<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:30 am-6:00 pm</td>
<td>Registration Open</td>
<td>Registration Area</td>
</tr>
<tr>
<td>8:00-9:30 am</td>
<td>Symposium 7: Organelle Communication</td>
<td>Ballroom 20BC</td>
</tr>
<tr>
<td>8:15-9:15 am</td>
<td>Exhibitor Tech Talk</td>
<td>Theater 2, Learning Center</td>
</tr>
<tr>
<td></td>
<td>Leica Microsystems Inc.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NEW Leica THUNDER Imagers – Decode 3D biology in real time</td>
<td></td>
</tr>
<tr>
<td>8:30-9:30 am</td>
<td>ASCB MAC Linkage Fellows Program (by invitation only)</td>
<td>Room 24C</td>
</tr>
<tr>
<td>8:30-8:45 am</td>
<td>Exhibitor Tech Talk</td>
<td>Theater 1, Learning Center</td>
</tr>
<tr>
<td></td>
<td>GATTAquant GmbH (Start-up Company)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>The next generation of imaging standards for fluorescence microscopy</td>
<td></td>
</tr>
<tr>
<td>9:00-9:50 am</td>
<td>How to Deliver an Effective Chalk Talk</td>
<td>Theater 4, Learning Center</td>
</tr>
<tr>
<td>9:00-9:50 am</td>
<td>How to Thrive as a New Faculty Member: Strategies for Research</td>
<td>Theater 3, Learning Center</td>
</tr>
<tr>
<td></td>
<td>and Mentoring Success</td>
<td></td>
</tr>
<tr>
<td>9:30-10:30 am</td>
<td>Exhibitor Tech Talk</td>
<td>Theater 1, Learning Center</td>
</tr>
<tr>
<td></td>
<td>Sapphire North America</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ReZolve Scientific Photostable Fluorophores for live cell imaging by</td>
<td></td>
</tr>
<tr>
<td></td>
<td>fluorescence microscopy and more</td>
<td></td>
</tr>
<tr>
<td>9:30-11:00 am</td>
<td>Morning Refreshment Break</td>
<td>Learning Center</td>
</tr>
<tr>
<td>9:45-10:45 am</td>
<td>Louis-Jeantet Prize Lectures: Christer Betsholtz and Antonio Lanzavecchia</td>
<td>Ballroom 20BC</td>
</tr>
<tr>
<td>10:00-11:00 am</td>
<td>ASCB MAC Visiting Professors Program (by invitation only)</td>
<td>Room 24C</td>
</tr>
<tr>
<td>10:00 am-12:00 pm</td>
<td>EMBO Lab Leadership: Teamwork and Conflict in the Lab</td>
<td>Room 25C</td>
</tr>
<tr>
<td>10:00-10:50 am</td>
<td>Faculty Search and Starting a Lab at a Primarily Undergraduate Institution</td>
<td>Theater 3, Learning Center</td>
</tr>
<tr>
<td>10:00-10:50 am</td>
<td>How to Boost Your Research Project with Support of International Research Infrastructures</td>
<td>Theater 4, Learning Center</td>
</tr>
<tr>
<td>10:45-11:45 am</td>
<td>Exhibitor Tech Talk</td>
<td>Theater 1, Learning Center</td>
</tr>
<tr>
<td></td>
<td>Bruker Corporation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advances in dye development and microscopy for live cell super resolution microscopy with the Vutara 352</td>
<td></td>
</tr>
<tr>
<td>10:45-11:45 am</td>
<td>Exhibitor Tech Talk</td>
<td>Theater 2, Learning Center</td>
</tr>
<tr>
<td></td>
<td>ChromoTek GmbH</td>
<td></td>
</tr>
<tr>
<td></td>
<td>One for All: Small Affinity-Tag &amp; Nanobody for Multiple Capture &amp; Detection Applications</td>
<td></td>
</tr>
<tr>
<td>10:45 am-12:00 pm</td>
<td>WICB Awards and Mentoring Theater: Let’s Make a Deal: The Art of Negotiating for Success</td>
<td>Room 26B</td>
</tr>
<tr>
<td>11:00 am-12:00 pm</td>
<td>Microsymposia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13 Molecular Mechanisms of Metabolic Reprogramming</td>
<td>Room 29C</td>
</tr>
<tr>
<td></td>
<td>14 Motility</td>
<td>Room 30C</td>
</tr>
<tr>
<td></td>
<td>15 Neuronal Cell Biology</td>
<td>Room 29B</td>
</tr>
<tr>
<td></td>
<td>16 Regulation of the Cytoskeleton 2</td>
<td>Room 28B</td>
</tr>
<tr>
<td></td>
<td>17 The Story of Life: Survival and Death</td>
<td>Room 30B</td>
</tr>
<tr>
<td></td>
<td>18 Tissue Architecture and Mechanics</td>
<td>Room 28D</td>
</tr>
<tr>
<td>11:00 am-12:00 pm</td>
<td>Creating Inclusive Biology Education Environments</td>
<td>Room 25B</td>
</tr>
<tr>
<td>11:00 am-12:00 pm</td>
<td>How to Improve Research Assessment for Hiring and Funding Decisions</td>
<td>Room 32B</td>
</tr>
<tr>
<td>11:00 am-12:00 pm</td>
<td>Moving (Rapidly) toward Open Data for All and by All</td>
<td>Room 31B</td>
</tr>
<tr>
<td>12:00-1:30 pm</td>
<td>Odd-Numbered Poster Presentations</td>
<td>Learning Center</td>
</tr>
<tr>
<td>12:00-1:00 pm</td>
<td>Barriers Removed: Manuscript Transfer Reception</td>
<td>ASCB Booth 623, Learning Center</td>
</tr>
<tr>
<td>12:00-12:50 pm</td>
<td>Dissecting Job Ads and Tailoring Your Résumé</td>
<td>Theater 3, Learning Center</td>
</tr>
<tr>
<td>12:00-12:45 pm</td>
<td>Exhibitor Tech Talk</td>
<td>Theater 1, Learning Center</td>
</tr>
<tr>
<td></td>
<td>MilliporeSigma</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Dynamic Live Cell Imaging of Mammalian Cells Using CellASIC® ONIX2 Microfluidic Platform</td>
<td></td>
</tr>
<tr>
<td>12:00-12:50 pm</td>
<td>Social Media for Science Communication</td>
<td>Theater 4, Learning Center</td>
</tr>
<tr>
<td>Time</td>
<td>Event</td>
<td>Location</td>
</tr>
<tr>
<td>--------------</td>
<td>------------------------------------------------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>1:00-2:00 pm</td>
<td>Science Discussion Tables</td>
<td>Roundtable Central Section 3, Learning Center</td>
</tr>
<tr>
<td>1:00-1:50 pm</td>
<td>Careers in Biotech Beyond the Bench</td>
<td>Theater 4, Learning Center</td>
</tr>
<tr>
<td>1:00-1:50 pm</td>
<td>Celldance Video Premiere and Elevator Speech Awards</td>
<td>Theater 3, Learning Center</td>
</tr>
<tr>
<td>1:00-1:45 pm</td>
<td>Exhibitor Tech Talk</td>
<td>Theater 1, Learning Center</td>
</tr>
<tr>
<td>1:15-1:45 pm</td>
<td>Meet the Committees</td>
<td>ASCB Booth 623, Learning Center</td>
</tr>
<tr>
<td>1:30-3:00 pm</td>
<td>Even-Numbered Poster Presentations</td>
<td>Learning Center</td>
</tr>
<tr>
<td>1:30-3:30 pm</td>
<td>Afternoon Refreshment Break</td>
<td>Learning Center</td>
</tr>
<tr>
<td>2:00-2:50 pm</td>
<td>Careers in Science Policy</td>
<td>Theater 3, Learning Center</td>
</tr>
<tr>
<td>2:00-2:45 pm</td>
<td>Exhibitor Tech Talk</td>
<td>Theater 1, Learning Center</td>
</tr>
<tr>
<td>2:00-2:45 pm</td>
<td>GenScript USA Inc.</td>
<td>Theater 2, Learning Center</td>
</tr>
<tr>
<td>2:00-2:50 pm</td>
<td>Helping the Next Generation of Researchers: Navigating the Challenges and Answering the Call for Change</td>
<td>Theater 4, Learning Center</td>
</tr>
<tr>
<td>2:00-2:30 pm</td>
<td>In-Booth Presentation</td>
<td>Booth 1019</td>
</tr>
<tr>
<td>3:00-4:00 pm</td>
<td>Exhibitor Tech Talk</td>
<td>Theater 1, Learning Center</td>
</tr>
<tr>
<td>3:15-4:00 pm</td>
<td>E.B. Wilson Medal Presentation and Address: Barbara J. Meyer</td>
<td>Ballroom 20BC</td>
</tr>
<tr>
<td>4:15-6:50 pm</td>
<td>Workshop: Electron Cryo-Tomography and Correlated Light and Electron Microscopy (CLEM)</td>
<td>Room 33B</td>
</tr>
<tr>
<td>4:15-6:50 pm</td>
<td>Subgroup X: New Tools and Resources for Studies of Stem Cell Biology</td>
<td>Room: 20D</td>
</tr>
<tr>
<td>4:30-7:05 pm</td>
<td>Minisymposia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 Biomechanics</td>
<td>Room 29C</td>
</tr>
<tr>
<td></td>
<td>13 Cell Biology of the Neuron</td>
<td>Room 28C</td>
</tr>
<tr>
<td></td>
<td>14 Cell Size, Cell Division, and Contractility</td>
<td>Ballroom 20A</td>
</tr>
<tr>
<td></td>
<td>15 Cytoskeleton, Motility, and Cell Mechanics: Tracks</td>
<td>Ballroom 20BC</td>
</tr>
<tr>
<td></td>
<td>16 Organelle Homeostasis</td>
<td>Room 30C</td>
</tr>
<tr>
<td></td>
<td>17 Regulation of Autophagy</td>
<td>Room 31B</td>
</tr>
<tr>
<td>7:00-8:30 pm</td>
<td>Reception: Enabling Persistence in Science: Creating Inclusive Environments through Microaffirmations</td>
<td>Room 32B</td>
</tr>
</tbody>
</table>
Tuesday, December 11

- **Symposium 7: Organelle Communication**

  **Chair:** Thomas Langer, Max Planck Institute for Biology of Ageing, Cologne

  **Ballroom 20BC**

  **8:00-9:30 am**

  8:00 am  **S15**

  The role of ER membrane contact sites in lipid metabolism and organelle biogenesis. W. Prinz; 1National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health, Bethesda, MD

  8:30 am  **S16**

  mTOR and Lysosomes in Growth Control. D.M. Sabatini; 1Whitehead Institute for Biomedical Research, Cambridge, MA, 2Biology, Massachusetts Institute of Technology, Cambridge, MA, 3Howard Hughes Medical Institute, Chevy Chase, MA

  9:00 am  **S17**

  New insights into mitochondrial vesicle transport. H.M. McBride; 1Neurology and Neurosurgery, McGill University, Montreal, QC

- **Exhibitor Tech Talk**

  **Theater 2, Learning Center**

  **8:15-9:15 am**

  Leica Microsystems Inc.

  NEW Leica THUNDER Imagers – Decode 3D biology in real time

  **Presenter:** Oliver Schlicker, Product Application Manager Advanced Widefield Microscopy, Leica Microsystems

  **Level:** Intermediate

  Working in 3D biology with thick specimens such as organoids, spheroids, small animals, 3D cell cultures and tissue sections on a typical widefield microscope often leads to a loss of details caused by hazy images. In contrast widefield imaging is the perfect solution for combining highest speed with highest sensitivity in combination with lowest phototoxicity for physiological imaging. Leica Microsystems is proud to introduce its new THUNDER Imager—a family of widefield imaging solutions designed to deliver benchmark application performance in core life science applications. Leica Microsystems’ new THUNDER Imagers enable users to see through the haze using the latest opto-digital techniques using computational clearing to remove the typical haze inherent to all widefield images. THUNDER-powered solutions use minimally invasive widefield illumination without any additional mechanical complexities. Learn how these new imagers simplify your workflow, while allowing you to produce computationally cleared images at unprecedented speeds and quality.

- **ASCB MAC Linkage Fellows Program (by invitation only)**

  **Room 24C**

  **8:30-9:30 am**

  ASCB MAC Linkage Fellows serve as a link between other faculty members and students at their home institution and nearby institutions and the ASCB MAC and the Society as a whole. The Fellows engage students at under-resourced universities and colleges in cell biology-related programming year-round. This session provides an opportunity for Linkage Fellows alumni to interact with each other and with the ASCB MAC IPERT Program leadership (PI, co-PIs, Scientific Manager and Evaluator) as we discuss their projects/activities, the outcomes, next career steps and future plans.

  **Outcomes:**

  1. Through this discussion, LF alumni will be able to gain new insight into developing outreach programs in cell biology.

  2. To allow LF to share and disseminate their assessment plans and outcomes data, and provide input to program leadership on developing and improving new outreach programs in cell biology.

  **Target audience:** Linkage Fellows program participants from prior cohorts
GAATAquant GmbH (Start-up Company)  
The next generation of imaging standards for fluorescence microscopy  
**Presenter:** Dr. Jürgen Schmied  
**Level:** Intermediate

Fluorescence microscopy is one of the key technologies in life sciences and biological research and the development of novel super-resolution techniques pushed the imaging even beyond the physical diffraction limit of light, resolving structural details which have never be seen before. Nevertheless researchers entered a level of imaging where reliable test and calibration standards were missing. Based on the groundbreaking technique of DNA nanotechnology, GAATAquant GmbH has the ability to build precise nanostructures, which allow researchers to test, to optimize and to monitor the resolution and performance of these high-end microscopes. The so-called nanorulers and nanobeads enable an easy and precise evaluation of the resolution and sensitivity of the optical system and therefore support researchers as well as developers in their daily routines.

**How to Deliver an Effective Chalk Talk**

**Erik Snapp**, Director of Graduate and Postdoctoral Programs, Janelia, and Adjunct Professor, Johns Hopkins University

Are you interested in a career in academia but unfamiliar with the standards of chalk talks often given during interviews? While trainees have plenty of opportunities to practice and present their data, tips and strategies on delivering a chalk talk are often sparse. This session will provide trainees with fundamental strategies and tips for delivering an effective chalk talk.

**Outcomes:**
1. Learn the appropriate decorum for giving a chalk talk.
2. Learn how to convey you are an independent thinker.
3. Learn how to be an effective communicator.
4. Learn what qualities interviewers are looking for and how to portray that during a chalk talk.

**Target audience:** graduate students and postdocs
How to Thrive as a New Faculty Member: Strategies for Research and Mentoring Success

9:00-9:50 am

Theater 3, Learning Center

Jonathan A. Kebler, Associate Professor, California State University Northridge
Michael Boyce, Assistant Professor, Duke University
Erin Cram, Associate Professor, Northeastern University
Crystal Rogers, Assistant Professor, California State University, Northridge
Ricardo M. Zayas, Associate Professor, San Diego State University

This session is intended for senior postdoctoral fellows and new faculty within three years of their first academic appointment. Attendees will improve the knowledge and skills needed to establish and maintain a productive research program and successful academic track record. Guided discussion topics by co-chairs and panelists will include balancing publishing and grant-writing, trainee recruiting/expectations, laboratory and collaboration management, tenure preparation, identifying influential mentors, and work-life balance. The Q&A session will be open to other topics including, but not limited to, conference attendance, navigating professional relationships within and outside of academia, networking, etc. Panelists include faculty who have successfully navigated the transition from postdoctoral trainee to establishing an externally funded research program at a range of academic institutions (e.g., R1 versus non-R1, public versus private, large versus small, different geographic locations, etc.).

Outcomes:

1. Discuss skills/strategies for advancing from postdoctoral training to an independent, tenure-track faculty position with external funding.
2. Receive tips and advice on topics such as publishing, grant-writing, laboratory management, tenure, identifying mentors, and work-life balance.
3. Learn strategies to build scientific professional skills and confidence.

Engage in an interactive Q&A session driven by attendee interests.

Target audience: senior postdocs and new faculty within three years of their first academic appointment

Exhibitor Tech Talk

9:30-10:30 am

Theater 1, Learning Center

Sapphire North America

ReZolve Scientific Photostable Fluorophores for live cell imaging by fluorescence microscopy and more

Presenter: Christie Bader, PhD
Level: Introductory

ReZolve Scientific’s range of fluorophores provide targeted insights on cell biology. The range of products are suited to confocal microscopy and include fluorescent probes that localize with polar lipids, mitochondria, and the endoplasmic reticulum. The probes use a unique metal core making them highly resistant to photobleaching, allowing for longer imaging with less signal loss. Applications include: • Cancer biology – ability to label polar lipids and lipid rich compartments that allows for easy comparisons and tracking of metabolic changes, which is important in cancer progression. • Neuroscience – detect lipid accumulation common to many neurological pathologies • Metabolic diseases – monitor mitochondria and changes in lipid content related to metabolic disease. Key advantages include: • Fast uptake of the dyes • Compatibility with other fluorophores, including GFP, allowing imaging of multiple attributes of the cell simultaneously • Use on live and fixed cells and tissue • Compatible with a range of fluorescent platforms and more. Unique properties: • Ability to label polar lipids • ER dye can wash-in wash-out for long term assays • Ability to detect mitochondria in fixed and frozen samples.

Morning Refreshment Break

9:30-11:00 am

Learning Center

Join us for complimentary coffee and tea while visiting exhibitors and viewing posters.
Louis-Jeantet Prize Lectures: Christer Betsholtz and Antonio Lanzavecchia

9:45-10:45 am

Chair: Hans Clevers, Hubrecht Institute

Ballroom 20BC

Christer Betsholtz, Director, Integrated Cardio Metabolic Centre, Karolinska Institute, and Professor, Uppsala University, Sweden

Antonio Lanzavecchia, Director, Institute for Research in Biomedicine, and Professor, Università della Svizzera italiana, Switzerland

9:55 am A7 Cellular interactions and heterogeneity in the blood microvasculature. C. Betsholtz; 1Department of Immunology, Genetics and Pathology, Uppsala University, Uppsala, Sweden

10:20 am A8 Lessons from the analysis of the immune response to P. falciparum. A. Lanzavecchia1,2; 1Institute for Research in Biomedicine, Bellinzona, Switzerland, 2Università della Svizzera italiana, Lugano, Switzerland

ASCB MAC Visiting Professors Program (by invitation only)

10:00-11:00 am Room 24C

The ASCB MAC Visiting Professors Program targets junior or mid-career faculty members who are seeking to begin and/or sustain collaborative professional development experiences with a more established and accomplished senior cell biologist who is also an ASCB member. This session provides an opportunity for Visiting Professors Program alumni to interact with each other and with the ASCB MAC IPERT Program leadership to discuss their projects/activities, outcomes, career development and future plans.

Outcomes:

1. Through this discussion, Visiting Professors will be able to refine their upcoming professional development activities and promote their future career development.

2. Visiting Professors will share and disseminate their proposed assessment plans and outcomes data, and together with IPERT program leadership discuss future career development programs and new approaches to development of research programs by junior faculty.

3. Share insights into how to involve undergraduates in faculty research programs to promote their interest in careers in cell biology.

Target audience: junior and mid-career faculty Visiting Professor Program alumni
EMBO Lab Leadership: Teamwork and Conflict in the Lab

10:00 am-12:00 pm
Room 25C

Samuel Krahl, Project Coordinator for EMBO Lab Management, Gesellschaft zur Förderung der Lebenswissenschaften Heidelberg GmbH

How much time does your team spend on research and how much time do the members spend on disagreements, discussions about who does or owns what, and even in conflict? We explore the different aspects of how teams work well together and what you as the leader can do to help your team achieve high levels of performance. Conflicts arise even in high performance teams, so we look at how you can identify conflict, what you can do to resolve it, and how you can redirect the energy it generates to drive your research forward.

We encourage participants to attend all three sessions in this series (the other two are Sunday and Monday) because they are interrelated and build on each other.

Outcomes:
1. Learn about the Team Clock and its application to team development and performance.
2. Learn about conflict and conflict management.

Target audience: group leaders (PIs), senior postdocs with responsibility for lab supervision or who are about to set up their own lab

Faculty Search and Starting a Lab at a Primarily Undergraduate Institution

10:00-10:50 am
Theater 3, Learning Center

Lance Barton, Professor, Austin College
Derek Applewhite, Assistant Professor, Reed College
Sara Olson, Assistant Professor, Pomona College

Many trainees opt to teach and start their labs at a primarily undergraduate institution (PUI). Trainees obtain their graduate degrees and postdoctoral experience at R1 institutions, so they often do not know the ins and outs of starting a lab at a PUI or how to navigate the faculty job search at this type of institution. What should applicants expect in the interview process and what sort of strategies should they employ to be successful? Also, how does this very particular lab setting differ from labs at R1 institutions? What are the strategies of building a successful research program with a lab fully composed of undergraduates? The panelists will discuss the effective strategies for navigating the job search and establishing a research lab at a PUI.

Outcomes:
1. Learn about the application components and the strategies of successful candidates who apply for positions at a PUI.
2. Learn about the interview process at a PUI.
3. Learn strategies for engaging undergraduates in academic research.
4. Gain insight into how to cultivate a successful research program at a PUI.

Target audience: graduate students and postdocs
How to Boost Your Research Project with Support of International Research Infrastructures

10:00-10:50 am  Theater 4, Learning Center

Scott E. Fraser, University of Southern California
Bahne Stechmann, FMP Leibniz Institute of Molecular Pharmacology
Radislav Sedláček, Institute of Molecular Genetics of the ASCR, v.v.i.
Frauke Leitner, European Molecular Biology Laboratory

Modern life science research often sees a dissociation between the researcher, who leads a scientific project, and the technology expert, who has the expertise to perform the required experiments. Often, an interdisciplinary approach as well as access to innovative technologies and services is needed. Our pan-European research infrastructures, Euro-BioImaging (www.eurobioimaging.eu), EU-OPENSCREEN (www.eu-openscreen.eu), and INFRAFRONTIER (www.infrafrontier.eu), aim to fill this gap and provide a solution to allow all scientists open access to the desired technologies and services, such as imaging, compound screening, or mouse disease models.

To demonstrate how access to cutting-edge technologies can enable excellent research, Scott Fraser, one of the key figures in microscopy technology development and Director of Science Initiatives at USC, will give a presentation on “Multi-Dimensional Imaging of Cells in Their Native Habitat.”

Outcomes:
1. Learn about the research opportunities provided by the three international research infrastructures: Euro-BioImaging, EU-OPENSCREEN and INFRAFRONTIER.
2. Discover the technologies, resources, and expertise offered in biological and medical imaging, compound screening, and mouse disease model phenotyping.
3. Understand how researchers have successfully integrated these technologies and expertise in their research projects.
4. Understand application procedures and discuss your project with research infrastructure experts onsite.

Target audience: all attendees

Exhibitor Tech Talk

10:45-11:45 am  Theater 1, Learning Center

Bruker Corporation

Advances in dye development and microscopy for live cell super resolution microscopy with the Vutara 352

Presenter: Robert Hobson, PhD – Applications Scientist

Level: Intermediate

Expanding the frontier of super-resolution imaging requires advances in both microscopy hardware and fluorescent labels. Here we describe a cooperative effort to improve both technological fronts with the ultimate goal of live-cell super-resolution microscopy. Bruker’s Vutara 352 super-resolution microscope has been designed for live-cell super-resolution microscopy with both high spatial and temporal resolution capabilities. The patented biplane module allows simultaneous two-color imaging in 3D while the sCMOS detector enables fast imaging of biological phenomena. Although this microscope system is capable of live-cell super-resolution imaging, it has been stymied by limitations in the current generation of live-cell-compatible fluorophores. Extant live-cell probes are either fluorescent proteins with low photon counts—and therefore low localization precision—or organic dyes, which require high laser power resulting in phototoxicity in living samples. To remedy this problem, we developed spontaneously blinking (SB) versions of the Janelia Fluor and Alexa Fluor dyes, which blink under physiological conditions at low laser power while still providing high photon counts. In particular, the spontaneously blinking Janelia Fluor 549 (SB-JF549) and red-shifted SB-JF646 are cell-permeable and are easily conjugated to HaloTag or SNAP-tag ligands, making them ready to use in live cell multi-color super-resolution experiments. The SB dyes, in combination with the Vutara 352, provide a powerful methodology for simultaneous imaging, localization and visualization of live-cell single-molecule localization data, while offering numerous statistical tools to quantify the data into publishable results.
Exhibitor Tech Talk

10:45-11:45 am  
ChromoTek GmbH
One for All: Small Affinity-Tag & Nanobody for Multiple Capture & Detection Applications
Presenter: Dr. Klaus Herick
Level: Intermediate

We have developed a new epitope tag system based on a VHH, Nanobody®, or alpaca single-domain antibody. This VHH binds with high affinity to the Spot-Tag®, an engineered 12-aa sequence PDRVRAVSHWSS. Owing to the unique properties of the anti-Spot-VHH, the Spot-Tag capture and detection system is universally applicable. When covalently coupled to beads the anti-Spot Nanobody enables the immunoprecipitation and purification of Spot-Tag fusion proteins: • High affinity allows the purification of low-abundance proteins • Native elution possible with free Spot peptide • High chemical stability allows for extraordinary harsh buffer compositions and repeated use for purification Anti-Spot Nanobody conjugated to fluorophores allows the imaging of cellular proteins and structures using fluorescence microscopy: • Small size of Spot-Label leads to better tissue penetration • Spot-Label is the first detection tool directed against a small peptide tag that is ideal for super resolution microscopy owing to minimal label displacement. Examples for immunoprecipitation, Co-IP for MS analysis, affinity purification, immunofluorescence including super resolution microscopy, Western blot, ELISA, and CRISPR/Cas are given. The Spot-Tag system combines the high affinity and specificity of an antibody-epitope tag system with the stability and small size of an alpaca nanobody. This results in a universal tag-system that simplifies the purification and concurrent analysis of target proteins.

WICB Awards and Mentoring Theater: Let’s Make a Deal: The Art of Negotiating for Success

10:45 am-12:00 pm  
Supported by Burroughs Wellcome Fund

WICB Junior for Excellence in Research Awardee: 
Sophie Dumont, University of California, San Francisco

WICB Mid-Career Awardee for Excellence in Research Awardee: 
Elizabeth Chen, UT Southwestern Medical Center, Dallas

WICB Sandra K. Masur Senior Leadership Awardee: 
Eva Nogales, University of California, Berkeley, and Lawrence Berkeley National Laboratory/HHMI

Presentation of the annual Women in Cell Biology (WICB) Awards For Excellence In Research honoring women for their exceptional contributions to cell biology and high levels of scientific endeavor and leadership during their early and mid-careers. The Sandra K. Masur Senior Leadership award will also be presented honoring a cell biologist at a later career stage whose outstanding achievements are coupled with a record of excellence and leadership in mentoring young scientists. “Let’s Make a Deal!” the WICB Mentoring Theater, will illustrate negotiation skills and approaches, effective communication and assertiveness, and the different perceptions and unrecognized biases we bring to these conversations. Following each skit, the actors will facilitate an open discussion with the audience on topics that challenge the advancement of women and underrepresented groups in science.

Outcomes:
1. Honoring and heightening awareness in the cell biology community of the exceptional contributions of women scientists.
2. Increased sensitivity and appreciation of the value of differing language and style approaches in lab, workplace, and academe.
3. Increased awareness that style stereotypes actually cut across gender and other group boundaries; concerns and solutions from students to retirees.
4. Learn successful approaches to workplace challenges from seasoned cell biologists attempting to mitigate bias: gender, race, age, etc.
5. Recognize that communication skills and bias are issues that must be, and can be addressed, at every stage of a scientist’s career, from both sides of each conversation.

Target audience: all attendees
Microsymposium 13: Molecular Mechanisms of Metabolic Reprogramming

11:00 am - 12:00 pm

**Moderator: Peter Yu, Ohio State University**

**Room 29C**

**11:00 am**

E73  
Cxcl12a and c-Myc promote the metabolic switch to glycolysis to support kidney repair after injury. T.A. Yakulov1, A. Todkar1, K. Slanchev1, J. Wiegel1, A. Bona1,2,3, A. Scholz1, G. Walz1,4; 1Renal Division, University Freiburg Medical Center, Faculty of Medicine, University of Freiburg, Freiburg, Germany, 2Faculty of Biology, University of Freiburg, Freiburg, Germany, 3Spemann Graduate School of Biology and Medicine (SGBM), University of Freiburg, Freiburg, Germany, 4BIOSS Center for Biological Signalling Studies, University of Freiburg, Freiburg, Germany

**11:10 am**

E74  
IGF-1’s regulates TGFβ’s profibrotic response contributing to lung fibrosis. D.M. Hernandez1,2, M. Andrianifahanana1, X. Yin1, J. Kang1, A.H. Limper1, E.B. Leof1; 1Thoracic Disease Research Unit, Mayo Clinic College of Medicine, Rochester, MN, 2Biochemistry & Molecular Biology, Mayo Clinic Graduate School of Biomedical Sciences, Rochester, MN

**11:20 am**

E75  
Palmitate inhibits muscle cell insulin-stimulated GLUT4 translocation and Rac1-dependent actin remodelling independently of Akt. V. Tokarz1,2, H. Akhuanzada1,2, A. Klip1,2,3; 1Cell Biology, Hospital for Sick Children, Toronto, ON, 2Physiology, University of Toronto, Toronto, ON, 3Biochemistry, University of Toronto, Toronto, ON

**11:30 am**

E76  
Sequential lipolysis and lipophagy pathways orchestrate lipid droplet breakdown in hepatocytes. M.B. Schott1, S.G. Weller1, R.J. Schulze1, E.W. Krueger1, H. Cao1, C.A. Casey1,2, M.A. McNiven1; 1Department of Biochemistry and Molecular Biology, Mayo Clinic, Rochester, MN, 2Department of Internal Medicine, University of Nebraska Medical Center, Omaha, NE, 3Research Service, Nebraska Western Iowa Health Care System, Omaha, NE

**11:40 am**

E77  
Soluble klotho acts as a circulating FGF23 co-receptor that modifies FGF23’s receptor affinity and subsequent downstream signaling. C. Yanuci1,2, D. Kentrup1, B. Richter1, B. Czaya1,2, I. Campos1,2, C. Faul1; 1Nephrology, University of Alabama Birmingham, Birmingham, AL, 2Cell Biology, University of Alabama Birmingham, Birmingham, AL

**11:50 am**

E78  
Ate1 Controls Cellular Warburg Effects by modifying HIF1α with arginylation. C. Jiang1, F. Fontanesi1, A. Barrientos1,2, T. Lampidis1, F. Zhang1; 1Molecular & Cellular Pharmacology, University of Miami Miller School of Medicine, Miami, FL, 2Biochemistry & Molecular Biology, University of Miami Miller School of Medicine, Miami, FL, 4Nurology, University of Miami Miller School of Medicine, Miami, FL, 4Cell Biology, University of Miami Miller School of Medicine, Miami, FL

Microsymposium 14: Motility

11:00 am - 12:00 pm

**Moderator: Krishnakumar Vasudevan, Stanford University**

**Room 30C**

**11:00 am**

E79  
Arp2/3-nucleated dendritic actin networks are required structures for adhesion formation and cell spreading in 3D. T. Isogai1,2, K.M. Dean1,2, S.J. Han1,2, P. Roudot1,2, M.K. Driscoll1,2, E.S. Welf1,2, J.D. Cillay1,2, K.A. Sochacki1,2, J.W. Taraska1,2, G. Danuser1,2; 1Lydia Hill Department of Bioinformatics, UT Southwestern Medical Center, Dallas, TX, 2Department of Cell Biology, UT Southwestern Medical Center, Dallas, TX, 3Laboratory of Molecular Biophysics, National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD

**11:10 am**

E80  
Macropinocytosis overcomes directional bias due to hydraulic resistance to enhance space exploration by dendritic cells. H.D. Moreau1, C. Blanch-Mercader2, R. Attia1,2, M. Maurin1, Z. Alraies1, D. Sanséau1, O. Malbec1, M. Delgado1, P. Bousso5,6, J. Joanny1,2, R. Voituriez8, M. Piel1,8; 1INSERM U932, Institut Curie, ANR-10-IDEX-0001-02 PSL* and ANR-11-LABX-0043, Paris, France, 2PSL Research University, Sorbonne Universités, UPMC – CNRS, Laboratoire PhysicoChimie Curie, Institut Curie, PARIS, France, 3Institut Curie, PSL Research University, CNRS, UMR 144, PARIS, France, 4Institut Pierre-Gilles de Gennes, PSL Research University, PARIS, France, 5Institut Pasteur, Dynamics of Immune Responses Unit, PARIS, France, 6INSERM U1223, PARIS, France, 7ESPCI Paris-Tech, PARIS, France, 8Laboratoire Jean Perrin, UM 8237 CNRS/UPMC, Paris, France
### Microsymposium 15: Neuronal Cell Biology

11:00 am-12:00 pm

**Moderator:** Gaia Cantelli, Duke University

<table>
<thead>
<tr>
<th>Time</th>
<th>Room</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00 am</td>
<td>E85</td>
<td>TUBA1A mutations identified in lissencephaly patients dominantly disrupt neuronal migration and impair dynein activity. J.E. Aiken1, E.A. Bates2, J.K. Moore3; 1Cell and Developmental Biology, University of Colorado Anschutz Medical Campus, Aurora, CO, 2Department of Pediatrics, University of Colorado Anschutz Medical Campus, Aurora, CO</td>
</tr>
<tr>
<td>11:10 am</td>
<td>E86</td>
<td>Ribosomal protein SA (Rpsa) signaling regulates neuronal morphogenesis. S.M. Blaziejewski1, S.A. Bennison1, T.H. Smith2, K. Toyoooka3; 1Neurobiology and Anatomy, Drexel University College of Medicine, Philadelphia, PA</td>
</tr>
<tr>
<td>11:20 am</td>
<td>E87</td>
<td>Tenectin recruits integrin to stabilize bouton architecture and regulate vesicle release at the <em>Drosophila</em> neuromuscular junction. Q. Wang1, T. Han1, P. Nguyen1, M. Jarnik1, M. Serpe1; 1NICHD, NIH, Bethesda, MD</td>
</tr>
<tr>
<td>11:30 am</td>
<td>E88</td>
<td>A coagulation factor IX peptide regulates endothelial barrier function and improves prognosis in traumatic brain injury model. Y. Fujiwara1; 1Division of oral surgery, Nihon University School of Medicine, Tokyo, Japan</td>
</tr>
<tr>
<td>11:40 am</td>
<td>E89</td>
<td>Protein kinase Trc regulates neurite outgrowth via Pavarotti (kinesin-6). R. Norkett1, M. Winding3, U. del Castillo1, W. Lu1, V.G. Gelfand1; 1Cell and Molecular Biology, Feinberg School of Medicine, Northwestern University, Chicago, IL</td>
</tr>
<tr>
<td>11:50 am</td>
<td>E90</td>
<td>RACK1 regulates local mRNA translation at adhesion sites in developing neurons. L. Kershner1, T. Bumbledare1, P. Cassidy1, K. Welshhans1; 1Department of Biological Sciences, Kent State University, Kent, OH, 2School of Biomedical Sciences, Kent State University, Kent, OH</td>
</tr>
</tbody>
</table>

### Microsymposium 16: Regulation of the Cytoskeleton 2

11:00 am-12:00 pm

**Moderator:** Brooke Gardner, University of California, Berkeley

<table>
<thead>
<tr>
<th>Time</th>
<th>Room</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00 am</td>
<td>E91</td>
<td>Reconstitution of aster movement and cell division plane positioning mechanisms in <em>Xenopus</em> egg extract. J.F. Pelletier1,2,3, C.M. Field1,2, N. Fakhri1, J.S. Oakey2, J.C. Gatlin2,3, T.J. Mitchison1,2; 1Department of Systems Biology, Harvard Medical School, Boston, MA, 2Marine Biological Laboratory, Woods Hole, MA, 3Department of Physics, Massachusetts Institute of Technology, Cambridge, MA, 4Department of Molecular Biology, University of Wyoming, Laramie, WY, 5Department of Molecular Biology, University of Wyoming, Laramie, WY</td>
</tr>
</tbody>
</table>
## Microsymposium 17: The Story of Life: Survival and Death

**11:00 am-12:00 pm**

**Room 30B**

**Moderators:** Scott Wilkinson, National Institutes of Health; and Emily Summerbell, Emory University

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Title</th>
<th>Presenters</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00 am</td>
<td>E97</td>
<td>Genetic interactions between specific chromosome copy number alterations dictate complex aneuploidy patterns.</td>
<td>M. Coimbatore Ravichandran&lt;sup&gt;1&lt;/sup&gt;, S. Fink&lt;sup&gt;1&lt;/sup&gt;, M. Clarke&lt;sup&gt;1&lt;/sup&gt;, F. Hofer&lt;sup&gt;1&lt;/sup&gt;, C.S. Campbell&lt;sup&gt;2&lt;/sup&gt;; 1Department of Chromosome biology, Max F. Perutz Laboratories, University of Vienna, Vienna, Austria</td>
</tr>
<tr>
<td>11:10 am</td>
<td>E98</td>
<td>Cadherin-11 is required for the specification and cell survival of neural crest cells.</td>
<td>S. Manohar&lt;sup&gt;1&lt;/sup&gt;, A. Camacho&lt;sup&gt;1&lt;/sup&gt;, C.D. Rogers&lt;sup&gt;1&lt;/sup&gt;; 1Biology, California State University Northridge, Northridge, CA</td>
</tr>
<tr>
<td>11:20 am</td>
<td>E99</td>
<td>Shedding light on cell death: optogenetic control of programmed cell death pathways.</td>
<td>K. Shkarina&lt;sup&gt;1&lt;/sup&gt;, E. Hasel&lt;sup&gt;1&lt;/sup&gt;, M. Leptin&lt;sup&gt;1&lt;/sup&gt;, P. Broz&lt;sup&gt;1&lt;/sup&gt;; 1Department of Biochemistry, University of Lausanne, Lausanne, Switzerland, 2Directors’ Research Unit, European Molecular Biology Laboratory, Heidelberg, Germany</td>
</tr>
<tr>
<td>11:30 am</td>
<td>E100</td>
<td>Molecular and topological reorganizations in mitochondrial architecture interplay during Bax-mediated steps of apoptosis.</td>
<td>N.R. Ader&lt;sup&gt;1,5&lt;/sup&gt;, P. Hoffmann&lt;sup&gt;1&lt;/sup&gt;, I. Ganeva&lt;sup&gt;2&lt;/sup&gt;, A. Borgeaud&lt;sup&gt;3&lt;/sup&gt;, C. Wang&lt;sup&gt;1&lt;/sup&gt;, R.J. Youle&lt;sup&gt;1&lt;/sup&gt;, W. Kukulski&lt;sup&gt;1&lt;/sup&gt;; 1National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD, 2Cell Biology, Medical Research Council Laboratory of Molecular Biology, Cambridge, United Kingdom</td>
</tr>
<tr>
<td>11:40 am</td>
<td>E101</td>
<td>Implications of Rho GTPase signaling in the genomic stability of glioblastoma cells to DNA damage.</td>
<td>Y.T. Magalhaes&lt;sup&gt;1&lt;/sup&gt;, F.L. Forti&lt;sup&gt;1&lt;/sup&gt;; 1Department of Biochemistry, University of Sao Paulo - Institute of Chemistry, Sao Paulo, Brazil</td>
</tr>
<tr>
<td>11:50 am</td>
<td>E102</td>
<td>Proteomic and Genetic Interaction Mapping Reveals New Ras Pathway Effectors and Regulators.</td>
<td>M.R. Kelly&lt;sup&gt;1&lt;/sup&gt;, K. Han&lt;sup&gt;1&lt;/sup&gt;, K. Kostyrko&lt;sup&gt;1&lt;/sup&gt;, N. Mooney&lt;sup&gt;1&lt;/sup&gt;, E.E. Jeng&lt;sup&gt;2&lt;/sup&gt;, M.C. Bassik&lt;sup&gt;3&lt;/sup&gt;, A. Sweet-Cordero&lt;sup&gt;2&lt;/sup&gt;; 1Baxter Laboratories, Stanford University, Stanford, CA, 2Department of Genetics, Stanford University, Stanford, CA, 3Pediatrics, University of California San Francisco, San Francisco, CA</td>
</tr>
</tbody>
</table>
Microsymposium 18: Tissue Architecture and Mechanics

11:00 am-12:00 pm  Room 28D

Moderator: Amanda Haage, University of British Columbia

11:00 am  E103
Image-based quantitative single-cell analysis of cellular architecture in developing tissues. J.M. Hartmann1, M. Wong1, D. Gilmour1,2; 1Cell Biology and Biophysics Unit, European Molecular Biology Laboratory EMBL, Heidelberg, Germany, 2Institute of Molecular Life Sciences, University of Zurich, Zurich, Switzerland

11:10 am  E104
Cell Migration Coordination by Site-Dependent Cell-Cell Contact. D. Li1, Y. Wang1; 1Biomedical Engineering, Carnegie Mellon University, Pittsburgh, PA

11:20 am  E105
Mechanical coordinates: designing geometrical microenvironments for the control mechanical waves in model tissues. V. Petrolli1, O. Mandula2, L. Herve2, C. Allier2, P. Moreau1, M. Balland4, G. Cappello; 1Physics, Laboratory of Interdisciplinary Physics (CNRS), Grenoble, France, 2Leti, CEA, Grenoble, France

11:30 am  E106
Smooth muscle differentiation physically sculpts emerging branches during mouse lung development. K. Goodwin1, A. Kosmrlj2, C.M. Nelson1,4; 1Lewis-Sigler Institute for Integrative Genomics, Princeton University, Princeton, NJ, 2Department of Mechanical and Aerospace Engineering, Princeton University, Princeton, NJ, 3Department of Chemical and Biological Engineering, Princeton University, Princeton, NJ, 4Department of Molecular Biology, Princeton University, Princeton, NJ

11:40 am  E107
A geometry-based model is sufficient to describe lumen stability in epithelial cells. C.G. Vasquez1, V. Vachharajani2, A.R. Dunn1,2; 1Chemical Engineering, Stanford University, Stanford, CA, 2Biophysics, Stanford University, Stanford, CA

11:50 am  E108
How do the semicircular canals of the inner ear form? A. Munjal1, S. Megason1; 1Systems Biology, Harvard Medical School, Boston, MA

Creating Inclusive Biology Education Environments

11:00 am-12:00 pm  Room 25B

Kimberly Tanner, Professor, San Francisco State University
Christopher Pickett, Director, Rescuing Biomedical Research
Jana Marcette, Assistant Professor, Harris-Stowe State University
Latanya Hammonds-Odie, Associate Professor, Georgia Gwinnett College
Alison Crowe, Principal Lecturer, University of Washington

The Inclusive Environments and Metrics in Biology Education and Research (iEMBER) network examines new ways of thinking about biology education reform, by taking the viewpoint that education spaces are social interaction spaces. This session led by iEMBER members will share current research on how social interactions in classrooms can impact students in different ways: self-efficacy, performance, sense of belonging, and science identity. Audience members will self-select into groups focused on specific pedagogical approaches (e.g., clickers, small group work), discuss barriers to student engagement, and brainstorm possible evidence-based strategies to increase equitable participation. This session is expected to be of interest both to stakeholders working in STEM diversity, equity, and inclusion and to students, faculty, and educators interested in building inclusive classroom environments.

Outcomes:
1. Appreciate the range of barriers that exist to student engagement in social learning environments.
2. Evaluate the effectiveness of your own teaching practices in promoting equity and inclusivity.
3. Practice designing classroom activities that promote inclusion using evidence-based approaches.

Target audience: all attendees
How to Improve Research Assessment for Hiring and Funding Decisions

11:00 am-12:00 pm  Room 32B

Journal-based metrics do not capture the quality of individual research articles or scientists. Despite this, many research institutes and funding agencies around the world rely on the Journal Impact Factor to quantify research success, especially when triaging large volumes of applications. The Declaration on Research Assessment (DORA) is working to change the culture and improve evaluation. This session will be an opportunity to provide feedback on forms associated with research evaluation in hiring and funding decisions. Attendees will work together in small groups to review one form—either a grant or faculty application. Following the small group discussions, there will be a debriefing for each type of application.

Outcomes:

1. Awareness of how research is assessed.
2. Recognition of existing biases in hiring, promotion, and funding decisions.
3. Identification of strategies to improve research assessment.

Target audience: all attendees and those with institutional responsibilities

Moving (Rapidly) toward Open Data for All and by All

11:00 am-12:00 pm  Room 31B

Anna E. Mazzucco, Special Assistant to the Principal Deputy Director, Immediate Office of the Director, NIH

Open data will only become a reality when its principles are included in research plans from the beginning of research. But funders, research institutions, and governments are moving rapidly away from discussing principles to demanding certain actions. Particularly of note are requirements for filing data management plans, and of ensuring that any data storage infrastructure chosen by a researcher meets a certain set of standards. Thus it is critical that researchers are involved in these discussions now. This session will discuss universal good practices as well as differences between stakeholders and between regions. We will focus particularly on roles of researchers, and will have the audience participate in a discussion of policy gaps, particularly where stakeholders may have discordant understandings of their responsibilities.

Outcomes:

1. Gain a better knowledge of what open data is, and is not.
2. Recognize similarities and differences in approaches to open data by research sector and geographic region.
3. Begin to understand the need for data management plans and for strategic selection of data depositories.

Target audience: all attendees, with emphasis on those responsible for handling primary and large datasets, as well as those responsible for maintaining data from individual researchers

Odd-Numbered Poster Presentations

12:00-1:30 pm  Learning Center
Barriers Removed: Manuscript Transfer Reception

12:00-1:00 pm ASCB Booth 623, Learning Center

Come for a slice of cake to celebrate a new collaboration that allows authors to effortlessly transfer their manuscripts and peer-review reports between our community journals, Journal of Cell Biology (JCB), Journal of Cell Science (JCS), and Molecular Biology of the Cell (MBoC). Join ASCB President Jodi Nunnari and Tim Spencer from JCB; Michael Way and Sharon Ahmad from JCS; and David Drubin and Erika Shugart from MBoC/ASCB.

Dissecting Job Ads and Tailoring Your Résumé

12:00-12:50 pm Theater 3, Learning Center

Joe Cribari, Founder and CEO, JC3 Consulting

Recruiters spend an average of just 5-7 seconds assessing a résumé or CV. To stand out among the competition and maximize your chances of success, it is vital to know how to dissect a job ad and tailor your résumé to the position and organization to which you are applying. This session will teach attendees how to analyze a job description and provide them with insight into what recruiters/hiring managers look for when screening applications. Using this information, attendees will be able to tailor their CV, résumé, and personal statement to a specific academic or industrial position.

Outcomes:
1. Learn how to analyze a job description.
2. Know how to tailor your CV or résumé to a job description.
3. Understand how to target your personal statement to a specific position.
4. Distinguish between a CV and résumé, and know the do’s and do not’s of each.

Target audience: undergraduates, graduate students, and postdocs

Exhibitor Tech Talk

12:00-12:45 pm Theater 1, Learning Center

MilliporeSigma

Dynamic Live Cell Imaging of Mammalian Cells Using CellASIC® ONIX2 Microfluidic Platform

Presenters: Cindy Chen, PhD, and Jun Park, PhD, Senior Scientists, MilliporeSigma

Level: Intermediate

This workshop will cover the advantages of “dynamic live cell” imaging, where microenvironmental parameters such as flowrates, the perfusion of nutrients and reagents, and temperature and gas compositions can be precisely controlled on demand by software during the entire duration of a given imaging experiment. Overview of applications covering hypoxia, apoptosis, migration, and suspension immune cell imaging will be presented. Specific emphasis will be given to microfluidic designs targeted for use with different cell types as well as fluorescent probes for live cell imaging. Any scientists planning to start live cell imaging experiments, as well as experienced imaging scientists wanting to broaden their applications, will benefit from this workshop.
Social Media for Science Communication

12:00-12:50 pm

**Theater 4, Learning Center**

**Prachee Avasthi**, Assistant Professor, University of Kansas Medical Center

**Beth Kenkel**, Research Scientist, University of Washington

**Needhi Bhalla**, Assistant Professor, University of California, Santa Cruz

Scientists can use many social media platforms to directly communicate their research with both other scientists and the public at large. This panel discussion will focus on the use of social media as a tool for science communication, and the pros and cons of different social media platforms. The panelists will discuss their experiences using social media as a scientist and how to get started.

**Outcomes:**
1. Learn about multiple tools to communicate science through different social media platforms.
2. Learn the techniques and skills that help communicate science using social media in a way that is professional but still intriguing.
3. Hear from multiple panelists about their experiences using these different platforms.
4. Interact and network with scientists who have been successful in using social media for communicating science.

**Target audience:** undergraduates, graduate students, and postdocs

Science Discussion Tables

1:00-2:00 pm

**Roundtable Central Section 3, Learning Center**

Take advantage of this special networking opportunity! Select your interest area and bring your questions to the ASCB Learning Center.

<table>
<thead>
<tr>
<th>Table</th>
<th>Presenter</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Daniel Gerlich</td>
<td>Chromosome Biology and Cell Division</td>
</tr>
<tr>
<td>2</td>
<td>Harm Kampinga</td>
<td>Protein Homeostasis, Age-Related Diseases and Aging</td>
</tr>
<tr>
<td>3</td>
<td>Michel Labouesse</td>
<td>Morphogenesis; Mechanical Forces; C. Elegans</td>
</tr>
<tr>
<td>4</td>
<td>Adam Hughes</td>
<td>Mitochondria, Lysosomes, and Organelle Crosstalk</td>
</tr>
<tr>
<td>5</td>
<td>Brenda Bloodgood</td>
<td>Neurobiology</td>
</tr>
<tr>
<td>6</td>
<td>Clodagh O’Shea</td>
<td>Visualizing and Redesigning Genomes</td>
</tr>
<tr>
<td>7</td>
<td>Andrew Carter</td>
<td>How Do Motor Proteins Select Their Cargos?</td>
</tr>
<tr>
<td>8</td>
<td>Bruce Goode</td>
<td>Cytoskeletal Dynamics</td>
</tr>
<tr>
<td>9</td>
<td>Peter Walter</td>
<td>UPR</td>
</tr>
<tr>
<td>10</td>
<td>Heidi McBride</td>
<td>Mitochondrial Dynamics</td>
</tr>
<tr>
<td>11</td>
<td>Erika Holzbaur</td>
<td>Organelle and Cytoskeletal Dynamics in Neurons; Autophagy</td>
</tr>
<tr>
<td>12</td>
<td>Andrew Murray</td>
<td>TBD</td>
</tr>
<tr>
<td>13</td>
<td>Marek Basler</td>
<td>Bacterial Secretion Systems</td>
</tr>
<tr>
<td>14</td>
<td>Antonio Lanzavecchia</td>
<td>Immunology</td>
</tr>
<tr>
<td>15</td>
<td>Amy Gladfelter</td>
<td>Phase Separation in Cell Biology</td>
</tr>
<tr>
<td>16</td>
<td>Katja Röper</td>
<td>Developmental and Cell Biology, Tissue Morphogenesis, Cytoskeleton</td>
</tr>
<tr>
<td>17</td>
<td>Diane Barber</td>
<td>Actin Architectures and Epithelial Plasticity</td>
</tr>
<tr>
<td>18</td>
<td>Blanche Schwappach</td>
<td>Membrane Protein Targeting, Vesicular Traffic</td>
</tr>
<tr>
<td>19</td>
<td>Julie Welburn</td>
<td>Cell Division, Microtubule Cytoskeleton</td>
</tr>
<tr>
<td>20</td>
<td>Lawrence Banks</td>
<td>Viruses and Cancer</td>
</tr>
<tr>
<td>21</td>
<td>Anna Akhmanova</td>
<td>Where Should I Publish My Paper?</td>
</tr>
</tbody>
</table>
Careers in Biotech Beyond the Bench

1:00-1:50 pm  Theater 4, Learning Center

Katerina Capkova, Regulatory Affairs Specialist, Hologic, Inc. - Diagnostic Solutions  
Laura Lloyd, Registered Patent Attorney, Matrix Law Group LLC  
Dan Schroen, Director of Marketing, WuXi Advanced Therapies  
Robyn Leary, Medical Science Liaison, Teva

This panel discussion will focus on non-research careers in biotech and drug discovery such as patent law, regulatory affairs, marketing, and medical affairs. The goal of this session is to expose trainees to different industry career paths that move beyond research and provide knowledge on how to successfully pursue those career paths. The panel format will allow the audience to guide the conversation and ensure topics are focused on the interests of attendees.

Outcomes:
1. Learn about a range of non-research careers in industry.
2. Have an opportunity to begin networking with professionals in a variety of fields.
3. Identify skills needed to pursue a non-research career in industry.

Target audience: graduate students, postdocs, and anyone looking to transition careers

Celldance Video Premiere and Elevator Speech Awards

1:00-1:50 pm  Theater 3, Learning Center

Join us for the premiere of the 2018 Celldance videos and recognition of the authoring labs. In addition, the winners of the 2018 Elevator Speech contest will be announced and awards will be given.

Outcomes:
1. Get introduced to the value of science outreach to non-scientists.
2. See examples of good scientific outreach communication.
3. Be exposed to research of peer labs, providing opportunities for networking and collaboration.

Target audience: all attendees

Exhibitor Tech Talk

1:00-1:45 pm  Theater 1, Learning Center

Bruker Corporation

Cellular Imaging with Light-Sheet Fluorescence Microscopy: Ultra Gentle, High-resolution Imaging of Living Samples

Presenter: Dane Maxfield M.S., PhD – Sales Product Specialist

Level: Intermediate

Light-sheet fluorescence microscopy is a state-of-the-art imaging technique that allows for long-term 3D imaging at unprecedented speed across scales from single molecules to whole organisms. This presentation will focus on the Luxendo InVi SPIM, an inverted light-sheet geometry, which is optimized for long-term 3D imaging of live specimens with resolution better than on a confocal microscope and under meticulously adjustable conditions. We will describe our innovative sample mounting technique and demonstrate the ease of use for a variety of specimens, ranging from cell culture to organoids and embryos. Coupled with precise environmental control, the InVi SPIM allows for imaging of these samples for multiple days and for resolving subcellular structures without the photobleaching or phototoxicity that plagues standard imaging techniques like laser scanning or spinning disk confocal microscopy. You can expect to learn the advantages of light-sheet fluorescence microscopy for high resolution cellular imaging and how this technique can be adapted to a multitude of different samples.
Meet the Committees

1:15-1:45 pm ASCB Booth 623, Learning Center
Members from the Committee for Postdocs and Grad Students (COMPASS) and Women in Cell Biology and Committees will be on hand to answer any questions you have.

Even-Numbered Poster Presentations

1:30-3:00 pm Learning Center

Afternoon Refreshment Break

1:30-3:30 pm Learning Center
Join us for a beverage and snack while visiting exhibitors and viewing posters.

Careers in Science Policy

2:00-2:50 pm Theater 3, Learning Center
Adriana Bankston, Associate Director of Fundraising and Strategic Initiatives, Future of Research
Shannon Muir, Director of Research Proposal Development Service, University of California, San Diego

This panel discussion will focus on exploring career options within science policy. Science policy careers are an exciting option for PhDs because they require a strong scientific background coupled with the ability to explain science to a variety of audiences, problem solve, and an interest in politics. The panelists will discuss how to get involved in science policy and the diversity of options within this career path.

Outcomes:
1. Learn about a range of careers in science policy.
2. Have an opportunity to begin networking with leaders in science policy.
3. Identify skills needed to pursue a career in science policy.

Target audience: undergraduates, graduate students, and postdocs

Exhibitor Tech Talk

2:00-2:45 pm Theater 1, Learning Center
Bruker Corporation

Cell Mechanics with Atomic Force Microscopy (AFM): From Modulus Mapping to Measuring Cell-Surface Interactions
Presenter: Andrea Slade, PhD – BioAFM Product Manager
Level: Intermediate

Mechanobiology-related studies aimed at understanding how cells exert and respond to forces in their environment have become an important area of cell biology research. Examining the effects of forces on cells has a wide range of applications from understanding disease pathology to the development of tissue engineering devices. While operable in fluid environments under near-physiological conditions, atomic force microscopy (AFM) not only allows direct examination of the nanoscale structure of cell membrane surfaces but it also provides unique opportunities to quantitatively measure the nanomechanical properties of living cells and tissues. In addition, the integration of AFM with advanced light microscopy techniques (e.g., confocal, super-resolution, etc.) enables direct correlation of these mechanical properties with fluorescence imaging datasets. Please join us for this informative seminar where we will introduce our complete family of BioAFMs, including the latest JPK systems to join Bruker. We will describe the most recent advances in Bruker’s BioAFM technology, focusing on various examples of how our industry-leading capabilities are enabling new possibilities for novel cell mechanics studies, both in real time and in situ.
Exhibitor Tech Talk

2:00-2:45 pm  Theater 2, Learning Center

GenScript USA Inc.

Using CRISPR Technologies in Cell Line Engineering

Presenter: TBD
Level: Intermediate

CRISPR/Cas9 is an easy and efficient tool to study gene function in cells. However, generation of CRISPR-mediated gene knock-in (KI) or knock-out (KO) cell line involves substantial workload, especially for hard-to-transfect cell lines or primary cell lines. For generating functional gene KO/KI using CRISPR, it is essential to choose the appropriate gRNA/Cas9 delivery system and design gRNA and/or donor template wisely. Join our discussion to learn more about how to effectively use CRISPR for generating KO/KI cell lines.

Helping the Next Generation of Researchers: Navigating the Challenges and Answering the Call for Change

2:00-2:50 pm  Theater 4, Learning Center

Gary McDowell, Executive Director, Future of Research (organizer)
Christopher Pickett, Director, Rescuing Biomedical Research
Maria-Elena Zavala, Professor, California State University Northridge
Giovanna Guerrero-Medina, Executive Director, Ciencia Puerto Rico
Sue Biggins, Professor, Fred Hutchinson Cancer Research Center

Three reports issued recently—“Breaking Through,” mandated by Congress under the 21st Century Cures Act; “Graduate STEM Education for the 21st Century;” and “Sexual Harassment of Women”—contain overarching themes of a lack of transparency, a lack of responsibility by stakeholders, and a system of training that increasingly does not work for the very people it trains. These reports make recommendations about ways to reform the research enterprise. But how can we effect change? This session will focus on discussing important issues that must be considered as part of these reforms. Presentations will be followed by a larger panel discussion and the opportunity for discussion with the ASCB community, with the aim of including this community’s considerations in pushing for reform.

Outcomes:
1. Appreciate the range of barriers that exist to effecting change.
2. Gain an understanding of the various issues driving hyper-competition and restricting the ability to do innovative science in the current research enterprise.

Target audience: all attendees

In-Booth Presentation

2:00-2:30 pm  Booth 1019

ALVEOLE

Demo of bioengineering custom cell microenvironments with PRIMO contactless and maskless photopatterning system

Presenters: Grégoire Peyret, PhD, and Hélène Delobel

To more efficiently study living cells and model diseases, researchers are challenged with mimicking the cell microenvironment in vitro. We will show how PRIMO photopatterning technology allows researchers to fine-tune cell culture substrates’ topography through microfabrication and biochemistry through protein micropatterning (compatible with all substrates: soft or stiff, flat or microstructured). substrates: soft or stiff, flat or microstructured).
The ability to study concerted movements, modifications, and interactions of proteins within a cell in a multiplexed fashion is key to unraveling the fundamental mechanisms of biology and disease states. However, the low-level expression of many proteins, combined with the transient nature of their interactions, makes analyzing these processes quite difficult. Duolink® in situ proximity ligation assay (PLA) offers a solution to overcome these problems. Duolink® PLA is both highly selective and sensitive, resulting from dual antibody recognition and rolling-circle amplification, which occurs only when the two PLA probes are in close proximity. Protein targets can be readily detected, quantified, and localized with single molecule resolution in unmodified cells. Duolink® PLA can be adapted for use on suspension or adherent cells, tissue sections, and multiwell plates, making it an ideal method for performing high-throughput screening of drugs, inhibitors, or monoclonal antibodies, target validation, and disease pathway analysis. In addition, Duolink® flowPLA now allows the detection of very low abundant proteins and protein interactions by flow cytometry. Furthermore, Multicolor Duolink® PLA allows multiplex detection of up to 4 protein events (e.g., protein interactions or modifications) within a single assay. These recent advances in the Duolink® PLA technology will allow researchers to generate more robust data in fewer tissue or cell samples.

**E.B. Wilson Medal Presentation and Address: Barbara J. Meyer**

3:15-4:00 pm

**Barbara J. Meyer**, University of California, Berkeley/HHMI

A6 Sex and Death: From Cell Fate Specification to Dynamic Control of X-Chromosome Conformation and Repression. B.J. Meyer; Molecular and Cell Biology, Howard Hughes Medical Institute and U. C. Berkeley, Berkeley, CA

**Workshop: Electron Cryo-Tomography and Correlated Light and Electron Microscopy (CLEM)**

4:15-6:50 pm

**Organizers and Speakers:**

Wanda Kukulski, MRC Laboratory of Molecular Biology, organizer and speaker

Martin Pilhofer, ETH Zurich, Switzerland, organizer and speaker

Juha Huiskonen, University of Oxford, UK, speaker

Elizabeth Wright, Morgridge Institute for Research and University of Wisconsin-Madison, speaker

Integrating the complexity of cellular organization from the atomic to the organelle scale is a grand challenge at the intersection of cell biology, biophysics, and structural biology. There is thus a growing need to study cellular assemblies of proteins, lipids, and nucleic acids in their native environment. In addition, it is important to understand how the distribution of cellular components changes over time and how dynamic changes in protein complexes mediate functions. A requirement for such comprehensive cellular models is integration of data from different scales of resolution. Electron cryo-tomography (cryo-ET) has emerged as a key technology toward this goal, since it resolves cellular complexes in situ, in a near-native
state, in three dimensions, and at the nanometer regime. Correlated light and electron microscopy is a powerful approach to overcome major challenges in cryo-ET: the localization of transient and elusive structures and the identification of defined stages during a cellular process. At the other end of the scale, combining density maps from cryo-ET with high-resolution structures attains an atomic view of cellular mechanisms.

In this workshop we present the forefront of cryo-ET, including sample preparation by cryo-focused ion beam milling and correlation with fluorescence microscopy. Specific examples will illustrate advances that were made while discovering novel aspects of cellular function and organization.

- **Subgroup X: New Tools and Resources for Studies of Stem Cell Biology**

  **4:15-6:50 pm**

  **Room: 20D**

  **Organizers:** Yukiko Yamashita, University of Michigan; and David Drubin, University of California, Berkeley

  Combined advances in genome editing, stem cell production, and organoid derivation from stem cells represent a revolution in cell and developmental biology. These advances have important implications for the study of basic biology as well as for translation of mechanistic discoveries into understanding of disease. Most cell and developmental biologists, however, are unfamiliar with the techniques and procedures necessary to work with stem cells. This session aims to provide the latest information about the new tools and resources being developed, and about the innovative model systems and experimental approaches being deployed for studies of stem cell biology. Wide adoption of stem cells for studies of cell and developmental biology promises to enable progress in basic research and translation of the results to address disease.

  **Presentations:**

  4:15 pm  
  Introduction. Yukiko Yamashita, University of Michigan, and David Drubin, University of California, Berkeley

  4:25 pm  
  Human iPSCs: from image to information. Molly Maleckar, Allen Institute for Cell Science

  4:40 pm  
  4D cell biology: Big data image analytics and lattice light-sheet imaging of live stem cell-derived organoids. Johannes Schoenenberg, University of California, Berkeley

  4:55 pm  
  Non-random sister chromatid segregation and germline immortality. Yukiko Yamashita, University of Michigan

  5:10 pm  
  Understanding progenitor to muscle stem cell transitions in human development and human pluripotent stem cells. April Pyle, University of California, Los Angeles

  5:25 pm  
  Using human iPSCs to understand the cell biology underlying neurodegeneration. Hyun Kate Lee, University of Toronto

  5:40 pm  
  CRISPR and Stem Cells: Disease mechanism and genome surgery. Bruce Conklin, University of California, San Francisco

  5:55 pm  
  Manipulating cellular and sub-cellular asymmetry with high spatiotemporal resolution in fly neural stem cells. Clemens Cabernard, University of Washington

  6:10 pm  
  Cellular aspect ratio and division mechanics pattern cell lineages in the intestinal epithelium. Kara McKinley, University of California, San Francisco

  6:25 pm  
  Dynamic regulation of stem cell division and fate by tissue architecture. Danelle Davenport, Princeton University

  6:40 pm  
  Closing comments

- **Minisymposium 12: Biomechanics**

  **4:15-6:50 pm**

  **Room 29C**

  **Supported by The Kavli Foundation**

  **Co-Chairs:** Katja Röper, MRC Laboratory of Molecular Biology; and Michel Labouesse, Institute of Biology Paris – Seine

  4:15 pm  
  Introduction

  4:20 pm  
  M119  
  Epithelial tissue fracture dynamics govern fast and extreme plastic shape changes in Trichoplax adhaerens. V.N. Prakash, M.S. Bull, M. Prakash; 1Department of Bioengineering, Stanford University, Stanford, CA, 1Department of Applied Physics, Stanford University, Stanford, CA

  4:35 pm  
  M120  
4:50 pm  M121  
Minisymposium 13: Cell Biology of the Neuron

Asymmetric biogenesis of occluding junctions drives integration of stem cell progeny during epithelial turnover.  
P. Moreno-Roman\textsuperscript{1}, I. Kolotueva\textsuperscript{2}, B. Humbel\textsuperscript{3}, L.E. O’Brien\textsuperscript{4}; \textsuperscript{1}Department of Biology, Stanford University, Stanford, CA, \textsuperscript{2}Electron Microscopy Facility, Université de Lausanne, Lausanne, Switzerland, \textsuperscript{3}Department of Molecular and Cellular Physiology, Stanford University, Stanford, CA

5:05 pm  M122  
Radially-patterned cell behaviours during tube budding from an epithelium.  
K. Röper\textsuperscript{1}, Y.E. Sanchez Corrales\textsuperscript{1}, G.B. Blanchard\textsuperscript{1}; \textsuperscript{1}Cell Biology, MRC-Laboratory of Molecular Biology, Cambridge, United Kingdom, \textsuperscript{2}Department of Physiology, Development and Neuroscience, University of Cambridge, Cambridge, United Kingdom

5:20 pm  M123  
3D Tissue elongation via ECM stiffness-cued junctional remodeling.  
D. Chen\textsuperscript{1}, J. Crest\textsuperscript{1}, S.J. Streichan\textsuperscript{2}, D. Bilder\textsuperscript{1}; \textsuperscript{1}Dept. of Molecular & Cell Biology, University of California, Berkeley, Berkeley, CA, \textsuperscript{2}Dept. of Physics, University of California, Santa Barbara, Santa Barbara, CA

5:35 pm  M124  
H. Hashimoto\textsuperscript{1}, E.M. Munro\textsuperscript{1,2}; \textsuperscript{1}Department of Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL, \textsuperscript{2}Committee on Development, Regeneration and Stem Cell Biology, University of Chicago, Chicago, IL

5:50 pm  M125  
Structural redundancy in supracellular actomyosin network connections enables robust tissue folding.  
H.G. Yevick\textsuperscript{1}, A.C. Martin\textsuperscript{1}; \textsuperscript{1}Biology, MIT, Cambridge, MA

6:05 pm  M126  
The Diaphanous-Related Formin, Dia1, Acts Upon Cell Junctions to Coordinate Differentiation and Cell Sorting in a Stratified Epithelium.  
R.M. Harmon\textsuperscript{1}, M.L. Gardel\textsuperscript{2}; \textsuperscript{1}Institute of Biophysical Dynamics, University of Chicago, Chicago, IL

6:20 pm  M127  
Mechanical signaling underlies self-organized regions of mesoderm differentiation in hESC colonies.  
N.M. Ayad\textsuperscript{1,2}, J.M. Muncie\textsuperscript{1,3}, L. Przybyla\textsuperscript{1}, J.N. Lakins\textsuperscript{2}, R. Sunyer\textsuperscript{1}, X. Trepat\textsuperscript{1}, V.M. Weaver\textsuperscript{1,2,4}; \textsuperscript{1}Graduate Program in Bioengineering, UC Berkeley - UCSF, San Francisco, CA, \textsuperscript{2}Center for Bioengineering and Tissue Regeneration, Department of Surgery, University of California San Francisco, San Francisco, CA, \textsuperscript{3}Institute for Bioengineering of Catelonia (IBEC), Universitat de Barcelona, Barcelona, Spain, \textsuperscript{4}Department 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

6:35 pm  M128  
Lateral inhibition in cell fate specification is mediated by mechanical signals modulating TAZ activity.  
P. Xia\textsuperscript{1}, D. Gütl\textsuperscript{1}, V. Zheden\textsuperscript{1}, C. Heisenberg\textsuperscript{1}; \textsuperscript{1}IST AUSTRIA, Klosterneuburg, Austria

---

**Minisymposium 13: Cell Biology of the Neuron**

4:15-6:50 pm  
Room 28C

**Supported by The Kavli Foundation**

**Co-Chairs:**  
Brenda Bloodgood, University of California, San Diego; and  
Gentry Patrick, University of California, San Diego

4:15 pm  
Introduction

4:20 pm  M129  
Mitochondria tune neuronal computation in the *Drosophila* visual system.  
E.L. Barnhart\textsuperscript{1,2}, C. Desplan\textsuperscript{1}, T.R. Clandinin\textsuperscript{1}; \textsuperscript{1}Neurobiology, Stanford, Stanford, CA, \textsuperscript{2}Biology, NYU, New York, NY

4:35 pm  M130  
Activity-dependent trafficking and function of lysosomes in dendrites and dendritic spines.  
M. Goo\textsuperscript{1}, L. Sancho\textsuperscript{1}, N. Slepak\textsuperscript{1}, S.K. Gilmore\textsuperscript{1}, D. Boassa\textsuperscript{1}, T.J. Deerinck\textsuperscript{1}, M.H. Ellisman\textsuperscript{1,2,4}, B.L. Bloodgood\textsuperscript{1}, G.N. Patrick\textsuperscript{1}; \textsuperscript{1}Section of Neurobiology, Division of Biological Sciences, University of California, San Diego, La Jolla, CA, \textsuperscript{2}National Center for Microscopy, and Imaging Research and Center for Research on Biological Systems, La Jolla, CA, \textsuperscript{3}Department of Neurosciences, University of California, San Diego, La Jolla, CA, \textsuperscript{4}Salk Institute for Biological Studies, San Diego, CA

4:50 pm  M131  
Phosphofructokinase (PFK-1) self-interaction is necessary for its clustering near synapses.  
Z. Xuan\textsuperscript{1}, S.K. Jang\textsuperscript{1}, S. Prakash\textsuperscript{1}, L. Jawerth\textsuperscript{2}, B. Kim\textsuperscript{1}, A. Patel\textsuperscript{1}, D. Albrecht\textsuperscript{1}, A.A. Hyman\textsuperscript{2}, D.A. Colón-Ramos\textsuperscript{1,4}; \textsuperscript{1}Department of Neuroscience, Cell Biology and Program in Cellular Neuroscience, Neurodegeneration and Repair, Yale University, New Haven, CT, \textsuperscript{2}Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany, \textsuperscript{3}Department of Biomedical Engineering, Worcester Polytechnic Institute, Worcester, MA, \textsuperscript{4}Instituto de Neurobiología, Universidad de Puerto Rico, San Juan, Puerto Rico
Minisymposium 14: Cell Size, Cell Division, and Contractility

4:15-6:50 pm

Ballroom 20A

Co-Chairs: Jan Skotheim, Stanford University; and Amy Maddox, University of North Carolina, Chapel Hill

4:15 pm

Introduction

4:20 pm M139

Constructing DNA-binding modules to sense changes in cell volume. C.W. Sandlin\textsuperscript{1}, H. Chen\textsuperscript{1}, M.C. Good\textsuperscript{1}; \textsuperscript{1}Cell and Developmental Biology, University of Pennsylvania, Philadelphia, PA

4:35 pm M140

The biosynthetic basis of cell size control. D. Chandler-Brown\textsuperscript{1,}, K. Schmoller\textsuperscript{1}, M. Swaffer\textsuperscript{1}, J. Turner\textsuperscript{1}, M. Langhinrichs\textsuperscript{1}, J.M. Skotheim\textsuperscript{1}; \textsuperscript{1}Biology, Stanford University, Stanford, CA

4:50 pm M141

Aurora-A breaks symmetry in C. elegans zygotes independently of its role in centrosome maturation. P. Zhao\textsuperscript{1,2}, X. Teng\textsuperscript{1}, M. Nishikawa\textsuperscript{1,2}, Y. Toyama\textsuperscript{1,2}, F. Motegi\textsuperscript{1,2,3}; \textsuperscript{1}Temasek Lifesciences Laboratory, Singapore, Singapore, \textsuperscript{2}Biological Sciences, National University of Singapore, Singapore, Singapore, \textsuperscript{3}Mechanobiology Institute, Singapore, Singapore, Singapore, \textsuperscript{4}Frontier Bioscience, Hosei University, Tokyo, Japan

5:05 pm M142

A reaction-diffusion mechanism for crossover regulation during meiosis. L. Zhang\textsuperscript{1,2}, W.T. Stauffer\textsuperscript{1,2,3}, S. Köhler\textsuperscript{1,2,3}, R. Rillo-Bohn\textsuperscript{1,2}, A.F. Dernburg\textsuperscript{1,2,4,5}; \textsuperscript{1}Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA, \textsuperscript{2}Howard Hughes Medical Institute, Chevy Chase, MD, \textsuperscript{3}Integrative Biology, University of California, Berkeley, Berkeley, CA, \textsuperscript{4}California Institute for Quantitative Biology (QB3), Berkeley, CA, \textsuperscript{5}Biological Systems and Engineering, Lawrence Berkeley National Laboratory, Berkeley, CA

5:20 pm M143

The regulation of nuclear remodelling at mitotic exit. G. Dei\textsuperscript{1}, S. Bruderer\textsuperscript{1,2}, M. Balasubramanian\textsuperscript{1}, W. Kuksulski\textsuperscript{1}, B. Baum\textsuperscript{1}; \textsuperscript{1}MRC Lab for Molecular Cell Biology, University College London, London, United Kingdom, \textsuperscript{2}Imperial College London, London, United Kingdom, \textsuperscript{3}Warwick Medical School, University of Warwick, Warwick, United Kingdom, \textsuperscript{4}MRC Lab for Molecular Cell Biology, University of Pennsylvania, Philadelphia, PA

*5:35 pm M144

Metaphase actin waves drive mitochondrial motility to promote spatial mixing of mtDNA before cell division. A.S. Moore\textsuperscript{1}, S.M. Coscia\textsuperscript{1}, C.L. Simpson\textsuperscript{1}, J.J. Nirschl\textsuperscript{1}, E.L. Holzbaur\textsuperscript{1}; \textsuperscript{1}Physiology, University of Pennsylvania, Philadelphia, PA

5:50 pm M145

Integration of biochemical signals and mechanical forces in the synchronization of the cell cycle. V.E. Deneke\textsuperscript{1}, A. Puliafito\textsuperscript{1}, D. Krueger\textsuperscript{1}, A. Narla\textsuperscript{1}, M. Vergassola\textsuperscript{1}, S. De Renzis\textsuperscript{3}, S. Di Talia\textsuperscript{3}; \textsuperscript{1}Cell Biology, Duke University, Durham, NC, \textsuperscript{2}IRC, Turin, Italy, \textsuperscript{3}EMBL Heidelberg, Heidelberg, Germany, \textsuperscript{4}University of California San Diego, San Diego, CA
Three mechanisms generate tension in the fission yeast contractile ring: sliding filament, fixed filament and unanchored myosin-II. \textit{S. Thiyagarajan} \textsuperscript{1}, \textit{S. Wang} \textsuperscript{2}, \textit{H.F. Chin} \textsuperscript{1}, \textit{T.D. Pollard} \textsuperscript{1,2,4,5}, \textit{B. O’Shaughnessy} \textsuperscript{1}; \textsuperscript{1}Chemical Engineering, Columbia University, New York, NY; \textsuperscript{2}Physics, Columbia University, New York, NY; \textsuperscript{3}Molecular Cellular and Developmental Biology, Yale University, New Haven, CT; \textsuperscript{4}Molecular Biophysics and Biochemistry, Yale University, New Haven, CT; \textsuperscript{5}Cell Biology, Yale University, New Haven, CT

Actin filaments locally template filament elongation to provide a structural memory of filament alignment during cytokinesis. \textit{Y. Li} \textsuperscript{1}, \textit{E.M. Munro} \textsuperscript{1,2}; \textsuperscript{1}Committee on Development, Regeneration, and Stem Cell Biology, the University of Chicago, Chicago, IL; \textsuperscript{2}Molecular Genetics and Cell Biology, the University of Chicago, Chicago, IL

Novel cytokinetic ring components limit myosin levels and closure speed. \textit{K.R. Bell} \textsuperscript{1}, \textit{M.E. Werner} \textsuperscript{1}, \textit{A. Doshi} \textsuperscript{1}, \textit{D.B. Cortes} \textsuperscript{1}, \textit{A.S. Maddox} \textsuperscript{1}; \textsuperscript{1}Biology, UNC - Chapel Hill, Chapel Hill, NC

* Andrew Moore is an ASCB Porter Prize for Research Excellence Awardee.

**Minisymposium 15: Cytoskeleton, Motility, and Cell Mechanics: Tracks**

\textbf{Ballroom 208C}

\textbf{Co-Chairs: Brad Nolen, University of Oregon; and Radhika Subramanian, Harvard Medical School and Massachusetts General Hospital}

\textbf{4:15-6:50 pm}

\textbf{4:15 pm M146} Three mechanisms generate tension in the fission yeast contractile ring: sliding filament, fixed filament and unanchored myosin-II. \textit{S. Thiyagarajan} \textsuperscript{1}, \textit{S. Wang} \textsuperscript{2}, \textit{H.F. Chin} \textsuperscript{1}, \textit{T.D. Pollard} \textsuperscript{1,2,4,5}, \textit{B. O’Shaughnessy} \textsuperscript{1}; \textsuperscript{1}Chemical Engineering, Columbia University, New York, NY; \textsuperscript{2}Physics, Columbia University, New York, NY; \textsuperscript{3}Molecular Cellular and Developmental Biology, Yale University, New Haven, CT; \textsuperscript{4}Molecular Biophysics and Biochemistry, Yale University, New Haven, CT; \textsuperscript{5}Cell Biology, Yale University, New Haven, CT

\textbf{4:20 pm M147} Actin filaments locally template filament elongation to provide a structural memory of filament alignment during cytokinesis. \textit{Y. Li} \textsuperscript{1}, \textit{E.M. Munro} \textsuperscript{1,2}; \textsuperscript{1}Committee on Development, Regeneration, and Stem Cell Biology, the University of Chicago, Chicago, IL; \textsuperscript{2}Molecular Genetics and Cell Biology, the University of Chicago, Chicago, IL

\textbf{4:35 pm M150} A complex containing lysine-acetylated actin and cyclase-associated protein inhibits the formin INF2. \textit{M. A.} \textsuperscript{1}, \textit{H.N. Higgs} \textsuperscript{1}; \textsuperscript{1}Biochemistry, Dartmouth College, Hanover, NH

\textbf{5:05 pm M152} Ena/VASP is fine-tuned for processive elongation on actin filaments bound by filopodia crosslinker fascin. \textit{A.J. Harker} \textsuperscript{1}, \textit{H.H. Katkar} \textsuperscript{1,2,3,4}, \textit{T.C. Bidone} \textsuperscript{1,2,3,4}, \textit{F. Aydin} \textsuperscript{1,2,3,4}, \textit{G.A. Voth} \textsuperscript{1,2,3,4}, \textit{D.A. Applewhite} \textsuperscript{1,5}, \textit{D.R. Kvar} \textsuperscript{1,6}; \textsuperscript{1}Department of Biochemistry and Molecular Biology, University of Chicago, Chicago, IL; \textsuperscript{2}Department of Chemistry, University of Chicago, Chicago, IL; \textsuperscript{3}The James Franck Institute, University of Chicago, Chicago, IL; \textsuperscript{4}Institute for Biophysical Dynamics, University of Chicago, Chicago, IL; \textsuperscript{5}Department of Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL; \textsuperscript{6}Department of Chemistry and Biochemistry, University of Oregon, Eugene, OR; \textsuperscript{7}Biochemistry, University of Washington, Seattle, WA

\textbf{5:20 pm M153} Muscle specific stress fibers give rise to sarcomeres and are mechanistically distinct from stress fibers in non-muscle cells. \textit{A.M. Fenix} \textsuperscript{1}, \textit{M.R. Visetsouk} \textsuperscript{2}, \textit{N. Taneja} \textsuperscript{1}, \textit{A.C. Neininger} \textsuperscript{1}, \textit{R. Garde} \textsuperscript{1}, \textit{B. Liu} \textsuperscript{1}, \textit{B.R. Nixon} \textsuperscript{1}, \textit{A. Manalo} \textsuperscript{1}, \textit{J.R. Becker} \textsuperscript{1}, \textit{S.W. Crawley} \textsuperscript{1}, \textit{D. Bader} \textsuperscript{1}, \textit{M.J. Tyska} \textsuperscript{1}, \textit{Q. Liu} \textsuperscript{1}, \textit{B.J. Nolen} \textsuperscript{1}; \textsuperscript{1}Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL; \textsuperscript{2}Chemistry and Biochemistry, University of Oregon, Eugene, OR; \textsuperscript{3}Department of Biology, Reed College, Portland, OR; \textsuperscript{4}Department of Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL

\textbf{5:35 pm M154} Severing enzymes amplify microtubule arrays through lattice GTP-tubulin incorporation. \textit{A. Vemu} \textsuperscript{1}, \textit{E. Szczesna} \textsuperscript{1}, \textit{E. Zehr} \textsuperscript{1}, \textit{J.O. Spector} \textsuperscript{1}, \textit{N. Grigorieff} \textsuperscript{2,3,4}, \textit{A.M. Deaconescu} \textsuperscript{1,5}, \textit{A. Roll-Mecak} \textsuperscript{1,5}; \textsuperscript{1}Cell Biology and Biophysics Unit, Porter Neuroscience Research Center, National Institute of Neurological Disorders and Stroke, Bethesda, MD; \textsuperscript{2}Howard Hughes Medical Institute, Janelia Farm Research Campus, Ashburn, VA; \textsuperscript{3}Department of Molecular Biology, Cell Biology and Biophysics, Brown University, Providence, RI; \textsuperscript{4}Biochemistry & Biophysics Center, National Heart, Lung and Blood Institute, Bethesda, MD; \textsuperscript{5}Howard Hughes Medical Institute, University of California, Davis, CA

\textbf{5:50 pm M155} Human β-tubulin isotypes regulate microtubule protofilament number and stability. \textit{S. Ti} \textsuperscript{1}, \textit{G.M. Alushin} \textsuperscript{1}, \textit{T.M. Kapoor} \textsuperscript{1}; \textsuperscript{1}Laboratory of Chemistry and Cell Biology, The Rockefeller University, New York, NY; \textsuperscript{2}Laboratory of Structural Biophysics and Mechanobiology, The Rockefeller University, New York, NY

\textbf{6:05 pm M156} Cryo-EM structure of the tubulin cofactors-Arl2-alpha/beta-tubulin complex reveal the molecular basis for alpha/beta-tubulin biogenesis and topology. \textit{Z. Wang} \textsuperscript{1}, \textit{F. Guo} \textsuperscript{1}, \textit{J.K. Moore} \textsuperscript{2}, \textit{J. Al-Bassam} \textsuperscript{1}; \textsuperscript{1}Molecular Cellular Biology, University of California, Davis, Davis, CA; \textsuperscript{2}Cell and Molecular Biophysics, Yale University, New Haven, CT
Minisymposium 16: Organelle Homeostasis

4:15-6:50 pm  Room 30C

Co-Chairs: Adam Hughes, University of Utah School of Medicine; and Marisa Otegui, University of Wisconsin-Madison

4:15 pm  M157
Introduction

6:20 pm  M157
Direct induction of microtubule branching by microtubule nucleation factor SSNA1. N. Basnet1, H. Nedorozlova1, A.H. Crevenna2, S. Bodakuntla3, T. Schlichthaerle1, M. Taschner3, G. Cardone3, C. Janke3, R. Jungmann3, M.M. Magiera3, C. Biertuempfel3, N. Mizuno3; 1Department of Structural Cell Biology, Max Planck Institute of Biochemistry, Munich, Germany, 2Biomolecular Self-Organization, Instituto de Tecnologia Quimica e Biologica António Xavier, Lisbon, Portugal, 3Genotoxic Stress and Cancer, Institut Curie, Paris, France, 4Department of Fundamental Microbiology, University of Lausanne, Lausanne, Switzerland

6:35 pm  M158
The means to an end: How the ciliary kinesin Kif7 finds microtubule ends. S. Jiang1, N. Mani1, E.M. Wilson-Kubalek1, P. Ku2, R.A. Milligan2, R. Subramanian2; 1Molecular Biology, Harvard Medical School and MGH, Boston, MA, 2The Scripps Research Institute, San Diego, CA

* Kelsie Eichel is the 2018 ASCB Merton Bernfield Awardee.
Minisymposium 17: Regulation of Autophagy

Supported by Biogen

Co-Chairs: Meng Wang, Baylor College of Medicine; and Hong Zhang, Institute of Biophysics, Chinese Academy of Sciences

4:15 pm Introduction

4:20 pm M169 Tethering the ER with the isolation membrane for autophagosome formation. Y. Zhao1, H. Zhang1,2; 1Department of Molecular, Cell and Cancer Biology, University of Massachusetts Medical School, Worcester, MA, 2National Laboratory of Biomacromolecules, Institute of Biophysics, Chinese Academy of Sciences, Beijing, China

4:35 pm M170 The autophagy-related gene ATG2A encodes a lipid transfer protein. S. Yu1, D. Valverde1, V. Boggavarapu1, T. Walz1, K.M. Reinisch*, T.J. Melia*; 1Department of Cell Biology, Yale University, New Haven, CT, 2Laboratory of Molecular Electron Microscopy, The Rockefeller University, New York, NY

4:50 pm M171 Conserved protein machinery regulates the autophagosome lipid composition. M. Graef1; 1MPRG Graef, Max Planck Institute for Biology of Ageing, Cologne, Germany

5:05 pm M172 Differential proteomic analysis identifies TEX264 as a novel receptor for ER autophagy. H. CHINO1,2, H. Hatta1, T. Natsume1, N. Mizushima1; 1Department of Biochemistry and Molecular Biology, The University of Tokyo, Tokyo, Japan, 2Department of Respiratory Medicine, The University of Tokyo, Tokyo, Japan, 3Biomedical Information Research Center, National Institute of Advanced Industrial Science and Technology, Tokyo, Japan

5:20 pm M173 A novel Atg39-mediated nucleolar autophagy pathway in response to DNA replication stress. A. Van Elgort1, L. Peruchò Jamies1, K.B. Kaplan1; 1Molecular and Cellular Biology, University of California, Davis, Davis, CA

5:35 pm M174 Lysosomal Signaling in Orchestrating Cellular and Organism Homeostasis. M.C. Wang1,2; 1Molecular and Human Genetics, Baylor College of Medicine, Houston, TX, 2Howard Hughes Medical Institute, Chevy Chase, MD

5:50 pm M175 Distinct Spatiotemporal Control of Macro-autophagy by Acute Glucose Restriction Remodels Vacular Liquid-ordered Membrane Domain to Regulate Cellular Lipid Metabolism and Survival during Starvation. A.Y. Seo1, F. Sarklet2, J. Lippincott-Schwartz1; 1Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA

6:05 pm M176 A novel autophagic mechanism mediating cellular lipid droplet catabolism. R.J. Schulze1, M.B. Schott1, S.G. Weller1, E.W. Krueger1, C.A. Casey1, M.A. McNiven1; 1Biochemistry and Molecular Biology, Mayo Clinic, Rochester, MN, 2Internal Medicine, University of Nebraska Medical Center, Omaha, NE

6:20 pm M177 Structural and biochemical analyses of the autophagic ATG2A-WIPI4 complex. S. Chowdhury1, C. Otomo1, A. Leitner1, K. Ohashi1, A. Rudolf1, G.C. Lander1, T. Otomo1; 1Integrative Structural and Computational Biology, The Scripps Research Institute, San Diego, CA, 2Institute of Molecular Systems Biology, Eidgenössische Technische Hochschule Zürich, Zurich, Switzerland, 3Faculty of Science, University of Zurich, Zurich, Switzerland

6:35 pm M178 Coordination of Class II PI3-kinase and Mtm PI3-phosphatase functions in autophagy. A.A. Kiger1, J. Groulx1, S. Jean1, M. Velichkova1, P. Kadandale1, N. Fujita1, S. Cox1, S. Kumar1; 1Cell & Developmental Biology, UC San Diego, La Jolla, CA
Reception: Enabling Persistence in Science: Creating Inclusive Environments through Microaffirmations

7:00-8:30 pm
Room 32B

Leticia Márquez-Magaña, Professor of Biology, San Francisco State University
Patricia Castruita, Post-baccalaureate researcher, University of California, San Francisco
Kenjus Watson, Postdoctoral Fellow, San Francisco State University

Research training and teaching environments in particular domains of science often reflect the culture of population group(s) predominant in its sub-fields (e.g., cell biology). While this affirms the culture and values of the historically predominant group, it often does not affirm the culture, lived experiences, or values of historically underrepresented students in those sub-fields. This session will discuss evidence of the negative outcomes, including exit from science, associated with this phenomenon in both research labs and classrooms. We will also share strategies to support faculty in creating more affirming and inclusive environments through verbal and non-verbal use of microaffirmations to improve persistence of historically underrepresented students in all domains of science.

Outcomes:

1. Gain an understanding of stereotype threat and other psychosocial barriers to persistence in science for historically underrepresented groups.
2. Learn strategies for creating affirming and inclusive environments in science.
3. Develop ideas for verbal and non-verbal microaffirmations.

Target audience: all attendees