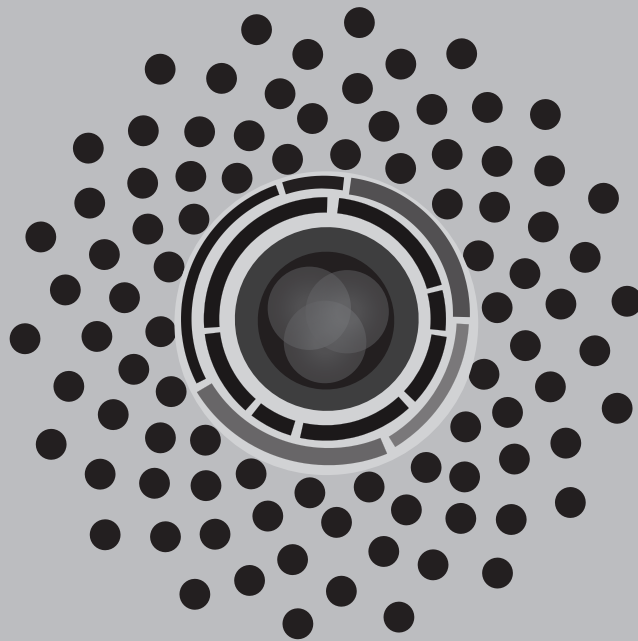


Sunday
December 4, 2016



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

Daily Schedule—Sunday, December 4

7:30 am-6:30 pm	Registration Open	Registration Area
7:30 am-8:00 pm	Career Center	Hall C, Learning Center
8:00-9:30 am	Symposium 1: Mechanical Forces in Cell Biology	Hall E
8:15-8:30 am	Exhibitor Tech Talk NanoSurface Biomedical, Inc.: A Biomimetic Cell Culture Platform for Enhancing Cell Biology Studies	Theater 2, Learning Center
8:30-8:45 am	Exhibitor Tech Talk Scientist (formerly Assay Depot Inc.): Creation of an Industry Standard for the Sourcing of Human Samples	Theater 2, Learning Center
9:00-9:45 am	Table Talk Mentoring in Teaching	Roundtable Central Section 2, Learning Center
9:00-10:00 am	Table Talk Unique Demands on Minority Graduate Students: Strategies to Adapt	Roundtable Central Section 3, Learning Center
9:00-10:00 am	Table Talk Biology Education Research	Roundtable Central Section 1, Learning Center
9:00-10:50 am	Career Awareness	Career Center Theater, Learning Center
9:30 am-4:00 pm	Exhibits Open	Learning Center
9:30-10:30 am	Exhibitor Tech Talk BioTek Instruments, Inc.: Normalization of Functional Cellular Metabolic Data using Cell Counting	Theater 2, Learning Center
9:30-11:00 am	Morning Refreshment Break	Learning Center
9:45-10:45 am	Symposium 2: Organelle Organization	Hall E
9:45-10:30 am	Table Talk Helpful Feedback from MALT and PALM Teaching Mentoring Awardees	Roundtable Central Section 2, Learning Center
10:00 am-12:00 pm	Foundational Cell Biology Workshop: Promoting Success of ALL Students in the STEM Classroom	Room 121
10:30-11:15 am	Table Talk Tips for Writing a Successful Application for a PALM Fellowship	Roundtable Central Section 2, Learning Center
10:45-11:45 am	Exhibitor Tech Talk BioLegend: Exploring the RANKL-RANK Axis in Bone Homeostasis and Cancer Metastasis	Theater 2, Learning Center
10:45-11:45 am	Exhibitor Tech Talk Cell Signaling Technology: Simple Workflows for Cellular Analyses from Cell Signaling Technology	Theater 1, Room 102
11:00 am-12:00 pm	Evolution Program	Room 310
11:00 am-12:00 pm	First Timer? Making the Most of the Annual Meeting	Room 309
11:00 am-12:00 pm	Science Discussion Tables	Roundtable Central Section 1, Learning Center
11:00 am-12:00 pm	E.E. Just Award Lecture Daniel A. Colón-Ramos	Room 120
11:00 am-12:00 pm	Science Writing Workshop Part 1	Career Center Theater, Learning Center
11:00 am-12:06 pm	Microsymposium 1: Autophagy/ESCRT	Microsymposia Room 1, Learning Center, Hall C

11:00 am-12:06 pm	Microsymposium 2: Genome Replication, Gene Regulation, and Gene Editing	Microsymposia Room 2, Learning Center, Hall C
11:15 am-12:00 pm	Table Talk Tips for Writing a Successful Application for a MALT Fellowship	Roundtable Central Section 2, Learning Center
12:00-12:55 pm	MD-PhD: Is It Right for Me?	Career Center Theater, Learning Center
12:00-1:30 pm	Odd-Numbered Poster Presentations	Learning Center
12:00-12:35 pm	Exhibitor Tech Talk Carl Zeiss Microscopy, LLC: High-throughput and Adaptive Feedback Microscopy	Theater 1, Room 102
12:00-12:45 pm	Exhibitor Tech Talk ACEA Biosciences, Inc.: TBD	Theater 2, Learning Center
12:15-1:15 pm	Table Talk Writing the Perfect Research Statement for Your Application Package	Roundtable Central Section 1, Learning Center
12:25-1:31 pm	Microsymposium 3: Cellular Interactions and Disease	Microsymposia Room 1, Learning Center, Hall C
12:25-1:31 pm	Microsymposium 4: Organelles	Microsymposia Room 2, Learning Center, Hall C
12:35-1:10 pm	Exhibitor Tech Talk Carl Zeiss Microscopy, LLC: Cytoskeletal Mechanics in the Beating Heart	Theater 1, Room 102
12:45-1:45 pm	Minorities Affairs Committee (MAC) Awards Reception (By Invitation Only)	Roundtable Central, Section 3, Learning Center
1:00-3:00 pm	Films: <i>The Biology of Skin Color</i> , <i>Spillover</i> , and <i>Virus Hunter</i>	ASCB Booth 423, Learning Center
1:00-1:55 pm	Career Panel: Industry	Career Center Theater, Learning Center
1:00-1:30 pm	In-Booth Presentation ALVEOLE: PRIMO: New Photopatterning Technology Offering a Customized Control of the Cellular Microenvironment	Booth 1017, Learning Center
1:00-4:00 pm	Science Writing Workshop Part 2 (Pre-registration required)	Roundtable Central, Section 2, Learning Center
1:00-1:45 pm	Exhibitor Tech Talk Andor Technology: Dragonfly: A New Imaging Platform - Instant Confocal with Multi-Modal Imaging	Theater 2, Learning Center
1:10-1:45 pm	Exhibitor Tech Talk Carl Zeiss Microscopy, LLC: From 3D Light to 3D Electron Microscopy	Theater 1, Room 102
1:30-3:30 pm	Afternoon Refreshment Break	Learning Center
1:30-2:15 pm	Meet the Editor of <i>CBE—Life Sciences Education</i>	ASCB Booth 423, Learning Center
1:30-3:00 pm	Even-Numbered Poster Presentations	Learning Center
1:50-2:56 pm	Microsymposium 5: Chromatin and Intranuclear Organization	Microsymposia Room 1, Learning Center, Hall C
1:50-2:56 pm	Microsymposium 6: Cytoskeletal Molecular Dynamics	Microsymposia Room 2, Learning Center, Hall C

Daily Schedule—Sunday, December 4

2:00-2:45 pm	Exhibitor Tech Talk Bruker Corporation: Correlative and Statistical Localization Microscopy Using the Vutara 352	Theater 2, Learning Center
2:00-2:45 pm	Exhibitor Tech Talk Human Protein Atlas: Explore the Human Cell	Theater 1, Room 102
2:00-2:55 pm	Panel Discussion: NIH K99	Career Center Theater, Learning Center
2:00-3:00 pm	International Affairs Committee (IAC) Roundtable (by invitation only)	Roundtable Central Section 1, Learning Center
2:30-3:30 pm	Table Talk MAC Program Alumni Meetup	Roundtable Central Section 3, Learning Center
3:00-4:00 pm	Opportunities for Cell Biology Society in China and Brazil	Room 121
3:00-4:00 pm	Exhibitor Tech Talk Thermo Fisher Scientific Inc.: New Transfection Reagents for CRISPR Editing and in vivo Applications	Theater 2, Learning Center
3:15-4:00 pm	Keith R. Porter Lecture Eva Nogales	Hall E
3:15-4:00 pm	Bruce Alberts Award for Excellence in Science Education David Lopatto	Room 120
4:15-5:15 pm	Exhibitor Tech Talk Allen Institute for Cell Science: Creating an Open Source Collection of GFP-Tagged Human iPSC Lines to Model Cell Organization and Dynamics	Theater 2, Learning Center
4:15-6:50 pm	Minisymposium 1: Bacterial Mechanics, Development, Division, and Polymers Minisymposium 2: Cell Cycle Regulation and Decisions Minisymposium 3: Intermediate Filaments from Cytoplasm to Nucleus Minisymposium 4: Membrane Traffic Control By Lipids, Cargos, and Motors Minisymposium 5: Microtubule Dynamics Minisymposium 6: Technological and Biological Frontiers in Signaling and Differentiation Education Minisymposium: Evidence-Based Education	Room 310 Room 103 Room 309 Room 104 Room 305 Room 306 Room 120
4:15-6:10 pm	Cell Imaging Workshop	Room 309

● Career Center

7:30 am-8:00 pm

Hall C, Learning Center

Stop by any time to check out the job postings.

9:00 am-4:00 pm

One-on-One CV Review

Drop in and have an experienced ASCB member help you hone the perfect CV.

Personalized Career Coaching

Drop by to talk one-on-one with life sciences career experts about your personal career trajectory.

National Postdoc Association Table

Representatives from the National Postdoctoral Association (NPA) will be available to discuss how they are trying to improve the postdoctoral experience. They will have resources for career planning, promoting diversity, and finding effective mentoring, including for international postdocs, postdocs with families, and senior graduate students who are planning next steps. Toolkits are available for starting a postdoc association at your institution.

National Research Mentoring Network Table

Students and researchers in the biomedical, behavioral, clinical, and social sciences: You can access free virtual mentorship, grantwriting coaching groups, mentorship training and more professional development programs and resources through the National Research Mentoring Network (NRMN), funded by the NIH. Learn more by visiting MariaElena Zavala at the table. Visit NRMNet today to learn more.

● Symposium 1: Mechanical Forces in Cell Biology

8:00-9:30 am

Hall E

Chair: **R. Dyche Mullins**, University of California, San Francisco

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|---------|----|--|
| 8:00 am | S1 | Rapid cell migration through dense tissues - it is easier for a camel to go through the eye of a needle. M. Piel ¹ ; ¹ UMR144/IPGG, Institut Curie, Paris, France |
| 8:30 am | S2 | Under pressure: epithelial cell population control. J. Rosenblatt ¹ ; ¹ Oncological Sciences, Huntsman Cancer Institute, University of Utah, Salt Lake City, UT |
| 9:00 am | S3 | Forcing Form and Function. V.M. Weaver ¹ ; ¹ University of California, San Francisco, San Francisco, CA |

● Exhibitor Tech Talk

8:15-8:30 am

Theater 2, Learning Center

NanoSurface Biomedical

A Biomimetic Cell Culture Platform for Enhancing Cell Biology Studies

Presenter: Alec S.T. Smith, PhD, Chief Science Officer, NanoSurface Biomedical Inc. and Senior Research Fellow, University of Washington, Bioengineering Department
Level: Intermediate

Cells maintained in vitro typically exhibit disordered cytoskeletal structures and random orientations. This disordered development can produce aberrant functional profiles and limit the utility of such in vitro models in terms of providing predictive data relevant to mammalian cell function. Here we demonstrate that extracellular matrix-inspired substrate nanotopography drastically improves the structural and functional development of differentiated cells. Specifically, we show how our patented nanotopographic culture dishes can be utilized to study the effect of cell-nanotopography interactions on adhesion, signaling, polarity, migration, and differentiation in the context of cancer biology, as well as regulation of epithelial wound healing, cardiovascular function, and stem cell biology. This talk will cover a broad range of applications and discuss results achieved from analysis of over twenty adherent cell types.

● Exhibitor Tech Talk

8:30-8:45 am

Theater 2, Learning Center

Scientist (formerly Assay Depot Inc.) Creation of an Industry Standard for the Sourcing of Human Samples

Presenter: Daniel Kagan, PhD

Level: Introductory

The Scientist.com marketplace has changed how scientific research is sourced and managed. By simplifying access to experts and services, the marketplace has dramatically lowered barriers to scientific innovation and helped pioneer a new virtual approach to research. Scientist.com has also now teamed up with 5 large pharmaceutical companies to establish an industry standard for the sourcing of human biological samples. This rigorous compliance framework provides increased visibility, traceability, and control while simplifying the user experience, saving time and money and improving access to innovative and routine human samples.

● Table Talk

9:00-9:45 am

Roundtable Central Section 2, Learning Center

Mentoring in Teaching

Looking for mentoring in teaching with active learning methods? Learn about the Mentoring in Active Learning & Teaching (MALT) or the NSF/ASCB Promoting Active Learning and Mentoring (PALM) Network programs.

● Table Talk

9:00-10:00 am

Roundtable Central Section 3, Learning Center

Unique Demands on Minority Graduate Students: Strategies to Adapt

Anthony Beas, a postdoc at Fred Hutchinson Cancer Research Center (Division of Basic Sciences, Seattle, WA) will discuss strategies graduate students from underrepresented backgrounds can use to adapt to the unique demands they face in academia.

Organized by the ASCB Minorities Affairs Committee

● Table Talk

9:00-10:00 am

Roundtable Central Section 1, Learning Center

Biology Education Research Erin Dolan, University of Georgia

Need help designing a biology education study? Collected assessment data but aren't sure how to analyze it? Conducted an education study but aren't sure how to publish it? Interested in exploring career paths that involve conducting biology education research? If so, bring your questions and ideas to this discussion on biology education research.

● Career Awareness

9:00-10:50 am

Career Center Theater, Learning Center

What Career Awareness and Development Resources Are There for Junior Scientists?

Gary McDowell, Executive Director, Future of Research

Adriana Bankston, Volunteer, Future of Research

To succeed in any career, academic or not, junior researchers must be aware of both career prospects and the skills they need to develop. All career tracks for junior scientists are competitive and we all need to be figuring out ways to efficiently and effectively pursue our career development goals. The session will discuss what kind of resources we currently use; and what resources we need or may want, in both raising career awareness and seeking development toward various career tracks. The interactive session will involve brainstorming about what career resources junior scientists feel are working, are not working, or are simply not available, and the group will share ideas and constructive solutions about how to decide upon and follow career goals.

Organized by the ASCB Committee for Postdocs and Students (COMPASS)

● Exhibits Open

Learning Center

9:30 am-4:00 pm

● Exhibitor Tech Talk

9:30-10:30 am

Theater 2, Learning Center

BioTek Instruments, Inc.

Normalization of Functional Cellular Metabolic Data using Cell Counting

Presenters: Yoonsook Kam, PhD / R&D Scientist, Agilent Technologies & Joe Clayton, PhD / Principal Scientist, BioTek Instruments, Inc.

Level: Intermediate

Changes in cellular metabolism underpin nearly all human disease. An integrated quantification of major metabolic pathways is possible using Seahorse XF analyzers from Agilent Technologies. Data normalization is often required to compare the metabolic poise of different samples, especially between cell types or treatment groups. Total cell number in each well is a widely accepted parameter for normalizing XF data; however, conventional methods for counting require additional procedures prone to error. In this Tech Talk, we will describe a new approach to normalization using the Cytation™ 5 Cell Imaging Multi-Mode Reader from BioTek Instruments, Inc. Using in situ assessment of cell number through digital microscopy, error due to sample preparation is decreased and accurate normalization can be applied to XF data.

● Morning Refreshment Break

9:30-11:00 am

Learning Center

Join us for complimentary coffee and tea while visiting exhibitors and viewing posters.

● Symposium 2: Organelle Organization

9:45-10:45 am

Hall E

Chair: **Peter Walter**, University of California, San Francisco School of Medicine/ HHMI

9:45 am S4 The behavior of mitochondria. **J. Nunnari**¹; ¹Department of Molecular and Cellular Biology, College of Biological Sciences, University of California, Davis, Davis, CA

10:15 am S5 The Cell Biology of Lipid Storage. **T.C. Walther**^{1,2,3}; ¹Cell Biology, Harvard Medical School, Boston, MA, ²Genetics and Complex Diseases, Harvard School of Public Health, Boston, MA, ³HHMI, Boston, United States

● Table Talk

9:45-10:30 am

Roundtable Central Section 2, Learning Center

Helpful Feedback from MALT and PALM Teaching Mentoring Awardees

Hear from previous participants who have been mentored in active learning for at least a semester through the ASCB MALT (Mentoring in Active Learning & Teaching) or the NSF/ASCB PALM (Promoting Active Learning and Mentoring) Network programs. How did the process work and what changes did we make in the classroom?

● Foundational Cell Biology Workshop

10:00 am-12:00 pm

Room 121

Supported by Howard Hughes Medical Institute

Promoting Success of ALL Students in the STEM Classroom

David J. Asai, Senior Director, Science Education; Howard Hughes Medical Institute

Amy Prunuske, Associate Professor, Microbiology and Molecular Genetics Department; Medical College of Wisconsin-Central Wisconsin

Sonia Zarate, Director, Office of Undergraduate Research; University of San Diego

Kimberly D. Tanner, Professor, Director of SEPAL; Department of Biology, San Francisco State University

Triscia Hendrickson, Associate Professor of Biology; Morehouse College

The session will begin with a 10-minute introduction to HHMI BioInteractive educational resources. HHMI's short films, virtual labs, data activities, apps, and print materials make science engaging for a diverse audience by coupling scientifically sound content with high-quality media. Resources use real data and highlight science as a process. In addition, educator guides suggest ways to implement the resources to scaffold learning and create a more student-centered environment. These multimedia resources are developed, vetted, and field-tested by educators and scientists, and available for free at BioInteractive.org.

Today's STEM educators teach a wide variety of students with diverse backgrounds, experiences, and learning styles. To ensure the success of all students, STEM educators must engage in inclusive practices in their classrooms and institutions. David Asai will introduce inclusive excellence and describe some of the barriers to student success. For the remainder of the first hour, the workshop will engage participants with a survey of evidence-based institutional practices and teaching strategies that have been shown to improve outcomes and retention in STEM for at-risk groups. We will also discuss mentoring opportunities for current and future faculty members. During the second hour, small group discussions and activities will focus on participants sharing best practices and strategies for student success, including pedagogical methods to engage all students, assessment of student learning in diverse classrooms, and faculty and future faculty development opportunities. The workshop is geared toward STEM educators at any level, from K-12 to higher education, as well as trainees interested in teaching.

Organized by the ASCB Education Committee

● Table Talk

10:30-11:15 am

Roundtable Central Section 2, Learning Center

Tips for Writing a Successful Application for a PALM Fellowship

The NSF-funded Promoting Active Learning and Mentoring Network (PALM) is looking for Fellows who want to receive mentoring in how to employ active learning in undergraduate classrooms. Come to this table talk to learn what characterizes a successful application for funding as a PALM Fellow.

● Exhibitor Tech Talk

10:45-11:45 am

Theater 2, Learning Center

BioLegend

Exploring the RANKL-RANK Axis in Bone Homeostasis and Cancer Metastasis

Presenter: Mohar Chattopadhyay, Product Manager

Level: Intermediate

Receptor Activator of Nuclear Factor-kappaB Ligand, RANKL, is a member of the tumor necrosis factor family of cytokines. RANKL functions as a key factor for osteoclast differentiation, migration, and activation through binding to its receptor RANK (Receptor Activator of NF-kappaB). This RANKL-RANK interaction is essential for bone formation. Besides maintaining bone homeostasis, it was recently found that RANKL also triggers cell migration of epithelial and melanoma cancer cells, that express the receptor RANK, to the bone. Here we present our portfolio, validation methods, and data exploring this RANKL-RANK system in bone resorption and bone metastases using several assays such as cell differentiation, chemotaxis, CHIP, and blocking capacity by target-ligand inhibition bioassays, amongst others. We'll also explore RANKL-induced intra-cellular signaling pathways involved in these processes.

● Exhibitor Tech Talk

10:45-11:45 am

Theater 1, Room 102

Cell Signaling Technology

Simple Workflows for Cellular Analyses

Presenter: Dr. Randall K. Wetzel, PhD

Level: Intermediate

Antibody-based assays are often used to accurately detect and quantify protein expression and modification, providing information critical to our understanding of both normal and disease-related signaling. These assays may incorporate numerous antibodies and cell lines and/or tissues, allowing for multiplexed analysis of complex cellular signaling events and the simultaneous measurement of multiple endpoints within a single experiment. Here, we will review common antibody-based applications like IHC, ICC, HCS, and flow cytometry. We will also demonstrate how highly validated fluorescently labeled antibodies and cellular dyes from Cell Signaling Technologies can be paired with the CellSimple™ Cell Analyzer to quickly and easily monitor biological processes, including cell health, viability, cell cycle, apoptosis, and immune or other cellular signaling in multiplex whole cell assays or lysate-based bead assays.

● Evolution Program

11:00 am-12:00 pm

Room 310

How Do You Solve a Problem Like Science Denial? One Conversation at a Time.



Ann Reid

National Center for
Science Education

A whopping 98% of scientists agree that humans have evolved over time; only 66% of the general public agree. Ninety-seven percent of climate scientists agree that humans are largely responsible for climate change; only 50% of the general public agree. What responsibility do scientists have for narrowing those gaps? And what's the best way to do so? Are you comfortable talking to people who reject or question conclusions that you find blindingly obvious? In this workshop, Ann Reid, Executive Director of the National Center for Science Education—which has been helping teachers cover the socially contentious topics of evolution and climate change for decades—will give you practical advice on how to make your conversations with science doubters more productive. We will discuss why so many people reject the overwhelming scientific evidence for evolution and climate change, and provide (evidence-based!) suggestions to help you become a more effective ambassador for science.

Organized by the ASCB Education Committ

● First Timer? Making the Most of the Annual Meeting

11:00 am-12:00 pm

Room 309

Natalie Lundsteen, PhD, Assistant Professor of Psychiatry and Director of Graduate Career Development, Graduate School of Biomedical Sciences, University of Texas Southwestern Medical Center

You made it to San Francisco. Now—create a strategy to maximize your time and opportunities. Over the next few days, you will be able to build your science knowledge but you can also grow your network of contacts, learn about potential career fields, and maybe, just maybe, start a conversation that could lead to a fantastic research collaboration or even a job offer. In this session we will discuss tips and tricks for taking advantage of all kinds of annual meeting situations and interactions, including how to make a great impression, what to ask employers and industry reps, practice delivering introductions, and planning for follow-up communication. Please bring your questions, a positive attitude, business cards (if you have them*) and something to take notes!

*If you need basic business cards, check out VistaPrint online or visit a Staples or OfficeMax for card-printing in the \$10 range.

● Science Discussion Tables

11:00 am-12:00 pm

Roundtable Central Section 1, Learning Center

Whether you're a student, postdoc, or PI, ASCB will again offer special networking opportunities with senior scientists and peers. Select your interest area and bring your questions to the ASCB Learning Center in the Moscone Center.

Table	Presenter	Topic
1	Matthieu Piel	Cell migration, cell polarity, cell growth and division, biophysics, microfluidics
2	Julie Brill	Cell morphogenesis and lipid signaling in animal development
3	Ed Munro	Cell polarity, cytoskeleton, morphogenesis, computational biology
4	Claire Walczak	Chromosome segregation and genomic instability
5	Magdalena Bezanilla	Developing tools in non-model organisms
6	Ora Weisz	Establishing effective collaborations
7	Diane Barber	Form and function: distinct actin filament architectures for different cell behaviors
8	Tom Misteli	Genome organization/Career development
9	Jody Rosenblatt	Maintaining a healthy epithelium and extrusion of epithelial cells
10	Samara Reck-Peterson	Microtubule-based intracellular transport
11	Jodi Nunnari	Mitochondrial dynamics/ASCB
12	Rebecca Heald	Mitosis and size control
13	Anthony Hyman	Phase separation in biology
14	Joe Gleeson	Connecting cell biology to disease mechanism
15	Lisa Dennison/ Liam Holt	Science sketches: how to make videos for fast, fun, and accessible communication of your research
16	Richard Cyr	NSF CAREER program for young faculty members

● E.E. Just Award Lecture

11:00 am-12:00 pm

Room 120

A Need to Connect: The Cell Biology of the Synapse and Behavior



Daniel A. Colón-Ramos

Yale University School of Medicine and the Graduate School

A2 The Cell Biology of Synapses and Behavior. **D.A. Colón-Ramos**¹; ¹Cell Biology and Neuroscience, Yale University, New Haven, CT

Organized by the ASCB Minorities Affairs Committee and supported by an IPERT grant from the National Institute of General Medical Sciences/NIH.

● Science Writing Workshop Part 1

11:00 am-12:00 pm

Career Center Theater, Learning Center

Careers in Science Writing and Getting Started

Jalees Rehman, MD, Associate Professor, University of Illinois at Chicago

This seminar will discuss career opportunities focused on writing for scientists, such as technical writing, careers as public information officers, and staff or freelance science journalists. Scientists interested in pursuing a career as a science writer will find advice on how to target their audience, engage in science blogging, and write longform science essays or articles for websites, newspapers, and magazines. Scientists will also be introduced to the craft of writing about science for a nonspecialist audience. After initial guidance in regards to crafting headlines, minimizing jargon, and providing the necessary background for their audience, attendees have the option to participate in a hands-on workshop (Part 2 from 1:00-4:00 pm in Section 2, Roundtable Central).

Organized by the ASCB Committee for Postdocs and Students (COMPASS)

● Microsymposium 1: Autophagy/ESCRT

11:00 am-12:06 pm

Microsymposia Room 1, Learning Center, Hall C

Moderators: **Theodore Ho**, University of California, San Francisco; and **Ashley Lakoduk**, University of Texas Southwestern Medical Center, Dallas

- 11:00 am Introduction
- 11:03 am E1 Autophagy maintains metabolism and functional activity of a subset of aged hematopoietic stem cells. **T.T. Ho**¹, **M.R. Warr**¹, **E. Adelman**², **E.V. Verovskaya**¹, **O.M. Lansinger**¹, **M.E. Figueroa**², **E. Passegue**¹; ¹Medicine, University of California, San Francisco, San Francisco, CA, ²Pathology, University of Michigan, Ann Arbor, MI
- 11:10 am E2 Proximity-based biotinylation identifies a new role for autophagy in ribonucleoprotein loading into extracellular microvesicles. **A.M. Leidal**¹, **H. Huang**², **J. Ye**¹, **T. Solvik**¹, **J.Y. Liu**¹, **F. Kai**³, **J. Goldsmith**¹, **M. Stanley**¹, **T. Marsh**¹, **A. Wiita**², **J. Debnath**¹; ¹Department of Pathology, University of California, San Francisco, San Francisco, CA, ²Department of Laboratory Medicine, University of California, San Francisco, San Francisco, CA, ³Department of Surgery, University of California, San Francisco, San Francisco, CA
- 11:17 am E3 The rapamycin-insensitive TOR Complex 2 network signals through mitochondria and the ER to regulate autophagy during amino acid limited growth conditions. **T. Powers**¹, **A. Vlahakis**¹, **N.L. Muniozguen**¹; ¹Molecular and Cellular Biology, University of California, Davis, Davis, CA
- 11:24 am E4 Membrane binding by CHMP7 coordinates ESCRT-III dependent nuclear envelope reformation. **J.G. Carlton**¹, **Y. Olmos**¹, **A. Perdrix-Rosell**¹; ¹Cancer Studies, KCL, London, United Kingdom
- 11:31 am E5 Autophagy regulates myelin compaction in the final stages of CNS myelination. **A.N. Bankston**^{1,2}, **M.D. Forston**^{2,3}, **A.M. Smith**^{1,2}, **R.M. Howard**^{1,2}, **S.R. Whittemore**^{1,2}; ¹Department of Neurological Surgery, University of Louisville, Louisville, KY, ²Kentucky Spinal Cord Injury Research Center, University of Louisville, Louisville, KY, ³Department of Anatomical Sciences and Neurobiology, University of Louisville, Louisville, KY
- 11:38 am E6 RILP is a stress-activated dynein recruitment factor required for mammalian autophagosome biogenesis, maturation and transport. **N.V. Khobreakar**^{1,2}, **R.B. Vallee**²; ¹Department of Biological Sciences, Columbia University, New York, NY, ²Department of Pathology and Cell Biology, Columbia University, New York, NY
- 11:45 am E7 The nuclear splicing factor Acinus moonlights as a cytosolic activator of autophagy. **N. Nandi**¹, **L.K. Tyra**¹, **H. Kramer**¹; ¹Dept. of Neuroscience, University of Texas Southwestern Medical Center, Dallas, TX
- 11:52 am E8 LAMP proteins bind cholesterol and contribute to NPC1-mediated cholesterol export from lysosomes. **J. Li**¹, **S.R. Pfeffer**¹; ¹Department of Biochemistry, Stanford University School of Medicine, Stanford, CA
- 11:59 am E9 Vps4 Induces Dynamic Instability in ESCRT-III Polymers. **B. Mierzwa**^{*1}, **N. Chiaruttini**^{*2}, **L. Redondo-Morata**³, **J. Moser von Filseck**², **J. König**^{4,5}, **I. Poser**⁶, **T. Müller-Reichert**⁴, **S. Scheuring**³, **A. Roux**^{2,7}, **D.W. Gerlich**¹; ¹Institute of Molecular Biotechnology of the Austrian Academy of Sciences (IMBA), Vienna, Austria, ²Department of Biochemistry, University of Geneva, Geneva, Switzerland, ³U1006 INSERM, Aix-Marseille Université, Marseille, France, ⁴Medical Theoretical Center, Dresden University of Technology, Dresden, Germany, ⁵Electron Microscopy Unit, Francis Crick Institute, London, United Kingdom, ⁶Max Planck Institute for Molecular Cell Biology and Genetics, Dresden, Germany, ⁷Swiss National Centre for Competence in Research Programme Chemical Biology, Geneva, Switzerland
- *Equal contributions

● Microsymposium 2: Genome Replication, Gene Regulation, and Gene Editing

11:00 am-12:06 pm

Microsymposia Room 2, Learning Center, Hall C

Moderators: **Travis Bernardo**, Albert Einstein College of Medicine; and **Cristian Suarez**, University of Chicago

- 11:00 am Introduction
- 11:03 am E10 Rif1 controls the development of late replication at the *Drosophila* Mid-Blastula Transition. **C.A. Seller**¹, **P.H. O'Farrell**¹; ¹Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA
- 11:10 am E11 Can a steroid hormone receptor induce DNA re-replication? **S.A. Gerbi**¹, **J. Urban**¹, **Y. Yamamoto**¹,

- L. Kadota¹, A. Lee¹, J. Leung¹, J. Bliss¹, M.S. Foulk²**; ¹BioMed Division; Department of Molecular Biology, Cell Biology and Biochemistry, Brown University, Providence, RI, ²Department of Biology, Mercyhurst University, Erie, PA
- 11:17 am E12 Female-biased embryonic death from DNA replication stress-induced inflammation. **A.J. McNairn¹, C. Chuang², M. Wallace³, J.C. Schimenti¹**; ¹Biomedical Sciences, Cornell University, Ithaca, NY, ²Genetics, Stanford University, Stanford, CA, ³Medicine, University of Oxford, Oxford, United Kingdom
- 11:24 am E13 Redundant GA-binding early transcription factors regulate the Drosophila histone locus body. **L.E. Rieder¹, K. Boltz², B. Duronio², E.N. Larschan¹**; ¹Molecular and Cellular Biology, Brown University, Providence, RI, ²Genetics and Molecular Biology, University of North Carolina Chapel Hill, Chapel Hill, NC
- 11:31 am E14 Identification and characterization of active enhancers as potential biomarkers of aggressive colorectal cancer. **R. Wu¹, C.R. Jerde¹, R.B. Diasio¹, S.M. Offer¹**; ¹Department of Molecular Pharmacology and Experimental Therapeutics, Mayo Clinic, Rochester, MN
- 11:38 am E15 A “toggle” in the RNase H domain of Prp8 correlates splicing fidelity and catalytic efficiency. **M. Mayerle¹, S. Ledoux¹, A. Price^{1,2}, M. Raghavan³, E. Moehle^{1,4}, H. Hadjivassiliou¹, S. Mendoza¹, D. Velazquez¹, N. Stepankiw³, A. de Bruyn Kops¹, K. Patrick^{1,5}, M. Dinglasan¹, Y. He¹, J. Abelson¹, J. Pleiss³, C. Guthrie¹**; ¹Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA, ²Physics, University of Colorado, Boulder, Boulder, CO, ³Molecular Biology and Genetics, Cornell University, Ithaca, NY, ⁴Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, ⁵Microbial Pathogenesis and Immunology, Texas AM Health Science Center, Byron, TX
- 11:45 am E16 Single Molecule Tracking of Ace1p In *Saccharomyces cerevisiae* defines a characteristic residence time for non-specific interactions of transcription factors with chromatin. **G.D. Mehta¹, D.A. Ball¹, R. Salomon-Kent¹, D. Mazza², T. Morisaki³, F. Mueller⁴, J.G. McNally⁵, T.S. Karpova¹**; ¹Laboratory of Receptor Biology and Gene Expression, National Institutes of Health, Bethesda, MD, ²Centro di Imaging Sperimentale e Università Vita-Salute San Raffaele, Istituto Scientifico Ospedale San Raffaele, Milano, Italy, ³Department of Biochemistry and Molecular Biology, Colorado State University, Colorado, CO, ⁴Computation Imaging and Modeling Unit, CNRS, Institut Pasteur, Paris, France, ⁵Helmholtz Center Berlin, Berlin, Institute for Soft Matter and Functional Materials, Berlin, Germany
- 11:52 am E17 Peptide based non-viral delivery of CRISPR-Cas9 for efficient genome engineering in mammalian cells. **G. Divita¹, N. Desai¹**; ¹Aadigen LLC, Pacific Palisades, CA
- 11:59 am E18 Conformational dynamics of Cas9 during DNA binding. **Y.S. Dagdas¹, J.S. Chen², S.H. Sternberg³, J.A. Doudna^{2,3,4,5}, A. Yildiz^{2,6}**; ¹Biophysics Graduate Group, University of California, Berkeley, Berkeley, CA, ²Department of Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, ³Department of Chemistry, University of California, Berkeley, Berkeley, CA, ⁴Howard Hughes Medical Institute, University of California, Berkeley, Berkeley, CA, ⁵Physical Biosciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA, ⁶Department of Physics, University of California, Berkeley, Berkeley, CA

● Table Talk

11:15 am-12:00 pm

Roundtable Central Section 2, Learning Center

Tips for Writing a Successful Application for a MALT Fellowship

Learn tips for writing a successful application for a Mentoring in Active Learning & Teaching (MALT) fellowship to be mentored in developing undergraduate course-based research experiences (CURES).

● MD-PhD: Is It Right for Me?

12:00-12:55 pm

Career Center Theater, Learning Center

Paul Utz and **Mark S. Anderson**, Directors of the Stanford Medical Scientist Training Program

This session will demystify the MD-PhD career and the application process to pursue an MD-PhD degree. The workshop will be presented by members of the MD-PhD Section of the Association of American Medical Colleges (AAMC) and will address general

issues related to MD-PhD program training. Topics include information on the careers of MD-PhD physician-scientists, how students train to become physician-scientists, how to apply to an MD-PhD training program, and the credentials of a competitive applicant. Panelists do not discuss individual programs, but will present common properties of programs. The workshop includes time for Q&A. Upon completion of the workshop, students, mentors, and advisors will have a working knowledge of MD-PhD careers, applying for a dual degree program, and how MD-PhD students are trained.

Organized by the ASCB Committee for Postdocs and Students (COMPASS)

● **Odd-Numbered Poster Presentations**

12:00-1:30 pm

Learning Center

● **Exhibitor Tech Talk**

12:00-12:35 pm

Theater 1, Room 102

Carl Zeiss Microscopy, LLC
High-throughput and Adaptive Feedback Microscopy
 Presenter: Christian Tischer
 Level: Advanced

High-throughput microscopy of siRNA treated cells has become a standard tool for discovering genes with roles in specific biological processes. However, conducting high-throughput microscopy experiments is still challenging as it puts high demands on sample preparation, microscopy, image and data analysis. Moreover, further characterization of the “hit genes” often requires demanding microscopic assays that are difficult to perform even in medium throughput. In this talk, I will outline the typical challenges occurring in high-throughput microscopy and discuss how dedicated microscope systems can help to tackle these challenges. In addition, I will describe how “adaptive feedback microscopy” allows scientists to perform highly complex microscopic assays in a fully automated manner, thereby enabling detailed and systematic further investigation of the identified “hit genes”.

● **Exhibitor Tech Talk**

12:00-12:45 pm

Theater 2, Learning Center

ACEA Biosciences, Inc.
 TBD

● **Table Talk**

12:15-1:15 pm

Roundtable Central Section 1, Learning Center

Writing the Perfect Research Statement for Your Application Package

Lance Barton, Department of Biology, Barton College, Sherman, TX; **Joyce Fernandes**, Department of Biology, Miami University, Oxford, OH; **Michael Paladin**, Department of Biology, Monmouth University, West Long Branch, NJ; **Michael Wolyniak**, Department of Biology, Hampden-Sydney College, Hampden-Sydney, VA

When applying for academic jobs, it is important to craft a cogent Research Statement that best frames your proposed research and what initiatives you will take in your laboratory to incorporate undergraduates effectively into your program. Join Biology Councilors from the Council on Undergraduate Research (CUR) to discuss topics, structures, and thought models for a Research Statement that will be well received by evaluators for the types of jobs for which you wish to apply. The Councilors will also discuss CUR’s mission and available resources to promote undergraduate research as a high-impact practice for the life science classroom.

● **Microsymposium 3: Cellular Interactions and Disease**

12:25-1:31 pm

Microsymposia Room 1, Learning Center, Hall C

Moderators: **Alyssa Lesko**, University of Notre Dame; and **Gary McDowell**, Future of Research, San Francisco, CA

12:25 pm

Introduction

12:28 pm E19

Rapid phenotypic assessment for mutations involved in human diseases: Uncovering a novel model for cardiac arrhythmia in the nematode *C. elegans*. **Y.M. Clovis¹**, **A. Webb¹**, **C. Turner¹**, **K.E.**

SUNDAY

		McCormick¹, S.R. Lockery¹ ; ¹ RD, NemaMetrix Inc., Eugene, OR
12:35 pm	E20	Developing 3D Molding Technique to Study the Effect of Geometry on Protein Expression. J.L. Flournoy¹, S. Park¹, Y. Chen¹ ; ¹ Mechanical Engineering, Johns Hopkins University, Baltimore, MD
12:42 pm	E21	Safe dose of bisphenol A to mothers during gestation and lactation increases proliferative rate and neoplastic lesions in mammary gland of female gerbil (<i>Meriones unguiculatus</i>) offspring. E.R. Leonel¹, S.P. Campos¹, D. Leonel¹, L. Falleiros-Junior¹, S. Taboga¹ ; ¹ Departament of Biology, São Paulo State University (IBILCE/UNESP), São José do Rio Preto, Brazil
12:49 pm	E22	Mesenchymal stem cells respond to matrix stiffness to promote mammary carcinoma proliferation via prosaposin secretion. S. Ishihara¹, D.R. Inman¹, W. Li², S.M. Ponik¹, P.J. Keely¹ ; ¹ Department of Cell and Regenerative Biology, University of Wisconsin-Madison, Madison, WI, ² Departments of Orthopedics and Rehabilitation Biomedical Engineering, University of Wisconsin-Madison, Madison, WI
12:56 pm	E23	Disruption of cell polarity, but not adhesion, alters Notch-mediated proliferation and differentiation in endometrial cancer. A.B. Gladden¹, E.R. Williams¹, R.R. Broaddus² ; ¹ Genetics, The University of Texas MD Anderson Cancer Center, Houston, TX, ² Pathology, The University of Texas MD Anderson Cancer Center, Houston, TX
1:03 pm	E24	A plasmid-based MMP14-FAP biosensor for monitoring and measuring MMP14 activity in real-time. A. Braun¹, K.A. Myers¹ ; ¹ Biology, University of the Sciences in Philadelphia, Philadelphia, PA
1:10 pm	E25	Direct visualization of phagocytes acting as Trojan horses and their contribution to brain invasion by the environmental yeast <i>Cryptococcus neoformans</i> . F.H. Santiago-Tirado¹, M.D. Onken², R.S. Klein³, J.A. Cooper², T.L. Doering¹ ; ¹ Molecular Microbiology, Washington University School of Medicine, St. Louis, MO, ² Biochemistry & Molecular Biophysics, Washington University School of Medicine, St. Louis, MO, ³ Medicine, Washington University School of Medicine, St. Louis, MO
1:17 pm	E26	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
1:24 pm	E27	An optimized image analysis-based approach to quantification of liver pathology. J. Abad¹, X. Liang², M. Calvert¹ ; ¹ Histology and Light Microscopy Core, Gladstone Institutes, San Francisco, CA, ² Bioengineering, UCSF, San Francisco, CA

● Microsymposium 4: Organelles

12:25-1:31 pm

Microsymposia Room 2, Learning Center, Hall C

Moderators: **Gregory Cook**, Oklahoma State University, Center for Health Sciences; and **Ashley Rowland**, University of California, Berkeley

12:25 pm		Introduction
12:28 pm	E28	A novel regulator of mitochondrial DNA copy number identified by an unbiased genetic screen. A. Göke^{1,2}, C. Osman^{1,2}, R.E. Diaz^{1,2,3}, P. Walter^{1,2} ; ¹ Howard Hughes Medical Institute, San Francisco, CA, ² Department of Biochemistry and Biophysics, University of California at San Francisco, San Francisco, CA, ³ Undergraduate Neuroscience Program, University of Miami, Miami, FL
12:35 pm	E29	Membrane-associated localization and interactomic study of primary cilia. P. Kohli^{1,2}, M. Rinschen^{1,2,3}, M. Hoehne^{1,2,3}, T. Benzing^{1,2,3}, B. Schermer^{1,2,3} ; ¹ Department II of Internal Medicine and Center for Molecular Medicine, University of Cologne, Cologne, Germany, ² Cologne Excellence Cluster on Cellular Stress Responses in Aging-Associated Diseases, University of Cologne, Cologne, Germany, ³ Systems Biology of Ageing Cologne, University of Cologne, Cologne, Germany
12:42 pm	E30	Molecular motors and cytoskeleton dynamics control the maturation and secretion of a lysosome-related organelle. L. Ripoll¹, X. Heiligenstein¹, L. Domingues¹, I. Hurbain^{1,2}, M.K. Dennis^{3,4}, M.S. Marks^{3,4}, E. Coudrier⁵, 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 (PCTIBiSA), 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

12:49 pm	E31	Physiology, University of Pennsylvania, Philadelphia, PA, ⁵ Molecular Mechanisms of Intracellular Transport, Institut Curie, PSL Research University, CNRS, UMR144, Paris, France Actin-induced calcium dynamics trigger key events in mitochondrial division. R. Chakrabarti ¹ , W. Ji ¹ , H.N. Higgs ¹ ; ¹ Biochemistry, Geisel School of Medicine, Dartmouth College, Hanover, NH
12:56 pm	E32	Heterogeneous mechanisms of primary cilia disassembly favor high speed dynamics. M. Mirvis ¹ , W.J. Nelson ^{1,2} ; ¹ Molecular and Cellular Physiology, Stanford University, Stanford, CA, ² Biology, Stanford University, Stanford, CA
1:03 pm	E33	Endosome-mitochondria interactions are modulated by iron release from transferrin. A. Das ¹ , M.M. Barroso ¹ ; ¹ Molecular & Cellular Physiology, Albany Medical College, Albany, NY
1:10 pm	E34	Illuminating mitophagy in living mt-Keima mouse tissues via STED super-resolution microscopy. D. Malide ¹ , N. Sun ² , T. Finkel ² ; ¹ Light microscopy core, NIH\NHLBI, Bethesda, MD, ² Center for molecular medicine, NIH\NHLBI, Bethesda, MD
1:17 pm	E35	Reeling in the cilium: chytrid fungi as a model for ciliary growth and resorption. K. Vasudevan ¹ , C.M. Baumer ¹ , L. Tracy ¹ , E. Turk ¹ , J.E. Stajich ² , T. Stearns ³ ; ¹ Department of Biology, Stanford University, Stanford, CA, ² Department of Plant Pathology Microbiology and Center for Plant Cell Biology, Institute for Integrative Genome Biology, University of California-Riverside, Riverside, CA, ³ Departments of Biology and Genetics, Stanford University, Stanford, CA
1:24 pm	E36	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

● Exhibitor Tech Talk

12:35-1:10 pm

Theater 1, Room 102

Carl Zeiss Microscopy, LLC Cytoskeletal Mechanics in the Beating Heart

Presenter: Benjamin L. Prosser

Level: Advanced

Microtubules have long been implicated in heartbeat regulation, yet their contribution to cardiac mechanics, and how it changes in disease, has remained obscure. One barrier to progress has been a lack of observation of microtubules in the living, beating myocyte. Recent advances utilizing Airyscan imaging have allowed us to capture microtubule behavior in contracting and stretching myocytes (Robison et al., Science 2016). Microtubules deform during the heartbeat, forming buckled sinusoids that resemble spring like elements and increase the mechanical resistance to myocyte contraction and stretch. We identify two key components regulating these microtubule mechanics: 1) post-translational “detyrosination” of cardiac microtubules and 2) desmin intermediate filaments. Additionally, we provide evidence that cytoskeletal resistance may limit cardiac function in human heart disease.

● Minorities Affairs Committee (MAC) Awards Reception (By Invitation Only)

12:45-1:45 pm

Roundtable Central, Section 3, Learning Center

Supported by The Burroughs Wellcome Fund

MAC poster competition winners are honored, information about MAC yearly activities is shared, and lots of networking takes place.

Organized by the ASCB Minorities Affairs Committee

● **Films: *The Biology of Skin Color, Spillover, and Virus Hunter***

1:00-3:00 pm

ASCB Booth 423, Learning Center

1:00-2:00 pm

The Biology of Skin Color

Spillover- Zika, Ebola, and Beyond

Virus Hunter

2:00-3:00 pm

The Biology of Skin Color

Spillover- Zika, Ebola, and Beyond

Virus Hunter

The Biology of Skin Color: In this 19-minute short film, Penn State University anthropologist Dr. Nina Jablonski walks through the evidence that the different shades of skin color among human populations arose as adaptations to the intensity of ultraviolet radiation in different parts of the world. *Spillover- Zika, Ebola, and Beyond*: Investigate the rise of spillover viruses, like Zika, Ebola and Nipah, which reside in animals and infect humans. Find out how human behaviors spread diseases and what science can do to anticipate, contain, and prevent epidemics around the world. *Virus Hunter*: In this 9-minute video from the Scientist at Work Series, follow scientists working in Bangladesh as they test fruit bat populations to determine whether they are infected with Nipah virus—a potentially deadly virus when passed on to humans.

● **Career Panel: Industry**

1:00-1:55 pm

Career Center Theater, Learning Center

These panelists will give a short talk about their career experiences and will then address individual questions from the audience.

Stephen Naylor received a PhD in Biochemistry and Molecular Biology from University of California, San Francisco in 2013, for research with David Morgan on cell cycle regulation in yeast. Following a year-long stint advocating for increased communication between scientists and policymakers with the nonprofit Green Science Policy Institute, Stephen decided to return to the laboratory in an industry setting. Since March 2015, he has been working as a scientist for Radiant Genomics, an Emeryville, CA, startup focused on soil metagenomics and natural product discovery. Building on past experience with molecular cloning, high throughput project design, and next-gen sequencing datasets, he is currently helping develop and optimize Radiant's natural product discovery and expression platform.

Anastasia Henry joined Denali Therapeutics in 2015 after a postdoctoral fellowship in the neuroscience department at Pfizer. Prior to this, she received her PhD from University of California, San Francisco in the laboratory of Mark von Zastrow. At Denali, she is currently a Scientist/Pathway Leader and leads a group of senior research scientists to support a variety of early discovery and more advanced therapeutic projects. She has participated in several project teams as both a team member and leader and has been involved in the hiring process for many positions within the company.

Erin Dueber received her PhD in Biophysics from University of California, San Francisco (Prof. David Agard, thesis advisor). After completing an independent postdoctoral fellowship at the Miller Institute for Basic Research in Science at University of California, Berkeley (Prof. James Berger, host), she joined Genentech as a Scientist in 2008. Currently, Dueber is a Senior Scientist and lab head in the department of Early Discovery Biochemistry. Her lab uses a combination of biochemical, biophysical, and structural methods to investigate how proteins function in both normal biology and disease states. Her research usually takes a reductionist approach, utilizing purified components to study the detailed molecular mechanisms of proteins and larger complexes, which are then put into the context of the more complex cellular environment through close collaboration with expert biologists. Dueber's current research includes projects in the areas of oncology, innate immunity, and infectious disease, with a special interest in how post-translational modifications (e.g., ubiquitination and phosphorylation) impact molecular interactions and cellular signaling.

Organized by the ASCB Committee for Postdocs and Students (COMPASS)

● In-Booth Presentation

1:00-1:30 pm

Booth 1017, Learning Center

ALVEOLE

PRIMO: New Photopatterning Technology Offering a Customized Control of the Cellular Microenvironment

Presenters: Romuald Vally, Matthieu Opitz

The device called PRIMO was developed to enable biologists to generate and tune any protein micropatterns, whether for studying the effect of a drug or mimicking the physiological conditions, at the level of a single cell or cell populations. Come and discover how it will facilitate your experimental manipulations.

● Science Writing Workshop Part 2 (*Pre-registration required*)

1:00-4:00 pm

Roundtable Central, Section 2, Learning Center

Hands-On Writing Session

Jalees Rehman, MD, Associate Professor, University of Illinois at Chicago

Sarah Krantz, graduate student, University of Illinois at Chicago

In this workshop (continuation from Part 1 at 11:00 am in the Career Center) attendees will participate in a hands-on science writing session. Attendees will write their own news article based on an original research paper in the field of cell biology. The goal of the workshop is to have every participant leave with something resembling a news article or blog post they wrote themselves. Jalees Rehman is a stem cell biologist and science writer with articles, essays, and blog posts published in Aeon Magazine, The Scientist, Scientific American, The Guardian, Salon, and The Huffington Post.

Organized by the ASCB Committee for Postdocs and Students (COMPASS)

● Exhibitor Tech Talk

1:00-1:45 pm

Theater 2, Learning Center

Andor Technology

Dragonfly: A New Imaging Platform - Instant Confocal with Multi-Modal Imaging

Presenter: James Wainwright

Level: Intermediate

Dragonfly is a novel microscopy platform that in a single device includes instant confocal, widefield-deconvolution, simultaneous multi-colour TIRFM, and optical boost for 3D single molecule localisation microscopy. Driven by a new, dedicated software called Fusion to facilitate the multi-modal imaging, the workflow covers image capture to real-time multi-dimensional rendering and deconvolution. Presenting our new imaging platform and its many benefits including: 3D capture at least 10x faster than conventional confocal; patented optics delivering outstanding image quality, illumination throughput and uniformity with extended spectral range for deep large-sample imaging; single molecule sensitivity for membrane studies and super-resolution; low-light imaging in non-confocal mode with GPU-accelerated deconvolution. Addressing subcellular imaging to whole sample biology, Dragonfly is perfect for core facilities or research projects requiring comprehensive imaging tools.

● Exhibitor Tech Talk

1:10-1:45 pm

Theater 1, Room 102

Carl Zeiss Microscopy, LLC

From 3D Light to 3D Electron Microscopy

Presenters: Robert Kirmse & Eric Hummel

Level: Advanced

The electron microscope (EM) is an invaluable tool for unravelling the structural details of cells and tissue. For the majority of questions the transmission electron microscope (TEM) is the standard to investigate resin embedded or cryo specimens. The scanning electron microscope (SEM) was mainly used to collect information on the topography of a specimen. However, the SEM emerged as a valuable imaging tool for traditional EM samples and thin sections offering advantages over classical TEM approaches. These advantages include the opportunity to section a resin-embedded sample directly in the SEM, prepare large numbers of serial sections, image them automatically, and include correlative light and electron microscopy easily into the workflow. The potential to complement, or even replace, the TEM in biological applications will be discussed.

● Afternoon Refreshment Break

1:30-3:30 pm

Learning Center

Join us for iced tea and snacks while visiting exhibitors and viewing posters.

● Meet the Editor of *CBE—Life Sciences Education*

1:30-2:15 pm

ASCB Booth 423, Learning Center



Erin Dolan, University of Georgia
Editor-in-Chief

Stop by for an informal discussion about the journal with Editor-in-Chief Erin Dolan.

● Even-Numbered Poster Presentations

1:30-3:00 pm

Learning Center

● Microsymposium 5: Chromatin and Intranuclear Organization

1:50-2:56 pm

Microsymposia Room 1, Learning Center, Hall C

Moderators: **Theodore Ho**, University of California, San Francisco; **Chenshu Liu**, Columbia University; and **Rebecca Meseroll**, National Institute of Diabetes and Digestive and Kidney Diseases, NIH

- 1:50 pm Introduction
- 1:53 pm E37 Chromatin organization and replication in mature striated muscle rely on mechanical coupling through intact LINC-complex. **S. Wang¹, U. C. P.¹, K. Fridman¹, B. Markus², T. Volk¹**; ¹Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel, ²G-INCPM / Mantoux Institute for Bioinformatics, Weizmann Institute of Science, Rehovot, Israel
- 2:00 pm E38 Reversible liquid droplet formation by HP1 α suggests role for phase separation in heterochromatin function. **A. Larson¹, D. Elnatan¹, M.J. Trnka¹, J.B. Johnston¹, A. Burlingame¹, G.J. Narlikar¹**; ¹Biochemistry, University of California San Francisco, San Francisco, CA
- 2:07 pm E39 A novel role for the essential DNA topoisomerase, Top2, in nuclear morphology and chromatin organization. **R.A. Meseroll¹, N. Holay¹, C. Caridi², J. Bachant², O. Cohen-Fix¹**; ¹National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), National Institutes of Health, Bethesda, MD, ²Graduate Program in Cell and Molecular Biology, University of California, Riverside, Riverside, CA
- 2:14 pm E40 Super-resolution microscopy reveals the three-dimensional organization of meiotic chromosome axes in intact *C. elegans* tissue. **M. Wojcik¹, S. Köhler², A.F. Dernburg², K. Xu¹**; ¹Chemistry, UC Berkeley, Berkeley, CA, ²Molecular and Cell Biology, UC Berkeley, Berkeley, CA
- 2:21 pm E41 The p150N domain of Chromatin Assembly Factor-1 regulates chromosome organization throughout the cell cycle via Ki-67. **T.D. Matheson¹, P.D. Kaufman¹**; ¹Molecular, Cell and Cancer Biology, U. Massachusetts Medical School, Worcester, MA
- 2:28 pm E42 Vertebrate transvection: evidence for chromosome X coalescence in human disease. **A.I. Laskowski¹, I.M. Konieczna², J. He², D.S. Neems¹, J.M. Mathew², J.R. Leventhal², R. Ramsey-Goldman³, S.T. Kosak¹**; ¹Department of Cell and Molecular Biology, Feinberg School of Medicine, Northwestern University, Chicago, IL, ²Department of Surgery, Feinberg School of Medicine, Northwestern University, Chicago, IL, ³Department of Medicine – Rheumatology, Feinberg School

- 2:35 pm E43 of Medicine, Northwestern University, Chicago, IL
Regulation of Rvb1/Rvb2 by a region within the INO80 chromatin remodeler implicates the yeast Rvbs as protein assembly chaperones. **C.Y. Zhou¹, C.I. Stoddard¹, J.B. Johnston², M.J. Trnka², I. Echeverria³, A. Burlingame², Y. Cheng^{1,4}, A. Sali^{2,3}, G.J. Narlikar¹**; ¹Biochemistry and Biophysics, UCSF, San Francisco, CA, ²Pharmaceutical Chemistry, UCSF, San Francisco, CA, ³Bioengineering and Therapeutic Sciences, UCSF, San Francisco, CA, ⁴Howard Hughes Medical Institute, San Francisco, CA
- 2:42 pm E44 Fascin regulates nuclear actin during *Drosophila* oogenesis. **D.J. Kelsch¹, C.M. Groen², T.N. Fagan¹, S. Sudhir¹, T.L. Tootle¹**; ¹Anatomy and Cell Biology, University of Iowa, Iowa City, IA, ²Regenerative Neurobiology Laboratory, Mayo Clinic, Rochester, MN
- 2:49 pm E45 Understanding the role of actin filaments in DNA double-strand break repair. **B.R. Schrank¹, T.A. Casado¹, J.J. Gautier²**; ¹Institute for Cancer Genetics, Columbia University Medical Center, New York, NY, ²Genetics and Development, Columbia University Medical Center, New York, NY

● Microsymposium 6: Cytoskeletal Molecular Dynamics

1:50-2:56 pm

Microsymposia Room 2, Learning Center, Hall C

Moderators: **Pinar Gurel**, National Institutes of Health; and **Scott Wilkinson**, Emory University

- 1:50 pm Introduction
- 1:53 pm E46 Nano-clustering of ligands on synthetic APCs influences T-cell membrane and actin organization. **E. Benard¹, P. Dillard^{1,2}, F. Pi^{1,3}, L. Limozin², K. Sengupta¹**; ¹STNO, CINaM, Marseille, France, ²LAI, Marseille, France, ³current address: School of food science of Jiangnan University, Jiangsu, China
- 2:00 pm E47 Microtubules acquire resistance from mechanical breakage through intraluminal acetylation. **Z. Xu^{1,2,3}, M.V. Nachury², Z. Werb¹, P. Marinkovich³, D. Portran², L. Schaedel⁴, M. Théry⁴, J. Gaillard⁴**; ¹Anatomy, University of California, San Francisco/UCSF, San Francisco, CA, ²Molecular and Cellular Physiology, Stanford University, School of Medicine, Stanford, CA, ³Dermatology, Stanford University, School of Medicine, Stanford, CA, ⁴Laboratoire de Physiologie Cellulaire et Végétale, Institut de Recherche en Technologie, Paris, France
- 2:07 pm E48 Mechanosensitive inhibition of formin facilitates contractile ring assembly in fission yeast. **D. Zimmermann¹, K.E. Homa¹, G.M. Hocky², L.W. Pollard³, G.A. Voth², M.J. Lord³, K.M. Trybus³, D.R. Kovar^{1,4}**; ¹Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL, ²Department of Chemistry, James Franck Inst. for Biophysical Dynamics and Computation Inst., University of Chicago, Chicago, IL, ³Molecular Physiology and Biophysics, University of Vermont, Burlington, VT, ⁴Biochemistry and Molecular Biology, University of Chicago, Chicago, IL
- 2:14 pm E49 Profilin directly regulates microtubule dynamics and microtubule-actin crosstalk using residues mutated in ALS. **J.L. Henty-Ridilla¹, B.L. Goode¹**; ¹Biological Sciences, Brandeis University, Waltham, MA
- 2:21 pm E50 The mammalian dynein/dynactin complex is a strong opponent to kinesin in a tug-of-war competition. **A. Yildiz¹**; ¹Department of Physics, Department of Molecular and Cell Biology, University of California Berkeley, Berkeley, CA
- 2:28 pm E51 High-resolution structural characterization of the myosin VI-F-actin interface during the force generation cycle. **P.S. Gurel¹, L.Y. Kim¹, T. Omabegho², Z. Bryant², G.M. Alushin¹**; ¹Cell Biology and Physiology Center, National Heart, Lung, and Blood Institute, Bethesda, MD, ²Department of Bioengineering and Department of Structural Biology, Stanford University School of Medicine, Stanford, CA
- 2:35 pm E52 Functions of the TOG domain proteins, FAP256 and CHE-12, at the ciliary tip. **P. Louka¹, M. Guha¹, K. Vasudevan², D. Wloga³, W.L. Dentler⁴, J. Gaertig¹**; ¹Cellular Biology, University of Georgia, Athens, GA, ²Biology, Stanford University, Stanford, CA, ³Cell Biology, Nencki Institute of Experimental Biology, Warszawa, Poland, ⁴Molecular Biosciences, University of Kansas, Lawrence, KS
- 2:42 pm E53 The +TIP, TACC3, is an important regulator of microtubule dynamics, axon outgrowth and guidance. **B. Erdogan¹, G. Cammarata¹, A. Franci¹, E. Lee¹, B. Pratt¹, J. Tiber¹, L.A. Lowery¹**; ¹Biology, Boston College, Boston, MA
- 2:49 pm E54 High-throughput detection of cytoskeletal contributions to cellular viscoelastic properties with

a new microfluidic paradigm and analytical framework. **L. Guillou¹, J.B. Dahl², J.G. Lin^{3,4}, A.I. Barakat¹, J. Husson¹, S. Muller², S. Kumar^{2,3,4}**; ¹Mechanics, Ecole Polytechnique, Palaiseau, France, ²Chemical and Biomolecular Engineering, UC-Berkeley, Berkeley, CA, ³The UC Berkeley-UCSF Graduate Program in Bioengineering, Berkeley, CA, ⁴Bioengineering, UC-Berkeley, Berkeley, CA

● Exhibitor Tech Talk

2:00-2:45 pm

Theater 2, Learning Center

Bruker Corporation **Correlative and Statistical Localization Microscopy Using the Vutara 352**

Presenter: Carl Ebeling

Level: Introductory

Super-resolution imaging, localization microscopy in particular, optically resolves spatial features within the cellular environment an order of magnitude below the classical diffraction limit. Due to the nature of the method, localization microscopy is often lacking in the contextual information of the overall cellular environment. Utilizing optical correlation microscopy through the Vutara 352 framework, it is possible to relate the large-scale cellular environment, obtained via swept-field confocal imaging, with more refined super-resolution localization data. Furthermore, its software offers numerous statistical analysis features to quantify the localization data into meaningful biological interpretations. These statistical features include spatial distribution tools such as Ripley's K and pair correlation calculations, cluster, co-localization and resolution analysis, as well as live-cell tools such as mean-squared displacement calculations and particle tracking.

● Exhibitor Tech Talk

2:00-2:45 pm

Theater 1, Room 102

Human Protein Atlas **Explore the Human Cell**

Presenter: Assistant Prof. Emma Lundberg

Level: Introductory

Launching the Cell Atlas at this Tech Talk! The subcellular distribution of 12000 human proteins has been localized to 27 organelles and cellular structures using an antibody-based approach and high-resolution confocal microscopy. The high spatial resolution allows identification of novel protein components of all major organelles as well as fine cellular structures such as the cytokinetic bridge, nuclear bodies, and rods and rings. Here we present a high-resolution proteome map of the human cell, the Cell Atlas. It is an image-based atlas detailing the subcellular distribution of the human proteome, as part of the Human Protein Atlas. It also includes chapters describing the organelle proteomes, multi-localizing proteins, cell cycle dependent proteins, and cell line transcriptomes. Explore it at www.proteinatlas.org

● Panel Discussion: NIH K99

2:00-2:55 pm

Career Center Theater, Learning Center

Applying for the NIH K99

These panelists will discuss their experiences with the application process for the K99/R00 Pathway to Independence Award, and then they will address individual questions from the audience.

Jordan Ward earned a PhD in Biochemistry from the University of London for work carried out with Simon Boulton at Cancer Research UK. He then joined Keith Yamamoto's group at University of California, San Francisco for a postdoctoral position focusing on nuclear hormone receptors in *C. elegans* and the human parasitic nematode *B. malayi*. At UCSF he authored successful Canadian Cancer Society and Canadian Institutes of Health Research postdoctoral fellowships and a K99/R00 Pathway to Independence Award. He also helped author a successful NSF award with his postdoctoral advisor. Currently he is an Assistant Professor at the University of California, Santa Cruz in the Department of Molecular, Cellular, and Developmental Biology. His advice on writing K99 grants and thoughts on applying for academic jobs can be found on his lab website: <http://www.jordandward.com>.

Kassandra Ori-McKenney received her PhD from Columbia University. After completing her graduate work with Richard Vallee, she moved across the country to pursue her postdoctoral work with Yuh Nung Jan at UCSF, where she focused on the organization

and regulation of the microtubule cytoskeleton during neuronal development. During her postdoc and with her daughter on the way, Ori-McKenney was not only awarded the K99/R00 Pathway to Independence Award but also received a perfect score on her application. In January, she joined the Department of Molecular and Cellular Biology at University of California, Davis. Her lab studies how signaling pathways converge on the microtubule cytoskeleton for proper neuronal function.

Organized by the ASCB Committee for Postdocs and Students (COMPASS)

● **International Affairs Committee (IAC) Roundtable (*by invitation only*)**

2:00-3:00 pm

Roundtable Central Section 1, Learning Center

Moderator: **Yixian Zheng**, Carnegie Institution for Science

The goals of the IAC Roundtable are to foster interactions between U.S. and international graduate students and postdocs and discuss science and policy issues of special significance for international attendees. Members of the IAC and ASCB Council facilitate discussions.

Organized by the ASCB International Affairs Committee

● **Table Talk**

2:30-3:30 pm

Roundtable Central Section 3, Learning Center

MAC Program Alumni Meetup

This is an opportunity for alumni of ASCB Minorities Affairs Committee (MAC) programs to meet up and network. If you are interested in applying to one of the MAC programs like the Postdocs/Jr. Faculty Workshop, FRED, Linkage Fellows, or the Visiting Professors program, this would be a great opportunity to meet people who have participated and can speak to their benefits.

Organized by the ASCB Minorities Affairs Committee

● **Opportunities for Cell Biology Society in China and Brazil**

3:00-4:00 pm

Room 121

Presenters for China: **Lei Cheng, Ming Lei, Xing Liu, Guangshuo Ou, Dawang Zhou, and Xuebiao Yao**, Chinese Society of Cell Biology & Chinese Academy of Sciences

Presenters for Brazil: **Celia R. S. Garcia** and **Marie-Anne Van Sluys**, São Paulo Research Foundation

This session will highlight the initiatives for cell biology research and introduce newly established resources/initiatives for interdisciplinary collaboration, graduate and postdoctoral training in China and Brazil. This event is specifically designed for those who plan to explore scientific collaboration (funds), postdoctoral fellowship and graduate scholarship, and professional employment opportunities in China or Brazil.

Organized by the ASCB International Affairs Committee

● **Exhibitor Tech Talk**

3:00-4:00 pm

Theater 2, Learning Center

Thermo Fisher Scientific Inc.
New Transfection Reagents for CRISPR Editing and in vivo Applications

Presenter: Thermo Fisher Scientific R&D

Level: Intermediate

The talk will cover our latest transfection innovations for CRISPR editing and in vivo applications. Topics included in the talk: Nucleic acid delivery solutions for hard-to-transfect and primary cells; Delivery of genome editing tools, including cas9 protein; High-titer production solutions for Lentivirus; In vivo delivery of RNAi and mRNA using Invitrogen™ InvivoFectamine™ 3.0 Reagent

● Keith R. Porter Lecture

3:15-4:00 pm

Hall E



Eva Nogales

Lawrence Berkeley National Laboratory and
University of California, Berkeley/HHMI

A1 Visualizing microtubule structure and interactions. **E. Nogales**^{1,2,3}; ¹MCB, UC Berkeley, Berkeley, CA, ²Molecular Biophysics and Integrated Bio-Imaging, Lawrence Berkeley National Laboratory, Berkeley, CA, ³Howard Hughes Medical Institute, Berkeley, CA

● Bruce Alberts Award for Excellence in Science Education

3:15-4:00 pm

Room 120

Investigations of Undergraduate Research Experiences and Science Learning: How Findings Drive New Questions



David Lopatto
Grinnell College

The opportunity for participating in scientific research as an undergraduate has long been recognized as a critical aspect of fostering interest and persistence in science. Efforts to investigate the essential features and benefits of undergraduate research have uncovered a complex package of features and a plethora of effects on student learning and attitude. The initial efforts to describe these effects in undergraduate research have led to assessment of undergraduate research embedded in disciplinary and interdisciplinary courses. The recounting of these efforts demonstrates how new questions drive research in science learning.

A3 Investigations of undergraduate research experiences and science learning: How findings drive new questions.
D. Lopatto¹; ¹Center for Teaching, Learning and Assessment, Grinnell College, Grinnell, IA

Organized by the ASCB Education Committee

● Exhibitor Tech Talk

4:15-5:15 pm

Theater 2, Learning Center

Allen Institute for Cell Science

Creating an Open Source Collection of GFP-Tagged Human iPSC Lines to Model Cell Organization and Dynamics

Presenter: Allen Institute for Cell Science Team

Level: Intermediate

The Allen Institute for Cell Science (AICS) is creating a dynamic visual model of hiPSC organization using a suite of GFP-tagged hiPSC lines labeling 15-20 major organelles/molecular machines of the cell. We will present the CRISPR/Cas9 methodologies, workflows, and QC metrics used to generate these endogenously tagged clonal cell lines and discuss our team and open science approach to create and share our tools and data. During this tech talk, we will focus on the following: 1) Methods (CRISPR/Cas9) and workflow for creating the GFP-tagged lines; 2) Assays and images for validation and QC; 3) List of structures and genes tagged; 4) Access to cell lines and associated data; and 5) Community feedback for future line production.

● Minisymposium 1: Bacterial Mechanics, Development, Division, and Polymers

4:15-6:50 pm

Room 310

Co-Chairs: **Zemer Gitai**, Princeton University; and **Lucy Shapiro**, Stanford University School of Medicine

- 4:15 pm Introduction
- 4:20 pm M1 Mechano-microbiology: How physical forces impact bacterial pathogenesis. **Z. Gitai**¹; ¹Molecular Biology, Princeton University, Princeton, NJ
- 4:35 pm M2 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; ¹Developmental Biology, Stanford University, Stanford, CA, ²Chemistry, Stanford University, Stanford, CA
- 4:50 pm M3 A Conserved Switch Regulates Phosphatase Activity to Initiate Cell-Specific Transcription in Response to Spatial Cues. **N. Bradshaw**¹, **V.M. Levdivkov**², **A.J. Wlikinson**², **C.M. Zimanyi**¹, **R. Gaudet**¹, **R. Losick**¹; ¹Molecular and Cellular Biology, Harvard University, Cambridge, MA, ²Structural Biology Laboratory, Department of Chemistry, University of York, York, United Kingdom
- 5:05 pm M4 Mycomembrane Dynamics and V-Snapping: Growth and Division of the Cell Envelope in *Corynebacterium glutamicum*. **X. Zhou**¹, **F.P. Rodriguez-Rivera**², **C.R. Bertozzi**^{2,3}, **J.A. Theriot**^{1,3,4}; ¹Biochemistry, Stanford University School of Medicine, Stanford, CA, ²Chemistry, Stanford University, Stanford, CA, ³Howard Hughes Medical Institute, Stanford, United States, ⁴Microbiology and Immunology, Stanford University School of Medicine, Stanford, CA
- 5:20 pm M5 Mechanistic interplay between coupled morphogenetic events in *Caulobacter*. **E.L. Meier**¹, **E.D. Goley**¹; ¹Biological Chemistry, Johns Hopkins University School of Medicine, Baltimore, MD
- 5:35 pm M6 Mechanistic insights of the Min Oscillator via cell-free reconstitution and imaging. **A.G. Vecchiarelli**¹, **K. Mizuuchi**¹; ¹National Institutes of Health, Bethesda, MD
- 5:50 pm M7 Along for the ride: directional motion of FtsZ filaments controls cytokinesis in *B. subtilis*. **A. Bisson**¹, **G. Squyres**¹, **Y. Hsu**^{2,3}, **E. Kuru**^{2,3}, **M. Van Nieuwenhze**², **Y. Brun**³, **E.C. Garner**¹; ¹Molecular and Cellular Biology, Harvard University, Cambridge, MA, ²Department of Chemistry, Indiana University, Bloomington, IN, ³Department of Biology, Indiana University, Bloomington, IN
- 6:05 pm M8 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; ¹University of California, San Francisco, San Francisco, CA, ²University of Washington, Seattle, WA
- 6:20 pm M9 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; ¹Biochemistry, University of Washington, Seattle, WA, ²Department of Cellular and Molecular Pharmacology, University of California, San Francisco, CA
- 6:35 pm M10 Electron Cryo-Tomography Visualizes the Spindle Apparatus and Nucleus-like Structures Formed During Infection by Φ KZ Family Bacteriophages. **A.F. Brilot**¹, **V. Chaikerasitak**², **K. Khanna**², **E. Villa**², **J. Pogliano**², **D.A. Agard**¹; ¹Biochemistry and Biophysics, University of California, San Francisco/HHMI, San Francisco, CA, ²Department of Chemistry Biochemistry, University of California, San Diego, La Jolla, United States

● Minisymposium 2: Cell Cycle Regulation and Decisions

4:15-6:50 pm

Room 103

Co-Chairs: **Hilary Collier**, University of California, Los Angeles; and **Arshad Desai**, Ludwig Institute for Cancer Research

- 4:15 pm Introduction
- 4:20 pm M11 Towards an integrated mesoscale model of budding yeast cell size control. **K.M. Schmoller**¹, **D. Chandler-Brown**¹, **Y. Winetraub**¹, **J.M. Skotheim**¹; ¹Department of Biology, Stanford University, Stanford, CA
- 4:35 pm M12 Cell cycle exit to a quiescent state involves alternative isoform use. **M. Mithun**^{1,2}, **E.L. Johnson**³, **D.C. Corney**^{1,2,3}, **D.G. Robinson**⁴, **D. Jelinek**^{1,2}, **A. Ambrus**^{1,2}, **D.G. Taylor**^{1,2}, **W. Wang**⁴, **S. Batista**⁵, **H.A. Collier**^{1,2}; ¹Molecular, Cell and Developmental Biology, UCLA, Los Angeles, CA, ²Biological Chemistry, David Geffen School of Medicine, Los Angeles, CA, ³Molecular Biology, Princeton University, Princeton, NJ, ⁴Lewis-Sigler Institute, Princeton University, Princeton, NJ, ⁵Computer Science, Princeton University, Princeton, NJ
- 4:50 pm M13 Examining chromatin structure in different states of G0. **Y. Ma**¹, **D.J. McKay**², **L. Buttitta**¹; ¹Molecular, Cellular and Developmental Biology, University of Michigan, Ann Arbor, MI, ²Dept. of

- Biology and Dept. of Genetics, University of North Carolina, Chapel Hill, NC
- 5:05 pm M14 Neurogenic lncRNAs mutated in human neurodevelopmental disorders. **C. Ang¹, O. Wapinski², Q. Ma², S. Fan³, R.A. Flynn², B. Coe⁴, M. Onoguchi², B.T. Do², J. Xu², Q. Lee¹, U. Elling⁵, J. Penninger⁵, E.E. Eichler⁴, A.K. Srivastava³, H. Chang², M. Wernig¹**; ¹ISCBRM, Stanford University, Stanford, CA, ²Dermatology, Stanford University, Stanford, CA, ³Greenwood Genetic Center, J.C. Self Research Institute of Human Genetics, Greenwood, SC, ⁴Howard Hughes Medical Institute and Department of Genome Sciences, University of Washington, Seattle, WA, ⁵Institute of Molecular Biotechnology of the Austrian Academy of Science (IMBA), Vienna Biocenter, Vienna, Austria
- 5:20 pm M15 An mRNA competition mechanism regulates localized phase separation of liquid-like P granules in *C. elegans* embryo. **S. Saha¹, C.A. Weber², M. Nusch³, C. Hoegge¹, O. Adame-Arana², M. Hein⁴, E. Osborne-Nishimura⁵, J. Mahamid⁴, M. Jahnel¹, L.M. Jawerth^{1,2}, A. Pozniakovski¹, C.R. Eckmann³, F. Julicher², A.A. Hyman¹**; ¹Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany, ²Max Planck Institute for the Physics of Complex Systems, Dresden, Germany, ³Martin Luther University, Halle (Saale), Germany, ⁴Max Planck Institute of Biochemistry, Martinsried, Germany, ⁵Colorado State University, Fort Collins, CO
- 5:35 pm M16 Cyclin-dependent kinase control of motile ciliogenesis. **E.K. Vlado¹, M.B. Stratton², T. Stearns^{2,3}, J.D. Axelrod¹**; ¹Pathology, Stanford University School of Medicine, Stanford, CA, ²Biology, Stanford University, Stanford, CA, ³Genetics, Stanford University School of Medicine, Stanford, CA
- 5:50 pm M17 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. Dumitru¹, S.F. Rusin¹, A. Kettenbach^{1,2}, D. Compton^{1,2}**; ¹Biochemistry Cell Biology, Dartmouth Geisel School of Medicine, Hanover, NH, ²Norris Cotton Cancer Center, Dartmouth Geisel School of Medicine, Lebanon, NH
- 6:05 pm M18 An ectopic, kinetochore-independent checkpoint activator reveals the biochemical design of the mitotic checkpoint. **A.P. Joglekar^{1,2}, C. Chen¹, P. Sekhri¹, I.M. Cheeseman³, I. Whitney³**; ¹Cell and Developmental Biology, University of Michigan Medical School, Ann Arbor, MI, ²Biophysics, University of Michigan, Ann Arbor, MI, ³Biology, MIT, Boston, MA
- *6:20 pm M19 Large-scale analysis of CRISPR cell cycle knockouts reveals that spindle assembly checkpoint function is dispensable for viability. **K.L. McKinley¹, I.M. Cheeseman¹**; ¹Department of Biology, Whitehead Institute/MIT, Cambridge, MA
- 6:35 pm M20 A Cdc20 Switch at the Kinetochore Reveals a Duality in Control of Anaphase Onset. **T. Kim¹, P. Lara Gonzalez¹, K. Oegema¹, A.B. Desai¹**; ¹Dept. of Cellular and Molecular Medicine, UCSD, Ludwig Institute for Cancer Research, San Diego, CA

* Kara McKinley won the Merton Bernfield Memorial Award for 2016.

● Minisymposium 3: Intermediate Filaments from Cytoplasm to Nucleus

4:15-6:50 pm

Room 309

Co-Chairs: **Sandrine Etienne-Manneville**, CNRS, Institut Pasteur, Paris, France; and **Jan Lammerding**, Cornell University

- 4:15 pm Introduction
- 4:20 pm M21 Polarization of the intermediate filament network during directed cell migration. **S. Etienne-Manneville¹, C. Leduc¹**; ¹Cell Polarity and Infection, Institut Pasteur - CNRS, Paris, France
- 4:35 pm M22 Interplay between Rho-GEF Solo and keratin filaments is crucial for mechanotransduction in epithelial cells. **S. Fujiwara^{1,2}, H. Abiko², K. Ohashi², K. Mizuno²**; ¹Department of Mechanical Science and Bioengineering, Graduate School of Engineering Science, Osaka University, Osaka, Japan, ²Department of BioMolecular Sciences, Graduate School of Life Sciences, Tohoku University, Sendai, Japan
- 4:50 pm M23 Drafting the intermediate filament proteome. **M. Wiking¹, C. AitBlal¹, L. Björk¹, A. Bäckström¹, F. Danielsson¹, J. Fall¹, C. Gnann¹, M. Hjelmare¹, D. Mahdessian¹, R. Schutten¹, M. Skogs¹, C. Stadler¹, D.P. Sullivan¹, P. Thul¹, C.F. Winsnes¹, L. Åkesson¹, M. Uhlén¹, E. Lundberg¹**; ¹Affinity Proteomics, Science for Life Laboratories (KTH), Solna, Sweden
- 5:05 pm M24 The desmosome/intermediate filament linkage regulates cell mechanics. **J.A. Broussard^{1,2}, R. Yang³, C. Huang³, S. P. Nathamgari³, A.M. Beese³, L.M. Godsel¹, S. Lee¹, F. Zhou³, N.J. Sniadecki⁴, H.D. Espinosa^{3,5}, K.J. Green^{1,2}**; ¹Department of Pathology, Northwestern University, Chicago, IL, ²Department of Dermatology, Northwestern University, Chicago, IL, ³Department of Mechanical Engineering, Northwestern University, Evanston, IL, ⁴Departments of Mechanical Engineering and Bioengineering, University of Washington, Seattle, WA, ⁵Theoretical and Applied Mechanics Program, Northwestern University, Evanston, IL

- 5:20 pm M25 Desmin modulates Nkx2.5 expression in cardiac stem cells by entering the nucleus and participating in transcription factor complexes that interact with the nkx2.5 gene. **C. Fuchs¹, S. Gawlas¹, P. Heher¹, S. Nikouli², H. Paar¹, M. Ivankovic¹, M. Schultheis¹, J. Klammer¹, T. Gottschamel¹, Y. Capetanaki², G. Weitzer¹**; ¹Department of Medical Biochemistry, Max F. Perutz Laboratories, Vienna Biocenter, Medical University of Vienna, Vienna, Austria, ²Biomedical Research Foundation Academy of Athens, Athens, Greece
- 5:35 pm M26 Tissue mechanics regulate heterochromatin formation in breast epithelial cells. **J. Northcott¹, R. Bainer¹, V.M. Weaver¹**; ¹Department of Surgery, University of California, San Francisco, San Francisco, CA
- 5:50 pm M27 Lamins modulate nuclear mechanics, migration efficiency, and nuclear envelope integrity during cancer cell migration in confined 3-D environments. **C.M. Denais¹, R.M. Gilbert², P. Isermann^{1,2}, B. Weigelin^{3,4}, A.L. McGregor^{1,2}, E.S. Bell^{1,2}, M. te Lindert³, P. Friedl^{3,4}, K. Wolf³, J. Lammerding^{1,2}**; ¹Weill Institute for Cell and Molecular Biology, Cornell University, Ithaca, NY, ²Meinig School of Biomedical Engineering, Cornell University, Ithaca, NY, ³Department of Cell Biology, Radboud University Medical Center, Nijmegen, Netherlands, ⁴Department of Genitourinary Medical Oncology, The University of Texas MD Anderson Cancer Center, Houston, TX
- 6:05 pm M28 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. Williams³, E. Leung¹, J. Sanders³, R.J. Eddy¹, J. Castracane³, J.S. Condeelis^{1,2}**; ¹Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, ²Gruss Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, ³Colleges of Nanoscale Science and Engineering, SUNY Polytechnic Institute, Albany, NY
- 6:20 pm M29 A detailed assembly mechanism of nuclear lamin A and its use to characterize laminopathic mutant variants. **H. Herrmann^{1,2}, U. Aebi²**; ¹Molecular Genetics, German Cancer Research Center, Heidelberg, Germany, ²Biozentrum, University of Basel, Basel, Switzerland
- 6:35 pm M30 The structural organization of lamins in the nuclear lamina. **O. Medalia¹, Y. Turgay¹, R.D. Goldman², M. Eibauer¹, T. Sapro¹**; ¹Biochemistry, University of Zurich, Zurich, Switzerland, ²Department of Cell and Molecular Biology, Northwestern University, Chicago, IL

● Minisymposium 4: Membrane Traffic Control By Lipids, Cargos, and Motors

4:15-6:50 pm

Room 104

Co-Chairs: **Vlad Denic**, Harvard University; and **Lois Weisman**, University of Michigan

- 4:15 pm Introduction
- 4:20 pm M31 Spatial regulation of myosin V transport via the PAK kinase, Cla4. **S. Wong¹, R.G. Yau¹, L.S. Weisman¹**; ¹Cell and Developmental Biology, Cell and Molecular Biology Training Program, Life Sciences Institute, University of Michigan, Ann Arbor, MI
- 4:35 pm M32 Budding yeast has a minimal endomembrane system. **K.J. Day¹, B.S. Glick¹**; ¹Department of Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL
- 4:50 pm M33 Ezrin activation by LOK phosphorylation involves a PIP₂-dependent coincidence detection mechanism in a multi-step reaction. **T. Pelaseyed¹, R. Viswanatha¹, J.J. Filter¹, M.L. Goldberg¹, A.P. Bretscher¹**; ¹Department of Molecular Biology and Genetics, Cornell University, Ithaca, NY
- 5:05 pm M34 Sphingomyelin is sorted at the trans Golgi network into a distinct class of secretory vesicle. **Y. Deng¹, F.E. Rivera-Molina¹, D.K. Toomre¹, C.G. Burd¹**; ¹Cell Biology, Yale University School of Medicine, New Haven, CT
- 5:20 pm M35 TMEM24, a lipid transporter at ER-PM contacts, regulates pulsatile insulin secretion. **M. Messa^{1,2,3,4}, J.A. Lees², E.W. Sun^{1,2,3,4}, H. Wheeler^{1,2,3,4}, F. Torta⁵, M.R. Wenk⁵, K.M. Reinisch², P. De Camilli^{1,2,3,4,6}**; ¹Department of Neuroscience, Yale University School of Medicine, New Haven, CT, ²Department of Cell Biology, Yale University School of Medicine, New Haven, CT, ³Howard Hughes Medical Institute, Yale University School of Medicine, New Haven, CT, ⁴Program in Cellular Neuroscience, Neurodegeneration and Repair, Yale University School of Medicine, New Haven, CT, ⁵Department of Biochemistry, Yong Loo Lin School of Medicine, National University of Singapore, Singapore, Singapore, ⁶Kavli Institute for Neuroscience, Yale University School of Medicine, New Haven, CT
- 5:35 pm M36 Cargo Mediated Regulation of Clathrin Mediated Endocytosis. **P. Sengupta¹, J. Lippincott-Schwartz¹, E. Betzig¹**; ¹Janelia Research Campus, HHMI, Ashburn, VA
- 5:50 pm M37 Cryo-CLEM of clathrin coats reveals the architecture of the clathrin lattice during maturation. **O. Avinoam¹, M. Kaksonen², J.A. Briggs^{1,3}**; ¹Structural and Computational Biology Unit, The European

Molecular Biology Laboratory (EMBL), Heidelberg, Germany, ²Department of Biochemistry, University of Geneva, Geneva, Switzerland, ³Cell Biology and Biophysics Unit, The European Molecular Biology Laboratory (EMBL), Heidelberg, Germany

6:05 pm M38 Two Alternative Modes of Dynein Regulations by LIS1. **M.E. DeSantis¹, Z. Htet¹, M. Cianfrocco¹, P.T. Tran¹, A.E. Leschziner¹, S.L. Reck-Peterson¹**; ¹CMM, UCSD, La Jolla, CA

6:20 pm M39 Novel motor-independent function of the dynein light chain in clathrin mediated endocytosis. **K.B. Farrell¹, S. McDonald¹, C. Worcester¹, O.B. Peersen¹, S.M. Di Pietro¹**; ¹Department of Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO

6:35 pm M40 Proximity-specific ribosome profiling reveals efficient co-translational ER targeting in the absence of SRP. **E.A. Costa¹, J.S. Weissman¹**; ¹Cellular and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA

● Minisymposium 5: Microtubule Dynamics

4:15-6:50 pm

Room 305

Co-Chairs: **Gaia Pigino**, Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany; and **Antonina Roll-Mecak**, The National Institutes of Health

4:15 pm Introduction

4:20 pm M41 Microtubules grow in vivo through pathways that use bent tubulin protofilaments. **J.R. McIntosh¹, E.A. O'Toole¹, J. Austin², R. Ding¹, E.V. Ulyanov³, F.I. Ataulakhanov^{3,4}, N.B. Gudimchuk^{3,4}**; ¹Molecular, Cellular, and Developmental Biology, University of Colorado, Boulder, CO, ²Molec. Gen. and Cell Biology, University of Chicago, Chicago, IL, ³Dept. Physics, Lomonosov Moscow State University, Moscow, Russia, ⁴Cent. Theoret. Probs. Physicochem. Pharmacol. RAS, Moscow, Russia

4:35 pm M42 Tubulin isoform composition tunes microtubule dynamics. **A. Vemu¹, J. Atherton², J.O. Spector¹, C.A. Moores², A. Roll-Mecak¹**; ¹NINDS, National Institutes of Health, Bethesda, MD, ²Department of Biological Sciences, Birbeck College, University of London, London, United Kingdom

4:50 pm M43 Processive motility of multi-motor kinesin-14 teams underlies regulation of microtubule minus-end dynamics. **S.R. Norris¹, C.E. Strothman¹, R. Ohl^{1*}, M. Zanic^{1*}**; ¹Cell and Developmental Biology, Vanderbilt University, Nashville, TN

5:05 pm M44 Electron cryo-Tomography of *Drosophila* S2 centrosomes provides novel insights into centriole to centrosome conversion. **G. Greenan^{1,2}, B. Keszthelyi¹, R.D. Vale², D.A. Agard¹**; ¹Department of Biochemistry Biophysics, University of California, San Francisco, San Francisco, CA, ²Department of Cellular and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA

5:20 pm M45 Mechanisms of microtubule nucleation and size in spindles. **F. Decker^{1,2}, E. Rieckhoff^{1,2}, J. Bruges^{1,2}**; ¹Molecular Cell Biology and Genetics, Max Planck Institute, Dresden, Germany, ²Physics of Complex Systems, Max Planck Institute, Dresden, Germany

5:35 pm M46 Dual nucleotide recognition underlies tip-binding specificity of mammalian EB proteins. **D. Roth¹, B.P. Fitton¹, A. Straube¹**; ¹Centre for Mechanochemical Cell Biology, University of Warwick, Coventry, United Kingdom

5:50 pm M47 A novel function of kinesin-1: changing microtubule conformation that accelerates successive kinesin binding. **T. Shima^{1,2}, Y. Okada^{1,2}**; ¹RIKEN QBiC, Osaka, Japan, ²Graduate School of Science, The University of Tokyo, Tokyo, Japan

6:05 pm M48 SPEF1 Imparts Mechanical Stability to the Central Pair Microtubules in Cilia. **M. Guha¹, Y. Jiang¹, K.K. Vasudevan², J. Gaertig¹**; ¹Department of Cellular Biology, The University of Georgia, Athens, GA, ²Department of Biology, Stanford University, Stanford, CA

6:20 pm M49 A dynein-based mechanism, re-purposed from neuronal migration, establishes and preserves microtubule organization in the axon. **A.N. Rao¹, A. Falnikar¹, M.M. Black¹, P.W. Baas¹**; ¹Neurobiology and Anatomy, Drexel University College of Medicine, Philadelphia, PA

6:35 pm M50 Fidgetin-like 2, a novel microtubule regulator, can be targeted in vitro and in vivo to enhance axon regeneration. **L.A. Baker¹, R. Charaffedine¹, M.T. Tar², P. Nacharaju¹, S.O. Suadican², J.M. Friedman¹, K.P. Davies^{1,2}, D.J. Sharp¹**; ¹Physiology and Biophysics, Albert Einstein College of Medicine, Bronx, NY, ²Urology, Albert Einstein College of Medicine, Bronx, NY

*These authors contributed equally to this research.

● **Minisymposium 6: Technological and Biological Frontiers in Signaling and Differentiation**

4:15-6:50 pm

Room 306

Co-Chairs: **Jeremy F. Reiter**, University of California, San Francisco; and **Jared Toettcher**, Princeton University

- 4:15 pm Introduction
- 4:20 pm M51 Tuning in to the right station: using optogenetics to probe and rewire MAP kinase signaling. **H.E. Johnson¹, M. Wilson¹, N. Pannucci¹, J.E. Toettcher¹**; ¹Molecular Biology, Princeton University, Princeton, NJ
- 4:35 pm M52 The role of GPCR localization in signal transduction. **N.G. Tsvetanova¹, M. von Zastrow¹**; ¹Psychiatry, University of California, San Francisco, San Francisco, CA
- 4:50 pm M53 Localization and regulation of mTORC2 activity in cells. **M. Ebner^{1,2}, B. Sinkovics², I. Yudushkin^{1,3}**; ¹Dept. of Medical Biochemistry, Medical University of Vienna, Vienna, Austria, ²Center for Molecular Biology, University of Vienna, Vienna, Austria, ³Dept. of Structural and Computational Biology, Max F. Perutz Laboratories, Vienna, Austria
- 5:05 pm M54 Optogenetic Investigation of Effects of Beta-Catenin Signaling Dynamics on Neural Stem Cell Differentiation. **A. Rosenbloom¹, L.J. Bugaj¹, M. Tarczyński¹, R. Kane², D. Schaffer^{1,3,4}**; ¹Bioengineering, University of California, Berkeley, Berkeley, CA, ²School of Chemical Biomolecular Engineering, Georgia Institute of Technology, Atlanta, GA, ³Chemical and Biomolecular Engineering, University of California, Berkeley, Berkeley, CA, ⁴Helen Wills Neuroscience Institute, University of California, Berkeley, Berkeley, CA
- 5:20 pm M55 A DNA based T cell receptor reveals the mechanistic role of spatial organization in ligand discrimination. **M.J. Taylor^{1,2,3}, K. Husain², Z.J. Gartner⁴, S. Mayor^{2,3}, R.D. Vale^{1,3}**; ¹Molecular and Cellular Pharmacology, University of California, San Francisco, San Francisco, CA, ²Cellular Organization and Signalling, National Centre for Biological Sciences, Bangalore, India, ³HHMI Summer Institute, Woods Hole, MA, ⁴Dept. of Pharmaceutical Chemistry, University of California San Francisco, San Francisco, CA
- 5:35 pm M56 Cancer-associated Ras/Erk signal misperception can drive hyper-proliferation. **L.J. Bugaj¹, A. Sabnis^{2,3}, A. Mitchell⁴, J. Garbarino¹, T. Bivona^{2,5}, J.E. Toettcher⁶, W. Lim^{1,7,8}**; ¹Department of Cellular and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA, ²Helen Diller Family Comprehensive Cancer Center, University of California, San Francisco, San Francisco, CA, ³Department of Pediatrics, University of California, San Francisco, San Francisco, CA, ⁴Program in Systems Biology, University of Massachusetts Medical School, Worcester, MA, ⁵Division of Hematology and Oncology, University of California, San Francisco, San Francisco, CA, ⁶Department of Molecular Biology, Princeton University, Princeton, NJ, ⁷Center for Systems and Synthetic Biology, University of California, San Francisco, San Francisco, CA, ⁸Howard Hughes Medical Institute, San Francisco, CA
- 5:50 pm M57 Cell-fate determination by ubiquitin-dependent regulation of translation. **A. Werner¹, S. Iwasaki¹, C.M. McGourty¹, S. Medina-Ruiz¹, N. Teerkorpi¹, N.T. Ingolia¹, M. Rape^{1,2}**; ¹Molecular and Cell Biology, UC Berkeley, Berkeley, CA, ²Howard Hughes Medical Institute, Chevy Chase, MD
- 6:05 pm M58 The roles of IFT and the transition zone in the assembly of the ciliary necklace. **S.K. Dutcher¹, H. Lin¹, U.W. Goodenough², R. Roth³**; ¹Genetics, Washington University, St Louis, MO, ²Biology, Washington University, St Louis, MO, ³Cell Biology and Physiology, Washington University, St Louis, MO
- 6:20 pm M59 CD2AP is a novel regulator of the mechanosensitive adhesion receptor ICAM-1 and Rac1 activity to control leukocyte transmigration. **A. Schaefer^{1,2}, T. van Duijn³, J. Majolee³, K. Burrige^{1,2}, P.L. Hordijk^{3,4}**; ¹Dept. of Cell Biology and Physiology, University of North Carolina at Chapel Hill, Chapel Hill, NC, ²Lineberger Comprehensive Cancer Center, University of North Carolina at Chapel Hill, Chapel Hill, NC, ³Dept. of Molecular Cell Biology, Sanquin Research and Landsteiner Laboratory, University of Amsterdam, Amsterdam, Netherlands, ⁴Dept. of Physiology, VU University Medical Center, Amsterdam, Netherlands
- 6:35 pm M60 Ciliary Hedgehog signaling controls fatty degeneration of skeletal muscle. **D. Kopinke¹, J.F. Reiter¹**; ¹Biochemistry, UCSF, San Francisco, CA

SUNDAY

● Education Minisymposium: Evidence-Based Education

4:15-6:50 pm

Room 120

Supported by CBE—Life Sciences Education

Co-Chairs: **Amy Prunuske**, Medical College of Wisconsin; and **Shannon Seidel**, Pacific Lutheran University

- 4:15 pm Introduction
- 4:20 pm M61 Scientist Spotlight Homework Assignments Shift Students' Stereotypes of Scientists and Enhance Science Identity in a Diverse Introductory Biology Class. **J. Schinske¹, H. Perkins², A. Snyder¹, M. Wyer²**; ¹Biology, De Anza College, Cupertino, CA, ²Psychology, NC State, Raleigh, NC
- 4:35 pm M62 Biomedical Sciences Enrichment Program: A model for increasing undergraduate research among underrepresented minority STEM students. **D.L. Horton¹, T. Hasson¹**; ¹Undergraduate Research Center - Sciences, University of California, Los Angeles, Los Angeles, CA
- 4:50 pm M63 A summer bridge program helps students to maximize their active learning experiences. **K.M. Cooper¹, M. Ashley¹, S.E. Brownell¹**; ¹School of Life Sciences, Arizona State University, Tempe, AZ
- 5:05 pm M64 Preparation of Underrepresented Males for Scientific Careers: A Study of the Dr. John H. Hopps Jr. Defense Scholars Program at Morehouse College. **J.K. Haynes¹, R.C. Thompson¹, M.R. Moore¹**; ¹Division of Science and Mathematics, Morehouse College, Atlanta, GA
- 5:20 pm M65 Decibel Analysis for Research on Teaching (DART): Measuring Classroom Decibel Levels to Quantify Active Learning. **M.T. Owens¹, S.B. Seidel², M. Wong³, J. Schinske⁴, K.D. Tanner¹**; ¹Biology, San Francisco State University, San Francisco, CA, ²Biology, Pacific Lutheran University, Tacoma, WA, ³Center for Computing for Life Sciences, San Francisco State University, San Francisco, CA, ⁴Biology, DeAnza College, Cupertino, CA
- 5:35 pm M66 Measuring student course preparation and the effect on exam performance in a partially flipped class. **K.B. Shannon¹**; ¹Biological Sciences, Missouri ST, Rolla, MO
- 5:50 pm M67 Research intensive courses: An alternative to faculty-mentored independent research for undergraduate students. **B.M. Fenner¹, M.E. Fenner²**; ¹Biology, King's College, Wilke-Barre, PA, ²Fenner Training and Consulting LLC, Forty Fort, PA
- 6:05 pm M68 Developing a curriculum-wide "Pipeline" CURE that connects PUIs with R1s. **T. Lee¹, B. Carpenter¹, C. May², D.J. Katz¹, K.L. Schmeichel²**; ¹Cell Biology, Emory University, Atlanta, GA, ²Biology, Oglethorpe University, Atlanta, GA
- 6:20 pm M69 Developing course-based undergraduate research experiences (CUREs) through long-term mentorship: The ASCB Mentoring in Active Learning and Teaching (MALT) program. **M.J. Wolyniak¹, A.J. Prunuske², M.J. Dobro³, S.M. Wick⁴**; ¹Biology, Hampden-Sydney, Hampden-Sydney, VA, ²Microbiology and Molecular Genetics, Medical College of Wisconsin, Wausau, WI, ³Human Biology, Hampshire, Amherst, MA, ⁴College of Biological Sciences, University of Minnesota, St. Paul, MN
- 6:35 pm M70 Exploring innovation, assessment, and evaluation beyond ASCB 2016. **A.J. Prunuske¹, S.B. Seidel²**; ¹Medical College of Wisconsin, Wausau, WI, ²Pacific Lutheran University, Tacoma, WA

● Cell Imaging Workshop

4:15-6:10 pm

Room 309

Imaging the Cell in the 21st Century: Challenges and Opportunities in Fluorescence Microscopy

Organizers and Speakers:

Hari Shroff, Organizer, National Institute of Biomedical Imaging and Bioengineering, NIH

Justin Taraska, Organizer, National Heart, Lung, and Blood Institute, NIH

Peter Kner, University of Georgia

Luke Lavis, Janelia Research Campus/HHMI

The last decade has seen an explosion in the variety and quantity of fluorescence imaging techniques available to the cell biologist. We can now image faster, more sharply, more gently, in more colors, and in more detail than ever before. Nevertheless, key questions remain: What sets the spatial resolution in a super-resolution experiment? How can one image in thick samples with a quality comparable to single thin cells? And what are the prospects for better and brighter probes? Which imaging technology is

right for a biological problem? How can different methods be correlated to provide information from multiple modes of imaging in the same sample? We will touch on all these and other key topics for the future use and development of fluorescence methods for cell biology in a series of talks and a panel discussion. A question-and-answer session will follow.

Schedule:

Each speaker will speak for 20 minutes with 5 minutes for Q&A

4:15-4:20 pm	Introduction by Organizers
4:20-4:25 pm	Super-Resolution Microscopy by Peter Kner
4:25-4:50 pm	3D Biology by Hari Schoff
4:50-5:15 pm	Dyes/Florescent Proteins by Luke Lavis
5:15-5:40 pm	Correlative Microscopy by Justin Taraska
5:40-6:10 pm	Open Discussion/Additional Q&A

Notes