TUESDAY
DECEMBER 10, 2019
### Daily Schedule—Tuesday, December 10

<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>West Salon</td>
</tr>
<tr>
<td>8:00–9:30 am</td>
<td>Symposium 6: Getting from Here to There: Individual and Collective Cell Migrations</td>
<td>Ballroom B</td>
</tr>
<tr>
<td>8:15–9:15 am</td>
<td>Exhibitor Tech Talk</td>
<td>Theater 2, Exhibit Hall B</td>
</tr>
<tr>
<td></td>
<td>Leica Microsystems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leica THUNDER Imagers – Decode 3D Biology in Real Time</td>
<td></td>
</tr>
<tr>
<td>8:45–9:00 am</td>
<td>Exhibitor Tech Talk</td>
<td>Theater 1, Exhibit Hall A</td>
</tr>
<tr>
<td></td>
<td>CellBox Solutions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>THE LIVE CELL SHIPPER - A Portable CO2 Incubator to Revolutionize Life Science Supply Chain Programs</td>
<td></td>
</tr>
<tr>
<td>9:00 am–12:00 pm</td>
<td>Career Coaching/Immigration Advice</td>
<td>Career Center, Exhibit Hall B</td>
</tr>
<tr>
<td>9:00–9:50 am</td>
<td>Careers in Industry: Beyond the Bench Inside Biotech</td>
<td>Theater 3, Exhibit Hall B</td>
</tr>
<tr>
<td>9:00–9:15 am</td>
<td>Exhibitor Tech Talk</td>
<td>Theater 1, Exhibit Hall A</td>
</tr>
<tr>
<td></td>
<td>ExpressCells</td>
<td></td>
</tr>
<tr>
<td></td>
<td>FAST-HDR: A Novel Vector System for the Rapid Development of Knock-In Cell Lines</td>
<td></td>
</tr>
<tr>
<td>9:00–9:50 am</td>
<td>How to Give a Chalk Talk</td>
<td>Theater 4, Exhibit Hall B</td>
</tr>
<tr>
<td>9:30–10:30 am</td>
<td>Exhibitor Tech Talk</td>
<td>Theater 1, Exhibit Hall A</td>
</tr>
<tr>
<td></td>
<td>Axiom Optics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Expanding Confocal Imaging into the Near Infrared Wavelengths</td>
<td></td>
</tr>
<tr>
<td>9:30–11:00 am</td>
<td>Morning Refreshment Break</td>
<td>Exhibit Hall AB</td>
</tr>
<tr>
<td>9:45–10:45 am</td>
<td>Symposium 7: Google Maps of the Cell: Controlling Intracellular Traffic Flow and Direction</td>
<td>Ballroom B</td>
</tr>
<tr>
<td>10:00 am–12:00 pm</td>
<td>EMBO Lab Leadership—Teamwork and Conflict in the Lab</td>
<td>Room 154</td>
</tr>
<tr>
<td>10:00–10:50 am</td>
<td>How to Boost Your Research Project with the Support of International Research Infrastructures</td>
<td>Theater 4, Exhibit Hall B</td>
</tr>
<tr>
<td>10:00–10:50 am</td>
<td>Searching for a Faculty Position and Starting a Lab at a Primarily Undergraduate Institution</td>
<td>Theater 3, Exhibit Hall B</td>
</tr>
<tr>
<td>10:45–11:45 am</td>
<td>Exhibitor Tech Talk</td>
<td>Theater 2, Exhibit Hall B</td>
</tr>
<tr>
<td></td>
<td>ChromoTek GmbH</td>
<td></td>
</tr>
<tr>
<td></td>
<td>An Innovative Class of Secondary Antibodies Based on Alpaca Nanobodies</td>
<td></td>
</tr>
<tr>
<td>10:45–11:45 am</td>
<td>Exhibitor Tech Talk</td>
<td>Theater 1, Exhibit Hall A</td>
</tr>
<tr>
<td></td>
<td>Bruker</td>
<td></td>
</tr>
<tr>
<td></td>
<td>From Single Molecules to Tissues - A New AFM Toolkit for Nanoscopic Investigation of Mechanics, Structures and Dynamic Processes in Life Science</td>
<td></td>
</tr>
<tr>
<td>10:45 am–12:00 pm</td>
<td>How to Improve Research Assessment during the Triage Phase of Application Review</td>
<td>Room 204AB</td>
</tr>
<tr>
<td>10:45 am–12:00 pm</td>
<td>WICB Awards and Mentoring Theater: Self-Advocacy—If Not You, Who?</td>
<td>Room 151A</td>
</tr>
<tr>
<td>10:45 am–12:00 pm</td>
<td>Writing Better Exam Questions for Undergraduate Cell Biology</td>
<td>Room 209AB</td>
</tr>
<tr>
<td>11:00 am–12:00 pm</td>
<td>Microsymposia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13. Actin Filaments: Binding and Assembly</td>
<td>Room 201</td>
</tr>
<tr>
<td></td>
<td>14. Cellular Imaging of Cytoskeletal Dynamics</td>
<td>Room 206</td>
</tr>
<tr>
<td></td>
<td>15. Dynamics of the Genome and Epigenome</td>
<td>Room 145A</td>
</tr>
<tr>
<td></td>
<td>16. Intracellular Trafficking &amp; Membrane Recycling</td>
<td>Room 147A</td>
</tr>
<tr>
<td></td>
<td>17. New Perspectives in Cell Biology: Frontiers of Microscopy</td>
<td>Room 146C</td>
</tr>
<tr>
<td></td>
<td>18. Stem Cell Differentiation and Techniques</td>
<td>Room 151B</td>
</tr>
<tr>
<td>12:00–12:50 pm</td>
<td>Finding and Starting a Lab at a R1 Institution</td>
<td>Theater 3, Exhibit Hall B</td>
</tr>
<tr>
<td>12:00–1:30 pm</td>
<td>Odd-Numbered Poster Presentations</td>
<td>Exhibit Hall AB</td>
</tr>
<tr>
<td>12:00–12:50 pm</td>
<td>Preparing Your Academic Application Materials</td>
<td>Theater 4, Exhibit Hall B</td>
</tr>
<tr>
<td>1:00–1:50 pm</td>
<td>Barriers to Expanding the Ranks of Staff Scientists in Biomedical Research</td>
<td>Theater 4, Exhibit Hall B</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>Career Coaching/Immigration Advice</td>
<td>Career Center, Exhibit Hall B</td>
</tr>
<tr>
<td>1:00–1:50 pm</td>
<td>Careers in Science Policy</td>
<td>Theater 3, Exhibit Hall B</td>
</tr>
<tr>
<td>1:00–1:50 pm</td>
<td>Elevator Speech Contest Awards</td>
<td>ASCB Booth 612, Exhibit Hall</td>
</tr>
<tr>
<td>1:00–1:45 pm</td>
<td>Exhibitor Tech Talk Synthego Efficient Scarless Genome Engineering of Induced Pluripotent Stem Cells</td>
<td>Theater 2, Exhibit Hall B</td>
</tr>
<tr>
<td>1:00–1:45 pm</td>
<td>Exhibitor Tech Talk Andor Technology Live Cell Microscopy: Optimizing Resolution, Speed, Field of View, and Robust Downstream Analysis</td>
<td>Theater 1, Exhibit Hall A</td>
</tr>
<tr>
<td>1:00–2:00 pm</td>
<td>Roundtable Discussions</td>
<td>Roundtables, Exhibit Hall B</td>
</tr>
<tr>
<td>1:30–3:00 pm</td>
<td>Afternoon Refreshment Break</td>
<td>Exhibit Hall AB</td>
</tr>
<tr>
<td>2:00–2:50 pm</td>
<td>Careers Beyond the Bench Outside Biotech—Science Infrastructure, Management, and Development</td>
<td>Theater 3, Exhibit Hall B</td>
</tr>
<tr>
<td>2:00–3:15 pm</td>
<td>Writing Your Science Story: How to Get Everyone Else Excited about Your Work</td>
<td>Theater 4, Exhibit Hall B</td>
</tr>
<tr>
<td>2:30–3:00 pm</td>
<td>Meet the Committees</td>
<td>ASCB Booth 612, Exhibit Hall</td>
</tr>
<tr>
<td>3:00–4:00 pm</td>
<td>Exhibitor Tech Talk LUMICKS USA Inc. Step into the Unresolved: Versatile Tools Toward Real-Time Single-molecule Biology and Acoustic Force-Based Cell Avidity Analysis</td>
<td>Theater 1, Exhibit Hall A</td>
</tr>
<tr>
<td>3:15–4:00 pm</td>
<td>E.B. Wilson Medal Presentation and Address: Peter Devreotes</td>
<td>Ballroom B</td>
</tr>
<tr>
<td>4:15–6:50 pm</td>
<td>Minisymposia</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12. Autophagy, Protein Turnover, and Quality Control</td>
<td>Room 206</td>
</tr>
<tr>
<td></td>
<td>13. Biological Phase Separation: From Phenomenon to Function</td>
<td>Room 207B</td>
</tr>
<tr>
<td></td>
<td>14. Cell Polarity</td>
<td>Room 146C</td>
</tr>
<tr>
<td></td>
<td>15. Cytoskeleton in Vitro</td>
<td>Room 147A</td>
</tr>
<tr>
<td></td>
<td>16. Dynamics of Morphogenesis in Cells, Tissues, and Organisms</td>
<td>Room 202B</td>
</tr>
<tr>
<td></td>
<td>17. Nucleus Structure and Dynamics</td>
<td>Room 146A</td>
</tr>
<tr>
<td>4:15–7:15 pm</td>
<td>Subgroup W: Maintenance of Genome Integrity in Health and Disease</td>
<td>Room 145A</td>
</tr>
<tr>
<td>4:15–6:50 pm</td>
<td>Workshop: Recent Advances in Single-Cell Transcriptomics</td>
<td>Room 151B</td>
</tr>
<tr>
<td>7:15–8:15 pm</td>
<td>GFP25: Lighting up Cell Biology</td>
<td>Room 145AB</td>
</tr>
</tbody>
</table>
Tuesday, December 10

- **Registration Open**
  
  7:30 am–6:00 pm
  
  West Salon

- **Symposium 6: Getting from Here to There: Individual and Collective Cell Migrations**
  
  8:00–9:30 am
  
  Ballroom B
  
  **Chair: Anna Huttenlocher, University of Wisconsin–Madison**

  8:00 am  **S13**  Dendritic Cell Migration at Various Scales. *A. Lennon-Duménil*, Institut Curie, France, Paris, FRANCE.

  8:30 am  **S14**  Collective Cell Movements: Cellular and Molecular Dynamics at the Leading Edge. *G. Scepanovic, R. Fernandez-Gonzalez*, University of Toronto, Toronto, ON, CANADA.

  9:00 am  **S15**  Mechanosensation of Tight Junctions by Zo-1 Phase Separation and Flow. *C. Heisenberg*, IST Austria, Klosterneuburg, AUSTRIA.

- **Exhibitor Tech Talk**
  
  8:15–9:15 am
  
  Theater 2, Exhibit Hall B
  
  **Leica Microsystems**
  
  **Leica THUNDER Imagers – Decode 3D Biology in Real Time**
  
  **Presenter: Evan Darling**, Product Manager Advanced 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. However, 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 Imagers—a family of widefield imaging solutions designed to deliver benchmark application performance in core life science applications. Leica Microsystems’ 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.

- **Exhibitor Tech Talk**
  
  8:45–9:00 am
  
  Theater 1, Exhibit Hall A
  
  **CellBox Solutions**
  
  **THE LIVE CELL SHIPPER - A Portable CO2 Incubator to Revolutionize Life Science Supply Chain Programs**
  
  **Presenter:** Corné Swart, PhD
  
  **Level:** Introductory

  Are you tired of the losses in quality and viability as a result of inadequate logistics solutions for cell and tissue transport? Are you interested in finding a solution for sending cells or cell based products to their final destination, safe and sound? The Cellbox is the first self-sufficient transport incubator that maintains the optimal temperature and CO2 environment for living cells and tissues, in the same manner that they would be cultivated in the laboratory. The Cellbox reduces the lead time in your logistic chain by up to two-thirds: no need to freeze, thaw and regenerate samples any longer. By shipping under user-defined conditions, the Cellbox eliminates the risks that sensitive cells face when exposed to extreme conditions and toxic additives in the cold chain. Join the Cellbox technology presentation and learn why Cellbox is the becoming the trusted choice for safe and reliable shipping - regardless of whether the intended transport of your iPSC-derived cells, organoids, tissues and other cell based samples is by road, rail, sea or air.
Career Coaching/Immigration Advice

9:00 am–12:00 pm  
Career Center, Exhibit Hall B

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

Professional career coaches from the East Coast

Stop by the Career Center to meet with a professional career coach. During these one-on-one sessions participants will receive individualized advice including but not limited to strategies for choosing a career and individualized review of application materials. Signups are first-come, first-served and participants are strongly encouraged, but not required, to bring print copies of application materials such as CVs and resumes.

Outcomes:
1. Obtain professional one-on-one mentorship focused on pursuing a career in science.
2. Gain insight into the career options available in the life sciences.
3. Learn individualized strategies to search and apply for job opportunities in your career of choice.
4. Gain critical advice for editing resumes, CVs, and application materials.

Target audience: while available to all, these one-on-one sessions are targeted to graduate students and postdoctoral fellows preparing for a career in the life sciences.

Immigration advice will be available from representatives from Getson & Schatz, PC, an immigration law firm in Philadelphia.

Careers in Industry: Beyond the Bench Inside Biotech

9:00–9:50 am  
Theater 3, Exhibit Hall B

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

Mansi Khanna, Regulatory Writer, Synchrogenix
Kimya Harris, Head of Intellectual Property and Legal Affairs, KSQ Therapeutics, Inc.
Diane Kambach, Team Leader, Field Application Scientists, BioTek Instruments

This panel discussion will focus on exploring biotechnology career options beyond research. Many PhDs face barriers to jobs in industry because they lack understanding of the field. Career options in biotechnology are wide in scope, and the goal of this session is to expose attendees to these paths. This panel has experience in health analytics, operations and logistics, legal affairs, and marketing.

Outcomes:
1. Learn about the range of non-research career opportunities in biotechnology.
2. Have an opportunity to begin networking with leaders in industry.
3. Identify skills and strategies needed to pursue a career in an industry career beyond the bench.

Target audience: all attendees
**Exhibitor Tech Talk**

**FAST-HDR: A Novel Vector System for the Rapid Development of Knock-In Cell Lines**

**Presenter:** Oscar Perez-Leal, MD  
**Level:** Intermediate

CRISPR has created new possibilities for studying cellular proteins under physiologic conditions by facilitating knock-in of large protein tags. However, its use for this purpose is limited because with conventional methods, the process is tedious and time-consuming. Here we describe a homologous recombination vector system, FAST-HDR, which, in combination with CRISPR, significantly accelerates the process of developing cell lines with multiple, labeled endogenous targets for multiplex imaging. The FAST-HDR vector system has been used to insert fluorescent tags including mClover3, mRuby3, and BFP2, the bioluminescent tag Nanoluc®, and the protein purification tag HaloTag®. However, the system can easily be modified to accommodate any protein tag. In-frame expression of a eukaryotic antibiotic resistance gene occurs only in successfully modified cells, facilitating clone selection during the final stage of cell line development. Efficiencies achieved by the system allow creation of knock-in cell lines.

**How to Give a Chalk Talk**

**Organized by the ASCB Committee for Postdocs and Students (COMPASS)**  
**Erik Snapp, Director of Graduate and Postdoctoral Programs, HHMI/Janelia Research Campus**

Are you interested in a career in academia but unfamiliar with the standards and expectations 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 provides 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 being an independent and innovative thinker and an effective communicator.
3. Learn what qualities interviewers are looking for and how to portray those during a chalk talk.

**Target audience:** graduate students and postdocs considering an academic career track

**Exhibitor Tech Talk**

**Expanding Confocal Imaging into the Near Infrared Wavelengths**

**Presenter:** Peter Drent  
**Level:** Advanced

Since the introduction of the confocal microscope, 3D imaging has become the norm. By using the confocal.nl RCM upgrade box, a confocal microscope is created on the basis of an imaging microscopy setup, which has 3x better sensitivity, and has 40% better resolution than other (traditional) confocal microscopes on the market. Because of the disruptive product concept, we can offer our confocal solution at a very affordable price level. On top of that, the RCM confocal microscope is very easy to use, offering consistent results for all users. One of the unique features of the RCM confocal microscope is that it is camera based. Cameras are made with different resolutions, different sensitivities but also with different wavelength sensitivities. Recently new cameras have been released offering 95% QE. These new cameras make the RCM confocal microscope 3x more sensitive that a typical GaAsP PMT (30% QE) based confocal microscope. By optimizing the internal optics for NIR wavelengths (650 - 850nm) and changing the camera type to a NIR camera, a sensitive NIR confocal microscope is created. Normally the use of NIR wavelengths is associated with lower resolution because of the longer wavelengths, but the re-scanning principle of the RCM improves the resolution again. At 780nm excitation the resolution of a confocal microscope is 330nm but RCM improves this to 250nm! RCM-VIS and RCM-NIR are available as complete microscope systems but also as upgrade versions from confocal.nl.
Morning Refreshment Break

9:30–11:00 am  Exhibit Hall AB
Join us for complimentary coffee and tea while visiting exhibitors and viewing posters.

Symposium 7: Google Maps of the Cell: Controlling Intracellular Traffic Flow and Direction

9:45–10:45 am  Ballroom B
Chair: George Langford, Syracuse University

9:45 am  S16  Building Memories: Cell Biological Mechanisms Underpinning Synapse Assembly and Function.  
D. Colón-Ramos; Yale University, New Haven, CT.
E. Ikonen; University of Helsinki, Helsinki, FINLAND.

EMBO Lab Leadership—Teamwork and Conflict in the lab

10:00 am–12:00 pm  Room 154
Samuel Krahl, EMBO Solutions 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) and senior postdocs

How to Boost Your Research Project with the Support of International Research Infrastructures

10:00 –10:50 am  Theater 4, Exhibit Hall B
Frauke Litner, EMBL
Bahne Stechmann, EU-Openscreen ERIC
Radislav Sedláček, Institute of Molecular Genetics of the ASCR, v. v. i.
Naomi Gray, Instruct-ERIC
Research is becoming ever more complex and increasingly requires access to state-of-the-art technologies and specialised expertise, which are not always available to researchers. Consequently, 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. Academic institutions aim to fill this gap by joining forces within international research infrastructures, which allow researchers to integrate innovative technologies, resources, and expertise (e.g., in imaging, compound screening, mouse disease models, and structural biology) in their research projects. This interactive session will be a unique opportunity for international scientists to learn how researchers have benefitted from working with the four research infrastructures Euro-BioImaging (www.eurobioimaging.eu), EU-OPENSCREEN (www.eu-openscreen.eu), INFRAFRONTIER (www.infrafrontier.eu), and Instruct-ERIC (instruct-eric.eu). Different funding options will be presented.
Outcomes:
1. Learn about the research opportunities provided by the four international research infrastructures: Euro-BioImaging, EU-OPENSCREEN, INFRAFRONTIER, and Instruct-ERIC.
2. Discover technologies, resources, and expertise offered in biological and medical imaging, compound screening, mouse disease model phenotyping, and structural biology.
3. Understand application procedures and discuss them with experts onsite to successfully integrate offered technologies and expertise in your own research projects.

Target audience: all attendees

Searching for a Faculty Position and Starting a Lab at a Primarily Undergraduate Institution

10:00 –10:50 am Theater 3, Exhibit Hall B
Organized by the ASCB Committee for Postdocs and Students (COMPASS) and the Council on Undergraduate Research (CUR)

Michael Wolyniak, Associate Professor, Hampden-Sydney College
Lance Barton, Professor, Austin College
Rebecca Burgess, Assistant Professor, Stevenson University
Karen Resendes, Associate Professor, Westminster College

Many trainees opt to teach and start their labs at primarily undergraduate institutions (PUIs). Many trainees obtain their graduate degrees and postdoctoral experience at R1 institutes, 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 institute. For example, many PUIs require job candidates to teach a lesson (often outside their field) as part of the interview process. This panel will help with several questions including: How do applicants go about finding available positions at PUIs? What should applicants expect in the interview process and what sort of strategies should they employ to be successful? How does this particular lab setting differ from labs at R1 institutes? What are the strategies of building a successful research program with a lab fully composed of undergraduates?

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

Target audience: all attendees

Exhibitor Tech Talk

10:45–11:45 am Theater 2, Exhibit Hall B

ChromoTek GmbH
An Innovative Class of Secondary Antibodies Based on Alpaca Nanobodies
Presenter: Dr. Klaus Herick
Level: Advanced

Secondary antibodies are essential tools in proteomics and immunodetection. Now, ChromoTek has developed the next level of secondary antibodies: These so-called Nano-Secondaries are monoclonal Nanobodies that bind to primary antibodies in species and subclass specific manner. They overcome the pitfalls of conventional secondary antibodies: Most secondary antibodies currently in use are polyclonal IgGs purified from animal sources. In consequence, they are ill-defined and often suffer from batch-to-batch variation. In addition, they require extensive cross-adsorption to minimize cross-reactivity to primary antibodies of different isotypes or from other species. ChromoTek’s Nano-Secondaries outperform conventional secondary antibodies, as
they: enable one-step immunostaining, i.e., the simultaneous incubation of primary antibody and Nano-Secondary. This method reduces incubation and hands-on time, and delivers precise and reproducible immunostainings. In details, they bind to their target IgG in a site-specific manner, are thoroughly characterized, and recombinantly produced in a serum-free expression system, and provide higher resolution, because they are about 10 times smaller than conventional antibodies. Nano-Secondaries can be used in immunofluorescence, multiplexing, flow cytometry, and Western blotting applications. In this presentation, Nano-Secondaries will be introduced, compared with conventional secondary antibodies, and applications data are shown.

- **Exhibitor Tech Talk**

10:45–11:45 am  
**Theater 1, Exhibit Hall A**

**Bruker**

**From Single Molecules to Tissues - A New AFM Toolkit for Nanoscopic Investigation of Mechanics, Structures and Dynamic Processes in Life Science**  
**Presenter:** Andrea Slade, PhD, Bruker, Product Manager  
**Level:** Intermediate

The ability of atomic force microscopy (AFM) to obtain three-dimensional topography images of biological molecules and complexes with nanometer resolution and under near-physiological conditions remains unmatched by other imaging techniques. JPK BioAFM has developed a new NanoWizard® 4 XP AFM which not only enables the high-speed study of the time-resolved dynamics associated with cellular processes, it’s latest scanner technologies and compact design also allow full integration of AFM into advanced commercially available light microscopy techniques.

This seminar will focus on how the advances in Bruker’s latest BioAFM can be applied to study a wide-range of biological samples, from individual biomolecules to mammalian cells and tissues in real-time, in-situ experiments. We will present examples of how we are able to resolve the nanoscale structure of individual biomolecules at high-speed scan rates (150 Hz), follow the dynamic reorganization of the membrane-associated cytoskeleton of living cells at high-temporal and high-spatial resolution, and automatically map the topography of cell cultures across the entire area of the microscope stage. We will also discuss the full suite of BioAFM modes and accessories for studying the nanomechanical properties of cells and tissues, including direct correlation of multiparametric, quantitative AFM and super-resolution (STED) datasets.

- **How to Improve Research Assessment during the Triage Phase of Application Review**

10:45 am–12:00 pm  
**Room 204AB**

**Anna Hatch**, Program Director, DORA

Triaging applications is one of the more challenging steps of hiring new faculty members. How can search committees review application materials in a way that is fair to the applicant, but does not overburden reviewers? It can be tempting for reviewers to default to using journal-based metrics or journal prestige to rank candidates, even though it is well established they don’t measure the impact of an individual article or researcher. But what are reasonable and workable alternatives? The Declaration on Research Assessment (DORA) is an initiative to advance practical and robust approaches to research assessment. In this interactive session, participants will work in small groups to test three approaches to triaging applications. At the end of the exercise, we will discuss the different approaches.

**Outcomes:**

1. Recognize existing biases in research assessment.
2. Gain awareness of how research is assessed in faculty hiring decisions.
3. Understand how the application review process can be strengthened to improve researcher assessment.

**Target audience: all attendees**
The WICB Awards and Mentoring Theater: Self-Advocacy—If Not You, Who?

10:45 am–12:00 pm
Room 151A

Supported by Burroughs Wellcome Fund
Organized by the ASCB Committee for Women in Cell Biology (WICB)

Rong Li, Sandra K. Masur Senior Leadership Award, Johns Hopkins University School of Medicine
Coleen T. Murphy, WICB Mid-Career Award for Excellence in Research, Princeton University
Sabine Petry, WICB Junior Award for Excellence in Research, Princeton University

Presentation of the annual Women in Cell Biology (WICB) Awards For Excellence In Research honors women for exceptional contributions to cell biology, and leadership during their early and mid-careers. The Sandra K. Masur Senior Leadership Award honors a later career-stage cell biologist whose outstanding achievements are coupled with a record of excellence and leadership in mentoring young scientists. “Self-Advocacy: If Not You, Who?” the WICB Mentoring Theater, will illustrate approaches for effective self-advocacy and assertiveness, in the context of common unrecognized biases that we harbor. Successful self-advocacy includes recognizing this asset in ourselves while appreciating and accepting it in others. An open discussion with the audience and participants on this topic and others that challenge the advancement of women and underrepresented groups in science will follow.

Outcomes:
1. Honor and heighten awareness in the cell biology community of the exceptional contributions of women scientists.
2. Increase sensitivity and appreciation of the value of differing language and style approaches in lab, workplace, and academe.
3. Increase awareness that style stereotypes actually cut across gender and other group boundaries.
4. Learn successful approaches to workplace challenges from seasoned cell biologists attempting to mitigate bias: gender, race, age, etc., and recognize that communication skills and bias are issues that must be, and can be, addressed at every stage of a scientific career.

Target audience: all attendees

Writing Better Exam Questions for Undergraduate Cell Biology

10:45 am–12:00 pm
Room 209AB

Alison Dell, Associate Professor, St. Francis College
Melissa Csikari, HHMI

Each year, the ASCB|EMBO Meeting competes with the end-of-semester challenges, especially for faculty preparing their final exams. This session aims to help participants write better questions through peer review and alignment with Vision and Change, reduce faculty load by creating high-quality questions to be shared within the community, and the opportunity to contribute to UWBERG’s Question Database (QDb). Bring your favorite questions for editing and peer review.

Outcomes:
1. Instructors in cell biology courses will have an opportunity to network and learn from each other as they create and revise exam questions together with their peers.
2. Peer feedback will help you write more effective exam questions for future assessments.
3. Questions submitted and revised during the workshop may be further revised and reviewed for inclusion in a publicly available question database, a freely available repository of high-quality, high-level, and machine-gradable questions for introductory bio

Target audience: all teaching scientists, and might be especially useful for new faculty who are just learning how to write effective summative assessments
Microsymposium 13: Actin Filaments: Binding and Assembly

11:00 am–12:00 pm

Moderators: Matt Akamatsu, University of California, Berkeley; and Kristen Skruber, University of Florida

11:00 am MS73 Intravital Subcellular and Single Molecule Imaging Reveal Multiple Actin Filament Populations Collaborate in the Remodelling of the Secretory Granule Membrane. M. Heydecker1, A. Masedunskas2, S. Ebrahim2, M. Appaduray2, A. Shitara2, N. Bryce1, R. Weigert2, P. Gunning1, E. Hardeman1; 1School of Medical Sciences, University of New South Wales, Sydney, AUSTRALIA, 2Laboratory of Cellular and Molecular Biology, Center for Cancer Research, National Cancer Institute, National Institutes of Health, Bethesda, MD.

11:10 am MS74 The Role of APC-mediated Actin Assembly in Microtubule Capture and Focal Adhesion Turnover. M. A. Juanes1, D. Isnardon2, A. Badache2, S. Brasselet2, M. Mavrakis3, B. L. Goode1; 1Brandeis University, Waltham, MA, 2Centre de Recherche en Cancérologie de Marseille, Inserm, Institut Paoli-Calmettes, Aix Marseille Université, Marseille, FRANCE, 3Aix Marseille Université, CNRS, Centrale Marseille, Institut Fresnel, Marseille, FRANCE.

11:20 am MS75 SPIN90 Links Arp2/3 Complex Nucleation to Formin Elongation to Control Actin Network Organization. L. Cao1, G. Charras2, A. Jegou1, G. Romet-Lemonne3; 1CNRS - Institut Jacques Monod, Paris, FRANCE, 2University College London, London, UNITED KINGDOM.

11:30 am MS76 Vimentin Intermediate Filaments and F-actin Form Interpenetrating Networks in the Cell Cortex. H. Wu1, Y. Shen1, S. Sivagarunathan1, M. Weber2, O. Medalia3, R. Goldman2, D. Weitz1; 1John A. Paulson School of Engineering and Applied Sciences, Harvard University, Cambridge, MA, 2Department of Cell and Developmental Biology, Northwestern University Feinberg School of Medicine, Chicago, IL, 3Department of Biochemistry, University of Zurich, Zurich, SWITZERLAND.

11:40 am MS77 Identification of a Novel B Cell Actomyosin Network That Promotes Antigen Contraction during Immune Synapse Formation. J. C. Wang1, X. Wu1, J. A. Hammer; National Institutes of Health, Bethesda, MD.

11:50 am MS78 α-T-catenin Intramolecular Interactions Regulate Vinculin Binding. J. A. Heier1, S. Pokutta2, W. I. Weis2, A. V. Kwiatkowski1, 1University of Pittsburgh School of Medicine, Pittsburgh, PA, 2Stanford University School of Medicine, Stanford, CA.

Microsymposium 14: Cellular Imaging of Cytoskeletal Dynamics

11:00 am–12:00 pm

Moderators: Emily Summerbell, Emory University; and Sumana Sundaramurthy, SUNY Upstate Medical University

11:00 am MS79 Single-molecule Imaging Reveals Distinct Subcomplexes of the Bacillus Subtilis Division Machinery. M. J. Holmes, E. C. Garner; Harvard University, Cambridge, MA.

11:10 am MS80 The Architecture and Dynamics of Podosomes in Macrophage Frustrated Phagocytosis. S. Hu1, T. Watanabe1, A. T. Nogueira1, J. Aaron1, A. Taylor2, T. Chew3, K. Hahn1; 1University of North Carolina At Chapel Hill, Chapel Hill, NC, 2HHMI Janelia Research Campus, Ashburn, VA.

11:20 am MS81 The Cellular Mechanism of Structural Color Change in the Zebrafish. D. Gur1,2, X. Wu3, J. Hammer4, J. Lippincott-Schwartz5; 1NIH/NICHD, Bethesda, MD, 2Janelia Research Campus, Ashburn, VA, 3NIH/NHLBI, Bethesda, MD, 4NIH/NHLBI, Bethesda, MD.

11:30 am MS82 Development of An Optogenetic Tool to Reversibly Control Microtubule Acetylation. A. Deb Roy, E. Gross, G. Pillai, A. Kim, T. Inoue; Johns Hopkins University, Baltimore, MD.

11:40 am MS83 Systematic Characterization of a Large Number of Microtubule-Associated Proteins Using Purification-free TIRF-reconstitution Assays. A. S. Jijumon1,2,3, S. Bodkunta1,2, M. Genov2,3, M. Bangera1, F. Maksut1,2, M. M. Magiera1,2, C. Janke1,2,3; 1Institut Curie, Paris, FRANCE, 2University of Paris Saclay, Orsay, FRANCE, 3PSL University, Paris, FRANCE, 4Instem, Bangalore, INDIA 11:50 am MS84 Three-color Tracking of Dynemin Stepping Along Microtubules. S. Niekamp, N. Stuurman, R. D. Vale; University of California - San Francisco, San Francisco, CA.
Microsymposium 15: Dynamics of the Genome and Epigenome

11:00 am–12:00 pm
Room 145A

Moderator: Vladimir Botchkarev, Dana-Farber Cancer Institute/Harvard Medical School

11:00 am MS85 Generation of Regulatory Stable Intronic Sequence RNAs from Conserved Genetic Loci. S. Chan¹, R. B. Ismail¹, J. Heng², S. Lim³, J. Ho³, J. Pek³; ¹Temasek Lifesciences Laboratory, Singapore, SINGAPORE, ²Raffles Institution, Singapore, SINGAPORE, ³Temasek Polytechnic, Singapore, SINGAPORE, ⁴Ngee Ann Polytechnic, Singapore, SINGAPORE.

11:10 am MS86 SETD2 Loss Drives Genomic Instability by Increasing CENP-A Levels and Generation of Dicentric Chromosomes. F. M. Mason¹, E. S. Kounlavong¹, I. Park², C. L. Walker², W. K. Rathmell¹; ¹Vanderbilt University Medical Center, Nashville, TN, ²Baylor College of Medicine, Houston, TX.

11:20 am MS87 Compaction without Condensin? Using Oligopain ts to Investigate Chromosome Territories in the Moth, Bombyx Mori. L. F. Rosin¹, J. Gil, Jr², I. A. Drinnenberg², E. P. Lei¹; ¹NIH/NIDDK, Bethesda, MD, ²Curie Institute, Paris, FRANCE.

11:30 am MS88 Distinct Roles of LINC Complex and Nucleoskeleton Components in Regulating Meiotic Chromosome Dynamics. C. Liu, Z. Lung, A. Dernburg; University of California, Berkeley and HHMI, Berkeley, CA.

11:40 am MS89 Identification of Regulators of Nuclear Shape. A. Schibler¹, P. Jevtic², G. Pegoraro², D. Levy², T. Misteli¹; ¹National Cancer Institute, NIH, Bethesda, MD, ²University of Wyoming, Laramie, WY.

11:50 am MS90 Multinucleation Associated Damage Promotes Quiescence Unlike Other Nuclear Atypia. M. Hart, V. M. Draviam; Queen Mary University of London, London, UNITED KINGDOM.

Microsymposium 16: Intracellular Trafficking & Membrane Recycling

11:00 am–12:00 pm
Room 147A

Moderator: Amanda S. Meyer, University of Southern California

11:00 am MS91 Membrane Homeostasis during Exocrine Secretion Is Maintained by Membrane Crumpling and Sequestration. K. Kumari, N. Scher, T. Biton, E. D. Schejter, B. Shilo, O. Avinoam; Weizmann Institute of Science, Rehovot, ISRAEL.


11:20 am MS93 Expanding the Realm of Small GTPase Function: Evidence for Rab40b/Cul5 Mediated Rap2 Regulation during Cell Migration. E. D. Duncan, E. Linklater, R. Prekeris; University of Colorado Anschutz Medical Campus, Aurora, CO.

11:30 am MS94 Spontaneous Clathrin Lattice Curvature without Triskelia Replacement. B. Heine, K. A. Sochacki, J. W. Taraska; National Institutes of Health, Bethesda, MD.

11:40 am MS95 ESCRT-III Heteropolymers Utilize Non-specific Lateral Interactions to Stabilize Curvature of Spiraling Polymers. S. Banjade, S. Tang, Y. Shah, S. D. Emr; Cornell University, Ithaca, NY.

11:50 am MS96 Neuronal Traffic Jams: Mechanistic Insights Into Mutant Mammalian Prion Aggregate-mediated Intracellular Transport Impairments. T. Chaiamarit, A. Verhelle, R. Chassefeyre, S. E. Encalada; the Scripps Research Institute, La Jolla, CA.
Microsymposium 17: New Perspectives in Cell Biology: Frontiers of Microscopy

11:00 am–12:00 pm

Supported by The Allen Institute

Moderators: Tim Fessenden, Massachusetts Institute of Technology, and Scott Wilkinson, National Institutes of Health

11:00 am  MS97  Tissue Architectural Cues Drive Organ Targeting of Tumor Cells in Zebrafish. C. D. Paul, K. Bishop, A. Devine, E. L. Paine, J. R. Staunton, S. M. Thomas, J. R. Thomas, A. D. Doyle, L. M. Miller Jenkins, N. Y. Morgan, R. Sood, K. Tanner; 1Laboratory of Cell Biology, National Cancer Institute, Bethesda, MD, 2Translational and Functional Genomics Branch, National Human Genome Research Institute, Bethesda, MD, 3National Institute of Dental and Craniofacial Research, Bethesda, MD, 4National Institute of Biomedical Imaging and Bioengineering, Bethesda, MD.

11:00 am  MS98  Live Cell Histology for Classification of Melanoma Cell Population Based on Single Cell Actions. A. Zaritsky, A. R. Jamieson, A. Nevarez, E. S. Welf, G. Danuser; 1Ben-Gurion University of the Negev, Beer-Sheva, ISRAEL, 2UT Southwestern Medical Center, Dallas, TX, 3University of California San Diego, San Diego, TX.

11:00 am  MS99  Multiplexed Fluorescence Lifetime Imaging Microscopy Reveals Dynamic Stem Cell Niche Metabolism in Lgr5-gfp Intestinal Organoids. R. Dmitriev, D. Papkovsky, I. Okkelman; University College Cork, Cork, IRELAND.

11:30 am  MS100  Identifying Patterns of Protein Organisation in 3d Super-resolution Datasets. A. Curd, R. Hughes, A. Cleasby, M. Baird, Y. Takagi, J. Ries, H. Shroff, M. Peckham; 1University of Leeds, Leeds, UNITED KINGDOM, 2National Institutes of Health, Bethesda, MD, 3EMBL, Heidelberg, GERMANY.

11:40 am  MS101  Single-molecule Imaging and Analysis of the Dynamic Organization of Vascular Endothelial Growth Factor 2 (VEGFR-2) on the Surface of Live Endothelial Cells. B. Da Rocha-Azevedo, S. Lee, A. Dasgupta, T. Kim, M. Kittisopikul, A. Vega, L. De Oliveira, K. Jaqaman; 1Biophysics, University of Texas Southwestern Medical Center, Dallas, TX, 2Korea University, Seoul, KOREA, 3Cell and Molecular Biology, Northwestern University Feinberg School of Medicine, Chicago, IL, 4Bioinformatics, University of Texas Southwestern Medical Center, Dallas, TX.

11:50 am  MS102  Waiting to Die: Nucleation-limited Signalosome Assembly Renders Human Cell Fate Decisions Inevitable. R. Halfmann, A. Rodriguez Gama, T. Kandola, S. Venkatesan, J. Wu, M. Hu; 1Stowers Institute for Medical Research, Kansas City, MO, 2University of Kansas Medical Center, Kansas City, KS.
Finding and Starting a Lab at a R1 Institution

12:00–12:50 pm  

The transition to any leadership position comes with new challenges and unknowns. This especially holds true for starting one’s own lab where there is no one set of guidelines or ways to go about it. This panel will provide insight and guidance for trainees on how to find and start their own labs at an R1 university. Participants will learn about the different aspects of starting and running a lab, such as interviewing and hiring, budgeting, mentoring, how to recruit students and postdocs, and much more.

Outcomes:
1. Gain insight and knowledge into the process of starting a lab and the unique challenges that come along with it.
2. Benefit from multiple individuals’ own experiences in starting a lab at different universities to learn about valuable resources and key information to help facilitate the process of finding and starting a lab at an R1 university.
3. Interact with panelists directly to ask questions and gain insight that you otherwise may not have access to.

Target audience: all attendees
Odd-Numbered Poster Presentations

12:00 –1:30 pm  Exhibit Hall AB

Preparing Your Academic Application Materials

12:00–12:50 pm  Theater 4, Exhibit Hall B

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

Natalie Chernets, Director of Postdoctoral Affairs & Professional Development, Drexel University

While many graduate students and postdocs have access to resources preparing them for academic careers, they often do not receive the training required for putting together a successful application packet. This session aims to provide an overview of application materials geared toward academic jobs, including research, teaching, and diversity statements. In addition, this session will educate participants on how to successfully prepare their application materials.

Outcomes:
1. Learn about academic job application components and the strategies of successfully preparing such components.
2. Know how to tailor your application materials to the job you are applying for.
3. Learn how to craft Research, Teaching, and Diversity statements that will stand out from other applicants and learnt specific skills that are important when applying for academic jobs.

Target audience: graduate students and postdocs

Barriers to Expanding the Ranks of Staff Scientists in Biomedical Research

1:00–1:50 pm  Theater 4, Exhibit Hall B

Story Landis, Former Director, National Institute of Neurological Disorders and Stroke, NIH
Stacey Gabriel, Senior Director of the Genomics Platform; Institute Scientist, Broad Institute
Travis Berggren, Executive Director of Research Operations, Salk Institute for Biological Sciences
Laura Contreras-Ruiz, Staff Scientist, Dana-Farber Cancer Institute

Growth in the trainee population without a concomitant increase in future employment opportunities presents a Malthusian dilemma for biomedical research. One way to reduce this pressure is to move away from research primarily conducted by trainees to a system that depends more on professional staff scientists. This session will explore the benefits of a greater dependence on professional staff scientists, and the cultural and institutional barriers that stand in the way of this shift. Current staff scientists will describe their roles and opportunities for career advancement. Faculty and administrators will describe their experiences working with staff scientists, and the institutional reforms needed to expand these ranks. The invited speakers will also engage the audience on ways to overcome roadblocks to employing more staff scientists.

Outcomes:
1. Understand the increasing roles that staff scientists play in research, and the ways in which institutions must adapt to their employment.
2. Gain an understanding of the many ways in which staff scientist positions are funded.
3. Learn about career development opportunities and other institutional policies affecting staff scientists.

Target audience: all attendees
Career Coaching/Immigration Advice

1:00–4:00 pm  
Career Center, Exhibit Hall B

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

Professional career coaches from the East Coast

Stop by the Career Center to meet with a professional career coach. During these one-on-one sessions participants will receive individualized advice including but not limited to strategies for choosing a career and individualized review of application materials. Signups are first-come, first-served and participants are strongly encouraged, but not required, to bring print copies of application materials such as CVs and resumes.

Outcomes:
1. Obtain professional one-on-one mentorship focused on pursuing a career in science.
2. Gain insight into the career options available in the life sciences.
3. Learn individualized strategies to search and apply for job opportunities in your career of choice.
4. Gain critical advice for editing resumes, CVs, and application materials.

Target audience: While available to all, these one-on-one sessions are targeted to graduate students and postdoctoral fellows preparing for a career in the life sciences.

Immigration advice will be available from representatives from Getson & Schatz, PC, an immigration law firm in Philadelphia.

Careers in Science Policy

1:00–1:50 pm  
Theater 3, Exhibit Hall B

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

Connie Lee, Associate Dean for Basic Science, The University of Chicago  
Esha Matthew, Foreign Affairs Officer, Department of State  
Paul Mungai, Science and Education Officer, UNESCO  
Becky Wagenaar-Miller, Chief, Extramural Policy Branch, NIMH

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 across a variety of audiences, the ability to problem solve, and an interest in politics. Even when science policy isn’t your main career it is possible to be actively involved in policy. The variety of speakers will provide attendees the opportunity to learn about the diversity of options within this career path and learn tips and strategies to pursue a career in science policy.

Outcomes:
1. Learn about a range of careers in science policy.
2. Network with leaders in science policy.
3. Identify skills needed to pursue a career in science policy.

Target audience: All attendees
Elevator Speech Contest Awards

1:00–1:50 pm
ASCB Booth 612, Exhibit Hall

Organized by the ASCB Public Information (PIC) and Public Policy (PPC) Committees

Can you sell your science in two minutes? In today’s world, it is critical for scientists to develop strong outreach and communication skills. If you had a captive audience for just two minutes, could you tell them what you do and why it’s important? If so, this contest is for you! Submit your two-minute elevator speech to the online video contest (https://www.ascb.org/policy-outreach/science-outreach/elevator-speech-contest/), or just come see the winning submissions!

Outcomes:
1. Improved ability to explain research to the broader public.
2. Increased confidence in science advocacy.
3. Practice your scientific pitch.

Target audience: all attendees

Exhibitor Tech Talk

1:00–1:45 pm
Exhibitor Tech Talk

Synthego
Efficient Scarless Genome Engineering of Induced Pluripotent Stem Cells
Presenter: Michael J Lelivelt, PhD
Level: Intermediate

Synthego is creating a factory scale iPSC editing infrastructure that can edit 1000's of stem cell lines in parallel. The automated process is based on extensive optimization of iPSC editing by CRISPR/Cas9 to create genome edits at efficiencies of >90% for gene KO’s. In addition to KO’s and in-frame tags in genes, we have focused on optimizing scarless editing to revert SNVs to wild-type or to create disease-associated SNVs in a variety of stem cells without other unwanted changes. We will discuss the strategies used to create these scarless edits and share the results of these approaches to create scarless homozygous and heterozygous changes.

Exhibitor Tech Talk

1:00–1:45 pm
Exhibitor Tech Talk

Andor Technology
Live Cell Microscopy: Optimizing Resolution, Speed, Field of View, and Robust Downstream Analysis
Presenter: Claudia Florindo, PhD
Level: Intermediate

We will present Andor’s complete solution for imaging and analyzing dynamic cellular events. Key challenges in live-cell imaging are: phototoxicity, photobleaching, speed (high temporal resolution), resolution (high resolution), and even super-resolution compatible with live imaging. Automatic analysis and detection of cells, organelles or intracellular structures is essential. The ultimate goal is to produce high-quality movies and quantifiable data. Typically you sacrifice one element (e.g., resolution) to preserve another (e.g., speed). Andor offers an all-inclusive solution for analyzing dynamic events with little or no sacrifice: 1) High QE ultra-fast detectors capturing very dim signals without compromising image quality. 2) Dragonfly multimodal confocal with ultra-fast gentle imaging from UV to the NIR range. 3) SRRF-Stream live-cell super-resolution. 4) Imaris, an extensive visualization, rendering an analysis package with tools for tracking intracellular organelles with multiple measurement outputs. Our comprehensive and versatile solution allows studying of live dynamics from vesicle trafficking to calcium imaging. We can detect, image, and analyze from tiny sub-resolution structures to large cellular events.
Roundtable Discussions

1:00–2:00 pm  
Roundtables, Exhibit Hall B

*Supported by Burroughs Wellcome Fund*

Take advantage of this special networking opportunity! Grab a lunch and join a table discussion on hot topics affecting the scientific community. Bring your questions to the Roundtables in the Exhibit Hall. Please see the ASCB | EMBO Meeting App for more details.

Afternoon Refreshment Break

1:30–3:30 pm  
Exhibit Hall AB

Join us for a beverage and snack while visiting exhibitors and viewing posters.

Even-Numbered Poster Presentations

1:30–3:00 pm  
Exhibit Hall AB

Careers Beyond the Bench Outside Biotech—Science Infrastructure, Management, and Development

2:00–2:50 pm  
Theater 3, Exhibit Hall B

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

Sarah Connelly, Consultant, Deloitte Consulting  
Miranda Hallett, Patent Agent, Arnold & Porter Kaye Scholer LLP  
Susi Varvayanis, Executive Director, BEST Program, Cornell

Many PhDs think that research at the bench is the only option they can consider, even outside of academia. However, a number of careers that do not involve traditional bench research are available to PhDs. This session plans to bridge the gap and introduce trainees to career options through a panel discussion focused on careers beyond the bench, outside the biotech industry, including science infrastructure, management, and development and will focus on careers such as patent law, consulting, regulatory affairs, and grant management.

Outcomes:

1. Learn about various career paths beyond bench including patent law, consulting, regulatory affairs, and grant management.
2. Learn skills and strategies to transition into these careers from traditional academic training.
3. Network with panelists and learn from their experiences.

**Target audience:** all attendees
Writing Your Science Story: How to Get Everyone Else Excited about Your Work

2:00–3:15 pm Theater 4, Exhibit Hall B

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

Adriana Bankston, University of California
Jaye Gardiner, Fox Chase Cancer Center
Laura Helmuth, Washington Post

In today’s intense research environment, scientists must become effective communicators to gain a competitive edge and make a difference in their communities. Explaining science to the public is an essential skill for any scientist, whether it is to engage with outreach opportunities, to educate students, or to communicate with patient advocates on grant panels and at fundraisers. This session aims to equip everyone with the tools they need to become successful writers when addressing the public, whether discussing their own work or the broader impact of their field. Participants will have the chance to hear from exceptional guest speakers and to take part in hands-on activities to refine their science writing and public communication skills.

Outcomes:
1. Appreciate the impact of science writing for the public and understand what makes writing captivating to a nonspecialist audience.
2. Learn tools to engage the public with your work through powerful writing by breaking down complex scientific concepts.
3. Learn how to edit your own writing to adapt it to different situations.

Target audience: all attendees

Meet the Committees

2:30–3:00 pm ASCB Booth 612, Exhibit Hall

Members from the Women in Cell Biology, Membership, and International Affairs Committee will be able to answer any questions you have.

Exhibitor Tech Talk

3:00–4:00 pm Theater 1, Exhibit Hall A

LUMICKS USA Inc.

Step into the Unresolved: Versatile Tools Toward Real-Time Single-molecule Biology and Acoustic Force-Based Cell Avidity Analysis

Presenters: Ali Raja, Nastaran Hadizadeh, and Leif Anderson

Level: Intermediate

Biological processes performed by proteins interacting with and processing DNA and RNA are key to cell metabolism and life. Detailed insights into these processes provide essential information for understanding the molecular basis of life. Single-molecule technologies offer an exciting opportunity to meet these challenges. Here, we show the latest applications of these technologies, not only in the field of DNA/RNA-protein interactions, but also of molecular motors, protein folding/unfolding, cell membrane mechanics, and genome structure and organization. C-Trap™ is the world’s first and only truly correlative optical tweezers-fluorescence system combining three core technologies: multi-trap continuous-wave optical tweezers, multi-color microscopy, and multi-channel laminar flow microfluidics. Coupled with the ability to upgrade to other imaging techniques, such as Widefield, TIRF, IRM, or STED nanoscopy, the C-Trap™ is truly unique and unmatched in the field. z-Movi™ is a novel instrument that can directly measure the avidity, or overall strength of interaction, between cells or cells and ligands. This is accomplished in a label-free, high throughput, and single-cell manner. z-Movi™ paves the way for the study of unexplored parameters in basic and translational research, thus impacting applications where cell-target interactions are key, including immunotherapy, antigen presentation, vaccination, immunological synapse, cellular adhesion, and therapeutic antibodies.
Directed cell migration is critical for an extensive range of physiological events. During development, concerted cellular movements bring form to the embryo and, in the adult, migration is critical for immune response, wound healing, stem cell homing, and neuronal wiring. When these orchestrated movements occur improperly or are subverted, disease results. The molecular components involved in cell migration are remarkably conserved between the social amoeba, Dictyostelium and mammalian cells. It is generally believed that cytoskeletal activities drive random cell migration whereas signal transduction events initiated by receptors regulate the cytoskeleton to guide cells. However, using amoebae, neutrophils, and mammary epithelial cells, we found that the cytoskeletal network, involving SCAR/WAVE, Arp 2/3 and actin-binding proteins, is capable of generating only rapid oscillations and undulations of the cell boundary. The signal transduction network, comprised of multiple pathways including Ras GTPases, multiple phosphoinositides, and Rac GTPases, is required to generate the sustained protrusions of migrating cells. The signal transduction network is excitable, exhibiting wave propagation, refractoriness and maximal response to suprathreshold stimuli, even in the absence of the cytoskeleton. We suggest that cell motility results from coupling of ‘pacemaker’ signal transduction and ‘idling motor’ cytoskeletal networks. We have been able to exploit the excitable nature of the signaling network to force cells to assume different morphologies and modes of migration from amoeboid to keratinocyte-like to oscillatory. The application of these concepts to the diverse migratory profiles exhibited by different cells and the ability of cells to detect and integrate extracellular cues is discussed.
Co-Chairs: Martin Graef, Max Planck Institute for Biology of Ageing, Cologne; and Roberto Zoncu, University of California, Berkeley

4:15 pm  Introduction

4:20 pm  M120  Molecular Mechanisms of the Mitochondrial Motors of Mass Destruction. G. Lander1, C. Puchades1, M. Shin1, S. Glynn2, W. Karzai3; 1Scripps Research, La Jolla, CA, 2Stony Brook University, Stony Brook, NY.

4:35 pm  M121  Novel Translation Repression Complex Prevents Ribosome Initiation on Faulty Messenger RNAs. K. Hickey4, K. Kostova5, J. Replogle1, K. Dickson4, K. D’Orazio4, N. Sinha4, R. Green4, J. Weissman5; 1University of California, San Francisco, San Francisco, CA, 2Carnegie Inst Washington, Baltimore, MD, 3Lawrence University, Appleton, WI, 4Johns Hopkins School of Medicine, Baltimore, MD.

4:50 pm  M122  Activated Ire1 Oligomerizes Into Filaments Contained in Anastomosing 30 Nm Endoplasmic Reticulum Membrane Tubes. N. Tran1,2, S. Carter1,2, V. Belyy1,2, D. Acosta-Alvear4, G. Jensen1,2, P. Walter1,2; 1University of California San Francisco, San Francisco, CA, 2Howard Hughes Medical Institute, Chevy Chase, MD, 3California Institute of Technology, Pasadena, CA, 4University of California Santa Barbara, Santa Barbara, CA.

5:05 pm  M123  ER Stress Response in a Premature Aging Disease. S. Vidak, L. Serebryannyy, T. Misteli; NCI/NIH, Bethesda, MD.

5:20 pm  M124  In Cellulo Structure of the Nuclear Pore Complex and Its Implications in Mrna Export and Nuclear Pore Turnover by Autophagy. M. Allegretti1, C. E. Zimmerli1, V. Rantos1, P. Ronchi1, F. Wilfling1, K. H. Fung1, C. Lee1, Y. Schwab1, J. Mahamid1, B. Pfander1, J. Kosinski1, M. Beck1; 1EMBL Heidelberg, Heidelberg, GERMANY, 2EMBL Hamburg, Hamburg, GERMANY, 3Max Planck Institute of Biochemistry, Munich, GERMANY.


5:50 pm  M126  System-Wide Profiling of Mitotic Ageing Reveals Pro-Ageing Functions of the Autophagy Machinery. M. Graef; Max Planck Institute for Biology of Ageing, Cologne, Cologne, GERMANY. Selective Autophagic Clearance of Neurodegeneration-associated Protein Aggregates Is Mediated by the Autophagy Receptor, TAX1BP1. S. A. Sarraf1, H. V. Shah1,2, G. Kanfer1, A. M. Pickrell1, L. A. Holtzclaw1, M. E. Ward1, R. J. Youle1; 1Biochemistry Section, Surgical Neurology Branch, National Institute of Neurological Disorders and Stroke, National Institutes of Health, Bethesda, MD, 2University of Maryland, College Park, MD, 3School of Neuroscience Science, College of Science, Virginia Tech, Blacksburg, VA, 4Microscopy and Imaging Core, Office of the Scientific Director, Intramural Research Program, Eunice Kennedy Shriver National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD.

6:05 pm  M127  Synaptic Activity Regulates Local Autophagy in Dendrites of Primary Neurons. S. Maday, V. V. Kulkarni, A. Anand, J. Brandt; Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA.

6:20 pm  M128  Regulation of Cholesterol-dependent Mtorc1 Signaling by Inter-organelle Contacts. C. Lim1,2, O. Davis1,2, H. Shin1,2, J. Zhang1,2, C. Berdan1,2, X. Jiang1, J. Counihan1,3, D. Ory1, D. Nomura1,3, R. Zoncu1,2; 1Department of Molecular and Cell Biology, University of California at Berkeley, Berkeley, CA, 2The Paul F. Glenn Center for Aging Research at the University of California, Berkeley, Berkeley, CA, 3Department of Nutritional Sciences and Toxicology, University of California at Berkeley, Berkeley, CA, 4Diabetic Cardiovascular Disease Center, Washington University School of Medicine, St Louis, MO.
Minisymposium 13: Biological Phase Separation: From Phenomenon to Function

4:15–6:50 pm

Room 207B

Co-Chairs: Dan Jarosz, Stanford University; and Jeff Woodruff, University of Texas, Southwestern Medical Center

4:15 pm
Introduction

4:20 pm  M130
ER Membranes Exhibit Phase Behavior at Sites of Organelle Contact. C. King, P. Sengupta, A. Seo, J. Lippincott-Schwartz; HHMI Janelia Research Campus, Ashburn, VA.

4:35 pm  M131
Protein Phase Separation as a Membrane Curvature Sensing Switch. G. Kago, F. Yuan, W. F. Zeno, J. C. Stachowiak; University of Texas at Austin, Austin, TX.

4:50 pm  M132
Ph-triggered Coacervate Formation Activates Enzyme Reactions. C. Love1, J. Steinkühler2, R. Dimova2, D. Tang1; 1Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, GERMANY, 2Max Plank Institute of Colloids and Interfaces, Potsdam, GERMANY.

5:05 pm  M133

5:20 pm  M134
The Transition Into and Out of Glucose Starvation Induced Cytoplasmic Freezing in Fission Yeast. A. Foote, M. Williamson, E. Florin; University of Texas at Austin, Austin, TX.

5:35 pm  M135
The Properties of Membraneless Organelles Are Tuned to Environmental Conditions. B. Stormo1, F. Dietrich1, C. Roden1, A. Gladfelter1; 1University of North Carolina-Chapel Hill, Chapel Hill, NC, 2Duke University, Durham, NC.

5:50 pm  M136
Adaptive Control of Cell Division Programs by Pervasive Protein Self-assembly. D. F. Jarosz; Stanford University, Stanford, CA.

6:05 pm  M137
Mitochondrial Nucleoids Self-assemble via Phase Separation. M. Feric1,2, T. G. Demarest3, J. Tian3, D. L. Croteau3, V. A. Bohr2, T. Misteli2; 1NIGMS, Bethesda, MD, 2NCI, Bethesda, MD, 3NIA, Baltimore, MD.

6:20 pm  M138
Robust Modulation of Kinase Activity within a Bacterial Biomolecular Condensate. S. Saurabh, L. Shapiro; Stanford University, Stanford, CA.

6:35 pm  M139
Material Aging Underlies Centrosome Weakening and Disassembly during Mitotic Exit. J. Woodruff; UT Southwestern Medical Center, Dallas, TX.
Minisymposium 14: Cell Polarity

4:15–6:50 pm
Room 146C

Co-Chairs: Sophie G. Martin, University of Lausanne; and Jeremy Nance, New York University School of Medicine

4:15 pm  Introduction

4:20 pm  M140  An Interphase Contractile Ring Reshapes Primordial Germ Cells to Allow Bulk Cytoplasmic Remodeling. J. Nance; New York University School of Medicine, New York, NY.

4:35 pm  M141  Leading Edge Maintenance in Migrating Neutrophil-like HL-60 Cells Is an Emergent Property of Branched Actin Growth. R. M. Garner1, E. F. Koslover1, A. J. Spakowitz1, J. A. Theriot3; 1Stanford University, Stanford, CA, 2University of California San Diego, San Diego, CA, 3Howard Hughes Medical Institute, University of Washington, Seattle, WA.

4:50 pm  M142  Negative Surface Charge Defines the State of Cell Cortex and Regulates Excitable Dynamics in Amoeboid Migration and Macropinocytosis. T. Banerjee1, D. Biswas2, D. S. Pal1, Y. Miao1, P. A. Iglesias2, P. N. Devreotes3; 1Department of Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD, 2Department of Electrical and Computer Engineering, Johns Hopkins University, Baltimore, MD.

5:05 pm  M143  Clics Are Ancient Conserved Regulators of Gα12/13 and Rac Signaling in Angiogenesis and Tubulogenesis. A. Arena, D. Shaye, D. Mao, J. Kitajewski; Dept. of Physiology and Biophysics. University of Illinois at Chicago, Chicago, IL.


5:35 pm  M145  Patterning of Membrane-associated Proteins through Membrane Flows. V. Gerganova1, I. Lamas1, D. Rukowski2, A. Vjestica1, D. Vavylonis2, S. G. Martin1; 1University of Lausanne, Lausanne, SWITZERLAND, 2Lehigh University, Bethlehem, PA.

5:50 pm  M146  An Asymmetric Mechanoresponse at Cadherin Junctions Ensures Epithelial Integrity during Mitotic Rounding. M. Gloerich1, J. Monster2, L. Donker1, M. Vliem1, Z. Win1, J. De Rooij1, B. Baum2; 1UMC Utrecht, Center for Molecular Medicine, Utrecht, NETHERLANDS, 2UCL, London, UNITED KINGDOM.

6:05 pm  M147  CD2AP Links Actin to PI3 Kinase Activity to Extend Epithelial Cell Height and Constrain Cell Area. Y. Wang, W. M. Briehrer; Department of Cell and Developmental Biology, University of Illinois, Urbana-Champaign, IL.

6:20 pm  M148  MAPK Feedback Phosphorylation of RGS Controls Its Spatiotemporal Localization and Alters Endocytosis through the Kelch Repeat Protein Kel1 during the Yeast Pheromone Response. W. C. Simke, J. B. Kelley, A. J. Hart; University of Maine, Orono, ME.

6:35 pm  M149  RhoA Mediates Epithelial Cell Shape Changes via Mechanosensitive Endocytosis. K. Cavanaugh1,2, M. Staddon3, E. Munro1,4, S. Banerjee3, M. Gardel5,6; 1Department of Molecular Genetics and Cell Biology, University of Chicago, Chicago, IL, 2Committee on Development, Regeneration and Stem Cell Biology, University of Chicago, Chicago, IL, 3Department of Physics and Astronomy, and Institute for the Physics of Living Systems, University College London, London, UNITED KINGDOM, 4Institute for Biophysical Dynamics, University of Chicago, Chicago, IL, 5James Franck Institute, and Department of Physics, University of Chicago, Chicago, IL.
Minisymposium 15: Cytoskeleton in Vitro

4:15–6:50 pm

Room 147A

Co-Chairs: Marija Zanic, Vanderbilt University; and Anthony Roberts, University of London

4:15 pm
Introduction

4:20 pm  M150
A Structural and Mechanistic Model for the Regulation of LRRK2'S Interaction with Microtubules. J. Salogiannis; University of California San Diego, San Diego, CA.

4:35 pm  M151
Mitochondria-adaptor TRAK Enables Kinesin-1 Driven Transport in Crowded Environments. V. Henrichs1,3, Z. Nahácka1, J. Rohlena1, C. Bařinka1, J. Neužil1, S. Diez2,4, M. Braun1, Z. Lánský1;

1Institute of Biotechnology of the Czech Academy of Sciences, BIOCEV, Vestec u Prahy, CZECH REPUBLIC, 2Faculty of Science, Charles University in Prague, Prague, CZECH REPUBLIC, 3B CUBE - Center of Molecular Bioengineering, Technische Universität Dresden, Dresden, GERMANY, 4Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, GERMANY.

5:05 pm  M153
Physical Integration within Xenopus Egg Extract Microtubule Asters Suggests Aster Movement Is Driven by Dynnein-dependent Surface Forces and Actomyosin Contraction. J. Pelletier1,2,3, C. Field1,2, S. Fürthauer4, N. Fakhri3, T. Mitchison1,2; 1Harvard Medical School, Boston, MA, 2Marine Biological Laboratory, Woods Hole, MA, 3Massachusetts Institute of Technology, Cambridge, MA, 4Flatiron Institute, New York, NY.

5:20 pm  M154
*How to Make Microtubules and Build the Mitotic Spindle. S. Petry; Princeton University, Princeton, NJ.

5:35 pm  M155
The Mitotic Spindle Protein Ckap2 Is a Potent Microtubule Assembly Factor. T. McAlear, S. Bechsted; McGill University, Montreal, QC, CANADA.

5:50 pm  M156
Multi-component in Vitro Reconstitution Induces Robust Microtubule Treadmilling. M. Zanic, G. Arpag, E. J. Lawrence; Vanderbilt University, Nashville, TN.

6:05 pm  M157
Reconstitution of Dynamic Actin Cables from Purified Components. L. W. Pollard, M. V. Garabedian, S. L. Alioto, B. L. Goode; Brandeis University, Waltham, MA.

6:20 pm  M158
Cell Division Proteins Follow Treadmilling FtsZ Filaments by Diffusion-and-Capture. N. Baranova1, M. Loose1, P. Radler1, V. M. Hernández-Rocamora2, W. Vollmer2; 1Institute of Science and Technology Austria, Klosterneuburg, AUSTRIA, 2Newcastle University, Newcastle, UNITED KINGDOM.

6:35 pm  M159
Phosphoinositides Regulate Force-independent Interactions between Talin, Vinculin, and Actin in Vitro. C. Kelley, T. Litschel, D. Dedden, S. Schumacher, P. Schwille, N. Mizuno; Max Planck Institute of Biochemistry, Martinsried, GERMANY.

*WICB Junior Awardee for Excellence in Research
Minisymposium 16: Dynamics of Morphogenesis in Cells, Tissues, and Organisms

4:15–6:50 pm Room 202B

Co-Chairs: Caren Norden, Max Planck Institute of Molecular Cell Biology and Genetics; and Angelike Stathopoulos, California Institute of Technology

4:15 pm Introduction

4:20 pm M160 The Role of Cell and Tissue Morphology in Neuroepithelial Nuclear Positioning. C. Norden1,2; 3MPI-CBG, Dresden, GERMANY, 2Instituto Gulbenkian de Ciência, Oeiras, PORTUGAL.

4:35 pm M161 An Adhesion Code Enables Robust Pattern Formation in the Zebrafish Spinal Cord. T. Tsai1, M. Sikora2, C. Heisenberg3, S. Megas4; 1Harvard Medical School, Boston, MA, 2Institute of Science and Technology, Klosterneuberg, AUSTRIA.

4:50 pm M162 Differentiation of Structurally- and Optically-Distinct Types of Iridophores Is Required for Stripe Formation in Zebrafish. D. Gur1,2, E. Bain3, D. Parichy3, J. Lippincott-Schwartz2; 1NIH/NICHD, Bethesda, MD, 2Janelia Research Campus, Ashburn, VA, 3University of Virginia, Charlottesville, VA.

5:05 pm M163 FGF Signaling Controls Epithelial-mesenchymal Transition during Gastrulation through the Regulation of Cell Adhesion and Division. J. Sun1, V. A. Stepanik1, A. Stathopoulos1; Division of Biology and Biological Engineering, California Institute of Technology, Pasadena, CA.

5:20 pm M164 Acute Rho1 Activation Reveals That Ventral Epithelial Cells of the Drosophila Embryo Are Specifically Predisposed for Coordinated Anisotropic Constriction during Gastrulation. A. Rich1, R. Fehon1, M. Glotzer2; University of Chicago, Chicago, IL.

5:35 pm M165 Distinct Prepatterns of RhoA Activity and F-actin Levels Promote Tissue Folding. M. Denk-Lobnig1, N. C. Heer1, A. C. Martin2; MIT, Cambridge, MA.

5:50 pm M166 A Single-cell Reconstruction of Planarian Regeneration Identifies Wound-induced Transcriptional States Required for Tissue Repair. B. Benham-Pyle1, C. Brewster1, A. Kent2, S. Chen2, F. Mann1, 2A. Scott1, A. Box3, A. Sánchez Alvarado1, 2Stowers Institute for Biomedical Research, Kansas City, MO.

6:05 pm M167 Simple Geometric Rules Define the Shape and Stability of Epithelial Lumens. C. G. Vasquez1, V. T. Vachharajani1, A. R. Dunn; Stanford University, Stanford, CA.

6:20 pm M168 Cells in Intermediate States during EMT Are Characterized by Specific Geometrical and Mechanical Intra-cellular Architectures. Y. Margaron1, L. Guyon2, L. Kurzawa2, A. Morel1, A. Pinhiero1, L. Blanchoin1, F. Rey1, A. Puisieux1, M. Thery4; 1CytoMorpho Lab, IRIG, Paris, FRANCE, 2Interdisciplinary Research Institute of Grenoble (IRIG), Grenoble, FRANCE, 3CytoMorpho Lab, IRIG, Grenoble, FRANCE, 4Cancer Research Center of Lyon, Lyon, FRANCE, 5RT2Lab, PSL Research University, Paris, FRANCE, 6CytoMorpho Lab, Hospital Saint Louis, Paris, FRANCE.

6:35 pm M169 Membrane Tension Regulates Fgf Driven Fate Choice in Embryonic Stem Cells. H. De Belly1, P. H. Jones2, K. J. Chalut3, E. K. Paluch4, 1MRC Laboratory for Molecular Cell Biology, University College London, London, UNITED KINGDOM, 2Department of Physics & Astronomy, University College London, London, UNITED KINGDOM, 3Wellcome Trust/Medical Research Council Cambridge Stem Cell Research Institute, Cambridge, UNITED KINGDOM, 4Department of Physiology, Development and Neuroscience, Cambridge, UNITED KINGDOM.
4:15 pm  Introduction


4:35 pm  M171  Prostaglandins Restrict Nuclear Actin to Control the Nucleolus. D. Wineland1, **T. Tootle**1, G. Kimble1, D. Kelpscher2; 1University of Iowa-Carver Coll Med, Iowa City, IA, 2Carnegie Institution for Science, Baltimore, MD.


5:05 pm  M173  The Mechanosensitivity of Nucleocytoplasmic Transport Is Governed by Increased Active Transport Both Into and Out of the Nucleus. **I. Andreu**1, I. Granero-Moya1, M. Molina1, V. González-Tarragó1, J. Kechagia1, P. Roca-Cusachs1,2; 1IBEC, Barcelona, SPAIN, 2UB and Ciber, Barcelona, SPAIN.

5:20 pm  M174  The Giant KASH Protein ANC-1 Functions with and Without LINC Complexes to Position Nuclei and Other Organelles. **H. Hao,** S. Kalra, L. Jameson, L. Herrera, N. Cain, D. Starr; University California-Davis, Davis, CA.

5:35 pm  M175  Nuclear Membrane Stability in Micronuclei Determined by Chromatin Content. H. Z. Huang, **E. M. Hatch,** E. M. Choo; Fred Hutchinson Cancer Research Center, Seattle, WA.

5:50 pm  M176  *Structure-function Analysis of Heh1(LEM2) and Chm7 Suggests Role for Direct-PA-binding in Nuclear Envelope Surveillance.* **D. J. Thaller**1, C. J. Marklew1, B. Ciani1, C. P. Lusk1; 1Yale School of Medicine, New Haven, CT, 2University of Sheffield, Sheffield, UNITED KINGDOM.

6:05 pm  M177  Maternal and Paternal Genome Mixing in the *C. Elegans* Zygote Involves Stepwise Pronuclear Fusion and Fenestration of Pronuclear Membranes. **M. M. Rahman**1, A. Harned2, I. Chang3, R. Maheshwari1, K. Narayan2, O. Cohen-Fix1; 1National Institute of Diabetes and Digestive and Kidney Diseases, NIH, Bethesda, MD, 2Frederick National Laboratory for Cancer Research, NCI, NIH, Frederick, MD.

6:20 pm  M178  Mutant Lamins Rupture and DNA Damage in Skeletal Muscle Cells. **T. Kirby**1, A. Earle1, G. Fedorchak1, P. Isermann1, J. Patel1, S. Iruvanti1, S. Moore2, G. Bonne3, L. Wallrath2; 1Cornell University, Ithaca, NY, 2University of Iowa, Iowa City, IA, 3Sorbonne Université, Center of Research in Myology, Association Institute of Myology, Paris, FRANCE.

6:35 pm  M179  Phase-separated Heterochromatin Domains Impart Mechanical Stiffness to the Nucleus. **M. C. King**1, J. F. Williams1, I. V. Surovtsev1, A. Nguyen1, S. G. J. Mochrie1; 1Yale School of Medicine, New Haven, CT, 2Pomona College, Claremont, CA, 3Yale University, New Haven, CT.

*Porter Prize for Research Excellence Winner*
Subgroup W: Maintenance of Genome Integrity in Health and Disease

4:15–7:15 pm

Organizers: Tony Huang, NYU School of Medicine; and Eli Rothenberg, NYU School of Medicine

This session will explore cell biology topics related to DNA repair, replication stress, and genome integrity. The focus will be on mechanistic, cellular, and organismal approaches to understand how DNA damage and/or replication problems influence cell cycle defects, genomic instability and tumorigenesis. Speakers will represent a diverse spectrum of scientific approaches, including biochemically-reconstituted systems, cell biology, super-resolution microscopy, and computational biology, to study the nuclear dynamics of DNA repair and replication stress response proteins and how they interface at DNA damage sites and/or stalled replication forks. Talks will emphasize cutting-edge new technologies to address a cell biological problem, including single-molecule, live-cell imaging in yeast and human cells, systems biology and pathway networks, and translational applications of basic scientific findings.

4:15 pm
Introduction by Tony Huang.

4:20 pm

4:40 pm
SG227 Redefining Therapy Response. S. Cantor; UMASS Medical School, Worcester, MA.

5:00 pm
SG228 Homologous Recombination Repair Domains: Formation and Impact on Genome Stability. J. Zagelbaum1, B. R. Schrank1, J. Zhao1, A. Schooley2, R. Rabadan1, J. Dekker1, J. Gautier1; 1Columbia University, New York, NY, 2University of Massachusetts Medical School, Worcester, MA.

5:12 pm
SG229 Investigation of Break-induced Replication. A. Malkova; University of Iowa, Iowa City, IA.

5:32 pm
SG230 Regulation of Genome Stability at Replication Forks. J. Huang1, A. Taglialetela1, A. Acharya2, G. Leuzzi1, R. Cuella-Martin1, D. Billing1, G. Brunette1, N. Clark1, K. Bernstein2, R. Baer1, P. Cejka2, A. Ciccia1; 1Columbia University Irving Medical Center, New York, NY, 2Università della Svizzera italiana, Bellinzona, SWITZERLAND, 3University of Pittsburgh, Pittsburgh, PA.

5:52 pm
Break

6:02 pm
SG231 Sirt6 Is Responsible for More Efficient DNA Double-strand Break Repair in Long-lived Species. V. Gorbunova, X. Tian, A. Seluanov; University of Rochester, Rochester, NY.

6:22 pm
SG232 Pathological Trans-lesion Synthesis (TLS): a Mutagenic Driver and Molecular Vulnerability in Cancer. C. Vaziri; University of North Carolina, Chapel Hill, NC.

6:42 pm
SG233 Chromosome Segregation Errors Generate a Diverse Spectrum of Structural Genomic Rearrangements. S. F. Brunner1, O. Shoshani2, P. J. Campbell1, D. W. Cleveland3, P. Ly4; 1Wellcome Sanger Institute, Hinxton, UNITED KINGDOM, 2Ludwig Institute for Cancer Research, University of California San Diego, La Jolla, CA, 3University of Texas Southwestern Medical Center, Dallas, TX.

6:54 pm
SG234 Role of Deubiquitinases in the Mammalian Replication Stress Response. T. T. Huang; NYU School of Medicine, New York City, NY.
**Workshop: Recent Advances in Single-Cell Transcriptomics**

4:15–6:50 pm

**Supported by Illumina**

Organizers: Jeff Moffitt, Harvard University; and Fei Chen, Massachusetts Institute of Technology

Speakers: Jeffrey Moffitt, Harvard University; Fei Chen, Massachusetts Institute of Technology; Karthik Shekhar, University of California, Berkeley; and Peter Sims, Columbia University

Single-cell transcriptomics techniques offer the exciting ability to discover and catalog cell types and states from essentially any tissue or organism. As such, these methods are driving large-scale efforts to systematically map the cell types across all tissues in entire model organisms, and these reference atlases promise to provide fundamental new insights into tissue biology and to be transformative resources that will drive the next wave of discoveries into disease mechanism. Nonetheless, to meet the ambitious goals of such cell-atlas efforts, improvements are needed on all aspects of single-cell methodology. In this workshop, several investigators in the growing field of single-cell analysis will introduce state-of-the-art developments in single-cell experimental methodology, computational analysis, as well as the burgeoning field of spatial genomics.

**GFP25: Lighting up Cell Biology**

7:15–8:15 pm

Organized by the ASCB Public Information Committee (PIC)

Martin Chalfie, Professor, Columbia University
Jennifer Lippincott-Schwartz, Senior Group Leader, HHMI-Janelia Farms

This year marks the 25th anniversary of the use of green fluorescent protein (GFP) as a tagging tool for biological research. Since their discovery, fluorescent proteins have shaped the way researchers approach and carry out science. In this session, we will hear personal accounts of how fluorescent proteins have impacted the exciting work of leading cell and developmental biologists. Winners of ASCB’s GFP25 Image and Video Contest will also be announced.

Outcomes:

1. Learn the history of the discovery and use of GFP in biological research.
2. Learn about the development of new fluorescent biological probes and tools that utilize fluorescent proteins.

Target audience: all attendees