update recent findings and discuss the future directions of neurite formation, in particular focusing on the molecular mechanisms of neurite initiation and outgrowth and the functions of key players in this process.

Presentations:

8:30-8:35 am	Introduction. Kazuhiro Toyooka , Drexel University College of Medicine
8:35-9:00 am	Dawn of neurite formation: 14-3-3epsilon in neurite initiation. Kazuhiro Toyooka , Drexel University College of Medicine
9:00-9:25 am	The when, where and maybe why of apical dendrite initiation in the cortex. Eric Olson , SUNY Upstate Medical University
9:25-9:50 am	MAP1B plays a key role in integrating signals that lead to cytoskeleton remodeling and determine axonal fate. Fatiha Nothias , Institut De Biologie Paris Seine
9:50-10:15 am	CLASPIing neurites at the tip. Angela Ho , Boston University
10:15-10:40 am	Breaking the symmetry: signaling integration in neurite outgrowth. Ding Mei , Institute of Genetics and Developmental Biology, Chinese Academy of Sciences
10:40-11:05 am	Influence of subcellular localization of Rho GTPases on neurite outgrowth. Dianna Hynds , Texas Woman's University

Subgroup X: Neuronal Cytoskeleton: A Complex Interplay of Cytoarchitecture and Dynamics

Room 121B

Organizers: **Laura Anne Lowery**, Boston College; **Kassandra Ori-McKenney**, University of California, Davis; and **Le Ma**, Thomas Jefferson University

The architecture and remodeling of the neuronal cytoskeleton powers the development and plasticity of a functional nervous system. This is accomplished through cytoskeletal-generated forces that drive morphological changes in neurons, including neuronal migration, axon outgrowth, dendritic arborization, and synaptogenesis. The highly polarized morphology of the neuron and the resulting specialized physiology are often achieved through the coordination of broadly used cytoskeletal pathways modulated by neuronal specific proteins and programs. Novel molecular, genetic, and imaging techniques allow for molecular interrogation and analysis of cytoskeletal architecture and dynamics in the neuron with higher spatial and temporal resolution. This session will highlight novel findings and mechanistic insights into this exciting area of neuronal cell biology, and how these programs may go awry in neurodevelopment and neurodegenerative disease.

Presentations:

8:30-8:35 am	Welcome by organizers
8:35-8:50 am	Specializations of the axonal cytoskeleton. Scott Brady , University of Illinois, Chicago
8:50-9:05 am	Regulation of microtubule polarity during axon arbor development in vivo. Mary Halloran , University of Wisconsin-Madison
9:05-9:20 am	Tau's role in regulating axonal microtubules is not what you think. Peter Baas , Drexel University
9:20-9:35 am	Competition between microtubule associated proteins directs motor transport. Kassie Ori-McKenney , University of California, Davis
9:35-9:50 am	Mechanism mediating MAP7 regulation of microtubules in axon branching. Stephen Tymanskyj (Ma lab), Thomas Jefferson University

WEDNESDAY

9:50-10:05 am	Regulation of neuron polarization and axon extension by the mitotic kinesin Kif20b. Noelle Dwyer , University of Virginia
10:05-10:20 am	XMAP215 contributes to the spatiotemporal guidance of microtubules and their interaction with F-actin inside growth cones. Paula Slater (Lowery lab), Boston College
10:20-10:35 am	How specificity is encoded in microtubule networks, the role of the tubulin code. Antonina Roll-Mecak , NIH/NINDS
10:35-10:50 am	Branch-specific microtubule destabilization mediates synapse elimination in the neuromuscular junction. Monika Brill (Misgeld lab), Technische Universitat Munchen
10:50-11:05 am	Microtubule severing enzymes in neural regeneration. David Sharp , Albert Einstein College of Medicine

● Symposium 6: Quality Control

11:20 am - 12:20 pm

Terrace Ballroom 3

Chair: **Pietro De Camilli**, Yale School of Medicine

11:20 am	S14	Orchestration of mitosis by Anaphase-Promoting Complex, a fascinating molecular machine. B.A. Schulman ¹ ; ¹ Molecular Machines Signaling, Max Planck Institute of Biochemistry, Munich, Germany
11:50 am	S15	Mechanism of ER-associated protein degradation (ERAD). T. Rapoport ^{1,2} ; ¹ Cell Biology, Harvard Medical School, Boston, MA, ² Harvard Medical School, Howard Hughes Medical Institute, Boston, MA