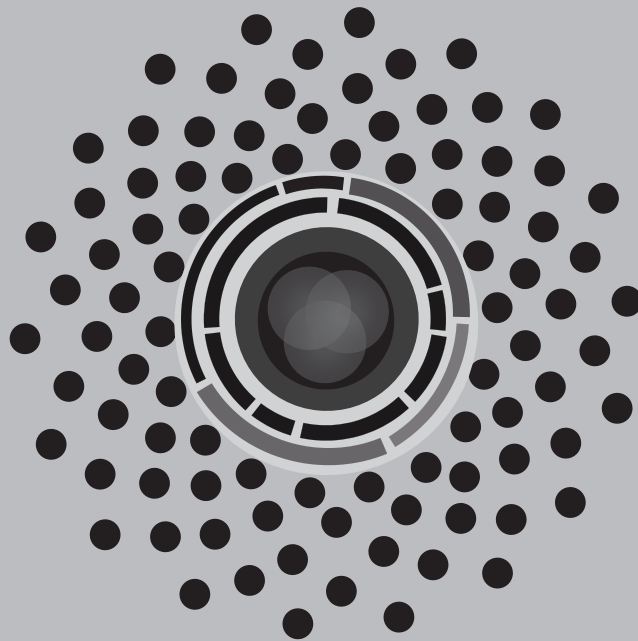


Monday
December 5, 2016



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

7:00 am	MACS® Gives Back—Charity 5K Fun Run	
7:30 am-6:00 pm	Registration Open	Registration Area
7:30 am-8:00 pm	Career Center	Hall C, ASCB Learning Center
8:00-9:00 am	Symposium 3: Disease Informing Cell Biology	Hall E
8:15-9:15 am	Exhibitor Tech Talk Leica Microsystems Inc.: Infinite Possibilities in Live Cell Imaging: Advances in Confocal and Super-Resolution Imaging by Leica Microsystems	Theater 1, Room 102
8:15-8:30 am	Exhibitor Tech Talk MicroManager: TBD	Theater 2, Learning Center
8:30-8:45 am	Exhibitor Tech Talk Montana Molecular: Measuring Dynamic cAMP Levels with Improved Sensitivity Using cADDIs, a Live-Cell Assay for Gs and Gi Signaling	Theater 2, Learning Center
8:45-9:00 am	Exhibitor Tech Talk Nanolive SA: Come and Discover the Ultimate Live Cell Imaging Microscope!	Theater 2, Learning Center
9:00-9:15 am	Exhibitor Tech Talk Tag Optics: Enabling High-Speed and Real-Time Volumetric Imaging of Biological Systems Using TAG Lens™ Enabled Microscopy	Theater 2, Learning Center
9:00-10:00 am	Confident Career Decision-Making	Career Center Theater, Learning Center
9:00-10:00 am	Table Talk Developing a Research Program Focused on Undergraduates	Roundtable Central Section 2, Learning Center
9:00-10:00 am	Table Talk Strategies for Teaching Science Writing and Literature Reading	Roundtable Central Section 1, Learning Center
9:15-10:45 am	Symposium 4: Quality Control	Hall E
9:30 am-4:00 pm	Exhibits Open	Learning Center
9:30-10:30 am	Exhibitor Tech Talk Photometrics: Maximizing Sensitivity & Signal to Noise in Scientific Imaging	Theater 2, Learning Center
9:30-11:00 am	Morning Refreshment Break	Learning Center
10:00-11:00 am	COMPASS Open Forum and Stress Management Workshop	Room 270
10:00-11:00 am	Exploring and Preparing for a Faculty Career	Career Center Theater, Learning Center
10:45 am-12:00 pm	Career Discussion and Mentoring Roundtables	Roundtable Central Sections 1-3, Learning Center
10:45-11:45 am	Exhibitor Tech Talk Collecta, Inc.: Driver-Map Genome-Wide Expression Profiling for Biomarker Discovery	Theater 1, Room 102
10:45 am-12:00 pm	Funding Opportunities in Europe for Creative Minds from Anywhere in the World	Room 120
10:45-11:45 am	Exhibitor Tech Talk Semrock (a Part of IDEX Health & Science): Maximizing the Performance of Fluorescence Microscopes by Optical Filters	Theater 2, Learning Center
11:00 am-12:00 pm	Advocacy Toolbox: Effective Science Communication for Advocacy	Room 121

11:00 am-12:06 pm	Microsymposium 7: Cell Adhesion and Migration	Microsymposia Room 1, Learning Center, Hall C
11:00 am-12:06 pm	Microsymposium 8: Regulation of the Trafficking Machinery	Microsymposia Room 2, Learning Center, Hall C
11:00 am-12:30 pm	Delivering Science: Effective Communication Skills to Become a Successful Scientist	Career Center Theater, Learning Center
12:00-12:45 pm	Exhibitor Tech Talk eLife: New Approaches to Peer Review: An Open Discussion	Theater 1, Room 102
12:00-12:45 pm	Exhibitor Tech Talk Bruker Corporation: 4D Confocal Imaging at the Speed of Life	Theater 2, Learning Center
12:00-1:30 pm	Odd-Numbered Poster Presentations	Learning Center
12:15-1:00 pm	Table Talk Mentoring in Teaching	Roundtable Central Section 2, Learning Center
12:25-1:31 pm	Microsymposium 9: New Insights Into the Cell Division Mechanisms	Microsymposia Room 1, Learning Center, Hall C
12:25-1:31 pm	Microsymposium 10: Spatial Organization of the Cell	Microsymposia Room 2, Learning Center, Hall C
1:00-1:55 pm	Career Panel: Science Policy	Career Center Theater, Learning Center
1:00-1:45 pm	Table Talk Helpful Feedback from MALT and PALM Teaching Mentoring Awardees	Roundtable Central Section 2, Learning Center
1:00-1:45 pm	Exhibitor Tech Talk Public Library of Science (PLOS): Digital Advances for Improved Author Recognition and Credit	Theater 2, Learning Center
1:00-1:45 pm	Exhibitor Tech Talk Thermo Fisher Scientific Inc.: Advances in Fluorescence Microscopy: Platforms and Probes	Theater 1, Room 102
1:00-2:00 pm	ASCB Business Meeting	ASCB Booth 423, Learning Center
1:00-2:30 pm	ASCB Advocates!	ASCB Booth 423, Learning Center
1:30-2:15 pm	Meet the Editor of <i>Molecular Biology of the Cell</i>	ASCB Booth 423, Learning Center
1:30-3:30 pm	Afternoon Refreshment Break	Learning Center
1:30-3:00 pm	Even-Numbered Poster Presentations	Learning Center
1:45-2:30 pm	Table Talk Tips for Writing a Successful Application for a MALT Fellowship	Roundtable Central Section 2, Learning Center
1:50-2:56 pm	Microsymposium 11: Development, Regeneration and Wound Healing	Microsymposia Room 1, Learning Center, Hall C
1:50-2:56 pm	Microsymposium 12: Membrane Trafficking and Signaling	Microsymposia Room 2, Learning Center, Hall C
2:00-2:45 pm	Exhibitor Tech Talk eBioscience, part of Thermo Fisher Scientific: Visualize Transcription and Translation at the Single-Cell Level	Theater 1, Room 102

Daily Schedule—Monday, December 5

2:00-2:45 pm	Exhibitor Tech Talk Bitplane, Inc.: Automated Cell Membrane Based Segmentation and Cell Lineage Tracking – Advanced Image Analysis Tools for 3D Time-Lapse Microscopy by Bitplane Imaris	Theater 2, Learning Center
2:00-2:30 pm	In-Booth Presentation ALVEOLE: PRIMO: New Photopatterning Technology Offering a Customized Control of the Cellular Microenvironment	Booth 1017, Learning Center
2:00-2:55 pm	Career Panel: Teaching and Administration	Career Center Theater, Learning Center
2:30-3:30 pm	Table Talk ASCB MAC Program Alumni Meetup	Roundtable Central Section 3, Learning Center
2:30-3:15 pm	Table Talk Tips for Writing a Successful Application for a PALM Fellowship	Roundtable Central Section 2, Learning Center
3:00-3:55 pm	Panel Discussion: Navigating the Faculty Job Search	Career Center Theater, Learning Center
3:00-4:00 pm	WICB Network Reception	Room 270
3:00-4:00 pm	Science Discussion Tables	Roundtable Central Section 1, Learning Center
3:00-4:00 pm	Research in Cell Biology in France: Opportunities and Tips	Room 309
3:00-4:00 pm	Politicians Don't Bite	Room 121
3:00-4:00 pm	Exhibitor Tech Talk Nanolive SA: Explore New Dimensions in Non-Invasive Live Cell Imaging!	Theater 1, Room 102
3:00-4:00 pm	Exhibitor Tech Talk ASI/Applied Scientific Instrumentation: Innovations in ASI Light Sheet Microscopes - the Oblique SPIM	Theater 2, Learning Center
3:15-4:00 pm	Education Initiative Forum	Room 120
3:45-4:45 pm	Table Talk Community College Partnerships with 4-year Institutions	Roundtable Central Section 2, Learning Center
4:00-6:00 pm	Networking Happy Hour	Career Center, Learning Center
4:15-5:15 pm	Exhibitor Tech Talk Horizon Discovery: Creating Human Cell Line Models for Hypothesis Testing and Validation Studies with CRISPR/Cas Technology	Theater 2, Learning Center
4:15-6:50 pm	Minisymposium 7: Actin Dynamics Minisymposium 8: Cell Biology of the Nucleus Minisymposium 9: Chromosome Segregation Mechanisms Minisymposium 10: Connecting Cells to Tissues Minisymposium 11: Organelle Contact Sites and Biogenesis Minisymposium 12: Post-transcriptional Gene Regulation	Room 305 Room 306 Room 103 Room 104 Room 302 Room 301
4:15-6:35 pm	Kaluza Award Minisymposium	Room 310
4:15-6:50 pm	Monday Workshop: Cryo-EM	Room 309
5:30-6:30 pm	Exhibitor Tech Talk MilliporeSigma (formerly EMD Millipore and Sigma-Aldrich): Advances in Microfluidic Control of Cellular Microenvironment with Uninterrupted Imaging Allows for Highly Controllable, Long-Term, More in vivo-like Cell Culture Studies	Theater 2, Learning Center
7:00-8:30 pm	Experiments in Science Storytelling: A Special Film Premiere	Room 104
7:15-8:30 pm	Emerging Topic Symposium Mitochondria and Cancer Cell Biology	Room 302

Monday, December 5

● MACS® Gives Back—Charity 5K Fun Run

7:00 am

Details available at www.signmeup.com/site/online-event-registration/117197

● Career Center

7:30 am–8:00 pm

Hall C, ASCB 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.

1:00–4:00 pm

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 3: Disease Informing Cell Biology

8:00–9:00 am

Hall E

Chair: **Alan Ashworth**, UCSF Helen Diller Family Comprehensive Cancer Center

8:00 am S6 Cell biological and genetic basis of neurodevelopmental disease. **J.G. Gleeson**¹; ¹Neuroscience, HHMI, University of California, San Diego, San Diego, CA

8:30 am S7 Mitochondrial parts, pathways, and pathogenesis. **V.K. Mootha**^{1,2,3}; ¹Molecular Biology, Massachusetts General Hospital, Boston, MA, ²Systems Biology, Harvard Medical School, Boston, MA, ³Investigator, Howard Hughes Medical Institute, Boston, MA

● Exhibitor Tech Talk

8:15–9:15 am

Theater 1, Room 102

Leica Microsystems Inc.

Infinite Possibilities in Live Cell Imaging: Advances in Confocal and Super-Resolution Imaging by Leica Microsystems

Presenter: TBD

Level: Advanced

Innovation in advanced imaging is a driving force for science. Leica Microsystems confocal platform, the Leica SP8, features modularity that allows users to build a powerful imaging system specific to your research and budget today without compromising essential functionality for the future. Examples of the platforms modularity include digital light sheet and super-resolution STED.

● Exhibitor Tech Talk

8:15–8:30 am

Theater 2, Learning Center

Micro-Manager by Open Imaging

TBD

MONDAY

● Exhibitor Tech Talk

8:30-8:45 am

Theater 2, Learning Center

Montana Molecular

Measuring Dynamic cAMP Levels with Improved Sensitivity Using cADDIs, a Live-Cell Assay for Gs and Gi Signaling

Presenter: Shane Tillo

Level: Introductory

In living cells, cAMP levels are regulated by the interplay of Gs and Gi signaling. We developed cADDIs, a genetically-encoded cAMP sensor that can be used to monitor Gs and Gi signaling on either fluorescence microscopes or platemeters. To test the sensor, we first stimulated Gs, and then reversed the change in fluorescence by stimulating Gi-coupled receptors to show the inhibition of cAMP production in real time. The ability to detect both Gi and Gs responses in the same cell is unique and provides new insights into how cells balance adenylyl cyclase activity to tightly control cAMP levels.

● Exhibitor Tech Talk

8:45-9:00 am

Theater 2, Learning Center

Nanolive SA

Come and Discover the Ultimate Live Cell Imaging Microscope!

Presenter: Lisa Pollaro, PhD

Level: Intermediate

Nanolive's unique tomographic-holographic 3D microscope is a high speed, high resolution and non-invasive tool that images living cells and tissue slices instantly, in 3D and with no stains. It measures the cell's own physical properties (refractive index and refractive index gradient) in 3D, in a truly quantitative way, allowing you to observe your cells in real-time, as long as you wish, without any invasion or sample preparation. And that's not all, something new is coming out this year, exclusively for ASCB 2016. Do you want to be the first one to know?

● Exhibitor Tech Talk

9:00-9:15 am

Theater 2, Learning Center

TAG Optics

Enabling High-Speed and Real-Time Volumetric Imaging of Biological Systems Using TAG Lens™ Enabled Microscopy

Presenter: Christian Theriault, TAG Optics Inc.

Level: Intermediate

The need for live 3D imaging of biological samples at high magnification is highly desired by academic, medical, and pharmaceutical researchers but remains challenging due to depth of field constraints inherent in current microscope systems. In this talk we introduce the TAG Lens™, an ultra high-speed variable focus lens that enables live 3D imaging with no loss of resolution at high magnification. We will provide examples of a number of recent applications of this technology implemented in various microscopy systems including brightfield, confocal, light sheet, and multi-photon, in addition to other super-resolution imaging methods. Finally, we will discuss the implications of this technology for real-time blood flow imaging and other critical medical imaging needs.

● Confident Career Decision-Making

9:00-10:00 am

Career Center Theater, Learning Center

Confident Career Decision-Making through Internships

Alexandra Schnoes, Co-founder and Manager, University of California, San Francisco Graduate Student Internships for Career Exploration Program

How do you effectively learn if a career is right for you? Consider doing an internship during your training. As the co-founder and manager of the UCSF Graduate Student Internships for Career Exploration (GSICE) program for 7 years, Schnoes will talk about how an internship can help you explore careers and come to a confident career choice. Internship opportunities exist in many career areas like industry research, business, policy, science education, and more. She will cover the ins and outs of part-time and full-time internships, and what to do if your institution doesn't have a formal internship program.

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

● Table Talk

9:00-10:00 am

Roundtable Central Section 2, Learning Center

Developing a Research Program Focused on Undergraduates

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; and **Michael Wolyniak**, Department of Biology, Hampden-Sydney College, Hampden-Sydney, VA

Engagement in research is an ideal way to prepare undergraduates for potential careers in the life sciences, develop transferable skills, and retain students in STEM fields. However, what goes into a research program that effectively reaches and engages undergraduates? Join Biology Councilors from the Council on Undergraduate Research (CUR) to discuss how to build a research program that can involve undergraduates in both classrooms and independent settings. The Councilors will also discuss CUR's mission and how it promotes undergraduate research as a high impact practice for the life science classroom.

● Table Talk

9:00-10:00 am

Roundtable Central Section 1, Learning Center

Strategies for Teaching Science Writing and Literature Reading

Jennifer Hood-DeGrenier, Worcester State University

● Symposium 4: Quality Control

9:15-10:45 am

Hall E

Chair: **Jonathan Weissman**, University of California, San Francisco

9:15 am S8

Selective inhibition of a phosphatase to correct protein quality control failures and treat neurodegenerative diseases. **I. Das¹, A. Krzyzosiak¹, A. Sigurdardottir¹, K. Schneider¹, A. Bertolotti¹**; ¹MRC Laboratory of Molecular Biology, Cambridge, United Kingdom

9:45 am S9

Stressed Out: A Novel Approach to Cancer Immunotherapy. **L.H. Glimcher¹**; ¹Dana-Farber Cancer Institute, Boston, MA

10:15 am S10

Mechanisms of nascent protein quality control in the cytosol. **R.S. Hegde¹**; ¹MRC Laboratory of Molecular Biology, Cambridge, United Kingdom

● Exhibitor Tech Talk

9:30-10:30 am

Theater 2, Learning Center

Photometrics

Maximizing Sensitivity & Signal to Noise in Scientific Imaging

Presenter: Rachit Mohindra

Level: Intermediate

Progress in life science research has benefited from image sensor innovation. This is no more apparent than in scientific CMOS cameras that are the established workhorse solution. Combined with new breakthroughs in computational imaging and signal processing, scientific cameras can move from image capture devices to assisting in selecting and processing important data. A vision for how this is realized is presented. This includes application in super-resolution microscopy and improving signal-to-noise ratios in very low light imaging which is typical of live-cell microscopy. EMCCD sensors previously defined the peak of sensitivity. Today back-side illuminated CMOS sensors are available and poised to eliminate tradeoffs between frame rate, field-of-view and sensitivity. This presentation includes camera performance comparisons and how to select a camera for fluorescence microscopy methods.

● Morning Refreshment Break

9:30-11:00 am

Learning Center

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

MONDAY

● COMPASS Open Forum and Stress Management Workshop

10:00-11:00 am

Room 270

The COMmittee for Postdocs and StudentS (COMPASS) will give a brief overview of the committee and its latest activities. Then a talk and workshop will focus on stress management techniques by Nichole Proffitt, a Mindfulness and Mindfulness-Based Stress Reduction Instructor from the UCSF Osher Center for Integrative Medicine.

● Exploring and Preparing for a Faculty Career

10:00-11:00 am

Career Center Theater, Learning Center

Laurence Clement and **Jennie Dorman**, Office of Career and Professional Development, University of California, San Francisco
This session will explore the different types of faculty positions available to life scientists in the U.S., including R1 institutions, liberal arts colleges, master's granting universities, and community colleges, and the skills they require. Participants will use the Academic Career Readiness Assessment (ACRA) Framework to assess their level of preparedness for different positions, and to set professional development and research goals for the rest of their training. The ACRA Framework was developed with input from faculty members at different types of institutions, and with the support of a Burroughs Wellcome Fund grant.

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

● Career Discussion and Mentoring Roundtables

10:45 am-12:00 pm

Roundtable Central Sections 1-3, Learning Center

(No preregistration required; first-come, first served)

Supported by The Burroughs Wellcome Fund

Coordinator: **Debra Page Baluch**, Arizona State University

The Career Discussion and Mentoring Roundtables allow participants to meet informally for discussions on issues of importance to cell biologists in various stages of their careers. Conversations are moderated by individuals who have experience in various professional areas or with particular issues and also benefit from discussion around the table. The session is an excellent way to disseminate practical information on career choices, to discuss strategies for effectively developing a career, and to network with others who share career interests and concerns.

Attending these roundtables can help you overcome the intimidating aspects of the large Annual Meeting, especially for young cell biologist for whom it is critical to find mentors among cell biologists as they progress in their careers. Past attendees say that meeting others with common interests and concerns at this event enriched their initial contacts and provided positive feedback and excellent advice regarding a career issue of concern to them.

Table Topics

Career Options

- C1 Careers in Biotech, Pharmaceutical & Industry
- C2 Careers in Patent Law, Intellectual Property
- C3 Careers in Scientific Writing & Editing
- C4 Careers in Computational Biology, Bioinformatics
- C5 Careers as Research Scientists/Academic Professionals
- C6 Career Choices: Academia vs. Industry
- C7 Careers in Government Labs
- C8 Strategies for Obtaining a Postdoc
- C9 International Postdocs: In the U.S. and Abroad
- C10 Undergraduate Research and Career Opportunities

Career Preparation

- P1 Interviewing & Negotiation Skill Development
- P2 Applying for an Academic Faculty Position

- P3 Applying for a PUI Faculty Position
- P4 Setting Up and Managing Your First Laboratory
- P5 Career Transitions
- P6 Tips for Applying to Graduate School
- P7 Teaching and Research in PUIs
- P8 Funding Options for Research at PUIs
- P9 Funding Options for Academic Research
- P10 Teaching Tools & Strategies

Career and Life

- L1 Work/Life Balance
- L2 Women in Science
- L3 LGBTQ in Science
- L4 National Research Mentoring Network
- L5 Establishing an Individual Mentoring Plan (IDP)
- L6 Institutional Research and Academic Career Award (IRACDA) Programs

Organized by the ASCB Women in Cell Biology Committee

● Exhibitor Tech Talk

10:45-11:45 am

Theater 1, Room 102

Collecta, Inc.

Driver-Map Genome-Wide Expression Profiling for Biomarker Discovery

Presenter: Paul Diehl, COO

Level: Introductory

Collecta's Driver-Map Genome-Wide Expression Profiling assay combines the sensitivity of multiplex PCR with the dynamic range of NGS. The method leverages highly optimized primers to amplify specific targeted regions of transcripts of all human protein-coding genes. The amplified products are then deeply sequenced using NGS which enables precise quantitative determination of gene expression levels. The approach provides ca. 100-fold more sensitivity than RNA-Seq over a greater dynamic range. Just 10 pg of total RNA is sufficient to quantify over 5 orders of magnitude variation in gene expression levels. Further, the use of targeted primers enables direct analysis of total RNA isolate and obviates the need for globin depletion from whole blood samples. We will present profiling results that demonstrate how this assay can be used.

● Funding Opportunities in Europe for Creative Minds from Anywhere in the World

10:45 am-12:00 pm

Room 120

Launched in February 2007 by the European Union, the first European body funding excellent research at the frontiers of knowledge will celebrate its 10th anniversary next year. The ERC is already shaping Europe's research scene and is highly regarded by the international research community, establishing itself as a world-class research funding agency.

Through highly selective competitions for attractive grants, the ERC promotes junior and established researchers to pursue their work in Europe in any field of research and regardless of their nationality. Encouraging international scientific cooperation, the ERC supports top researchers from anywhere in the world including the USA. To date, close to 60,000 scientific proposals have been received, and more than 6,500 top researchers have been funded at various careers stages, among which some Nobel Prize winners and 40,000 researchers and experts have been employed in ERC teams.

The workshop will explain the ERC's funding schemes as well as provide answers to practical questions such as:

- How can the ERC support research careers?
- What are their main features?
- What are the selection criteria and how long is the selection process?
- How does the application process work?
- How many researchers are funded each year?
- What are the chances of success?

In addition, ERC Grantees will be present to share their experiences with these funding initiatives and will answer questions from the audience.

Organized by the ASCB International Affairs Committee

● **Exhibitor Tech Talk**

10:45-11:45 am

Theater 2, Learning Center

Semrock Part of IDEX Health & Science
Maximizing the Performance of Fluorescence Microscopes by Optical Filters

Presenter: Prashant Prabhat and Michael Delay

Level: Introductory

TIRF, Super-resolution & Multiphoton fluorescence microscopy techniques continue to gain in popularity. This tutorial will discuss ways of maximizing the performance of such imaging systems by utilizing applications specific optical filters. SearchLight (<https://searchlight.semrock.com/>) is a free, online spectral plotting and analysis tool that allows for evaluation and optimization of microscopy systems. Latest developments with this premium modeling resource will be discussed.

● **Advocacy Toolbox: Effective Science Communication for Advocacy**

11:00 am-12:00 pm

Room 121



Simon Atkinson
Indiana University
Purdue University
Indianapolis



Sue Biggins
Fred Hutchinson
Cancer Research Center



Daniel Fletcher
University of
California, Berkeley



Holly Goodson
University of Notre
Dame



Kathleen J. Green
Northwestern
University



Connie Lee
The University of
Chicago



Thomas D. Pollard
Yale University



Mark Winey
University of
Colorado, Boulder

If you were in an elevator with President Obama, how would you explain to him what you do? How do you explain your work to the chatty guy sitting next to you on an airplane? If you're not sure or think you need to improve your explanation, you need to come to this session and improve your own two-minute speech with help from experienced science policy advocates

● **Microsymposium 7: Cell Adhesion and Migration**

11:00 am-12:06 pm

Microsymposia Room 1, Learning Center, Hall C

Moderators: **Bruno Da Rocha-Azevedo**, University of Texas Southwestern Medical Center; and **Alyssa Lesko**, University of Notre Dame

11:00 am Introduction
11:03 am E55 Proper actin network architecture is essential for restricting polarization to a single leading edge in neutrophils. **B.R. Graziano**¹, **A. Diz-Muñoz**², **O.D. Weiner**¹; ¹Cardiovascular Research Institute, UCSF, San Francisco, CA, ²Cell Biology and Biophysics, EMBL, Heidelberg, Germany
11:10 am E56 Biomechanical Alterations of Endothelial Cells Induced by *Listeria monocytogenes*. **E.E. Bastounis**¹, **J.A. Theriot**^{1,2,3}; ¹Biochemistry, Stanford University, School of Medicine, Stanford, CA,

- 11:17 am E57 ²Microbiology and Immunology, Stanford University, School of Medicine, Stanford, CA, ³Howard Hughes Medical Institute, Stanford University, School of Medicine, Stanford, CA
Two distinct actin networks mediate traction oscillations to confer mechanosensitivity of focal adhesions. **Z. Wu**¹, **S.V. Plotnikov**², **A. Moalim**², **C.M. Waterman**¹, **J. Liu**¹; ¹NHLBI, NIH, Bethesda, MD, ²Department of Cell & Systems Biology, University of Toronto, Toronto, ON
- 11:24 am E58 Actin retrograde flow actively aligns and orients ligand-engaged integrins in focal adhesions. **V. Swaminathan**¹, **J.K. Mathew**², **S. Mehta**³, **P. Nordenfelt**⁴, **T.I. Moore**⁵, **K. Nobuyasu**⁶, **D. Baker**⁶, **R. Oldenbourg**³, **T. Tani**³, **S. Mayor**², **T.A. Springer**⁵, **C.M. Waterman**¹; ¹Cell Biology and Physiology Center, NHLBI/NIH, Bethesda, MD, ²National Center for Biological Sciences, Bangalore, India, ³Marine Biological Sciences, Woods Hole, MA, ⁴Division of Infection Medicine, Lund University, Lund, MD, ⁵Program in Cellular and Molecular Medicine, Harvard University, Boston, MA, ⁶Department of Biochemistry, University of Washington, Seattle, WA
- 11:31 am E59 Novel Role of Septin2 in Endothelial Cell Podosome Formation and Matrix Degradation. **K.B. Collins**¹, **H. Kang**¹, **J. Klomp**¹, **A.V. Karginov**¹, **A.B. Malik**¹; ¹Molecular and Cellular Pharmacology, University of Illinois at Chicago, Chicago, IL
- 11:38 am E60 Actomyosin-dependent structural alterations to tight junctions result in loss of barrier function in MDCK cells upon acute mechanical strain. **N. Chavez**¹, **M.A. Garcia**¹, **T. Yasumura**², **J. Moeller**³, **B.L. Pruitt**^{3,4,5}, **J.E. Rash**², **R.G. Johnson**⁶, **W.J. Nelson**^{1,5}; ¹Department of Biology, Stanford University, Stanford, CA, ²Department of Biomedical Sciences, Colorado State University, Fort Collins, CO, ³Department of Mechanical Engineering, Stanford University, Stanford, CA, ⁴Department of Bioengineering, Stanford University, Stanford, CA, ⁵Department of Molecular and Cellular Physiology, Stanford University, Stanford, CA, ⁶Department of Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN
- 11:45 am E61 Traction forces and three-dimensional shape of the cell edge mediate organization of cell-edge activity during polarization. **A. Bornert**^{1,2}, **N. Piacentini**^{1,3}, **F. Raynaud**^{1,4}, **A.B. Verkhovsky**^{1,2}; ¹Lab. of Cell Biophysics, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, ²Lab. of Physics of Living Matter, Ecole Polytechnique Fédérale de Lausanne, Lausanne, Switzerland, ³Intel Semiconductor AG, EPFL Innovation Park, Lausanne, Switzerland, ⁴Computational Systems Oncology, University of Lausanne, Lausanne, Switzerland
- 11:52 am E62 Molecular Mechanism of Fascin Regulated Cancer Cell Invasion. **E. Pham**¹, **S.P. George**¹, **A. Ahrorov**¹, **S. Patnaik**¹, **J.C. Conrad**², **S. Khurana**^{1,3}; ¹Biology and Biochemistry, University of Houston, Houston, TX, ²Chemical and Biomolecular Engineering, University of Houston, Houston, TX, ³Baylor College of Medicine, Houston, TX
- 11:59 am E63 The two-dimensional nature of leading-edge lamellipodia is intrinsic and does not depend on surface interactions. **L. Fritz-Laylin**¹, **M. Mehan**¹, **B. Chen**², **T. Goddard**¹, **T. Ferrin**¹, **E. Betzig**², **G. Johnson**¹, **R.D. Mullins**¹; ¹Molecular and Cellular Pharmacology, University of California San Francisco, San Francisco, CA, ²HHMI Janelia Farm Research Campus, Ashburn, VA

● Microsymposium 8: Regulation of the Trafficking Machinery

11:00 am-12:06 pm

Microsymposia Room 2, Learning Center, Hall C

Moderators: **Matthew Akamatsu**, University of California, Berkeley; **Ashley Lakoduk**, University of Texas Southwestern Medical Center, Dallas; and **Anupam Das**, Albany Medical College

- 11:00 am Introduction
- 11:03 am E64 The adaptor protein APPL1 regulates cancer cell migration through $\alpha 5\beta 1$ trafficking and Rac activation. **N. Diggins**¹, **D.J. Webb**^{1,2,3}; ¹Biological Sciences, Vanderbilt University, Nashville, TN, ²Kennedy Center for Research on Human Development, Vanderbilt University, Nashville, TN, ³Cancer Biology, Vanderbilt University, Nashville, TN
- 11:10 am E65 The structure of the COPI coat determined within the cell. **Y.S. Bykov**¹, **M. Schaffer**², **S.O. Dodonova**¹, **S. Albert**², **J.M. Plietzko**², **W. Baumeister**², **B.D. Engel**², **J.A. Briggs**¹; ¹Structural and Computational Biology Unit, European Molecular Biology Laboratory, Heidelberg, Germany, ²Max Planck Institute of Biochemistry, Martinsried, Germany
- 11:17 am E66 Regulation of COPII vesicle trafficking by O-GlcNAcylation. **B.J. Bisnett**¹, **N.J. Cox**^{1,2}, **B.M. Condon**^{1,2}, **T.R. Meister**¹, **T.J. Smith**¹, **M. Boyce**¹; ¹Biochemistry, Duke University, Durham, NC, ²Pharmacology and Cancer Biology, Duke University, Durham, NC
- 11:24 am E67 LTK is an ER-resident receptor tyrosine kinase that sense the load of glycoproteins and regulates

- COPII trafficking. **F.G. Centonze¹, C. Behrends², H. Farhan¹**; ¹Institute of Basic Medical Sciences, University of Oslo, Oslo, Norway, ²Institute of Biochemistry II, University of Frankfurt, Frankfurt, Germany
- 11:31 am E68 Vps4 is required for clathrin-mediated endocytosis mutant viability and cargo trafficking from the plasma membrane. **K. Hoban¹, S. Lux¹, J. Poprawski¹, Y. Zhang¹, D.C. Prosser¹, C. Norris¹, B. Wendland¹**; ¹Department of Biology, Johns Hopkins University, Baltimore, MD
- 11:38 am E69 Molecular Investigations Into the Presynaptic Functions of Synucleins. **K.J. Vargas^{1,2}, N. Schrod³, T. Davis^{1,2}, R. Fernandez-Busnadiego^{2,4,5}, Y.V. Taguchi^{2,4}, U. Laugks³, V. Lucic³, S.S. Chandra^{1,2,6}**; ¹Department of Neurology, Yale University, New Haven, CT, ²Program in Cellular Neuroscience, Neurodegeneration and Repair, Yale University, New Haven, CT, ³Max Planck Institute of Biochemistry, Martinsried, CT, ⁴Department of Cell Biology, Yale University, New Haven, CT, ⁵Howard Hughes Medical Institute, Yale University, New Haven, CT, ⁶Department of Neuroscience, Yale University, New Haven, CT
- 11:45 am E70 Structure, inhibition, and regulation of a vacuolar two-pore channel TPC1. **A.F. Kintzer¹, R.M. Stroud¹**; ¹Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA
- 11:52 am E71 To bind or not to bind: a reciprocal inhibition of SH3-PRD domain interaction between BIN1 and Dynamin-2. **J. Laiman¹, Y. Liu¹**; ¹Institute of Molecular Medicine, National Taiwan University, Taipei, Taiwan
- 11:59 am E72 Differential sorting of planar cell polarity signaling receptors, Frizzled6 and Vangl2, at the trans Golgi Network. **Y. Guo¹, T. Ma¹, R. Wang¹, P. Lau¹, Y. Huang¹, R.W. Schekman²**; ¹Division of Life Science, Hong Kong University of Science and Technology, Hong Kong, Hong Kong, ²Department of Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA

● Delivering Science: Effective Communication Skills to Become a Successful Scientist

11:00 am-12:30 pm

Career Center Theater, Learning Center

Mónica Feliú-Mójer, Vice-Director Ciencia Puerto Rico, Science Outreach Manager, iBiology
Erika Shugart, Executive Director, American Society for Cell Biology
Franklin Carrero-Martínez, Program Director, National Science Foundation, & MAC
Greg Cook, PhD Student, Oklahoma State University Center for Health Sciences, & COMPASS Liaison to MAC
Jennifer Frazier, Staff Scientist, Exploratorium

During this interactive workshop, participants will learn and put into practice effective communication skills to support their professional advancement. The session will provide participants with 1) an introduction to effective communication principles and strategies; 2) tangible examples of how effective communication skills can support their professional advancement; and 3) resources that will help them strengthen their communication skills. Discussion will include communicating science to different audiences (e.g., peers versus general audience) and the challenges, opportunities, and advantages of incorporating effective communication skills into your toolbox. Scientists and professionals at all stages in their career are encouraged to attend.

Organized by COMPASS and the ASCB Minorities Affairs Committee (MAC) as part of the Mentoring Academy (supported by an IPERT grant from the National Institute of General Medical Sciences/NIH).

● Exhibitor Tech Talk

12:00-12:45 pm

Theater 1, Room 102

eLife
New Approaches to Peer Review: An Open Discussion

Presenter: Suzanne Pfeffer

Level: Advanced

Join a panel of your colleagues to discuss innovative approaches to peer review, from the scientist's perspective. Points for discussion include consultation among reviewers, openness and transparency, and the contribution of preprints to research dissemination and evaluation in biology. The discussion will be chaired by Suzanne Pfeffer, Stanford University and eLife Reviewing Editor. The panel will feature scientists and publishers, including David Drubin, UC Berkeley and Editor-in-Chief of *MBoC*. We invite you to join the discussion and contribute your own thoughts about how peer review could better serve the community. For further information, please visit elifesciences.org/events. eLife representatives and editors, including Mohan Balasubramanian, Chris Burd, and Jonathon Pines, will be on hand to continue the discussion throughout the meeting at Booth 219.

● Exhibitor Tech Talk

12:00-12:45 pm

Theater 2, Learning Center

Bruker Corporation
4D Confocal Imaging at the Speed of Life
Presenters: Jimmy Fong and Ewa Zarnowska
Level: Intermediate

The Opterra II Swept-Field Confocal is a high speed imaging system designed for live cell, volumetric microscopy. The high frequency scanning, superior optical sectioning capabilities, and unique flexibility to adjust the scanning aperture of the Swept Field Technology coupled with sophisticated photostimulation have allowed scientists to interrogate their biology in a comprehensive way. Come learn about the variety of research enabled by the instrument including studies of wound-healing processes in the *Xenopus laevis*, neural development in zebrafish, tracking of multi-labeled cilia and others.

● Odd-Numbered Poster Presentations

12:00-1:30 pm

Learning Center

● Table Talk

12:15-1:00 pm

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.

● Microsymposium 9: New Insights Into the Cell Division Mechanisms

12:25-1:31 pm

Microsymposia Room 1, Learning Center, Hall C

Moderators: **Theodore Ho**, University of California, San Francisco; **Chenshu Liu**, Columbia University; and **Dennis Zimmermann**, University of Chicago

12:25 pm	Introduction
12:28 pm E73	Yeast metabolic cycle: the relationship between metabolic state and the cell cycle at single-cell resolution. A.J. Burnett ^{1,2,3} , N.E. Buchler ^{3,4} ; ¹ University Program in Genetics and Genomics, Duke University, Durham, NC, ² Cell and Molecular Biology Program, Duke University, Durham, NC, ³ Center for Genomic and Computational Biology, Duke University, Durham, NC, ⁴ Biology, Duke University, Durham, NC
12:35 pm E74	The Mad1/Mad2 spindle checkpoint complex is repurposed in development to promote cell cycle progression. P. Lara Gonzalez ¹ , M. Moyle ¹ , K. Oegema ¹ , A.B. Desai ¹ ; ¹ Dept. of Cellular & Molecular Medicine, UCSD, Ludwig Cancer Research, San Diego, CA
12:42 pm E75	Golgi-derived microtubules play a major role in the disassembly of nuclear envelope during mitosis in human cells. K. Frye ¹ , M. Fomicheva ¹ , D. Yampolsky ¹ , E. Kolobova ² , V. Magidson ³ , J.R. Goldenring ² , X. Zhu ¹ , A. Khodjakov ³ , I. Kaverina ¹ ; ¹ Cell and Developmental Biology, Vanderbilt University, Nashville, TN, ² Surgery, Vanderbilt University School of Medicine, Nashville, TN, ³ Wadsworth Center, New York State Department of Health, Albany, NY
12:49 pm E76	HMMR/RHAMM balances motor forces needed to complete the spindle assembly checkpoint. H. Chen ¹ , C.A. Maxwell ¹ ; ¹ Paediatrics, University of British Columbia, Vancouver, BC
12:56 pm E77	Defining a cell's internal compass: Focal adhesions control cleavage furrow shape and spindle tilt during mitosis. N. Taneja ¹ , A.M. Fenix ¹ , L. Rathbun ² , B.A. Millis ¹ , M.J. Tyska ¹ , H. Hehnl ² , D.T. Burnette ¹ ; ¹ Cell and Developmental Biology, Vanderbilt University, Nashville, TN, ² Cell and Developmental Biology, SUNY Upstate Medical University, Syracuse, NY
1:03 pm E78	The Timing of Midzone Stabilization during Cytokinesis Depends on Myosin II Activity and an Interaction between INCENP and Actin. J.E. Landino ¹ , R. Ohi ¹ ; ¹ Cell and Developmental Biology, Vanderbilt University, Nashville, TN
1:10 pm E79	Investigating the role of Condensins in mitotic chromosome architecture using quantitative super-resolution microscopy. N. Walther ¹ , B. Koch ¹ , M. Kueblbeck ¹ , Y. Cai ¹ , M.J. Hossain ¹ , A.Z.

- 1:17 pm E80 **Politi¹, M. Lampe², J. Ries¹, J. Ellenberg¹**; ¹Cell Biology Biophysics Unit, European Molecular Biology Laboratory (EMBL), Heidelberg, Germany, ²Advanced Light Microscopy Facility, European Molecular Biology Laboratory (EMBL), Heidelberg, Germany
Rho GTPases signaling: from cytoskeleton regulation to nuclear DNA damage response and repair.
- 1:24 pm E81 **F.L. Forti¹, Y.T. Magalhaes¹**; ¹Department of Biochemistry, Institute of Chemistry, University of Sao Paulo, Sao Paulo, Brazil
Diaphanous formin mDia2 bridges small GTPase signaling with nuclear environment to regulate stable CENP-A loading at the centromere. **C. Liu¹, Y. Mao¹**; ¹Pathology and Cell Biology, Columbia University, New York, NY

● Microsymposium 10: Spatial Organization of the Cell

12:25-1:31 pm

Microsymposia Room 2, Learning Center, Hall C

Moderators: **Brooke Gardner**, University of California, Berkeley; and **Anupam Das**, Albany Medical College

- 12:25 pm Introduction
- 12:28 pm E82 Amyloid-like Self-Assembly of a Cellular Compartment. **E. Boke¹, M. Ruer², M. Wuhr^{1,3}, M. Coughlin¹, R. Lemaitre², S.P. Gygi³, S. Alberti², D.N. Drechsel², A.A. Hyman², T.J. Mitchison¹**; ¹Department of Systems Biology, Harvard Medical School, Boston, MA, ²Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany, ³Department of Cell Biology, Harvard Medical School, Boston, MA
- 12:35 pm E83 Multicolor Super-Resolution Microscopy And Correlation Analysis Reveal 3D Structure of Ciliary Transition Zone. **X. Shi^{1,2}, G. Garcia², J.F. Reiter², B. Huang^{1,2}**; ¹Pharmaceutical Chemistry, University of California - San Francisco, San Francisco, CA, ²Biochemistry and Biophysics, University of California - San Francisco, San Francisco, CA
- 12:42 pm E84 Nanoscopic compartmentalization of membrane protein motion at the axon initial segment. **D. Albrecht¹, C.M. Winterflood², M. Sadeghi³, F. Noe³, H. Ewers¹**; ¹Chemistry and Biochemistry, Free University Berlin, Berlin, Germany, ²Randall Division, King's College London, London, United Kingdom, ³Department of Mathematics and Computer Science, Free University Berlin, Berlin, Germany
- 12:49 pm E85 Quantitative analysis of the 3D spatial organization of cells and organelles. **J. Chen¹, D. Dedham¹, A. Walter¹, R. Wercberger¹, J. Kuhn¹, M.A. Le Gros^{1,2}, A. Basbaum¹, C.A. Larabell^{1,2}**; ¹Anatomy, University of California San Francisco, San Francisco, CA, ²Molecular Biophysics Integrated Bioimaging, Lawrence Berkeley National Laboratory, Berkeley, CA
- 12:56 pm E86 Using optogenetics to uncover principles governing cell size scaling relationships in giant yeast. **C. Allard^{1,2}, F. Decker^{2,3}, O.D. Weiner^{2,4}, B.R. Graziano^{2,4}, J.E. Toettcher^{2,5}**; ¹Department of Biochemistry, Dartmouth Medical School, Hanover, NH, ²Marine Biological Laboratory, Woods Hole, MA, ³Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany, ⁴Cardiovascular Research Institute, UCSF, San Francisco, CA, ⁵Department of Molecular Biology, Princeton University, Princeton, NJ
- 1:03 pm E87 Predicting the targeting of tail-anchored proteins to subcellular compartments in mammalian cells. **J.L. Costello¹, I. Castro¹, F. Camões², T.A. Schrader¹, D. McNeill³, S. Gomes², E. Giannopoulou⁴, V. Pogenberg⁴, N. Bonekamp², D. Ribeiro², M. Wilmanns⁴, M. Schrader¹, M. Islinger⁵**; ¹Biosciences, University of Exeter, Exeter, United Kingdom, ²Centre for Cell Biology, University of Aveiro, Aveiro, Portugal, ³Met Office, Hadley Center, Exeter, United Kingdom, ⁴c/o DESY, EMBL Hamburg, Hamburg, Germany, ⁵Institute of Neuroanatomy, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany
- 1:10 pm E88 Ready, Set, Miro! Miro1-mediated mitochondrial positioning at the leading edge accelerates cell movement. **M-H. Schuler¹, B. Cunniff^{1,2,3}, A. Lewandowska¹, T. Kirchhausen^{2,3}, J.M. Shaw¹**; ¹Department of Biochemistry, University of Utah, Salt Lake City, UT, ²Department of Cell Biology, Harvard Medical School, Boston, MA, ³Program in Cell and Molecular Medicine, Boston Children's Hospital, Boston, MA
- 1:17 pm E89 PhotoGate Microscopy for Tracking Single Molecules in Crowded Environments. **V. Belyy^{1,2}, S. Shih³, J. Bandaria³, Y. Huang¹, R. Lawrence⁴, R. Zoncu⁴, A. Yildiz^{1,3,4}**; ¹Biophysics, University of California, Berkeley, Berkeley, CA, ²Biophysics, University of California, San Francisco, San Francisco, CA, ³Department of Physics, University of California, Berkeley, Berkeley, CA, ⁴Department of Molecular Cell Biology, University of California, Berkeley, Berkeley, CA
- 1:24 pm E90 Mapping the spatial and functional interactions of transition zone proteins and nucleoporins

during ciliary gating. **D. Takao¹, L. Wang¹, A. Boss¹, T.L. Blasius¹, K.J. Verhey¹**; ¹Cell and Developmental Biology, University of Michigan Medical School, Ann Arbor, MI

● Career Panel: Science Policy

1:00-1:55 pm

Career Center Theater, Learning Center

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

Barbara J. Natalizio is a American Association for the Advancement of Science Science and Technology Policy Fellow serving in the Directorate for Education and Human Resources, Division of Graduate Education at the National Science Foundation. She received her bachelor's degree in Biochemistry and History from Montclair State University and her PhD in Molecular Genetics and Microbiology from Duke University. Prior to the AAAS fellowship, she was a postdoctoral fellow in the Department of Cell and Developmental Biology at Vanderbilt University Medical Center where she became very interested in career and professional development for early career scientists as a leader of the Vanderbilt Postdoctoral Association and as a member of the Board of Directors of the National Postdoctoral Association. Through her experiences at the NSF, she has gained a comprehensive awareness of and appreciation for effective evaluation, assessment, and policy that enables her continued support of higher education reform and STEM workforce development at the national level.

Meghan Mott is a neuroscientist with a strong interest in the intersection of science, technology, and public policy. Currently, she is Chief of Staff in the Office of the Director at the National Institute of Neurological Disorders and Stroke (NINDS) at the National Institutes of Health. In this position, she serves as a representative for the NINDS Director, communicating policy, managing resources, and guiding the Institute's scientific and administrative functions to accomplish its mission. Mott serves as the NINDS Director's point of contact for a number of high priority projects, by performing analyses, fact finding, and collecting data to inform strategic, policy, and programmatic planning as well as providing advice and direction for special projects across the whole range of NIND's programs and activities. In addition, she develops written material; conducts data and policy analysis; coordinates communication, policy development, program planning, and implementation; and works on a variety of strategic and outreach activities. Previously, Mott was a Science & Technology Policy Fellow for the AAAS Health, Education, and Human Services Program, where she was Special Assistant to the NINDS Director. In 2014, she was selected as a Christine Mirzayan Science and Technology Policy Fellow at the Institute of Medicine's Board on Health Sciences Policy at the National Academies. Prior to that position, she completed a postdoctoral fellowship in the Laboratory of Molecular Physiology at the National Institute on Alcohol Abuse and Alcoholism. Mott received a PhD in Anatomical Sciences and Neurobiology from the University of Louisville School of Medicine and a bachelor's in Biology with a specialization in Neuroscience from the University of Chicago.

Erica Siebrasse is the Education and Professional development Manager for the American Society for Biochemistry and Molecular Biology. She develops and manages programs to support members at all career stages. Recently, she has focused on improving the society's career resources, particularly those for graduate students and postdocs. Erica earned a BA in biochemistry and molecular biology from Hendrix College in 2009 and a PhD in Molecular Microbiology from Washington University in St. Louis in 2014. She has been active in K-12 outreach efforts since college, including founding the program "Ridin' Dirty with Science" and leading the Young Scientist Program while at Washington University. She used the skills gained through these experiences to transition to a science policy fellowship at the ASBMB prior to accepting her current position.

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

● Table Talk

1:00-1:45 pm

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?

MONDAY

● Exhibitor Tech Talk

1:00-1:45 pm

Theater 2, Learning Center

PLOS (Public Library of Science) Digital Advances for Improved Author Recognition and Credit

Presenter: Meghan Byrne, Senior Editor, PLOS ONE

Level: Intermediate

Scientists, policymakers, educators, funders and publishers work in an increasingly vibrant research world where multimedia data, new types of research outputs and real-time online discussions are altering the way the community works, communicates and cooperates. Attendees of this presentation will learn how to easily incorporate into their daily habits advances including digital identifiers such as ORCID iDs, standardized and detailed author contributions via the CRediT project, tracking article influence with Article-Level Metrics and early posting of work before formal publication on preprint servers. PLOS has implemented these initiatives to improve author recognition and accelerate making work freely available and to help change the publishing landscape to better serve authors without compromising the publisher values of documentation, curation and archiving.

● Exhibitor Tech Talk

1:00-1:45 pm

Theater 1, Room 102

Thermo Fisher Scientific Inc. Advances in Fluorescence Microscopy: Platforms and Probes

Presenter: Nicholas Dolman

Level: Introductory

The combination of light microscopy and fluorescent reporters offers an unparalleled view into the function of intact cells. Recently, the scientific community has witnessed many major innovations in fluorescence microscopy that have paved the way for exciting new discoveries. Invitrogen™ Molecular Probes™ reagents have represented a significant aspect of these key innovations, driving the cutting edge of fluorescent reporter development for four decades. In this seminar, we will highlight the breadth and depth of fluorescent probes available to the cell biologist of today, drawing on specific techniques as diverse as single molecule, in vivo and super-resolution imaging to high content and multicolor time lapse imaging. Specific examples of new assays and tools to visualize and quantify key aspects of cell biology will also be described that include high throughput assays for ion channel modulators, signal amplification approaches for low abundance targets, new antifade reagents, endocytosis of antibody-drug conjugates, and apoptosis. Furthermore, we will show how this broad set of cellular assays can be applied in concert to characterize CRISPR-edited cell lines.

● ASCB Business Meeting

1:00-2:00 pm

ASCB Booth 423, Learning Center

Join leaders of the ASCB to learn about the state of the Society and the passing of the gavel from Peter Walter to Pietro De Camilli.

● ASCB Advocates!

1:00-2:30 pm

ASCB Booth 423, Learning Center

Meet members of the Public Policy Committee, learn how you can be involved at your institution, and learn simple ways to communicate with your elected officials.

1:00 pm Meet Connie Lee, ASCB Public Policy Committee chair, and other members of the Public Policy Committee

1:30 pm Learn how you can organize a student policy & advocacy group at your institution

2:00 pm Learn simple ways to contact your elected officials. We will have sample letters for you to use and send to your elected official. We will also teach you how easy it is to tweet your elected official and discuss the impact social media has in Washington.

The ASCB Public Policy Committee is offering a full day of Public Policy and Science Advocacy Events. Join us as well for The Advocacy Toolbox: The Two-Minute Speech, from 11:00 am-12:00 pm, and Politicians Don't Bite, from 3:00-4:00 pm.

#ASCBadvocates! #WeAreResearch!

Organized by the ASCB Public Policy Committee

● Meet the Editor of *Molecular Biology of the Cell*

1:30-2:15 pm

ASCB Booth 423, Learning Center



David Drubin, University of California, Berkeley
Editor-in-Chief

Stop by for an informal discussion about the journal with Editor-in-Chief David Drubin.

Members of the *Molecular Biology of the Cell* editorial board will also be available at various times at the ASCB Journals Exhibit Booth (Booth 238). Stop by the booth or check the Mobile App for times.

● Afternoon Refreshment Break

1:30-3:30 pm

Learning Center

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

● Even-Numbered Poster Presentations

1:30-3:00 pm

Learning Center

● Table Talk

1:45-2:30 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).

● Microsymposium 11: Development, Regeneration and Wound Healing

1:50-2:56 pm

Microsymposia Room 1, Learning Center, Hall C

Moderators: **Gregory Cook**, Oklahoma State University, Center for Health Sciences; and **Alyssa Lesko**, University of Notre Dame

1:50 pm	Introduction
1:53 pm E91	Multicellular context contributes to cell type specific protection against cytokinesis failure. T. Davies¹ , N. Romano Spica¹ , Y. Zhuravlev^{1,2} , M. Shirasu-Hiza² , J. Dumont³ , J.C. Canman¹ ; ¹ Department of Pathology and Cell Biology, Columbia University, New York, NY, ² Department of Genetics and Development, Columbia University, New York, NY, ³ Institut Jacques Monod, Paris, France
2:00 pm E92	TRPV4 activity modulates development of the fetal lung. J.T. Morgan¹ , P.A. Sariano¹ , W.G. Stewart¹ , J.P. Gleghorn¹ ; ¹ Biomedical Engineering, University of Delaware, Newark, DE
2:07 pm E93	Monitoring Dendrite Regeneration after Injury <i>in vivo</i> . K.L. Thompson-Peer^{1,2} , L. DeVault^{1,2} , T. Li^{1,2} , L.Y. Jan^{1,2} , Y.N. Jan^{1,2} ; ¹ Physiology, University of California, San Francisco, CA, ² Howard Hughes Medical Institute, San Francisco, CA
2:14 pm E94	Cellular Neighborhood Influences the Equilibria of Phenotypic States in a Heterogeneous Population. C. Krishnamurthy¹ , A. Paulson² , Z.J. Gartner¹ ; ¹ Pharmaceutical Chemistry, University

- of California, San Francisco, San Francisco, CA, ²Biomedical Sciences Program, University of California, San Francisco, San Francisco, CA
- 2:21 pm E95 Flares of active RhoA locally reinforce tight junctions. **R.E. Stephenson¹, T. Higashi¹, B. Coy¹, T.R. Arnold¹, A.L. Miller¹**; ¹Molecular, Cellular, and Developmental Biology, University of Michigan, Ann Arbor, MI
- 2:28 pm E96 Self-organization of skin organoid with hair primordia formation *in vitro*. **M. Lei^{1,2}, L. Schumacher³, Y. Lai⁴, W. Juan⁴, C. Yeh¹, P. Wu¹, T. Jiang¹, R. Baker³, R. Widelitz¹, L. Yang², C. Chuong^{1,4}**; ¹Department of Pathology, University of Southern California, Los Angeles, CA, ²College of Bioengineering, Chongqing University, Chongqing, China, ³Mathematical Institute, University of Oxford, Oxford, United Kingdom, ⁴Integrative Stem Cell Center, China Medical University, Taichung, Taiwan
- 2:35 pm E97 Direct visualization of multinucleated giant cell formation. **J.J. Faust^{1,2}, W. Christenson^{3,4}, K. Doudrick⁵, R. Ros^{3,4}, T.P. Ugarova^{1,2}**; ¹Center for Metabolic and Vascular Biology, Mayo Clinic, Scottsdale, AZ, ²Molecular and Cellular Biology, Arizona State University, Tempe, AZ, ³Department of Physics, Arizona State University, Tempe, AZ, ⁴Center for Biological Physics, Arizona State University, Tempe, AZ, ⁵Department of Civil and Environmental Engineering, University of Notre Dame, Notre Dame, IN
- 2:42 pm E98 Human Kidney Organoids from Genome-Modified Pluripotent Stem Cells Establish a High-Penetrance Model of Polycystic Kidney Disease. **N.M. Cruz¹, B.S. Freedman¹**; ¹Department of Medicine, Division of Nephrology, Kidney Research Institute, and Institute for Stem Cell and Regenerative Medicine, University of Washington, Seattle, WA
- 2:49 pm E99 The role of division orientation in embryonic patterning. **L.I. Rathbun¹, J. Amack¹, H. Hehny¹**; ¹Cell and Developmental Biology, State University of New York Upstate Medical University, Syracuse, NY

● Microsymposium 12: Membrane Trafficking and Signaling

1:50-2:56 pm

Microsymposia Room 2, Learning Center, Hall C

Moderators: **Paulo Caceres**, Weill Cornell Medical College; **Ashley Lakoduk**, University of Texas Southwestern Medical Center, Dallas; and **Anupam Das**, Albany Medical College

- 1:50 pm Introduction
- 1:53 pm E100 Cellular, molecular and structural mechanisms of phosphorylation-dependent inhibition of IRSp53 by 14-3-3. **D.J. Kast¹, R. Dominguez¹**; ¹Physiology, University of Pennsylvania, Philadelphia, PA
- 2:00 pm E101 The Role of Rab30 at the Interface between the Recycling Endosome & the *trans*-Golgi Network. **K.L. Zulkefli¹, F.J. Houghton¹, P. Gosavi¹, I.S. Mahmoud¹, P.A. Gleeson¹**; ¹Biochemistry Molecular Biology, Bio21 Molecular Science Biotechnology Institute, University of Melbourne, Melbourne, Australia
- 2:07 pm E102 Pre-allocated Subset of Clathrin-coated Pits Controls Competition and Cooperation of Receptor Signaling. **D. Kim¹, Y. Kwon¹, H. Ahn², J. Noh¹, M. Jeong³, S. Park¹, K. Zhou¹, N. Lee⁴, S. Ryu¹**; ¹Life Sciences, Pohang University of Science and Technology, Pohang, Korea, South, ²School of Interdisciplinary Bioscience and Bioengineering, Pohang University of Science and Technology, Pohang, Korea, South, ³Integrative Biosciences & Biotechnology, Pohang University of Science and Technology, Pohang, Korea, South, ⁴Physics, Pohang University of Science and Technology, Pohang, Korea, South
- 2:14 pm E103 Specific exosome subtypes are generated in different endosomal compartments and selectively regulated by stress sensor mTORC1. **S. Fan¹, S.M. Perera¹, B. Kroeger¹, C. Alves¹, I. Stefana¹, J.F. Morris¹, C. Wilson¹, A.L. Harris², D. Goberahan¹**; ¹Department of Physiology, Anatomy and Genetics, Oxford University, Oxford, United Kingdom, ²The Weatherall Institute of Molecular Medicine, Oxford University, Oxford, United Kingdom
- 2:21 pm E104 Growth factor signaling regulation of a Rab-effector switch required for ciliogenesis initiation. **V. Walia¹, M. Vetter², C. Insinna¹, Q. Lu¹, D. Ritt¹, S. Specht¹, J. Stauffer¹, D. Morrison¹, E. Lorentzen², C.J. Westlake¹**; ¹Center for Cancer Research, National Cancer Institute, Frederick, MD, ²Max Plank Institute of Biochemistry, Martinsried, Germany
- 2:28 pm E105 Organization of the Leukotriene Synthetic Complex in Neutrophils as an Indicator of Disease State. **A.B. Schmider¹, M. Godin¹, H.D. Elliott², R.J. Soberman¹**; ¹Nephrology, Massachusetts General

- 2:35 pm E106 Hospital, Charlestown, MA, ²Cell Biology, Harvard Medical School, Boston, MA
Otoferlin is a sensory hair cell specific calcium sensor for membrane fusion and neurotransmitter release during the encoding of sound. **C.P. Johnson¹, P. Chatterjee¹, R. Tanguay¹**; ¹Biochemistry, Oregon State University, Corvallis, OR
- 2:42 pm E107 The Lowe Syndrome phosphoinositide phosphatase dOCRL restricts innate immune activation by regulating endosomal traffic. **S.J. Del Signore¹, S.A. Biber¹, K.S. Lehmann¹, T.L. Eskin¹, A.A. Rodal¹**; ¹Rosenstiel Basic Medical Sciences Research Center, Department of Biology, Brandeis University, Waltham, MA
- 2:49 pm E108 Clathrin light chain isoform specific effects alter EGFR trafficking, signaling and increase metastatic potential. **P. Chen¹, N. Bendris¹, Y. Hsiao², C.R. Reis¹, M. Mettlen¹, H. Chen³, S. Yu², S.L. Schmid¹**; ¹Cell biology, UTSW medical center, Dallas, TX, ²Department of Clinical Laboratory Sciences and Medical Biotechnology, National Taiwan University College of Medicine, Taipei, Taiwan, ³Institute of Statistical Science, Academia Sinica, Taipei, Taiwan

● Exhibitor Tech Talk

2:00-2:45 pm

Theater 1, Room 102

eBioscience, part of Thermo Fisher Scientific Visualize Transcription and Translation at the Single-Cell Level

Presenter: Sara Becker-Catania, PhD

Level: Intermediate

Complex interactions between transcription, translation, and post-translational modifications are hidden from view in typical endpoint assays that measure either RNA or protein levels. In situ hybridization (ISH) provides a method for examining levels of specific RNA transcripts in individual cells, while immunocytochemistry (ICC) utilizes antibodies to visualize the localization of specific proteins (and protein modifications). Unfortunately, the ability to simultaneously observe RNA and protein in a single cell has been thwarted by the incompatibility of ISH and ICC protocols. Further complicating this analysis, traditional ISH methods have limited multiplexing capability and lack the sensitivity necessary for detecting low-abundance RNA species. We will describe a novel technique combining ICC staining of RNA with ISH that utilizes branched DNA signal amplification technology, allowing for single-copy mRNA sensitivity.

● Exhibitor Tech Talk

2:00-2:45 pm

Theater 2, Learning Center

Bitplane, Inc. Automated Cell Membrane Based Segmentation and Cell Lineage Tracking – Advanced Image Analysis Tools for 3D Time-Lapse Microscopy by Bitplane Imaris

Presenter: Anna Paszulewicz

Level: Intermediate

This session will focus on automated 3D/4D microscopy image analysis tools for cell biologists including cell segmentation with only membrane or nuclear envelope labelling, cell division tracking, cell cycle length analysis, cell lineage tree creation, reference frame (user-defined xyz coordinate system) registration for object realignment and motility calculation in relation to another moving object. Relevant applications for quantifying shape, size, fluorescence intensity or dynamics include the following: tissue formation, organoids, spheroids, stem cells, nuclear organization, cell interactions, intracellular compartmentalization and embryo development, tracking cell migration or viral particle movement. Tips on handling terabyte sizes 3D/4D microscopy datasets for visualization and high quality animation will also be showcased.

● In-Booth Presentation

2:00-2:30 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.

● Career Panel: Teaching and Administration

2:00-2:55 pm

Career Center Theater, Learning Center

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

Omar Quintero earned his PhD in Cell Biology from Duke University. After completing his graduate work, he moved to the IRACDA-funded SPIRE postdoctoral program at the University of North Carolina, Chapel Hill, where he received training and practice in teaching as well as in research. At UNC, his postdoctoral research focused on the role of unconventional myosins in filopodial dynamics and mitochondrial transport. He has taught Cell Biology, Integrative Physiology, and Mechanochemical Cell Biology to undergraduates. His research continues to focus on the cell biology of unconventional myosins and has resulted in six publications with undergraduate co-authors. Currently, he is an Assistant Professor of Biology at the University of Richmond, a private liberal arts university.

Isaac Strong earned his PhD in Cellular Biology from the University of California, San Francisco. For most of his graduate career he also volunteered as a mentor with Minds Matter of San Francisco (MMSF), an education nonprofit geared to prepare low-income, first-generation college-bound high school students for college success. His involvement with MMSF spurred him to consider teaching at the high school level. He is now a Biology teacher at St. Ignatius College Preparatory in San Francisco. His involvement with MMSF has continued and now includes developing program-wide curriculum while running part of the mentoring program.

Michael Penn, Jr. earned an MD and PhD in biomedical sciences from the University of California, San Francisco. After his graduate studies he worked for Genentech as a Senior Product Manager of Herceptin Marketing and Business Development for nine years, before joining the Gladstone Institutes in 2012. Currently he is the Vice President of Diversity, Outreach and Mentoring at the Gladstone Institutes, where he is responsible for integrating diversity and inclusion strategies into all of Gladstone's core scientific and administrative activities. Additionally, he has previously served as the San Francisco Health Commissioner and CEO of the Gladstone Foundation, and co-founded Building Diversity in Science, a nonprofit organization dedicated to empowering students to pursue careers in science.

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

● Table Talk

2:30-3:30 pm

Roundtable Central Section 3, Learning Center

ASCB MAC Program Alumni Meetup

This is an opportunity for alumni of ASCB 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

● Table Talk

2:30-3:15 pm

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 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.

● Panel Discussion: Navigating the Faculty Job Search

3:00-3:55 pm

Career Center Theater, Learning Center

These panelists will discuss their experiences with the faculty job search, and then they will address individual questions from the audience.

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 University of California, San Francisco, where she focused on the organization and regulation of the microtubule cytoskeleton during neuronal development. With her two year old daughter and another on the way, she and her husband were very busy navigating the job market last year. In

January, she joined the Department of Molecular and Cellular Biology as an Assistant Professor at University of California, Davis. Her lab studies how signaling pathways converge on the microtubule cytoskeleton for proper neuronal function.

Damian Ekiert completed his PhD in Ian Wilson's lab at the Scripps Research Institute, investigating the molecular basis of influenza virus inhibition by broadly neutralizing antibodies. Continuing to pursue his interest in infectious disease, he conducted postdoctoral work in Jeffery Cox and Ron Vale's labs, exploring the structural basis of specialized protein secretion in *M. tuberculosis*, and a lipid trafficking system broadly conserved in double-membraned bacteria. He recently accepted a position as an Assistant Professor at the Skirball Institute of Biomolecular Medicine at New York University, in the departments of Cell Biology and Microbiology.

Jessica Feldman joined the faculty in the Department of Biology at Stanford University as an Assistant Professor in 2014. Her group studies structural changes that occur within cells during normal development and in disease using the model organism *C. elegans*. In particular, her lab is interested in understanding how microtubules become spatially organized in different cell types during cell differentiation. Prior to arriving at Stanford, Jessica received her PhD from University of California, San Francisco working with Wallace Marshall and was a Helen Hay Whitney postdoctoral fellow in the lab of Jim Priess at the Fred Hutchinson Cancer Research Center.

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

● WICB Network Reception

3:00-4:00 pm

Room 270

Supported by The Burroughs Wellcome Fund

Addressing Harassment in Science

Moderators:



Erin Goley

Johns Hopkins University
School of Medicine



Jessica Polka

ASAPbio

Panelists:

Nanette Asminov, San Francisco Chronicle

Bruno da Rocha Azevedo, University of Texas Southwestern Medical Center

Caroline Kane, University of California, Berkeley

Tricia Serio, University of Arizona

Janet D. Stemwedel, San Jose State University

The goal of this panel is to expose scientists to experts who can speak to ways of productively and proactively addressing harassment (both sexual and otherwise). The format will consist of a 3-5 minute introduction from each panelist followed by questions and comments from the audience. While content will include informative elements (such as the definition of harassment and basic legal information) and personal stories, there will be a particular focus on practical advice for how to address these issues in individual communities.

Organized by the ASCB Women in Cell Biology Committee and the Committee for Postdocs and Graduate Students (COMPASS)

MONDAY

● Science Discussion Tables

3:00-4:00 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	Gitai Zemer	Applying new approaches to old questions: lessons from bacterial cell biology
2	Josh Rappoport	Careers in research core facilities
3	Andrew Ewald	Cell biology of cancer invasion and metastasis
4	Hillary Collier	Cell cycle, gene regulation and metabolism
5	Jennifer Zallen	Cell polarity and dynamics in development
6	Yingzi Yang	Cell polarity in development and disease
7	Ian Macara	Cell polarity, stem cells, breast cancer
8	Gaia Pigino	Electron microscopy to study cellular dynamics?
9	Anne Bertolotti	How to pick a scientific problem to start your independent lab
10	Scott Keeney	Meiosis
11	Anne Spang	Membrane traffic and intracellular compartmentation
12	Vamsi Mootha	Mitochondria
13	Lois Weisman	Organelle dynamics
14	Ramanujan Hegde	Protein quality control; protein maturation; membrane proteins; protein trafficking
15	David Pellman	Genomic consequences of cell division errors
16	Jan Lammerding	Mechanics of cells and tissues: how engineering and physics can help us understand cell biology
17	Lisa Dennison/ Liam Holt	Science sketches: how to make videos for fast, fun, and accessible communication of your research

● Research in Cell Biology in France: Opportunities and Tips

3:00-4:00 pm

Room 309

Speakers:

Thierry Galli, Co-Director of Multi-Organization-Thematic-Institute of Cell Biology, Development and Evolution

Arnaud Echard, President, French Society for Cell Biology

This session highlights current cell biology research, education, and scientific publication activities in France. We also discuss the potential opportunities for career development, particularly for young researchers, and for international collaboration on fundamental and translational research. The event is specifically designed for those who plan to explore employment opportunities (PhD theses, postdoc, researcher position, and young group leaders, sabbatical) and/or establish collaborative efforts in France.

Organized by the ASCB International Affairs Committee

● Politicians Don't Bite

3:00-4:00 pm

Room 121

Tom Pollard, Yale University

Gary Gorbsky, Oklahoma Medical Research Foundation

Samantha Ancona Esselmann, University of California, San Francisco

Scott Wilkinson, Emory University

Hear Public Policy Committee member Tom Pollard lead a discussion on how to engage elected officials about the importance of federally funded biology research and how you too can become a science advocate. The panel discussion will then be followed by a Q&A session.

● Exhibitor Tech Talk

3:00-4:00 pm

Theater 1, Room 102

Nanolive SA

Explore New Dimensions in Non-Invasive Live Cell Imaging!

Presenter: Yann Cotte

Level: Advanced

Nanolive has great news for you! Last year, @ASCB2015, Nanolive launched its unique tomographic-holographic 3D microscope: a high speed, high resolution and non-invasive tool that images living cells and tissue slices instantly, in 3D and with no stains. It measures the cell's own physical properties (refractive index) in 3D, in a truly quantitative way, allowing one to observe living cells in real-time, for unlimited periods of time and without any invasion or sample preparation. Something very new and exciting is coming out this year, exclusively for ASCB2016. Be the first one to learn about it during our tech talk!

● Exhibitor Tech Talk

3:00-4:00 pm

Theater 2, Learning Center

ASI/Applied Scientific Instrumentation

Innovations in ASI Light Sheet Microscopes - the Oblique SPIM

Presenter: Jon Daniels

Level: Introductory

The advantages of the light sheet technique include low photo toxicity, rapid 3D imaging, and good resolution. One limitation for ASI's DiSPIM geometry has been that the excitation and observation objectives, for identical objectives arranged perpendicularly, must have NA no more than NA 0.8 before the objectives are too fat to co-focus, thus limiting optical resolution. One solution is place to high numerical aperture objectives obliquely to one another, still generating perpendicular light sheets for the observation. ASI has developed two versions of a SPIM that utilize two objectives arranged obliquely, the dualview DoSPIM, and the single sided oSPIM. The oSPIM uses a traditional inverted microscope with oil objective for the illumination light sheet and a tilted high NA water dipper above for imaging.

● Education Initiative Forum

3:15-4:00 pm

Room 120



Jessica Regan Lucas
Southern Illinois University

Southern Illinois Bridges to the Baccalaureate Program Promotes Retention of Community College Students in STEM Disciplines

The Southern Illinois Bridges to the Baccalaureate Program helps underserved community college students persevere in biomedical and behavioral science majors at 4-year universities. Through this program, community college students engage in an authentic cell biology and genetics research project throughout the summer. After participating in the program, students are more likely to successfully transfer to 4-year universities, remain in STEM majors, and apply to graduate programs.

Organized by the ASCB Education Committee

MONDAY

● Table Talk

3:45-4:45 pm

Roundtable Central Section 2, Learning Center

Community College Partnerships with 4-year Institutions

Learn more about partnerships between faculty at community colleges and four-year colleges to promote evidence-based learning for all.

● Networking Happy Hour

4:00-6:00 pm

Career Center, Learning Center

This is a networking opportunity to meet with select ASCB exhibitors in an informal setting at the Career Center. Whether you want to establish new contacts, are on the job search, or simply want to learn more about the vendors, we encourage you to drop by and mingle. Cash bar will be available and light snacks will be served.

● Exhibitor Tech Talk

4:15-5:15 pm

Theater 2, Learning Center

Horizon Discovery

Creating Human Cell Line Models for Hypothesis Testing and Validation Studies with CRISPR/Cas Technology

Presenter: Daniella Steel, PhD

Level: Intermediate

With the advent of powerful new sequencing technologies, there is a superb opportunity to elucidate the functional role of genes in disease. By exploiting next generation gene editing technologies, such as CRISPR CAS9, Horizon Discovery has developed genetic cell line models that enable researchers to test their hypothesis or gain definitive proof with final validation studies, to better understand the role of these genes. We will discuss the technology behind the creation of knockout, knockin and endogenous reporter cell lines. Furthermore, we will demonstrate how these tools are being applied over a variety of areas, such as confirmation and extension of results from patient derived materials, and in parallel screens of collections of knockout cell lines.

● Minisymposium 7: Actin Dynamics

4:15-6:50 pm

Room 305

Co-Chairs: **Magdalena Bezanilla**, University of Massachusetts, Amherst; and **Tatjana Piotrowski**, Stowers Institute for Medical Research

- 4:15 pm Introduction
- 4:20 pm M71 Competitive and cooperative interactions between actin binding proteins drive their sorting to different actin cytoskeleton networks. **J.R. Christensen¹, K.E. Homa¹, M.E. OConnell¹, A.N. Morgenthaler¹, D.R. Kovar¹**; ¹Molecular Genetics and Cell Biology, The University of Chicago, Chicago, IL
- 4:35 pm M72 An actin filament stress sensor based on utrophin. **A.R. Harris¹, P. Jreij², D.A. Fletcher²**; ¹QB3, University of California Berkeley, Berkeley, CA, ²Department of Bioengineering and Biophysics Program, University of California Berkeley, Berkeley, CA
- 4:50 pm M73 Comprehensive analysis of formin localization at cell-cell junctions and cytokinetic contractile rings in epithelial cells. **T. Higashi¹, A.L. Miller¹**; ¹MCDB, University of Michigan, Ann Arbor, MI
- *5:05 pm M74 Interplay between filopodia and focal adhesions through the formin FMNL3. **L.E. Young¹, E.G. Heimsath², H.N. Higgs¹**; ¹Biochemistry, Dartmouth College, Hanover, NH, ²Cell Biology and Physiology, UNC, Chapel Hill, NC
- 5:20 pm M75 Actin and microtubule crosstalk mediate persistent polarized growth. **S. Wu¹, M. Bezanilla¹**; ¹Biology, University of Massachusetts, Amherst, MA
- 5:35 pm M76 Actin cable arrays controlling nuclear position in Drosophila nurse cells require microtubules, EB1, APC1, APC2, and formins for their assembly. **R. Jaiswal¹, O. Molinar², B.L. Goode¹, B.M.**

- McCartney**²; ¹Department of Biology, Brandeis University, Waltham, MA, ²Department of Biological Sciences, Carnegie Mellon University, Pittsburgh, PA
- 5:50 pm M77 How does actin disassembly induce myelin wrapping? **J. Zuchero**¹, **B. Barres**¹; ¹Neurobiology, Stanford University, Stanford, CA
- 6:05 pm M78 Intermediate filament and Plakin family function in the morphogenesis of actin-based microridges in zebrafish. **Y. Inaba**¹, **V. Chauhan**¹, **A. Sagasti**¹; ¹Department of Molecular, Cell and Developmental Biology, University of California, Los Angeles, Los Angeles, CA
- 6:20 pm M79 Form and Function: Distinct Actin Architectures and Nucleators for the Epithelial Plasticity Programs of Embryonic Stem Cell Differentiation and Epithelial to Mesenchymal Transition. **F.M. Aloisio**¹, **M. Rana**¹, **D.L. Barber**¹; ¹Department of Cell and Tissue Biology, University of California, San Francisco, San Francisco, CA
- 6:35 pm M80 Investigating the role of ERK-mediated actin phosphorylation in ciliary dynamics. **S. Dutta**¹, **P. Avasthi**^{1,2}; ¹Anatomy and Cell Biology, University of Kansas Medical Center, Kansas City, KS, ²Ophthalmology, University of Kansas Medical Center, Kansas City, KS
- *Lorna Young is co-recipient with Ernest G. Heimsath of the *Molecular Biology of the Cell* Paper of the Year Award for 2016.

● Minisymposium 8: Cell Biology of the Nucleus

4:15-6:50 pm

Room 306

Co-Chairs: **Abby Dernburg**, University of California, Berkeley/HHMI; and **Bing Ren**, Ludwig Institute for Cancer Research/UCSD

- 4:15 pm Introduction
- 4:20 pm M81 Super-resolution study of nuclear envelope transmembrane protein transport in live cells. **K.C. Mudumbi**¹, **E. Schirmer**², **W. Yang**¹; ¹Department of Biology, Temple University, Philadelphia, PA, ²Wellcome Trust Center for Cell Biology, University of Edinburgh, Edinburgh, United Kingdom
- 4:35 pm M82 Super-resolution imaging reveals epigenome organization and its spatial coordination with transcription factories in single mammalian cells. **J. Xu**¹, **H. Ma**¹, **J. Jin**¹, **Y. Huang**², **N. Davidson**³, **Y. Liu**¹; ¹University of Pittsburgh Cancer Institute, School of Medicine, Pittsburgh, PA, ²Magee-Women Research Institute, University of Pittsburgh, Pittsburgh, PA, ³University of Pittsburgh Cancer Institute, UPMC Cancer Centers, Pittsburgh, PA
- 4:50 pm M83 Hunchback and Krüppel mediate early cell fate competence correlated with distinct actin-dependent intranuclear re-localization of gene loci in *Drosophila* neuroblasts. **P. Chikte**¹, **S. Jansen**¹, **N. Dinges**², **J. Urban**¹; ¹Biology, Institute of Genetics, Mainz, Germany, Mainz, Germany, ²Institute of Molecular Biology, Mainz, Germany
- 5:05 pm M84 A self-extinguishing signaling circuit within the synaptonemal complex regulates meiotic recombination. **A.F. Dernburg**^{1,2,3,4}, **O. Rog**^{1,2,3}, **S. Köhler**^{1,2,3}, **L. Zhang**^{1,2,3}; ¹Howard Hughes Medical Institute, Chevy Chase, MD, ²Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, ³California Institute for Quantitative Biosciences (QB3), Berkeley, CA, ⁴Life Sciences Division, Lawrence Berkeley National Laboratory, Berkeley, CA
- 5:20 pm M85 Structure and Function of the Nuclear Pore Complex Cytoplasmic mRNA Export Platform. **J. Fernandez-Martinez**¹, **S. Kim**², **Y. Shi**³, **P. Upla**⁴, **R. Pellarin**^{2,5}, **M. Gagnon**⁶, **I.E. Chemmama**², **J. Wang**³, **I. Nudelman**¹, **W. Zhang**³, **R. Williams**¹, **W.J. Rice**⁴, **D.L. Stokes**⁴, **D. Zenklusen**⁶, **B.T. Chait**³, **A. Sali**², **M.P. Rout**¹; ¹Laboratory of Cellular and Structural Biology, The Rockefeller University, New York, NY, ²Department of Bioengineering and Therapeutic Sciences, Department of Pharmaceutical Chemistry, and California Institute for Quantitative Biosciences, University of California San Francisco, San Francisco, CA, ³Laboratory of Mass Spectrometry and Gaseous Ion Chemistry, The Rockefeller University, New York, NY, ⁴Simons Electron Microscopy Center, New York Structural Biology Center, New York, NY, ⁵Structural Bioinformatics Unit, Institut Pasteur, Paris, France, ⁶Département de Biochimie et Médecine Moléculaire, University of Montreal, Montreal, QC
- 5:35 pm M86 The molecular architecture of lamins in somatic cells. **Y. Turgay**¹, **M. Eibauer**¹, **A.E. Goldman**², **T. Shimi**², **M. Khayat**³, **K. Ben-Harush**⁴, **K. Saprà**¹, **R.D. Goldman**², **O. Medalia**^{1,3}; ¹Department of Biochemistry, University of Zurich, Zurich, Switzerland, ²Department of Cell Biology, Northwestern

University Feinberg School of Medicine, Chicago, IL, ³Department of Life Sciences and the National Institut for Biotechnology in the Negev, Ben Gurion University, Beer-Sheva, Israel, ⁴Department of Chemical Engineering, Shamoon College of Engineering, Ashdod, Israel

- 5:50 pm M87 Tracking multiple genomic elements using correlative CRISPR imaging and sequential DNA FISH. **J. Guan¹, H. Liu², X. Shi¹, B. Huang¹**; ¹Pharmaceutical Chemistry, University of California, San Francisco, San Francisco, CA, ²Bioengineering, University of California San Francisco, San Francisco, CA
- 6:05 pm M88 Phase separation drives heterochromatin domain formation. **A.R. Strom^{1,2}, A. Emelyanov³, D. Fyodorov³, G.H. Karpen^{1,2}**; ¹Biological Systems and Engineering, Lawrence Berkeley National Laboratory, Berkeley, CA, ²Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, ³Department of Cell Biology, Albert Einstein College of Medicine, Bronx, NY
- 6:20 pm M89 Resolving the molecular architecture of the NPC with 3D super-resolution fluorescence microscopy. **V. Jimenez-Sabinina¹, M. Bates², A.B. Szymborska³, B. Nijmeijer¹, S. Mosalaganti⁴, M. Beck⁴, S.W. Hell², J. Ellenberg¹**; ¹Cell Biology and Biophysics Unit, European Molecular Biology Laboratory, Heidelberg, Germany, ²NanoBiophotonics Department, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany, ³Max Delbrück Center for Molecular Medicine, Berlin, Germany, ⁴Structural and Computational Biology Unit, European Molecular Biology Laboratory, Heidelberg, Germany
- 6:35 pm M90 Live cell imaging reveals dynamic sister chromatid linkage at individual genomic loci. **R. Stanyte¹, J. Nuebler², R. Stocsits³, A. Schleiffer³, L. Mirny², J. Peters³, D.W. Gerlich¹**; ¹Institute of Molecular Biotechnology of the Austrian Academy of Sciences (IMBA), Vienna Biocenter (VBC), Vienna, Austria, ²Institute for Medical Engineering and Sciences, and Department of Physics, Massachusetts Institute of Technology (MIT), Cambridge, MA, ³Research Institute of Molecular Pathology (IMP), Vienna Biocenter (VBC), Vienna, Austria

● Minisymposium 9: Chromosome Segregation Mechanisms

4:15-6:50 pm

Room 103

Co-Chairs: **Sue Biggins**, Fred Hutchinson Cancer Research Center/HHMI; and **Scott Keeney**, Memorial Sloan Kettering Cancer Center/HHMI

- 4:15 pm Introduction
- *4:20 pm M91 Epigenetic specification of rapidly evolving centromeres. **L. Rosin¹, J. Palladino¹, A. Chavan¹, B. Mellone^{1,2}**; ¹Molecular and Cell Biology, University of Connecticut, Storrs, CT, ²Institute for Systems Genomics, University of Connecticut, Storrs, CT
- 4:35 pm M92 The CENP-A nucleosome bound by CENP-C and CENP-N is the fundamental unit for maintaining centromere identity. **L.Y. Guo¹, L. Zandarashvili¹, K.L. McKinley², N. Sekulic¹, D. Fachinetti³, D.W. Cleveland³, I.M. Cheeseman², B.E. Black¹**; ¹Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA, ²Whitehead Institute for Biomedical Research and Department of Biology, Massachusetts Institute of Technology, Cambridge, MA, ³Ludwig Institute for Cancer Research and Department of Cellular and Molecular Medicine, University of California, San Diego, La Jolla, CA
- 4:50 pm M93 Elucidating the regulation of kinetochore assembly using a de novo kinetochore assay. **J. Lang¹, A. Barber¹, S. Biggins¹**; ¹Division of Basic Sciences, Fred Hutchinson Cancer Research Center, Seattle, WA
- 5:05 pm M94 Sex-specific regulation of kinetochores distinguishes sperm meiotic chromosome segregation. **V. Cota¹, J. Wu², G. Fabig³, T. Cintra¹, L. Mateo¹, Q. Luis¹, M.A. Monroy¹, T. Müller-Reichert³, D.S. Chu¹**; ¹Biology, San Francisco State University, San Francisco, CA, ²Department of Clinical Laboratory Sciences and Medical Biotechnology, National Taiwan University, Taipei, Taiwan, ³Center for Regenerative Therapies, TU Dresden, Dresden, Germany
- 5:20 pm M95 Kif18A coordinates the alignment and attachment of chromosomes during cell division. **H. Kim¹, C. Fonseca¹, J.K. Stumpff¹**; ¹Molecular Physiology and Biophysics, University of Vermont, Burlington, VT
- 5:35 pm M96 The mammalian kinetochore independently regulates its passive and active interfaces with microtubules. **A.F. Long¹, D.B. Udy¹, S. Dumont^{1,2}**; ¹Cell and Tissue Biology, University of California, San Francisco, San Francisco, CA, ²Cell and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA
- 5:50 pm M97 Mechanism of Cdt1-mediated control of kinetochore microtubule attachment stabilization by the Ndc80 Complex. **S. Agarwal¹, S. Seshadrinathan¹, J.G. Cook², R.J. McKenney³, D. Varma¹**; ¹Cell and Molecular Biology, Feinberg School of Medicine, Northwestern University, Chicago, IL,

²Biochemistry and Biophysics, UNC Chapel Hill School of Medicine, Chapel Hill, IL, ³Molecular and Cellular Biology, University of California at Davis, Davis, CA

6:05 pm M98

The KMN Network has Essential Post-Mitotic Functions During Embryo Morphogenesis. **D.K. Cheerambathur¹, B. Prevo¹, S. Wang¹, R.A. Green¹, K. Oegema¹, A.B. Desai¹**; ¹Cellular and Molecular Medicine, Ludwig Institute for Cancer Research/UCSD, La Jolla, CA

6:20 pm M99

A SUMO-dependent protein network regulates meiotic chromosome congression in *C. elegans* oocytes. **F.G. Pelisch¹, T. Tammsalu¹, B. Wang¹, A. Gartner¹, R.T. Hay¹**; ¹Centre for Gene Regulation and Expression, University of Dundee, Dundee, United Kingdom

6:35 pm M100

An actin spindle protects mammalian oocytes against chromosome segregation errors. **B. Mogessie¹, M. Schuh¹**; ¹Meiosis, Max Planck Institute for Biophysical Chemistry, Göttingen, Germany

* Barbara Mellone won the 2016 WICB Junior Award for Excellence in Research

● Minisymposium 10: Connecting Cells to Tissues

4:15-6:50 pm

Room 104

Co-Chairs: **Xin Chen**, Johns Hopkins University; and **Zev Gartner**, University of California, San Francisco

4:15 pm

Introduction

4:20 pm M101

Increasing β -catenin/Wnt3A Activity Levels Drive Mechanical Strain-Induced Epithelial Cell Cycle Progression through Mitosis. **B.W. Benham-Pyle¹, J. Sim², K.C. Hart³, B.L. Pruitt², W.J. Nelson³**; ¹Cancer Biology, Stanford University, Stanford, CA, ²Mechanical Engineering, Stanford University, Stanford, CA, ³Biology, Stanford University, Stanford, CA

4:35 pm M102

Imaging How Cells Choose their Fate, Shape and Position in the Early Mouse Embryo. **N. Plachta¹**; ¹Institute of Molecular and cell Biology, A*STAR, Singapore, Singapore

4:50 pm M103

The spatiotemporal limits of developmental Erk signaling. **H.E. Johnson¹, Y. Goyal², N. Pannucci¹, G.M. Schupbach¹, S.Y. Shvartsman², J.E. Toettcher¹**; ¹Molecular Biology, Princeton University, Princeton, NJ, ²Chemical Engineering, Princeton University, Princeton, NJ

5:05 pm M104

Motile stem cells exhibit tissue-level spatial order during homeostasis but not growth of the adult *Drosophila* midgut. **X. Du¹, J. Martin¹, S. Balachandra¹, S. Ngo¹, I. Riedel-Kruse¹, L.E. O'Brien¹**; ¹Molecular and Cellular Physiology, Stanford University, Stanford, CA

5:20 pm M105

Asymmetric microtubule activity facilitates differential epigenetic inheritance in *Drosophila* male germline stem cell. **R. Ranjan¹, X. Chen¹**; ¹Department of Biology, Johns Hopkins University, Baltimore, MD

5:35 pm M106

Tissue-level forces regulate Wnt/ β -catenin-dependent mesoderm differentiation within self-organized regions of human embryonic stem cell colonies. **J.M. Muncie^{1,2}, L. Przybyla¹, J.N. Lakins¹, R. Sunyer³, X. Trepac³, V.M. Weaver^{1,4}**; ¹Center for Bioengineering and Tissue Regeneration, Department of Surgery, University of California San Francisco, San Francisco, CA, ²Joint Graduate Group in Bioengineering, University of California, San Francisco and University of California, Berkeley, San Francisco, CA, ³Institute for Bioengineering of Catalonia (IBEC), Barcelona, Spain, ⁴Department of Anatomy, Department of Bioengineering and Therapeutic Sciences, Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research, Helen Diller Family Comprehensive Cancer Center, University of California, San Francisco, San Francisco, CA

5:50 pm M107

Mouse intestinal crypt morphogenesis. **K. Sumigray¹, T.H. Lechler¹**; ¹Dermatology, Duke University, Durham, NC

6:05 pm M108

The balance between cells with distinct spindle dynamic behaviors is maintained by negative feedback during airway tube morphogenesis. **Z. Tang¹, Y. Hu², K. Jiang¹, C. Zhan¹, W.F. Marshall³, N. Tang¹**; ¹National Institute of Biological Sciences, Beijing, Beijing, China, ²Zhou Pei-yuan Center for Applied Mathematics, Tsinghua University, Beijing, Beijing, China, ³Department of Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

6:20 pm M109

Cells help each other remember the past through cell-cell communication and by collectively backing-up information. **D. Gomez-Alvarez¹, H. Youk¹**; ¹Department of Bionanoscience, Kavli Institute of Nanoscience, Delft University of Technology, Delft, Netherlands

6:35 pm M110

Tissue origami: Directed folding of tissues by programmed cell contractility networks. **A.J. Hughes¹, M.C. Coyle¹, J. Zhang¹, Z.J. Gartner¹**; ¹Pharmaceutical Chemistry, University of California, San Francisco, San Francisco, CA

MONDAY

● Minisymposium 11: Organelle Contact Sites and Biogenesis

4:15-6:50 pm

Room 302

Co-Chairs: **Laura Lackner**, Northwestern University ; and **Gia Voeltz**, University of Colorado, Boulder

- 4:15 pm Introduction
- 4:20 pm M111 GPS2 regulates the expression of nuclear-encoded mitochondrial genes through mitochondria retrograde signaling. **M.D. Cardamone¹, B. Tanasa², C.T. Cederquist¹, J. Huang¹, K. Mahdaviani^{3,4}, J. Orofino¹, C. Lentucci¹, M.G. Rosenfeld⁵, M. Liesa⁴, V. Perissi¹**; ¹Biochemistry, Boston University, Boston, MA, ²Pediatrics, Stanford University, Stanford, CA, ³Medicine, Boston University, Boston, MA, ⁴Medicine, UCLA, Los Angeles, CA, ⁵Medicine, UCSD, La Jolla, CA
- 4:35 pm M112 ER-mitochondria contacts couple mtDNA synthesis with mitochondrial division in human cells. **S.C. Lewis¹, L.F. Uchiyama¹, J. Nunnari¹**; ¹Molecular and Cellular Biology, University of California, Davis, Davis, CA
- 4:50 pm M113 Unraveling the mechanism of ER-associated organelle fission. **G. Voeltz¹, M. Phillips¹, P.J. Chitwood¹**; ¹MCD Biology, University of Colorado, Boulder, CO
- 5:05 pm M114 Endosome-ER contacts control actin nucleation and retromer function through VAP-dependent regulation of PI4P. **R. Dong^{1,2,3,4}, Y. Saheki^{1,2,3,4}, S. Swarup⁴, L. Lucast^{1,2,3,4}, J.W. Harper⁵, 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 Cell Biology, Harvard Medical School, Boston, MA, ⁶Kavli Institute for Neurosciences, Yale University School of Medicine, New Haven, CT
- 5:20 pm M115 RASSF4 regulates PIP2 and formation of ER-plasma membrane junctions. **Y. Chen¹, C. Chang¹, J. Liou¹**; ¹Physiology, UT Southwestern, Dallas, TX
- 5:35 pm M116 The biogenesis of a mitochondria-plasma membrane anchor. **L.M. Kraft¹, H.A. Ping¹, W. Chen¹, L.L. Lackner¹**; ¹Molecular Biosciences, Northwestern University, Evanston, IL
- 5:50 pm M117 Identifying and characterizing contact sites between organelles. **N. Shai¹, S.G. Chuartzman¹, L. Zada¹, E. Zalckvar¹, M. Schuldiner¹**; ¹Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel
- 6:05 pm M118 ACBD5 and VAPB mediate membrane associations between peroxisomes and the ER. **J.L. Costello¹, I.G. Castro¹, C. Hacker¹, T.A. Schrader¹, J. Metz¹, D. Zeuschner², A.S. Azadi¹, L.F. Godinho¹, V. Costina³, P. Findeisen³, A. Manner⁴, M. Islinger⁴, M. Schrader¹**; ¹Biosciences, University of Exeter, Exeter, United Kingdom, ²Max-Planck-Institute for Molecular Biomedicine, Munster, Germany, ³Institute for Clinical Chemistry, University of Heidelberg, Mannheim, Germany, ⁴Institute of Neuroanatomy, University of Heidelberg, Mannheim, Germany
- 6:20 pm M119 A family of membrane-shaping proteins generates ER subdomains that mediate pre-peroxisomal vesicle biogenesis. **A.S. Joshi¹, X. Huang², V. Choudhary¹, T. Levine³, J. Hu², W. Prinz¹**; ¹NIDDK, National Institutes of Health, Bethesda, MD, ²Department of Genetics and Cell Biology, Nankai University and Tianjin Key Laboratory of Protein Sciences, Tianjin, China, ³Institute of Ophthalmology, UCL, London, United Kingdom
- *6:35 pm M120 Systematic fluorescent protein tagging of endogenous genes in human cells. **D. Kamiyama¹, S. Sekine¹, M.D. Leonetti², S. Feng³, V. Pessino⁴, J.S. Weissman², B. Huang^{1,5}**; ¹Department of Pharmaceutical Chemistry, University of California, San Francisco, San Francisco, CA, ²Department of Molecular and Cellular Pharmacology, University of California, San Francisco, San Francisco, CA, ³Graduate Program of Bioengineering, University of California, San Francisco, San Francisco, CA, ⁴Graduate Program of Biophysics, University of California, San Francisco, San Francisco, CA, ⁵Department of Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA

* Bo Huang won a 2016 Early Career Award.

● **Minisymposium 12: Post-transcriptional Gene Regulation**

4:15-6:50 pm

Room 301

Co-Chairs: **Jeff Collier**, Case Western Reserve University; and **Mitch Guttman**, California Institute of Technology

- 4:15 pm Introduction
- 4:20 pm M121 Uncovering mechanisms of lncRNA function through comprehensive identification of direct lncRNA-interacting proteins. **C.A. McHugh¹**, **M. Guttman¹**; ¹Biology and Biological Engineering, California Institute of Technology, Pasadena, CA
- 4:35 pm M122 Regulation of m⁶A mRNA Modifications in Mouse Embryonic Stem Cells by Gsk-3. **K.J. Faulds¹**, **J. Egelston¹**, **L.J. Sedivy¹**, **C.J. Phiel¹**; ¹Integrative Biology, University of Colorado Denver, Denver, CO
- 4:50 pm M123 Alternative Polyadenylation of RECK Regulates Cell Migration and Invasion. **H. Lee¹**, **M. Mithun^{2,3}**, **D.C. Corney^{2,3,4}**, **E.L. Johnson⁴**, **O. Bosompra²**, **H.A. Collier^{1,2,3}**; ¹Molecular Biology Interdepartmental Doctoral Program, University of California, Los Angeles, Los Angeles, CA, ²Department of Molecular, Cell and Developmental Biology, University of California, Los Angeles, Los Angeles, CA, ³Department of Biological Chemistry, David Geffen School of Medicine, University of California, Los Angeles, Los Angeles, CA, ⁴Department of Molecular Biology, Princeton University, Princeton, NJ
- 5:05 pm M124 RanBP2, a giant nuclear pore protein, regulates the translation of diverse sets of mRNAs which encode secretory proteins. **A.F. Palazzo¹**, **M. Truong¹**, **K. Kulendra¹**, **H. Zhang¹**; ¹Biochemistry, University of Toronto, Toronto, ON
- 5:20 pm M125 Activation of the general translation initiation factor eIF2B antagonizes the integrated stress response and enhances cognition. **J.C. Tsai^{1,2}**, **C. Sidrauski^{1,2}**, **A. Anand^{1,2}**, **M. Kampmann^{2,3}**, **B.R. Hearn^{4,5}**, **P. Vedantham^{4,5}**, **P. Jaishankar^{4,5}**, **M. Sokabe⁶**, **A.S. Mendez^{1,2}**, **C.S. Fraser⁶**, **J.S. Weissman^{2,3}**, **A.R. Renslo^{4,5}**, **P. Walter^{1,2}**; ¹Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA, ²Howard Hughes Medical Institute, San Francisco, CA, ³Cellular and Molecular Pharmacology, University of California, San Francisco, San Francisco, CA, ⁴Pharmaceutical Chemistry, University of California, San Francisco, San Francisco, CA, ⁵Small Molecule Discovery Center, University of California, San Francisco, San Francisco, CA, ⁶Molecular and Cellular Biology, University of California Davis, Davis, CA
- 5:35 pm M126 The role of translation elongation in differential gene expression during stress. **B.M. Zid¹**, **A. Harvey¹**, **H. Yang¹**; ¹Chemistry and Biochemistry, University of California San Diego, La Jolla, CA
- 5:50 pm M127 The translational landscape during human neuronal differentiation at transcript isoform resolution. **S.N. Floor^{1,2}**, **J. Blair¹**, **H. Bateup¹**, **D. Hockemeyer¹**, **J.A. Doudna^{1,2}**; ¹Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, ²Howard Hughes Medical Institute, Berkeley, CA
- 6:05 pm M128 The DEAD-box helicase Dhh1p couples mRNA decay and translation by monitoring codon optimality. **A. Radhakrishnan¹**, **Y. Chen²**, **S. Martin²**, **N. Alhusaini²**, **R. Green¹**, **J. Collier²**; ¹Program in Molecular Biophysics, Johns Hopkins University, Baltimore, MD, ²Center for RNA Molecular Biology, Case Western Reserve University, Cleveland, OH
- 6:20 pm M130 Role of C-terminal Alanine and Threonine Extensions (CAT tails) in Nascent Polypeptide Degradation. **K. Kostova¹**, **J.S. Weissman¹**; ¹CMP, University of California, San Francisco, San Francisco, CA
- 6:35 pm M129 Dual interaction of Zuo1, an Hsp70 J-protein co-chaperone, with both 60S and 40S subunits of the ribosome, suggesting a role in coordinating protein folding and translation. **K. Lee¹**, **R. Sharma¹**, **O.K. Shrestha¹**, **C.A. Bingman¹**, **E.A. Craig¹**; ¹Biochemistry, University of Wisconsin-Madison, Madison, WI

MONDAY

● Kaluza Award Minisymposium

4:15-6:35 pm

Room 310

- 4:15 pm Introduction
- 4:20 pm A4 Phase Separation of Multivalent Adaptor Proteins. **S. Banjade**^{1,2}, **P. Li**¹, **H.C. Cheng**¹, **Q. Wu**¹, **B. Chen**¹, **R.V. Pappu**³, **M.K. Rosen**^{1,4}; ¹Department of Biophysics, UT Southwestern Medical Center, Dallas, TX, ²Current: Weill Institute for Cell and Molecular Biology, Cornell University, Ithaca, NY, ³Department of Biomedical Engineering, Washington University in St. Louis, St. Louis, MO, ⁴HHMI, UT Southwestern Medical Center, Dallas, TX
- 4:35 pm A5 Extracellular vesicles from *Trypanosoma brucei* mediate virulence factor transfer and cause host anemia. **A. Szempruch**¹, **S. Sykes**², **R. Kieft**², **L. Dennison**², **A. Becker**², **A. Gartrell**², **W. Martin**³, **E. Nakayasu**⁴, **I. Almeida**⁵, **J. Harrington**², **S. Hajduk**²; ¹Division of Biology and Biological Engineering, California Institute of Technology, Pasadena, CA, ²Biochemistry and Molecular Biology, University of Georgia, Athens, GA, ³Animal Health Research Center, University of Georgia, Athens, GA, ⁴Biological Sciences, Pacific Northwest National Laboratory, Richland, WA, ⁵Biological Sciences, University of Texas El Paso, El Paso, TX
- 4:50 pm A6 Angiopeliosis as an Alternative Mechanism of Cell Extravasation. **T. Allen**¹; ¹Molecular Biomedical Sciences, NC State University, Raleigh, NC
- 5:05 pm A7 The developmental polarity and morphogenesis of a single cell. **D. Bonazzi**¹, **A. Haupt**², **J. Julien**³, **H. Tanimoto**², **R. Seddiki**², **M. Romao**⁴, **D. Delacour**², **D. Salort**⁵, **M. Piel**⁴, **A. Boudaoud**⁶, **N. Minc**²; ¹Pathogenesis of Vascular Infections, Institut Pasteur, Paris, France, ²Institut Jacques Monod, Paris, France, ³Max Planck Institute for Dynamics and Self-Organization, Göttingen, Germany, ⁴Institut Curie, Paris, France, ⁵UMR 7238 CNRS, Université Pierre et Marie Curie, Paris, France, ⁶ENS CNRS, Laboratoire Joliot-Curie, Lyon, France
- 5:20 pm A8 Distinct Circuits for the Formation and Retrieval of an Imprinted Olfactory Memory. **X. Jin**^{1,2}, **N. Pokala**^{1,3}, **C.I. Bargmann**¹; ¹The Rockefeller University/HHMI, New York, NY, ²Society of Fellows, Harvard University, Cambridge, MA, ³New York Institute of Technology, New York, NY
- 5:35 pm A9 Adaptive evolution to the deletion of essential genes. **G. Liu**^{1,2}, **J. Yong**¹, **M. Yurieva**³, **S. Kandhadayar Gopalan**³, **L.Z. Jaron**¹, **J.S. Lim**¹, **M. Poidinger**³, **G.D. Wright**¹, **F. Zolezzi**³, **H. Choi**⁴, **N. Pavelka**³, **G.I. Rancati**¹; ¹Institute of medical biology, Agency for Science, Technology and Research, Singapore, Singapore, ²School of biological science, Nanyang Technological University, Singapore, Singapore, ³Singapore Immunology Network, Agency for Science, Technology and Research, Singapore, Singapore, ⁴Saw Swee Hock School of Public Health, National University of Singapore, Singapore, Singapore
- 5:50 pm A10 Single-chromosome aneuploidy commonly functions as a tumor suppressor. **J. Sheltzer**¹; ¹Cancer Center, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY
- 6:05 pm A11 TRPA1 channels regulate cochlear amplification through active shape changes of supporting cells in the inner ear. **A.C. Velez-Ortega**¹, **R. Stepanyan**¹, **S.E. Edelmann**¹, **C. Park**², **K.Y. Kwan**³, **G.P. Sinha**¹, **D.P. Corey**³, **G.I. Frolenkov**¹; ¹Dept. of Physiology, University of Kentucky, Lexington, KY, ²Dept. of Head Neck Surgery, University of California, Los Angeles, Los Angeles, CA, ³Dept. of Neurobiology, Harvard Medical School, Boston, MA
- 6:20 pm A12 Toward quantitative understanding of kinetochore-microtubule interactions based on the molecular properties of individual components. **A.V. Zaytsev**¹; ¹Department of Physiology, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

● Monday Workshop: Cryo-EM

4:15-6:50 pm

Room 309

Cryo-EM: What It Can Do Now and How You Could Get Started

Organizer and Speakers:

Grant Jensen, Organizer, California Institute of Technology/HHMI
James Deatherage, National Institute of General Medical Sciences, NIH
Francis Reyes, Janelia Research Campus/HHMI (Tamir Gonen Lab)
Sriram Subramaniam, National Cancer Institute, NIH

This workshop will begin with explanations of the fundamental challenges in biological EM; the key principles of cryo-preservation, electron imaging, and detector technologies; and the three basic modalities of cryo-EM (electron crystallography, single particle reconstruction, and tomography). It will then provide updates on what each modality can do now, who should be thinking about trying cryo-EM, and NIH plans to expand access to instrumentation throughout the nation. Finally, three different example levels of investments

institutions could choose to get started and the kinds of financial support models that have worked in the past will be presented for discussion. Experts in each area will present the explanations and updates, followed by extended periods for questions and discussion. No previous background is required. Each presentation below includes discussion time.

Presentations

4:15-4:40 pm

Grant Jensen:

- Introduction to workshop
- Introduction to fundamental challenges in biological EM (preserving the sample in a native state in the ultra-high vacuum of EM, obtaining 3D reconstructions from projections, and radiation damage)
- Recent technical advances
- Introduction to electron crystallography, single particle reconstruction, and tomography

4:40-5:00 pm

Francis Reyes (Tamir Gonen Lab):

- Update on 2D and 3D electron crystallography/ microED technology—what can it do now?

5:00-5:30 pm

Sriram Subramaniam:

- Update on single particle reconstruction technology—what can it do now?

5:30-5:45 pm

Break

5:45-6:15 pm

Grant Jensen:

- Update on electron tomography technology—what can it do now?

6:15-6:25 pm

James Deatherage:

- Updates on NIH plans to increase access to cryo-EM

6:25-6:45 pm

Grant Jensen:

- Options for a new institution that wants to get involved—three different example levels of investment, equipment needed, costs to set up, annual costs, successful business plans
- Final questions

● Exhibitor Tech Talk

5:30-6:30 pm

Theater 2, Learning Center

MilliporeSigma (formerly EMD Millipore and Sigma-Aldrich)
Advances in Microfluidic Control of Cellular Microenvironment with Uninterrupted Imaging Allows for Highly Controllable, Long-Term, More in vivo-like Cell Culture Studies

Presenter: Victor Yeh

Level: Advanced

The ability to perform live-cell experiments within microfluidic chambers greatly extends the precision and biological relevance of in vitro cell culture studies. One major challenge for long-term in vitro culture is controlling and manipulating microenvironment parameters such as temperature and gas composition without moving the culture or impeding optical access to the cells. R&D engineer Victor Yeh, MilliporeSigma, presents the latest advances in microfluidic cell culture and live cell microscopy, highlighting cell culture considerations, microfluidic design and fabrication requirements, and efforts to better integrate microfluidic systems with microscopy. Microfluidics applications in fields ranging from bacterial biofilm dynamics to tumor metastasis using the CellASIC® ONIX Microfluidic System will be reviewed. The workshop will finish with open discussion of applications and future directions of the technology.

● Experiments in Science Storytelling: A Special Film Premiere

7:00-8:30 pm

Room 104

Supported by Simons Foundation

Welcome: **Simon Atkinson**, Indiana University-Purdue University Indianapolis

Introduction: **Boyana Konforti**, Simons Foundation

PANEL (after screening)

Jagesh Shah, Harvard Medical School

Janet Iwasa, University of Utah

Elliot Kirschner, News and Guts Media

Adam Bolt, Two Turtle Productions

Moderator: **Greg Boustead**, Simons Foundation

The Simons Foundation and ASCB are pleased to announce a special film premiere of "A Brief History of Fat." This free event for ASCB meeting attendees will include a 20-minute screening of the film, followed by a short panel and Q&A with the filmmakers and scientists. Enjoy a round of popcorn and drinks on us!

There is perhaps no part of the human body more maligned than fat. "A Brief History of Fat" challenges us to rethink fat by delving into the surprisingly fascinating biology of why we have it, how it works, and how it may make us sick. It also offers a fresh take on science programming for the public, by experimenting with innovative narrative techniques and high-art production, while still digging deep into the cell biology that makes the story so compelling to begin with. We welcome ASCB attendees to enjoy a first-look at this film project as a springboard for a larger conversation about how best to effectively communicate esoteric research to the broader public.

● Emerging Topic Symposium

7:15-8:30 pm

Room 302

Mitochondria and Cancer Cell Biology

Jointly supported by the National Cancer Institute/NIH and the ASCB

Organizers:

Michael Graham Espey, National Cancer Institute/NIH

Jodi Nunnari, University of California, Davis

Speakers:

Role of mitochondria in cancer cell adaptive responses and metastasis. **Dario C. Altieri**, The Wistar Institute Cancer Center, Philadelphia

Metabolic consequences of Ras-induced mitochondrial fission in pancreatic cancer. **David Kashatus**, University of Virginia, Charlottesville

New frontiers in ER-mitochondrial dynamics. **Jodi Nunnari**, University of California, Davis

Role of SOD1 and the inter-membrane space in the mitochondrial UPR. **Doris Germain**, Mount Sinai Hospital, Icahn Medical Institute, NY

Mitochondria as signaling organelles can define cellular morphology and functional states. Cellular processes that rely on mitochondrial communication networks are altered or destabilized by stresses commonly experienced by cancer cells (e.g., mutation, hypoxia, therapeutics). This Symposium will highlight the latest findings at the intersection of mitochondrial and cancer cell biology. Recognition of mitochondrial communication patterns and how they are exploited and selected upon for cancer cell survival and resistance reveals new insights into mechanistic cell biology.