

The logo features a central circular arrangement of grey dots of varying sizes, creating a textured, sun-like effect. This is overlaid on a background of light grey, wavy, horizontal lines that resemble a signal or data waveform. A thick, dark grey arc is positioned to the left of the text, partially overlapping the wavy lines.

ASCB | EMBO
2017 meeting

Dec. 2-6, 2017 | Philadelphia, PA

Monday
December 4, 2017

7:30 am-6:00 pm	Registration Open	Registration Area
7:30 am-8:00 pm	Career Center Open	Hall D, Learning Center
8:00-9:30 am	Symposium 3: Cell Biology of Neurons	Terrace Ballroom 3
8:15-9:15 am	Exhibitor Tech Talk Leica Microsystems Inc.: Visualizing the complexity of life with advanced imaging techniques	Theater 1, Learning Center
8:15-8:30 am	Exhibitor Tech Talk Infinitesimal LLC: A new paradigm in single-cell transfection and gene editing	Theater 2, Learning Center
8:30-8:45 am	Exhibitor Tech Talk Lipotype GmbH: Lipotype Shotgun Lipidomics technology for comprehensive, high-throughput lipid analysis	Theater 2, Learning Center
8:45-9:00 am	Exhibitor Tech Talk MiniPCR: Genes in space and on Earth too: DNA technology for all	Theater 2, Learning Center
9:00-9:15 am	Exhibitor Tech Talk NanoSurface Biomedical: NanoSurface: Biomimetic cell culture platforms for enhancing cell biology studies	Theater 2, Learning Center
9:00 am-4:00 pm	Career Coaching	Career Center, Learning Center
9:00-9:45 am	Navigating Publishing in Scientific Journals	Theater 3, Learning Center
9:30-10:30 am	Exhibitor Tech Talk MilliporeSigma: New advances in microfluidic control of cellular microenvironment with uninterrupted imaging allows for highly controllable, long-term, more in vivo-like cell culture studies	Theater 2, Learning Center
9:30-11:00 am	Morning Refreshment Break	Learning Center
9:45 am-10:45 am	Symposium 4: Cell Interactions	Terrace Ballroom 3
10:00-11:00 am	Science Communication Workshop Using Improvisation	Room 126A
10:00 am-12:00 pm	Lab Leadership – Communication and Feedback	Room 117
10:00-10:45 am	Green Cards for Scientific Researchers: How to Win Your EB-1/NIW Case	Theater 3, Learning Center
10:30 am-12:00 pm	Advocacy Toolbox: The Two-Minute Speech	Room 123
10:45 am-12:00 pm	The Road toward Open Science	Room 122B
10:45-11:45 am	Exhibitor Tech Talk Photometrics: Maximizing sensitivity and signal to noise in scientific imaging	Theater 2, Learning Center
11:00 am-12:00 pm	Bruce Alberts Award for Excellence in Science Education: Kimberly Tanner	Room 124
11:00 am-12:00 pm	Meeting NIH's Rigor & Reproducibility Training Requirement for Key Biological Resources with Cell Authentication Training	Room 126B
11:00 am-12:00 pm	Career Discussion and Mentoring Roundtables	Roundtable Central Sections 1-3, Learning Center
11:00 am-12:00 pm	LGBTQ+ Diversity Session	Room 122A
11:00 am-12:10 pm	Microsymposium 7: Spindle Architecture, SAC, and Meiosis	Microsymposia Room 1, Learning Center, Hall C
11:00 am-12:10 pm	Microsymposium 8: Cytoskeleton and Motility	Microsymposia Room 2, Learning Center, Hall C

12:00-1:30 pm	Odd-Numbered Poster Presentations	Learning Center
12:00-1:00 pm	Showing of HHMI Films	ASCB Booth 525, Learning Center
12:00-12:45 pm	Starting Your Lab at an R1 Institute	Theater 3, Learning Center
12:00-12:45 pm	Exhibitor Tech Talk Wiley: Want people to read your paper? Optimize your chances with the Wiley Researcher Academy	Theater 1, Learning Center
12:00-12:45 pm	Exhibitor Tech Talk SVI Huygens Software: Restoring light-microscopy images with the SVI-Huygens deconvolution software	Theater 2, Learning Center
12:25-1:35 pm	Microsymposium 9: Organelle Structure and Dynamics	Microsymposia Room 1, Learning Center, Hall C
12:25-1:35 pm	Microsymposium 10: Cell Adhesion and Motility	Microsymposia Room 2, Learning Center, Hall C
1:00-1:45 pm	Careers in Entrepreneurship/Consulting Panel	Theater 3, Learning Center
1:00-1:30 pm	In-Booth Presentation ALVEOLE: Controlling the chemistry and topography of the cellular microenvironment with quantitative protein photopatterning – demo	Booth 539, Learning Center
1:00-1:45 pm	Exhibitor Tech Talk Nikon Instruments Inc.: Regulation of microtubule-based motility	Theater 1, Learning Center
1:00-1:45 pm	Exhibitor Tech Talk MilliporeSigma: Winning westerns: proven strategies to optimize your western blots	Theater 2, Learning Center
1:15-1:45 pm	Meet the ASCB Committees	ASCB Booth 525, Learning Center
1:30-3:00 pm	Even-Numbered Poster Presentations	Learning Center
1:30-3:30 pm	Afternoon Refreshment Break	Learning Center
1:45-2:30 pm	Meet the Editor of <i>Molecular Biology of the Cell</i>	ASCB Booth 525, Learning Center
1:50-3:00 pm	Microsymposium 11: Cell Migration, Stem Cells, and Disease	Microsymposia Room 1, Learning Center, Hall C
1:50-3:00 pm	Microsymposium 12: Mechanoregulation and Translational Studies of the Cytoskeleton	Microsymposia Room 2, Learning Center, Hall C
2:00-2:30 pm	ASCB Member Forum/Business Meeting	ASCB Booth 525, Learning Center
2:00-2:45 pm	Exhibitor Tech Talk Collecta, Inc.: Targeted RNA expression profiling for biomarker discovery in complex samples	Theater 1, Learning Center
2:00-2:45 pm	Exhibitor Tech Talk Andor Technology: Practical reasons to consider Dragonfly as your next confocal solution	Theater 2, Learning Center
3:00-4:00 pm	ASCB MAC Linkage Fellows Meeting (by invitation only)	Room 105A
3:00-4:00 pm	Exhibitor Tech Talk Berkeley Lights: Smaller is better: isolating and assaying single cells in a nanofluidic chip	Theater 1, Learning Center

Daily Schedule—Monday, December 4

3:00-4:00 pm	Exhibitor Tech Talk NemaMetrix Inc.: Functional analysis of disease genes in in vivo systems	Theater 2, Learning Center
3:15-4:00 pm	EMBO Gold Medal Ceremony and Lecture: Maya Schuldiner	Terrace Ballroom 3
4:15-5:15 pm	Exhibitor Tech Talk Nanolive SA: A marker-free technology to analyze living cell's internal structure and organelles in 3D, at high temporal and spatial resolution	Theater 2, Learning Center
4:15-6:50 pm	Workshop: CRISPR	Room 121B
4:15-6:50 pm	<p>Minisymposium 7: Actin Dynamics and Function</p> <p>Minisymposium 8: Cancer Cell Signaling, Adaptive Responses, and Metastasis</p> <p>Minisymposium 9: Ensuring Fidelity of Chromosome Segregation</p> <p>Minisymposium 10: Lipids in Signaling and Membrane Organization</p> <p>Minisymposium 11: Multicellular Interactions: Tissue Regeneration and Mechanisms of Disease</p> <p>Minisymposium 12: Protein Folding, Misfolding and Neurodegeneration</p> <p>Minisymposium 13: Subcellular Organization of Neural Cells</p>	<p>Room 113B</p> <p>Room 114</p> <p>Room 108A</p> <p>Room 115B</p> <p>Room 120B</p> <p>Room 118B</p> <p>Room 119A</p>
5:00-6:00 pm	Elevator Speech Videotaping	Room 103B
5:30-6:30 pm	Exhibitor Tech Talk Oxford Nanoimaging Ltd.: The Nanoimager: a desktop super-resolution microscope with d-STORM/PALM and SIM functionality	Theater 2, Learning Center
7:00-8:30 pm	Resilience in Science: A Panel and Networking Reception	Room 123

Monday, December 4

● Symposium 3: Cell Biology of Neurons

8:00-9:30 am

Terrace Ballroom 3

Chair: **Erika L. F. Holzbour**, Perelman School of Medicine at the University of Pennsylvania

- 8:00 am S6 Somatic mutation and genomic diversity in the human brain. **C.A. Walsh**¹; ¹Division of Genetics and Genomics, Boston Children's Hospital/Harvard Medical School/HHMI, Boston, MA
- 8:30 am S7 Sorting out polarized transport in neurons. **L.C. Kapitein**¹; ¹Department of Biology, Utrecht University, Utrecht, Netherlands
- 9:00 am S8 Ligands, receptors and signaling mechanisms for sensory dendrite morphogenesis. **K. Shen**¹; ¹Biology, Stanford University, Stanford, CA

● Exhibitor Tech Talk

8:15-9:15 am

Theater 1, Learning Center

Leica Microsystems Inc.

Visualizing the complexity of life with advanced imaging techniques

Presenter: Jochen Sieber, PhD

Level: Intermediate

Biology is complex and fluorescence microscopy is an important research tool in revealing the details within this complexity. The more insights we gain, the more questions emerge. Two common approaches in unraveling the complexities of biological processes are: 1) resolving relevant structures, and 2) tracking those structures over time. Another emerging trend is functional imaging, which aims to elucidate the function of molecules – not just their localization and abundance. Innovative new imaging solutions using the versatile TCS SP8 confocal platform are featured in this talk. The topics will span discussions of deep intravital multiphoton imaging with the TCS SP8 DIVE's 4Tune detector and super-resolution imaging through confocal-based and STED methods.

● Exhibitor Tech Talk

8:15-8:30 am

Theater 2, Learning Center

Infinitesimal LLC

A new paradigm in single-cell transfection and gene editing

Presenter: Vincent Lemaitre

Level: Advanced

Infinitesimal's NanoFountain Probe Electroporation (NFP-ETM) system for single-cell transfection consists of a robotic arm, with 3-degrees of motion, a microfluidic probe, custom electronics, and software for automated transfection of individual cells. The system is mounted to the body of an inverted fluorescent microscope and interfaced to a PC. By integrating a user interface, the software-controlled robotic arm, and a proprietary cell contact detection algorithm, a "Point-Click-Transfect" paradigm was achieved. Using this system, a library of biomolecules, proteins and nucleic acids were delivered into different adhering cell types such as immortalized and primary cells, e.g., human stem cells, with high efficiency and cell viability. In this presentation we will highlight the NFP-ETM system advantages in applications such as gene editing and cell line generation.

● Exhibitor Tech Talk

8:30-8:45 am

Theater 2, Learning Center

Lipotype GmbH

Lipotype Shotgun Lipidomics technology for comprehensive, high-throughput lipid analysis

Presenter: Dr. Michal Surma

Level: Advanced

Lipids have been neglected in the ongoing omics revolution. One reason has been the difficulty to comprehensively analyze lipid compositions of different samples – ranging from organs to organelles and bodily fluids – in a true high-throughput mode. Lipotype

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introduced a mass spectrometry-based approach providing fully quantitative results characterized by high precision and exhaustive lipid coverage. It allows for efficient and convenient analysis of large sample sets, increasing the statistical power of studies and paving the way for making lipidomics a routine tool in biological and clinical research. The successful application of this technology is exemplified by various published studies.

● Exhibitor Tech Talk

8:45-9:00 am

Theater 2, Learning Center

MiniPCR

Genes in space and on Earth too: DNA technology for all

Presenter: Sebastian Kraves, PhD

Level: Introductory

For decades the tools of modern biology and DNA analysis have remained inaccessible outside of high-end labs. miniPCR develops technology to close this gap, making DNA experimentation accessible to researchers, educators, and extreme locations such as the International Space Station or the Amazon rainforest. In this session we will share the history of miniPCR development and its deployment in various contexts including truffle farming, on-the-ground Ebola diagnosis, and DNA sequencing in space. These examples illustrate how PCR and gel electrophoresis can now be accessed with increased ease and efficiency by researchers, biotechnologists and DNA curious individuals around the globe.

● Exhibitor Tech Talk

9:00-9:15 am

Theater 2, Learning Center

NanoSurface Biomedical

NanoSurface: Biomimetic cell culture platforms for enhancing cell biology studies

Presenter: Nicholas Geisse, PhD

Level: Introductory

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

● Career Coaching

9:00 am-4:00 pm

Career Center, Learning Center

Stop by the career center for the opportunity 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.

Coaches:

David Taylor, Assistant Director, Office of Postdoctoral Affairs, The Children's Hospital of Philadelphia

Paulette McRae, Academic Programs Officer, The Children's Hospital of Philadelphia

Joseph Barber, Associate Director, UPENN Career Services

Mary Beth Davis, Pre-Health Advisor, Drexel University Steinbright Career Development Center

Laura Craig, Associate Director of Career Development, Temple University

Diane Hull, Associate Director, UPENN Career Services

David Prisco, Career Counselor and Employer Relations Associate, La Salle University

Kristy Lamb, Associate Director of Preprofessional Advising, New York University

Sheryl Smith, Associate Professor, Arcadia University

Megan Wright, Associate Professor, Arcadia University

Patricia Phelps, Director, Professional Development and Career Office, Johns Hopkins University School of Medicine

Catherine Hueston, STEM Education Postdoctoral Fellow, Professional Development and Career Office, Johns Hopkins University School of Medicine

Outcomes:

1. Obtain professional one-on-one mentorship catered toward 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, CV's, and application materials

Target audience: graduate students and postdocs

● **Navigating Publishing in Scientific Journals**

9:00-9:45 am

Theater 3, Learning Center

Supported by HHMI

Marta Koch, Scientific Editor, *Cell*
Andrea Leibfried, Editor, the *EMBO Journal*
Nicola Stead, Senior Editor, *PLOS ONE*

Experienced panelists from *EMBO*, *PLOS*, and *Cell* will discuss important strategies in choosing, submitting, reviewing, and publishing manuscripts in scientific journals. These panelists will also touch upon what directions the journals intend on taking in the future years. This panel will be guided by questions from the audience to ensure the conversation is focused on attendees' interests.

Marta Koch currently serves on the editorial board for *Cell Press*. She completed her PhD and postdoctoral fellowship at VIB Leuven in Belgium. Koch also conducted research as a Senior Research Associate at Scripps Research Institute.

Andrea Leibfried worked with Jan Lohmann on stem cell maintenance in the plant *Arabidopsis* before moving to the field of trafficking. In 2009 she obtained her PhD from the Université Pierre et Marie Curie in Paris, for which she studied DE-Cadherin trafficking in *Drosophila* with Yohanns Bellaïche at the Curie Institute. She then went to Anne Ephrussi's lab at the EMBL in Heidelberg to work on oocyte polarity and mRNA trafficking in *Drosophila*. Leibfried joined *The EMBO Journal* in 2013 and is mainly responsible for assessing and handling manuscripts in the areas of membranes & intracellular transport, cell death & autophagy, plant biology, and metabolism.

Nicola Stead is a Senior Editor at *PLOS ONE* based in the Cambridge, UK, office. Fascinated by the complexity of cells, she studied biology at the University of Bath, UK, and then went on to focus on chromatin biology during her PhD in Molecular Biology at the University of Cambridge, UK. During her research, she was keenly aware of the importance of the Open Access movement and joined PLOS in 2013 to help promote and contribute to Open Science and communication.

Outcomes:

1. Learn strategies for choosing the optimal journal for your manuscripts
2. Gain insights on how to successfully submit and publish manuscripts
3. Discuss the benefits of being a reviewer for scientific journals and how to be a good peer reviewer
4. Network with editors from a diverse set of journals

Target audience: undergraduates, graduate students, postdocs, faculty

● Exhibitor Tech Talk

9:30-10:30 am

Theater 2, Learning Center

MilliporeSigma

New advances in microfluidic control of cellular microenvironment with uninterrupted imaging allows for highly controllable, long-term, more in vivo-like cell culture studies

Presenter: Victor Yeh

Level: Intermediate

Performing live-cell experiments within microfluidic chambers greatly extends the precision and biological relevance of in vitro cell culture studies. One major challenge for long-term in vitro culture is controlling and manipulating micro-environmental parameters like temperature and gas composition, without disturbing the culture or impeding optical access to the cells. This workshop will cover the advantages of microfluidic cell culture and live-cell microscopy, and will review cell culture considerations, microfluidic design and fabrication requirements, and integration of microfluidic systems with microscopy for optimum visualization of live cells. Microfluidics applications in fields ranging from bacterial biofilms to tumor metastasis, followed by an introduction to recent microfluidic device designs will also be covered. The workshop will finish with open discussion of applications and future directions of the technology.

● Morning Refreshment Break

9:30-11:00 am

Learning Center

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

● Symposium 4: Cell Interactions

9:45-10:45 am

Terrace Ballroom 3

Chair: **Laura Machesky**, Beatson Institute for Cancer Research, UK

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|----------|-----|---|
| 9:45 am | S9 | Capturing principles of tissue dynamics and function by live imaging. V. Greco ¹ ; ¹ Genetics, Yale University, New Haven, CT |
| 10:15 am | S10 | Polarised secretion and frustrated ciliogenesis: the cell biology of serial killer cells. G.M. Griffiths ¹ ; ¹ Cambridge Institute for Medical Research, Cambridge University, Cambridge, United Kingdom |

● Science Communication Workshop Using Improvisation

10:00-11:00 am

Room 126A

Neil Bardhan, Bardhan Consulting, Philadelphia

Come meet the members of ASCB's Committee for Postdocs and Students (COMPASS) and improve your science communication skills with improvisation-based techniques led by Dr. Neil Bardhan. Communication is critical for all aspects of a scientific career, whether engaging with your mentor or engaging with the public. Improvisation provides a unique avenue to improve scientific communication skills and foster relationships.

Outcomes:

1. Meet COMPASS members and voice opinions on what you would like COMPASS to do for you in the future
2. Improve collaboration and communication skills using Improvisation methods
3. Foster community and a network among participants

Target audience: postdocs, graduate students

● Lab Leadership – Communication and Feedback

10:00 am-12:00 pm

Room 117

Supported by Thermo Fisher Scientific, Inc.

Samuel Caddick, PhD, Project Coordinator for EMBO Lab Management at the Gesellschaft zur Förderung der Lebenswissenschaften Heidelberg GmbH

A fundamental skill of good leadership is communicating effectively. In this session we explore a model of communication that helps you lead your lab and get more research done by working well with your staff and being effective in discussions or negotiations with your peers and superiors. Giving and receiving feedback well is the best predictor of success for a leader. We introduce you to a process of giving feedback about behavior that builds trust and increases performance in teams.

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

Outcomes:

1. Learn about the Transactional Analysis model of communication and its application to communicating with staff, peers, and superiors.
2. Explore how a feedback culture leads to improved performance of teams and leaders.
3. Learn how to give feedback to build trust, develop your staff and get more research done.

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

● Green Cards for Scientific Researchers: How to Win Your EB-1/NIW Case

10:00-10:45 am

Theater 3, Learning Center

Brian Getson, Getson & Schatz

Brian Getson, a graduate of the University of Pennsylvania Law School with 20 years of experience, is a leading U.S. immigration lawyer who represents scientific researchers in applying for green cards. His immigration law firm is based in Philadelphia. Mr. Getson has given presentations at numerous major scientific conferences, the Wistar Institute, and at universities. Visit researchergreencard.com for more information.

Outcomes:

1. Understand your job prospects in the United States relative to immigration laws
2. Receive a free, individualized legal consultation related to immigration law

Target audience: attendees interested in applying for green cards

● Advocacy Toolbox: The Two-Minute Speech

10:30 am-12:00 pm

Room 123

Connie Lee, Moderator, University of Chicago; Chair, Public Policy Committee

Simon J. Atkinson, Indiana University – Purdue University

Charles A. Easley, University of Georgia

Bob Goldstein, University of North Carolina Chapel Hill

Holly Goodson, University of Notre Dame

Kathleen J. Green, Northwestern University

Rebecca Heald, University of California, Berkeley

Tom Pollard, Yale University

If you were in an elevator with President Trump, how would you explain to him what you do? How do you explain your work to the chatty guy sitting next to you on an airplane? If you're not sure or think you need to improve your explanation, come to this session and improve your own two-minute speech with help from experienced science policy advocates. Participants will also be able to participate in the Elevator Speech Contest using their new skills.

Outcomes:

1. Improved ability to explain research to government officials and the public
2. Increased confidence in science advocacy

Target audience: graduate students, postdocs, others interested in improving science advocacy skills

● **The Road toward Open Science**

10:45 am-12:00 pm

Room 122B

Bernd Pulverer, EMBO Press, Chair
Jeremy Freeman, Chan Zuckerberg Initiative
Michael Huerta, National Library of Medicine
Thomas Lemberger, EMBO SourceData
Laura Machesky, Beatson Institute for Cancer Research, University of Glasgow
Jessica Polka, ASAPbio
Jason Swedlow, University of Dundee and Glencoe Software

Concerns about reproducibility and reliability of published data emphasize the need for more transparency and detail and more systematic approaches in the ways science is conducted and communicated, but the concept of Open Science is broader: It is about efficient access to all meaningful research outputs and touches on issues of accuracy, discoverability, standards, quality control, selectivity, and ethics. This session will bring together key representatives from research and research infrastructure—including “big data,” bench science, communications, and policy—to discuss the cultural and institutional obstacles to more open communication of research and to propose ways to create an Open Science future that renders scientific research more efficient and effective. Panelists include scientists, technology innovators, funders, publishers, and science communication innovators.

Outcomes:

1. Recognize that there are more dimensions to sharing research than publishing in high-impact science journals
2. Appreciate the tools and infrastructure required for a constructive Open Science landscape
3. Understand the cultural and institutional changes necessary to facilitate adoption of Open Science paradigms

Target audience: All attendees

● **Exhibitor Tech Talk**

10:45-11:45 am

Theater 2, Learning Center

Photometrics
Maximizing sensitivity and signal to noise in scientific imaging
Presenter: Rachit Mohindra
Level: Intermediate

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

● Bruce Alberts Award for Excellence in Science Education

11:00 am-12:00 pm

Room 124

What Does Teaching Sound Like? Introducing DART – Decibel Analysis for Research in Teaching – A New Tool for Systematically Analyzing Teaching Practices across Instructors and Institutions



Kimberly Tanner
San Francisco State University

A4 What Does Teaching Sound Like? Introducing DART – Decibel Analysis for Research in Teaching – A New Tool for Systematically Analyzing Teaching Practices across Instructors and Institutions. **K.D. Tanner**¹; ¹Biology, San Francisco State University, San Francisco, CA

The DART tool could enable individual instructors, departments, institutions, and science education stakeholders worldwide to systematically and regularly inventory the presence of evidence-based, active learning pedagogies with ~90% accuracy across thousands of courses in diverse settings with minimal effort. We envision DART as a tool for immediate feedback for individual instructors, as well as a system with which departments and institutions can regularly capture, assess, compare, and demonstrate their added educational value by showing the extent to which their instructors employ effective instructional practices for students.

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● Meeting NIH's Rigor & Reproducibility Training Requirement for Key Biological Resources with Cell Authentication Training

11:00 am-12:00 pm

Room 126B

Vivian Siegel, PhD, Director of Education and Training, Global Biological Standards Institute; and **Leonard Freedman**, PhD, President, Global Biological Standards Institute

Validation of key biological reagents such as cell lines is critical to research reproducibility and yet is rarely performed, leading to costly and time-consuming errors. Presenters will describe the rationale for developing an “active learning” online training module on cell authentication and will highlight key features of the module that they believe will effectively change research practice by sending trainees back into the laboratory to report on and implement authentication practices. Vivian Siegel will preview the online version that has been developed for use both by individuals and by trainees within RCR and other classroom settings using a “blended” format, and summarize the impact of the pilot training on research practice. Leonard Freedman will summarize other related activities that support improved rigor and reproducibility.

Outcomes:

1. Understand the importance of implementing cell authentication into research workflows to improve research reproducibility
2. Incorporate online training components into classes for personal, lab, and departmental use

Target audience: all attendees who use cell lines in their research; and faculty who teach cell culture techniques, responsible conduct of research, or rigor and reproducibility

● Career Discussion and Mentoring Roundtables

11:00 am-12:00 pm

Roundtable Central Sections 1-2,
Learning Center

Supported by The Burroughs Wellcome Fund

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

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

International Science and Scientists

Visa Issues
Career and Funding Options Abroad
Opportunities for Postdocs and PhDs
from Abroad to Attend an Advanced
Cell Biology Course in Brazil

Career Options

Careers in Biotech, Pharma & Industry
Careers in Patent Law & Intellectual
Property
Careers in Scientific Writing & Editing
Careers in Computational Biology &
Bioinformatics
Careers as a Research Scientist/
Academic Professional
Career Choices: Outside Academia and
Industry
Career Choices: Science Policy
Careers in Government Labs

Career Advancement

Strategies for Obtaining a Postdoc
IRACDA Teaching and Research
Postdoctoral Fellowships
Applying for an Academic Faculty
Position
Applying for a Faculty Position at a
Primarily Undergraduate Institution
Setting Up and Managing Your First Lab
Funding Options for Academic Research
Achieving Tenure at Different Types of
Institutions
Career Transitions
Using Social Media for Public
Engagement
Supporting and Increasing Diversity in
Undergraduate Science Education
Building and Maintaining Partnerships
to Support Science Outreach
Broader Impacts: Engaging the

Community in STEM
CourseSource: Publishing Evidence-
Based Teaching Resources for
Undergraduate Biology

Essential Career Skills, Resources, and Support

Interviewing & Negotiation Skill
Development
Women in Science
Unique Demands on Minority Graduate
Students
Thriving as a Faculty Member at a
Minority-Serving Institution

● LGBTQ+ Diversity Session

11:00 am-12:00 pm

Room 122A

Partially supported by the National Organization of Gay and Lesbian Scientists (NOGLSTP) and Technical Professionals and member donations

All attendees are welcome to join us for one hour of scientific knowledge and career advice/networking for Lesbian, Gay, Bisexual, Transsexual, Queer Cell Biologists and diversity allies. The session includes a scientific presentation by an accomplished LGBTQ+ scientist and a discussion panel about career issues involving LGBTQ+ students and professionals.

11:00-11:05: Introduction. **Bruno Da Rocha-Azevedo** and **Lee Ligon**

11:05-11:40: Supergrowth: coordination of cell growth and size. **Fred Chang**, University of California, San Francisco

11:40-12:00: Career/Networking Panel and Open Discussion. **Fred Chang**, University of California, San Francisco; **Ashley Lakoduk**, University of Texas Southwestern Medical Center; **Lee Ligon**, RPI; and **Bruno Da Rocha-Azevedo**, UT Southwestern Medical Center

Outcomes:

1. Scientific knowledge provided by an accomplished cell biologist talk
2. Opportunity for LGBTQ+ attendees to network
3. Career advice for LGBTQ+ attendees

Target audience: all attendees

● Microsymposium 7: Spindle Architecture, SAC, and Meiosis

11:00 am-12:10 pm

Microsymposia Room 1, Learning Center, Hall C

Moderator: **Arunika Das**, University of Pennsylvania

- 11:00 am E43 Kinesin-binding protein (KBP) is an inhibitory regulator of the mitotic kinesins Kif18A and Kif15. **H.L. Malaby¹, M. Dumas², J.K. Stumpff¹, R. Oh²**; ¹Molecular Physiology and Biophysics, The University of Vermont, Burlington, VT, ²Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN
- 11:10 am E44 Cell type-specific response to spindle misorientation and effects on tissue growth. **A.S. Parra¹, C.A. Johnston¹**; ¹Biology, University of New Mexico, Albuquerque, NM
- 11:20 am E45 Investigating in vivo variation in the strength of the spindle assembly checkpoint. **A.R. Gerhold¹, J. Labbé¹, P.S. Maddox²**; ¹Institute for Research in Immunology and Cancer, University of Montreal, Montreal, QC, ²Department of Biology, University of North Carolina, Chapel Hill, Chapel Hill, NC
- 11:30 am E46 Aurora B association with nucleosomes, not transcription, regulates its centromere localization and proper SAC response in human cells. **C. Ferras¹, M. Cruz¹, M. Alba Abad², N. Galjart³, J. Arulanandam², H.J. Maiato¹**; ¹Chromosome Instability & Dynamics Lab, IBMC/I3S, Porto, Portugal, ²Cell Biology, Wellcome Trust Centre for Cell Biology, Institute of Cell Biology, Edinburgh, United Kingdom, ³Genetics, Erasmus MC, Rotterdam, Netherlands
- 11:40 am E47 Negative regulatory network between the three aurora kinases protects mouse gamete euploidy. **A.L. Nguyen¹, A. Gentilello¹, K. Schindler¹**; ¹Genetics, Rutgers University, Piscataway, NJ
- 11:50 am E48 Histone dynamics during oocyte meiosis in *C. elegans*. **S. Rosu¹, P. Thepmankorn¹, O. Cohen-Fix¹**; ¹LCMB, NIH-NIDDK, Bethesda, MD
- 12:00 pm E49 Interplay between microtubule bundling and sorting factors ensures acentriolar spindle stability during *C. elegans* oocyte meiosis. **T.J. Mullen¹, S.M. Wignall¹**; ¹Molecular Biosciences, Northwestern University, Evanston, IL

MONDAY

● Microsymposium 8: Cytoskeleton and Motility

11:00 am-12:10 pm

Microsymposia Room 2, Learning Center, Hall C

Moderator: **Valerie Tutwiler**, University of Pennsylvania School of Medicine

- 11:00 am E50 Composition of LAT clusters regulates their movement within actomyosin networks. **J.A. Ditlev^{1,2}, A.R. Vega³, D.V. Koester^{2,4}, X. Su^{2,5}, R.D. Vale^{2,5}, S. Mayor^{2,4}, K. Jaqaman³, M.K. Rosen^{1,2}**; ¹Department of Biophysics and Howard Hughes Medical Institute, UT Southwestern Medical Center, Dallas, TX, ²Howard Hughes Medical Institute Summer Institute, Marine Biological Laboratory, Woods Hole, MA, ³Department of Biophysics, UT Southwestern Medical Center, Dallas, TX, ⁴National Centre for Biological Sciences, Bangalore, India, ⁵Department of Cellular and Molecular Pharmacology and Howard Hughes Medical Institute, University of California San Francisco, San Francisco, CA
- 11:10 am E51 The kinesin-3 KIF1C is a processive dimer and activated by a scaffold phosphatase. **A. Bachmann^{1,2}, N. Siddiqui^{1,2}, D. Roth^{1,2}, I. Kaverina³, A. Straube^{1,2}**; ¹Centre for Mechanochemical Cell Biology, University of Warwick, Coventry, United Kingdom, ²Warwick Medical School, University of Warwick, Coventry, United Kingdom, ³Cell and Developmental Biology, Vanderbilt University, Nashville, TN
- 11:20 am E52 Rapid and dynamic arginylation of the leading edge β -actin is required for cell migration. **I. Pavlyk¹, N.A. Leu¹, P. Vedula¹, A. Kashina¹, S. Kurosaka¹**; ¹Department of Biomedical Sciences, University of Pennsylvania, Philadelphia, PA
- 11:30 am E53 Coordination of acto-myosin contractility and mitochondrial positioning during neutrophil migration in live animals. **N. Melis¹, B. Subramanian¹, D. Chen¹, C. Parent¹, R. Weigert¹**; ¹Laboratory of Cellular and Molecular Biology, National Cancer Institute - NCI, Bethesda, MD
- 11:40 am E54 An investigation on the potential of Fidgetin-like 2, a microtubule severing enzyme, as a target to induce angiogenesis and heart regeneration. **A.H. Kramer¹, V. Paulino², Y. Wang³, P. Nacharaju¹, J.M. Friedman¹, B. Zhou³, R. Kitsis², D.J. Sharp¹**; ¹Physiology and Biophysics, Albert Einstein

11:50 am	E55	College of Medicine, Bronx, NY, ² Wilf Family Cardiovascular Research Institute, Albert Einstein College of Medicine, Bronx, NY, ³ Genetics, Albert Einstein College of Medicine, Bronx, NY Evolutionarily conserved mechanisms drive sarcomere assembly in cardiomyocytes. A.M. Fenix ¹ , N. Taneja ¹ , M.R. Visetsouk ² , B.R. Nixon ³ , A. Manalo ¹ , J.R. Becker ³ , S.W. Crawley ⁴ , D. Bader ^{1,3} , M.J. Tyska ¹ , J.H. Gutzman ² , D.T. Burnette ¹ ; ¹ Department of Cell and Developmental Biology, Vanderbilt University, Nashville, TN, ² Department of Biological Sciences, Cell and Molecular Biology, University of Wisconsin, Milwaukee, WI, ³ Department of Medicine, Vanderbilt University Medical Center, Nashville, TN, ⁴ Department of Biological Sciences, The University of Toledo, Toledo, OH
12:00 pm	E56	EFHC1 and EFHC2 are necessary for motile cilia function and A-tubule MIP recruitment. B.A. Bayless ¹ , D. Stoddard ^{2,3} , Y. Zhao ⁴ , J. Gaertig ⁵ , D. Nicastro ^{2,3} , M. Winey ¹ ; ¹ Molecular and Cellular Biology, University of California, Davis, Davis, CA, ² Biology, Brandeis University, Waltham, MA, ³ Cell Biology and Biophysics, University of Texas Southwestern Medical Center, Dallas, TX, ⁴ Molecular, Cellular and Developmental Biology, University of Colorado, Boulder, CO, ⁵ Cellular Biology, University of Georgia, Athens, GA

● Odd-Numbered Poster Presentations

12:00-1:30 pm

Learning Center

● Showing of HHMI Films

12:00-1:00 pm

ASCB Booth 525, Learning Center

Selections from the *I Contain Multitudes* Series and a not yet released short film

The *I Contain Multitudes* series is based on the book of the same name. The series premiered online in Fall 2017 with weekly episodes. Some are visits to a scientist's lab with Ed Yong as the guide. Others show intriguing animal behavior as Yong explains the hidden microbial backstory. In others, Yong answers viewers' questions while tackling the biggest misconceptions about the microbial world.

HHMI BioInteractive short films are compelling stories, in fields ranging from evolutionary biology and genetics to earth science, which provide concrete examples of how science works, how evidence is weighed and tested, and how conclusions are reached. Each film runs for 10 to 30 minutes and is accompanied by a collection of supporting materials, including film guides, quizzes, hands-on activities, and lesson plans, for educators to use to increase the impact of the films in their instruction.

● Starting Your Lab at an R1 Institute

12:00-12:45 pm

Theater 3, Learning Center

Supported by HHMI

Prachee Avasthi, Assistant Professor, University of Kansas Medical Center

Matthew Good, Assistant Professor, University of Pennsylvania

Kara Spiller, Assistant Professor, Drexel University

Elçin Ünal, Assistant Professor, University of California, Berkeley

Starting a lab at an R1 institute can be a daunting process. What are some problems that one can be aware of or even avoid when setting up a lab at an R1 institute? What are useful strategies to efficiently and effectively set up a successful lab, beyond the advice of "publish or perish?" Recent veterans of the process will share their experiences in a panel discussion. This session will be very interactive as it is fully based on questions from the audience.

Prachee Avasthi (web: avasthilab.org, twitter: @pracheeac) received her PhD in the lab of Wolfgang Baehr from the University of Utah Neuroscience program. She then received a Ruth L. Kirschstein NRSA postdoctoral fellowship to work in the lab of Wallace Marshall at University of California, San Francisco. In 2015, she joined the Anatomy and Cell Biology Department at the University of Kansas Medical Center. Her lab uses chemical biology, biochemistry, genetics, and quantitative live cell imaging to uncover novel mechanisms regulating assembly of the ubiquitous cellular antenna, the cilium. Avasthi is also an active supporter of preprints as an ASAPbio ambassador and is involved in various efforts to support early career faculty. She founded an online peer mentoring community for new PIs (currently >400 worldwide members) and serves on the eLife Early Career Advisory Group.

Matt Good joined the faculty of the Department of Cell and Developmental Biology at University of Pennsylvania in 2015. The Good

Lab investigates the contributions of cell size to subcellular assembly and cellular physiology, with particular emphasis on early embryo development. Broadly, the group is interested in principles of protein assembly at the micron length scale and how boundaries influence biological processes, including spindle assembly, small GTPase signaling, and gene expression. Their studies leverage imaging, biochemical reconstitution, and cell-like encapsulation to gain new insights on fundamental cell biological questions. Good received a PhD from the University of California, San Francisco, as a member of the laboratory of Wendell Lim. As a Miller Fellow at the University of California, Berkeley, he performed joint research in laboratories of Rebecca Heald and Daniel Fletcher.

Kara Spiller joined Drexel University's School of Biomedical Engineering, Science, and Health Systems as an assistant professor in 2013. Her group studies macrophage behavior in tissue repair and develops novel biomaterials to manipulate macrophage behavior for enhanced healing. Spiller received her PhD in biomedical engineering from Drexel in 2010, after conducting her doctoral research in the Biomaterials and Drug Delivery Laboratory at Drexel and in the Shanghai Key Tissue Engineering Laboratory of Shanghai Jiao Tong University. She conducted postdoctoral studies as a Fulbright fellow at the University of Minho in Portugal and as a postdoctoral fellow at Columbia University in New York. Her research is funded by the NIH, NSF, private foundations, and industry.

Elçin Ünal is an assistant professor in the Molecular and Cell Biology Department at the University of California, Berkeley. Her lab studies the principles that control the nuclear and cytoplasmic integrity of gametes toward understanding how gamete formation counteracts age-induced cellular damage and how the meiotic cells partition their chromosomes. Ünal received her undergraduate degree in Molecular Biology and Genetics from Bilkent University, Turkey. She then moved to the U.S. to pursue her PhD research in Doug Koshland's lab at the Carnegie Institute and completed her postdoctoral training as a Jane Coffin Childs Fellow in Angelika Amon's lab at MIT. Ünal is a recipient of the NIH Innovator Award, Pew Scholarship, March of Dimes Basil O'Connor Award as well as Damon Runyon Rachleff Innovator Award.

Outcomes:

1. Have a better understanding of the day-to-day job as a faculty member at an R1 institute
2. Learn strategies for successfully mentoring a variety of trainees from undergraduates to postdoctoral fellows
3. Gain insight into skills required to succeed as a faculty member at an R1 institute
4. Have a broader sense of career paths available to PhDs

Target audience: graduate students, Postdocs

● Exhibitor Tech Talk

12:00-12:45 pm

Theater 1, Learning Center

Wiley

Want people to read your paper? Optimize your chances with the Wiley Researcher Academy

Presenter: Andrew Moore

Level: Advanced

Many people click on but don't read an article; others don't even find it. Many sound articles don't even reach peer review. Which factors influence the success of your manuscript, from submission to publication and final readership recognition? What are editors and reviewers looking for? Did you know that you're addressing different readerships from submission to publication? How do search engines work, how do editors help authors "optimize" their articles for findability? How has the Internet changed the writing challenge for authors? Increase your understanding of scientific communication, and benefit from insights that you are unlikely to get elsewhere. Opportunity after the talk to learn more about writing and editorial at the Wiley booth.

● Exhibitor Tech Talk

12:00-12:45 pm

Theater 2, Learning Center

SVI Huygens Software Restoring light-microscopy images with the SVI-Huygens deconvolution software

Presenter: Dr. Giulia De Luca

Level: Introductory

While analyzing light-microscopy images, you might miss the small features of the sample because the resolution of the microscope is too low or because the images are noisy. This talk will describe how the SVI-Huygens deconvolution software increases more than 2-times the image resolution and more than 10-times the contrast, for a more reliable data visualization and analysis. Join this talk to know how Huygens is: -Comprehensive, addressing drift, chromatic aberration and crosstalk and including visualization and analysis options; -Fast, with its GPU-accelerated algorithms; -Flexible, for beginners with the automatic Deconvolution Express and for advanced users with the Deconvolution wizard, Scripting and Batch processing; -Up-to-date, with the new multi-tile Stitcher wizard and the new Light-sheet Fusion and deconvolution. Info and test: info@svi.nl.

● Microsymposium 9: Organelle Structure and Dynamics

12:25-1:35 pm

Microsymposia Room 1, Learning Center, Hall C

Moderators: **Ashley Rowland**, University of Colorado - Boulder; and **Sara Wong**, University of Michigan

- 12:25 pm E57 An image-based subcellular map of the human proteome. **P.J. Thul¹, L. Åkesson¹, D. Mahdessian¹, A. Bäckström¹, F. Danielsson¹, C. Gnann¹, M. Hjelmare¹, R. Schutten¹, C. Stadler¹, D.P. Sullivan¹, C.F. Winsnes¹, M. Uhlén¹, E. Lundberg¹**; ¹Science for Life Laboratory, Royal Institute of Technology (KTH), Stockholm, Sweden
- 12:35 pm E58 VLDL secretion from hepatocytes is controlled by phosphatidic acid. **M. Kumar¹, P. Rai¹, P. Barak^{1,2}, S.S. Kamat³, R. Mallik¹**; ¹Department of Biological Sciences, Tata Institute of Fundamental Research, Mumbai, India, ²Department of Physiology, Anatomy and Genetics, Oxford University, Oxford, United Kingdom, ³Departments of Biology Chemistry, Indian Institute of Science Education and Research, Pune, India
- 12:45 pm E59 A new model for COPII-mediated cargo export from the endoplasmic reticulum. **O. Shorn¹, I. Nevo-Yassaf¹, T. Aviad¹, J. Shepchelovich¹, Y. Yaffe¹, E. Perlson², A. Yehekel³, M. Pasmanik-Chor³, G.H. Patterson⁴, C. Kaether⁵, K. Hirschberg¹**; ¹Pathology, Tel Aviv University, Tel Aviv, Israel, ²Physiology and Pharmacology, Tel Aviv University, Tel Aviv, Israel, ³Bioinformatics Unit, G.S.W. Faculty of Life Sciences, Tel Aviv University, Tel Aviv, Israel, ⁴Section on Biophotonics, NIBIB, National Institutes of Health, Bethesda, MD, ⁵Leibniz Institute for Age Research, Fritz Lipmann Institute, Jena, Germany
- 12:55 pm E60 Myosin-Va is required for preciliary vesicle transportation to the mother centriole during ciliogenesis. **C. Wu^{1,2}, H. Chen¹, T.K. Tang^{1,2}**; ¹Institute of Biomedical Sciences, Academia Sinica, Taipei, Taiwan, ²Taiwan International Graduate Program in Interdisciplinary Neuroscience, National Yang-Ming University and Academia Sinica, Taipei, Taiwan
- 1:05 pm E61 Axonemal lumen dominates cytosolic protein diffusion inside the primary cilium. **W. Luo¹, A. Ruba¹, D. Takao², L.P. Zweifel³, R.Y. Lim³, K.J. Verhey², W. Yang¹**; ¹Biology, Temple University, Philadelphia, PA, ²Department of Cell and Developmental Biology, University of Michigan Medical School, Ann Arbor, MI, ³Biozentrum and the Swiss Nanoscience Institute, University of Basel, Basel, Switzerland
- 1:15 pm E62 Two-color STORM reveals that disruption of ciliary transition zone architecture causes Joubert syndrome. **X. Shi¹, G. Garcia^{2,3}, J.F. Reiter^{2,3}, B. Huang^{1,2}**; ¹Pharmaceutical Chemistry, University of California - San Francisco, San Francisco, CA, ²Biochemistry and Biophysics, University of California, San Francisco, San Francisco, CA, ³Cardiovascular Research Institute, University of California - San Francisco, San Francisco, CA
- 1:25 pm E63 Retrograde diffusion of kinesin-II facilitates flagellar length control in *Chlamydomonas*. **A. Chien¹, S. Shih², R. Bower³, D. Tritschler³, M.E. Porter³, A. Yildiz^{1,2}**; ¹Biophysics, University of California, Berkeley, Berkeley, CA, ²Physics, University of California, Berkeley, Berkeley, CA, ³Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, Minneapolis, MN

● Microsymposium 10: Cell Adhesion and Motility

12:25-1:35 pm

Microsymposia Room 2, Learning Center, Hall C

Moderators: **Catherine Carbone**, University of California-San Francisco; and **Scott Wilkinson**, National Institutes of Health

- 12:25 pm E64 Invadopodia are limited to the G1 phase of cell cycle. **B. Bayarmagnai**¹, **L. Perrin**¹, **K. Esmaili Pourfarhangi**¹, **B. Gligorijevic**^{1,2}; ¹Bioengineering, Temple University, Philadelphia, PA, ²Cancer Biology Program, Fox Chase Cancer Center, Philadelphia, PA
- 12:35 pm E65 ECM cross-linking regulates invadopodia dynamics. **K. Esmaili Pourfarhangi**¹, **A. Bergman**², **B. Gligorijevic**¹; ¹Bioengineering Department, Temple University, Philadelphia, PA, ²Systems Computational Biology Department, Albert Einstein College of Medicine, New York, NY
- 12:45 pm E66 Stiff microenvironments promote multinucleation via failure of midbody abscission downstream of Snail. **A.K. Simi**¹, **A.A. Anlas**¹, **S.X. Zhang**¹, **T. Hsia**¹, **D.C. Radisky**², **C.M. Nelson**^{1,3}; ¹Chemical Biological Engineering, Princeton University, Princeton, NJ, ²Cancer Biology, Mayo Clinic Cancer Center, Jacksonville, FL, ³Molecular Biology, Princeton University, Princeton, NJ
- 12:55 pm E67 Aquaporin-5 in carcinogenesis: expression decreases levels of cell:cell adhesion proteins in MDCK cells. **F.H. Login**¹, **H.H. Jensen**^{1,2}, **J.J. Morgen**^{1,2}, **G.A. Pedersen**^{1,3}, **J.S. Koffman**⁴, **J. Palmfeldt**¹, **P. Boss**¹, **M. Parsons**³, **L.N. Nejsum**^{1,4}; ¹Department of Clinical Medicine, Aarhus University, Aarhus, Denmark, ²Department of Molecular Biology and Genetics, Aarhus University, Aarhus, Denmark, ³King's College, London, United Kingdom, ⁴Interdisciplinary Nanoscience Center, Aarhus University, Aarhus, Denmark
- 1:05 pm E68 Co-regulation of Rac and Rho signalling in cell motility by a scaffold RhoGAP BPGAP1. **C.Q. Pan**¹, **P.J. Chua**², **T.W. Chew**¹, **S.Y. Er**¹, **P. Chaudhuri**¹, **D.C. Wong**¹, **A. Salim**³, **A. Thike**⁴, **C. Koh**⁵, **C. Lim**⁶, **P.H. Tan**⁴, **B.H. Bay**², **A.J. Ridley**⁷, **B.C. Low**¹; ¹Biological Sciences, Mechanobiology Institute, National University of Singapore, Singapore, Singapore, ²Department of Anatomy, Yong Loo Lin School of Medicine, National University Health System, National University of Singapore, Singapore, Singapore, ³Department of Mathematics and Statistics, La Trobe University, Bundoora, Australia, ⁴Department of Pathology, Singapore General Hospital, Singapore, Singapore, ⁵Division of Molecular Genetics & Cell Biology, School of Biological Sciences, Nanyang Technological University, Singapore, Singapore, ⁶Department of Biomedical Engineering, Mechanobiology Institute, National University of Singapore, Singapore, Singapore, ⁷Randall Division of Cell and Molecular Biophysics, King's College London, London, United Kingdom
- 1:15 pm E69 Apoptosis Signal-Regulating Kinase 1 (ASK1) is a novel regulator of heparin-induced thrombocytopenia and thrombosis in mice. **P. Patel**¹, **Y. Zhou**¹, **S. McKenzie**¹, **U. Naik**¹; ¹Cardeza Foundation for Hematologic Research and Center for Vascular Biology Research, Department of Medicine, Thomas Jefferson University, Philadelphia, PA
- 1:25 pm E70 A novel Twist1-PKD1 axis promotes epithelial dissemination. **D. Georgess**¹, **O.K. Sirka**¹, **G. Frid**¹, **A. Choi**¹, **N.M. Neumann**¹, **A.J. Ewald**¹; ¹Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD

MONDAY

● Careers in Entrepreneurship/Consulting Panel

1:00-1:45 pm

Theater 3, Learning Center

Supported by HHMI

Dalia El-Sherif, Partner, Pyxa Solutions

Michael Lang, Consulting Associate, Charles River Associates

Michael Poisel, Director, Penn Center for Innovation Ventures

Ricky Solorzano, Co-founder and CEO, Allevi, Inc.

PhDs are particularly well poised to take the jump into entrepreneurship and consulting based careers, as obtaining a PhD exposes you to many of the innovative and critical-thinking skills needed to excel in these careers. Although PhDs are well-suited for these jobs, resources are scarce on how to pursue careers in entrepreneurship and consulting. This panel will provide first-hand experiences, offer advice about these career paths, and answer questions from the audience.

Dalia El Sherif's unique background blends entrepreneurship and management consulting in the pharmaceutical, medical device, and healthcare industries. El-Sherif was top Strategy/Change consultant at PA Consulting, IBM, and Shire. At PA and IBM, El-Sherif successfully led 20+ projects over 14 accounts including but not limited to post-merger integrations, risk management and compliance programs, and portfolio management initiatives. At Shire El-Sherif led the Process Optimization group for Global Regulatory Affairs before moving on to lead Strategic Planning and Portfolio Management for Shire's Pharmadivision. In this role she delivered a Presidents Club award winning strategic 2020 roadmap. Currently, El-Sherif leads Pyxa's R&D Consulting and Technology Services and the development of Pyxa's DirectusPro, a strategic Life-Science focused Cloud-Based Global Labeling Solution.

Michael Lang completed his PhD in Cell and Developmental Biology at the University of Michigan. Since graduating, he has joined Charles River Associates (CRA) as a life sciences consultant. His work combines quantitative and qualitative market research as well as structured analytics to deliver insights that help pharmaceutical and biotech clients value and prioritize market opportunities and launch new brands. He works closely with multiple teams across CRA's life sciences practice to help companies with their most critical and challenging business decisions within rare disease, oncology, immunology, neuroscience and other specialty biopharma sectors.

Michel Poisel joined the University of Pennsylvania in 2009 and since has been building entrepreneurial programs for the university. He currently manages PCI Ventures, which includes UPstart, AppitUP, DevelUPmed and UPadvisors. Prior to Penn, Poisel made investments in software and business services for NewSpring Capital, Apax Partners and GE Capital spanning more than 10 years in private equity. He began his career in manufacturing operations for General Electric/Lockheed Martin and participated in the successful completion of several satellite programs. Poisel graduated with honors in Mechanical Engineering from Rose-Hulman Institute of Technology, holds an MS in Systems Engineering from the Moore School of Engineering of University of Pennsylvania, and has an MBA in finance and entrepreneurial management from the Wharton School of Business of University of Pennsylvania.

Ricky Solorzano is the CEO and co-founder of Allevi, Inc., and is interested in making it easy for scientists to create 3D biology through the power of organ bioengineering. He received his BS in Bioengineering from the University of Pennsylvania. Solorzano completed research at the University of Miami Miller School of Medicine before returning to Penn's Tissue Microfabrication laboratory. He was also a Harrison Surgical Scholar in the University of Pennsylvania Health System and co-founded BioBots in 2013.

Outcomes:

1. Learn about all the various career opportunities from industry leaders
2. Learn how to navigate your career interests in the field
3. Gain an understanding of what qualities and attributes employers in this field desire
4. Have the opportunity to ask questions in regard to your own career development

Target audience: undergraduates, graduate students, postdocs, faculty

● In-Booth Presentation

1:00-1:30 pm

Booth 539, Learning Center

ALVEOLE

Controlling the chemistry and topography of the cellular microenvironment with quantitative protein photopatterning – demo

Presenters: Matthieu Opitz, H el ene Delobel

We will show how PRIMO new photopatterning technology allows researchers to generate with high flexibility any shape of micropattern with multiple proteins, controlled density and precise alignment on all standard cell culture substrates (soft or stiff, flat or microstructured) and to fabricate microstructured substrates, in order to control the cellular microenvironment.

● Exhibitor Tech Talk

1:00-1:45 pm

Theater 1, Learning Center

Nikon Instruments Inc.
Regulation of microtubule-based motility
Presenter: Samara Reck-Peterson, PhD
Level: Advanced

In eukaryotic cells, cytoplasmic dynein-1 is essential for long-distance transport of many cargos and can be regulated to perform multiple molecular functions. One essential dynein regulator is Lis1, mutations in which cause the neurodevelopmental disease lissencephaly. I will present our discovery, and the mechanism by which, Lis1 regulates dynein in two distinct and opposing ways. Under some conditions Lis1 causes dynein to tightly bind to its microtubule track, while in other cases it weakens dynein's microtubule interaction. This work, which uses a combination of single-molecule imaging, in vitro reconstitution and cryo-electron microscopy, provides a new model for how Lis1 can regulate dynein to perform multiple molecular functions.

● Exhibitor Tech Talk

1:00-1:45 pm

Theater 2, Learning Center

MilliporeSigma
Winning westerns: proven strategies to optimize your western blots
Presenter: Jun Park, PhD
Level: Introductory

Does western blotting give you more trouble than expected? Do you feel like your precious samples are being wasted on bad westerns? Join us and find out how you can improve your western blots! In this seminar, you will learn general guidelines for performing and troubleshooting your westerns, such as: choice of different blotting membranes, parameters affecting blotting efficiency, conditions for optimizing your immunodetection, and information on SNAP I.D. 2.0: a faster way to perform immunodetection. As the inventors of PVDF Immobilon® membranes, MilliporeSigma knows how informative a good western can be. Bring your research questions to get the most out of this session.

● Meet the ASCB Committees

1:15-1:45 pm

ASCB Booth 525, Learning Center

Members from the International and Minorities Affairs 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 iced tea and snacks while visiting exhibitors and viewing posters.

MONDAY

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

1:45-2:30 pm

ASCB Booth 525, Learning Center



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

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

Members of the *Molecular Biology of the Cell* editorial board will also be available at various times at the ASCB Journals Exhibit Booth (Booth 931). Stop by the booth or check the *Poster Guide* for times.

● **Microsymposium 11: Cell Migration, Stem Cells, and Disease**

1:50-3:00 pm

Microsymposia Room 1, Learning Center, Hall C

		Moderators: Alyssa Lesko , University of Notre Dame; and Neil Neumann , Johns Hopkins University
1:50 pm	E71	Epithelial cells spatiotemporally coordinate molecular activities and mechanical forces to drive radial intercalation during ductal elongation. N.M. Neumann¹, M.C. Perrone^{2,3}, J.H. Veldhuis^{2,3}, R.J. Huebner¹, H. Zhan¹, P.N. Devreotes¹, G.W. Brodland^{2,3}, A.J. Ewald¹ ; ¹ Cell Biology and Center for Cell Dynamics, Johns Hopkins University School of Medicine, Baltimore, MD, ² Civil and Environmental Engineering, University of Waterloo, Waterloo, ON, ³ Centre for Bioengineering and Biotechnology, University of Waterloo, Waterloo, ON
2:00 pm	E72	Long-range intercellular communication in collective cell migration. A. Zaritsky^{1,2,3}, Y. Tseng⁴, M. Rabadán⁴, S. Krishna⁴, M. Overholtzer⁴, A. Hall⁴, G. Danuser^{2,3} ; ¹ Molecular Cell Biology, Weizmann Institute of Science, Rehovot, Israel, ² Bioinformatics, UT Southwestern Medical Center, Dallas, TX, ³ Cell Biology, UT Southwestern Medical Center, Dallas, TX, ⁴ Cell Biology, Memorial Sloan-Kettering Cancer Center, New York, NY
2:10 pm	E73	High-throughput screening platform for treatment optimization using cardiac tissues derived from patient's iPSCs. S. Park¹, W. Jung¹, C. Ong², M. Li¹, N. Hibino², Y. Chen¹ ; ¹ Department of Mechanical Engineering, Johns Hopkins University, Baltimore, MD, ² Division of Cardiac Surgery, Johns Hopkins University, Baltimore, MD
2:20 pm	E74	Self-organization of brain tumors: oncostreams determine growth, invasion, and malignancy of brain tumors. P.R. Lowenstein^{1,2}, A. Comba¹, D. Zamler¹, A. Argento¹, F. Nunez-Aguilera¹, S. Motsch³, M.G. Castro^{1,2} ; ¹ Neurosurgery, University of Michigan, Ann Arbor, MI, ² Cell and Developmental Biology, University of Michigan, Ann Arbor, MI, ³ Mathematical and Statistical Sciences, Arizona State University, Tempe, AZ
2:30 pm	E75	Live cell FLIM-PLIM microscopy reveals proliferative and metabolic heterogeneity of intestinal organoids. R.I. Dmitriev¹, T. Foley², D.B. Papkovsky¹, I.A. Okkelman¹ ; ¹ School of Biochemistry and Cell Biology, University College Cork, Cork, Republic of Ireland, ² Department of Anatomy and Neuroscience, University College Cork, Cork, Republic of Ireland
2:40 pm	E76	In vivo cellular reprogramming to restore respiratory function after SCI. S. Fernandes¹, L.V. Zholudeva¹, M.A. Lane¹, P.W. Baas¹, L. Qiang¹ ; ¹ Neurobiology and Anatomy, Drexel University College of Medicine, Philadelphia, PA
2:50 pm	E77	Is the eicosanoid producing enzyme 12-lipoxygenase (ALOX12) a tumor suppressor? G.F. Gerlach¹, P. Niethammer¹ ; ¹ Cell Biology, Memorial Sloan Kettering Cancer Center, New York, NY

● Microsymposium 12: Mechanoregulation and Translational Studies of the Cytoskeleton

1:50-3:00 pm

Microsymposia Room 2, Learning Center, Hall C

Moderators: **Pinar Gurel**, The Rockefeller University; and **Ashley Lakoduk**, University of Texas Southwestern Medical Center, Dallas

- 1:50 pm E78 Graded activation of ROCK and MLCK tunes regional stress fiber formation and mechanics via preferential myosin light chain phosphorylation. **E. Kassianidou**^{1,2}, **J.H. Hughes**^{1,2}, **S. Kumar**^{1,3}; ¹Bioengineering, University of California, Berkeley, Berkeley, CA, ²UC Berkeley - UCSF Graduate Program in Bioengineering, Berkeley, CA, ³Chemical and Biomolecular Engineering, University of Berkeley, Berkeley, CA
- 2:00 pm E79 Profiling mechanical stress-dependent cytoskeleton organization at varying curvatures using self-induced rolling membrane (SIRM). **J. Kim**¹, **L. Vannozzi**², **Y. Chen**^{1,3}; ¹Mechanical Engineering, Johns Hopkins University, Baltimore, MD, ²The BioRobotics Institute, Sant'Anna School of Advanced Studies, Pisa, Italy, ³Center for Cell Dynamics, Johns Hopkins University, Baltimore, MD
- 2:10 pm E80 Morphological changes of epithelia cells induced by viscous conditions. **J. Flournoy**¹, **G. Sun**¹, **D. Maity**², **Y. Chen**¹; ¹Mechanical Engineering, Johns Hopkins University, Baltimore, MD, ²Chemical and Biomolecular Engineering, Johns Hopkins University, Baltimore, MD
- 2:20 pm E81 Myofibroblast differentiation of fetal fibroblasts is inhibited in response to ECM rigidity and TGF- β 1. **R.J. Jerrell**¹, **M.J. Leih**¹, **A. Parekh**^{1,2,3,4}; ¹Otolaryngology, Vanderbilt University Medical Center, Nashville, TN, ²Vanderbilt-Ingram Cancer Center, Vanderbilt University Medical Center, Nashville, TN, ³Biomedical Engineering, Vanderbilt University, Nashville, TN, ⁴Cancer Biology, Vanderbilt University, Nashville, TN
- 2:30 pm E82 Molecular force loading explains cell sensing of extracellular ligand density and distribution. **R. Oria**^{1,2}, **T. Wiegand**^{3,4}, **J. Escibano**⁵, **A. Elosegui-Artola**¹, **J. Uriarte**², **C. Moreno-Pulido**¹, **I. Platzman**³, **P. Delcanale**¹, **L. Albertazzi**¹, **D. Navajas**^{1,2}, **X. Trepas**^{1,2,6}, **J.M. García Aznar**⁵, **.A. Cavalcanti-Adam**^{3,4}, **P. Roca-Cusachs**^{1,2}; ¹Institute for Bioengineering of Catalonia, Barcelona, Spain, ²University of Barcelona, Barcelona, Spain, ³Max-Planck-Institute for Medical Research, Heidelberg, Germany, ⁴University of Heidelberg, Heidelberg, Germany, ⁵Multiscale in Mechanical and Biological Engineering (M2BE), University of Zaragoza, Zaragoza, Spain, ⁶Institució Catalana de Recerca i Estudis Avançats, Barcelona, Spain
- 2:40 pm E83 Laser-induced retraction of single actomyosin stress fibers reveals subtype-specific viscoelastic properties and contributions to tension generation. **S. Lee**¹, **S. Kumar**^{1,2,3}; ¹Graduate Program in Bioengineering, UC Berkeley-UCSF, Berkeley, CA, ²Bioengineering, University of California, Berkeley, Berkeley, CA, ³Chemical and Biomolecular Engineering, University of California, Berkeley, Berkeley, CA
- 2:50 pm E84 Actin-generated forces during mammalian endocytosis. **M. Akamatsu**¹, **D.G. Drubin**¹; ¹Molecular and Cellular Biology, University of California, Berkeley, Berkeley, CA

MONDAY

● ASCB Member Forum/Business Meeting

2:00-2:30 pm

ASCB Booth 525, Learning Center

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

● Exhibitor Tech Talk

2:00-2:45 pm

Theater 1, Learning Center

Cellecta, Inc.

Targeted RNA expression profiling for biomarker discovery in complex samples

Presenter: Paul Diehl, PhD

Level: Intermediate

New rapid and robust transcriptome-based methods for cellular characterization of the tumor microenvironment and biomarker discovery are required to improve prognosis and treatment of cancer and other diseases. However, challenges with current

approaches for the above applications include high sample requirements, poor sensitivity, low dynamic range, and limited throughput. To address these limitations, we have developed the Driver-Map targeted RNA expression profiling assay using a genome-wide set of 19,000 validated primer pairs that leverages the sensitivity of multiplex RT-PCR with the throughput and digital readout depth of Next-Generation Sequencing (NGS). We present the performance of the assay for immunophenotyping of immune cells in whole blood samples from sepsis patients and assess the immune responses to complex immunomodulatory stimuli in ex vivo mode.

● Exhibitor Tech Talk

2:00-2:45 pm

Theater 2, Learning Center

Andor Technology
Practical reasons to consider Dragonfly as your next confocal solution

Presenter: Dr. Mark Browne

Level: Intermediate

Dragonfly is a high performance multi-modal imaging platform. In this session, we focus on Dragonfly's multi-point scanning confocal imaging performance and compare it to single point scanning, which has become the dominant technology over the last 30 years. We show that Dragonfly exceeds or matches the performance of point scanners in all important aspects. As life science research accelerates and demands greater throughput for deeper study, we suggest the community should consider this new and powerful platform wherever there is a need for fast, sensitive, high resolution confocal imaging. Further benefits to your research include greater productivity, extended spectral range, and accurate quantifiable results. From large samples, such as zebrafish and organoids, to single cells or yeast and bacteria, Dragonfly makes no compromises for the best quality image.

● ASCB MAC Linkage Fellows Meeting (by invitation only)

3:00-4:00 pm

Room 105A

Supported by an IPERT grant from NIGMS, NIH

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 minority-serving institutions in cell biology-related programming year-round. This session provides an opportunity for Linkage Fellows in the 2016-2017 and the 2017-2018 cohorts to interact with each other and with the ASCB MAC IPERT Program leadership to discuss their projects/activities, the outcomes, and future plans.

● Exhibitor Tech Talk

3:00-4:00 pm

Theater 1, Learning Center

Berkeley Lights
Smaller is better: isolating and assaying single cells in a nanofluidic chip

Presenter: Mark White, PhD

Level: Intermediate

Smaller is better because it's faster. Automating biological processes at nano volumes significantly shortens time to results, precisely captures multiple data points on each cell, and scales by screening thousands of single cells at one time. Berkeley Lights' proprietary OptoSelect™ technology enables precise manipulation of cells, including T cells and B cells, using low-intensity light. For the first time, individual cells can be selectively isolated, cultured, assayed, and exported. Selected cells can also be processed for nucleic acid isolation for further genomic studies. Examples will be shared of identification of cells of interest, assay versatility, and the capture of cell to cell interaction.

● Exhibitor Tech Talk

3:00-4:00 pm

Theater 2, Learning Center

NemaMetrix Inc.
Functional analysis of disease genes in in vivo systems

Presenters: Dr. Kathryn McCormick and Dr. Chris Hopkins

Level: Intermediate

The age of genomic and precision medicine is revolutionizing medical practices, but it is also revealing gaps in our knowledge of the genetics of disease. Each individual's genome harbors a significant number of unique alleles that may impact the individual's

health in unpredictable ways. These are the clinical Variants of Uncertain (or Unknown) Significance (VUS). Assigning a functional status to identified alleles, whether benign or pathogenic, is a significant problem. New advances in genome engineering and phenotypic assessment are making it possible to go confidently from identification of a novel patient allele to a ClinVar assignment of variant activity with speed and ease using in vivo functional data. We will show a typical workflow for disease variant analysis, focusing on Epilepsy and Alzheimer's disease genetics.

● EMBO Gold Medal Ceremony and Lecture

3:15-4:00 pm

Terrace Ballroom 3



Maya Schuldiner

Weizmann Institute of Science, Israel

A3 Systematic Cell Biology of Organelles. **M. Schuldiner**¹; ¹Molecular Genetics, Weizmann Institute of Science, Rehovot, Israel

● Exhibitor Tech Talk

4:15-5:15 pm

Theater 2, Learning Center

Nanolive SA

A marker-free technology to analyze living cell's internal structure and organelles in 3D, at high temporal and spatial resolution

Presenter: Dr. Yann Cotte

Level: Introductory

Holographic-tomographic microscopy is an emerging and powerful new imaging approach that will revolutionize 3D live cell imaging. It allows researchers to characterize cells, organelles and cell dynamics by refractive index variations, with truly no phototoxicity. The 3D Cell Explorer offers a versatile platform for in vitro live cell imaging. It acquires every second a complete 3D image of cells (bacteria, yeast, protozoa, mammalian) and tissues, combined with cellular environment control and fluorescence imaging. Long-term (for weeks) time-lapse imaging enables users to perform continuous quantification of single cells. New hardware and software features offer a complete solution from cellular environment control, over non-invasive 3D image acquisition to post-processing analysis and will be announced in world premiere!

● Workshop: CRISPR

4:15-6:50 pm

Room 121B

CRISPR-Based Editing and Tracking the Genome

Co-Organizers: **J. Keith Joung**, Massachusetts General Hospital and Harvard Medical School; and **Thoru Pederson**, University of Massachusetts Medical School

The discovery of the CRISPR immunity system in eubacteria and archaeobacteria was a breakthrough and so was its retooling to operate in eukaryotic cells. Despite excitement about its potential applications in the therapeutic domain, much remains to be done and the technology continues to advance and improve at an extremely rapid pace. This workshop will provide an update with talks from leading innovators of CRISPR technology in the preclinical arena. Three of the talks will present state-of-the-art advances in CRISPR-based gene editing technologies and the fourth will describe how the CRISPR machinery can be repurposed to track the dynamic movements of genomic loci in live cells. Ample time will be provided to allow for audience participation. We welcome all!

Speakers:

Exploration and Harnessing of CRISPR Diversity for RNA Manipulation. **Feng Zhang**, Massachusetts Institute of Technology

Developments and Applications of Base Editing: Genome Editing Without Double-Stranded DNA Cleavage. **David Liu**, Harvard University, MIT, and the Broad Institute

Defining and Minimizing CRISPR-Cas Nucleases' Off-Target Mutations. **J. Keith Joung**, Massachusetts General Hospital and Harvard Medical School

CRISPR-Based DNA Imaging in Living Cells Reveals Cell Cycle-Dependent Chromosome Dynamics. **Hanhui Ma**, University of Massachusetts Medical School

● Minisymposium 7: Actin Dynamics and Function

4:15-6:50 pm

Room 113B

Co-Chairs: **Stephanie Gupton**, University of North Carolina at Chapel Hill; and **Kenneth Campellone**, University of Connecticut

4:15 pm Introduction

4:20 pm M69 Direct observation of actin structural deformation in response to mechanical force. **P.S. Gurel¹, Y. Takagi², J.E. Bird³, J.R. Sellers², G.M. Alushin¹**; ¹The Rockefeller University, New York, NY, ²Cellular Biology and Physiology Center, National Heart, Lung, and Blood Institute, Bethesda, MD, ³National Institute of Deafness and Other Communication Diseases, Bethesda, MD

4:35 pm M70 Twinfilin promotes Capping Protein association with actin filament barbed ends by attenuating the inhibitory effects of CARMIL. **D. Hilton¹, A. Johnston¹, A. Simone¹, P. McConnell², J.A. Cooper², B.L. Goode¹**; ¹Molecular Cellular Biology, Brandeis University, Waltham, MA, ²Biochemistry Molec Biophysic, Washington University in St. Louis, St. Louis, MO

4:50 pm M71 Arp2/3 complex- and formin-mediated actin networks tune actin-binding protein sorting in fission yeast. **K.E. Homa¹, C. Suarez¹, D.R. Kovar^{1,2}**; ¹Molecular Genetics and Cell Biology, The University of Chicago, Chicago, IL, ²Biochemistry and Molecular Biology, The University of Chicago, Chicago, IL

5:05 pm M72 CYRIP5 (Fam49) proteins are local inhibitors of Rac1 and Scar/WAVE induced lamellipodia. **L. Fort¹, J. Batista¹, P. Thomason¹, H. Spence¹, J. Greaves², K. Martin¹, K. Anderson^{1,3}, P. Brown¹, S. Lilla¹, M. Nielson¹, P. Tafelmeyer⁴, S. Zanivan¹, S. Ismail¹, N. Tomkinson⁵, L.H. Chamberlain², R.H. Insall¹, L.M. Machesky¹**; ¹Beatson Institute for Cancer research, Glasgow, United Kingdom, ²Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde, Glasgow, United Kingdom, ³Crick Institute, London, United Kingdom, ⁴Hybrigenics Services, Paris, France, ⁵WestCHEM, Department of Pure and Applied Chemistry, University of Strathclyde, Glasgow, United Kingdom

5:20 pm M73 Ubiquitin-dependent regulation of filopodia during axon guidance and branching. **N. Boyer¹, C. Monkiewicz², S. Menon², S.L. Gupton^{2,3}**; ¹Neurobiology Curriculum, University of North Carolina at Chapel Hill, School of Medicine, Chapel Hill, NC, ²Cell Biology and Physiology, University of North Carolina at Chapel Hill, School of Medicine, Chapel Hill, NC, ³Neuroscience Center, University of North Carolina at Chapel Hill, School of Medicine, Chapel Hill, NC

5:35 pm M74 Mechanistic principles underlying regulation of the actin cytoskeleton by phosphoinositides. **Y. Senju¹, M. Kalimeri², E. Koskela¹, P. Somerharju³, H. Zhao¹, I. Vattulainen^{2,4}, P. Lappalainen¹**; ¹Institute of Biotechnology, University of Helsinki, Helsinki, Finland, ²Department of Physics, Tampere University of Technology, Tampere, Finland, ³Faculty of Medicine, University of Helsinki, Helsinki, Finland, ⁴Department of Physics, University of Helsinki, Helsinki, Finland

5:50 pm M75 An Amish founder mutation disrupts a PI(3)P-WHAMM-Arp2/3 complex driven autophagosome remodeling pathway. **A. Mathiowetz¹, E. Baple², A. Russo¹, A. Coulter¹, E. Carrano¹, J. Brown¹, R. Jinks³, A. Crosby², K. Campellone¹**; ¹University of Connecticut, Storrs, CT, ²University of Exeter Medical School, Exeter, United Kingdom, ³Franklin and Marshall College, Lancaster, PA

6:05 pm M76 Complement mediated phagocytosis involves mechanical coupling of $\beta 2$ integrins to the actin cytoskeleton by a myosin-independent molecular clutch. **V. Jaumouillé¹, T. Liu², E. Betzig², C.M. Waterman¹**; ¹National Heart, Lung, and Blood Institute, National Institutes of Health, Bethesda, MD, ²Janelia Research Campus, Howard Hughes Medical Institute, Ashburn, VA

6:20 pm M77 A geodesic septin lattice is required for actomyosin contractility on micron-scale curved membranes in vivo. **S. Ebrahim¹, A. Shitara¹, H. Shroff², B. Kachar³, R. Weigert¹**; ¹NCI, NIH, Bethesda, MD, ²NIBIB, NIH, Bethesda, MD, ³NIDCD, NIH, Bethesda, MD

6:35 pm M78 The interaction of FHOD1 with nesprin-2G activates a cryptic actin binding site and stimulates potent actin bundling activity: implications for nuclear movement. **S. Antoku¹, G.G. Gundersen¹**; ¹Pathology & Cell Biology, Columbia University, New York, NY

● **Minisymposium 8: Cancer Cell Signaling, Adaptive Responses, and Metastasis**

4:15-6:50 pm

Room 114

Supported by Thermo Fisher Scientific Inc.

Chair: **Brendan D. Manning**, Harvard University

- 4:15 pm Introduction
- 4:20 pm M79 Centrosome amplification triggers a non-canonical Senescence-Associated Secretory Phenotype and HIF1- α activation. **S.K. Wu**^{1,2}, **R. Picone**^{1,2}, **M.S. Levine**³, **S. Papathanasiou**^{1,2}, **M. Kwon**^{1,2}, **M. Janiszewska**^{1,2}, **K. Polyak**¹, **A. Spektor**^{1,2}, **A.J. Holland**³, **D. Pellman**^{1,2}; ¹Pediatric Oncology, Dana Farber Cancer Institute, Boston, MA, ²Cell Biology, Harvard Medical School, Boston, MA, ³Molecular Biology and Genetics, Johns Hopkins School of Medicine, Baltimore, MD
- 4:35 pm M80 Extensive genetic and transcriptional variation alters the response of cancer cell lines to anticancer drugs. **U. Ben-David**¹, **B. Siranosian**¹, **G. Ha**^{1,2}, **H. Tang**¹, **A. Thorner**², **J. Bittker**¹, **R. Beroukhim**^{1,2}, **T.R. Golub**^{1,2}; ¹Broad Institute of Harvard and MIT, Cambridge, MA, ²Dana Farber Cancer Institute, Boston, MA
- 4:50 pm M81 The mTOR network: signal integration and metabolic regulation. **B.D. Manning**¹; ¹Department of Genetics and Complex Diseases, Harvard T.H. Chan School of Public Health, Boston, MA
- 5:05 pm M82 Macropinosomes Coordinate the Activation of PI3K β by G β y and Rac. **Z. Erami**¹, **B.D. Khalil**¹, **G.K. Salloum**¹, **Y. Yao**¹, **A. Shymanets**², **B. Nuernberg**², **A.R. Bresnick**³, **J.M. Backer**¹; ¹Molecular Pharmacology, Albert Einstein College of Medicine, Bronx, NY, ²Institute for Pharmacology and Toxicology, Eberhard-Karls-Universität Tübingen, Tübingen, Germany, ³Biochemistry, Albert Einstein College of Medicine, Bronx, NY
- 5:20 pm M83 Endosomal/autophagic regulation of FOXO transcription factors. **I. Meras**¹, **L. Chotardd**², **C.E. Rocheleau**^{1,2}; ¹Anatomy and Cell Biology, McGill University, Montreal, QC, ²Research Institute of the McGill University, McGill University, Montreal, QC
- 5:35 pm M84 Hypoxia and cancer stem cell activity are linked during tumor cell dissemination and metastasis in breast tumors. **E. Xue**¹, **V.P. Sharma**^{1,2}, **D. Entenberg**^{1,2,3}, **Y. Wang**^{1,2,3}, **B. Tang**⁴, **L. Wakefield**⁴, **M.H. Oktay**^{1,2,3,5}, **J.S. Condeelis**^{1,2,3}; ¹Department of Anatomy and Structural Biology, Albert Einstein College of Medicine, Bronx, NY, ²Gruss-Lipper Biophotonics Center, Albert Einstein College of Medicine, Bronx, NY, ³Integrated Imaging Program, Albert Einstein College of Medicine, Bronx, NY, ⁴Laboratory of Cancer Biology and Genetics, National Cancer Institute, Bethesda, MD, ⁵Department of Pathology, Albert Einstein College of Medicine, Bronx, NY
- 5:50 pm M85 Identification of RAN binding protein 6 (RanBP6) as an EGFR feedback regulator and a tumor suppressor in glioblastoma. **W. Hsieh**^{1,2}, **B. Oldrini**^{1,3}, **H. Erdjument-Bromage**⁴, **P. Codega**¹, **M.S. Carro**⁵, **C. Campos**¹, **B.S. Taylor**^{1,6}, **P. Tempst**¹, **M. Squatrito**³, **I.K. Mellingerhoff**^{1,7}; ¹Human Oncology and Pathogenesis Program, Memorial Sloan Kettering Cancer Center, New York, NY, ²Department of Pharmacology, Weill Cornell Medical College, New York, NY, ³Seve Ballesteros Foundation Brain Tumor Group, National Cancer Research Centre (CNIO), Madrid, Spain, ⁴Molecular Biology Program, Memorial Sloan Kettering Cancer Center, New York, NY, ⁵Department of Neurosurgery, Medical Center University of Freiburg, Freiburg, Germany, ⁶Epidemiology and Biostatistics, Memorial Sloan Kettering Cancer Center, New York, NY, ⁷Department of Neurology, Memorial Sloan Kettering Cancer Center, New York, NY
- 6:05 pm M86 *Nedd9* influences lung cancer tumorigenesis through regulation of autophagy. **A.Y. Deneka**^{1,2}, **M.C. Kopp**³, **A.S. Nikonova**¹, **L. Haber**¹, **A. Gaponova**¹, **A. Nagele**¹, **H. Hensley**¹, **E.A. Golemis**¹; ¹Molecular Therapeutics, Fox Chase Cancer Center, Philadelphia, PA, ²Biochemistry, Kazan Federal University, Kazan, Russia, ³Pulmonary, Allergy and Critical Care, University of Pennsylvania, Philadelphia, PA
- 6:20 pm M87 Dietary conjugated polyunsaturated fatty acids induce ferroptotic cell death and suppress breast cancer tumorigenesis and metastasis. **A.C. Beatty**¹, **L.S. Fink**¹, **A. Strigun**², **T. Singh**¹, **E. Peter**¹, **C. Ferrer**³, **E. Nicolas**¹, **K.Q. Cai**¹, **T.P. Moran**¹, **M.J. Reginato**³, **U. Rennefahrt**², **J.R. Peterson**¹; ¹Cancer Biology, Fox Chase Cancer Center, Philadelphia, PA, ²Metanomics GmbH & Metanomics Health GmbH, Berlin, Germany, ³Drexel University, Philadelphia, PA
- 6:35 pm M88 Distinct ECM proteins of breast cancer metastatic niches in multiple organs. **J.D. Hebert**¹, **S.A. Myers**², **A. Naba**¹, **K.R. Clauser**², **S.A. Carr**², **R.O. Hynes**¹; ¹Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology, Cambridge, MA, ²Proteomics Platform, Broad Institute of MIT and Harvard, Cambridge, MA

MONDAY

● Minisymposium 9: Ensuring Fidelity of Chromosome Segregation

4:15-6:50 pm

Room 108A

Co-Chairs: **Elcin Unal**, University of California, Berkeley; and **Jorge Z. Torres**, University of California, Los Angeles

- 4:15 pm Introduction
- 4:20 pm M89 Role of chromatin and repetitive DNA in centromere formation and propagation. **J. Palladino**¹, **A. Chavan**¹, **A. Sposato**¹, **B. Mellone**^{1,2}; ¹Molecular and Cell Biology, University of Connecticut, Storrs, CT, ²Institute for Systems Genomics, University of Connecticut, Storrs, CT
- 4:35 pm M90 Condensin complexes promote chromosome movement during mitosis. **K.R. Salmon**^{1,2}, **D.A. Compton**^{1,2}; ¹Biochemistry and Cell Biology, Geisel School of Medicine at Dartmouth, Hanover, NH, ²Norris Cotton Cancer Center, Lebanon, NH
- 4:50 pm M91 Chromokinesin Kif4 is required for faithful chromosome segregation in mammalian oocytes. **C.M. Heath**¹, **S.M. Wignall**¹; ¹Molecular Biosciences, Northwestern University, Evanston, IL
- 5:05 pm M92 Human centromeres produce non-coding alpha satellite RNAs that are chromosome-specific and required for centromere protein loading. **S.M. McNulty**¹, **L.L. Sullivan**¹, **B.A. Sullivan**^{1,2}; ¹Department of Molecular Genetics and Microbiology, Duke University, Durham, NC, ²Division of Human Genetics, Duke University, Durham, NC
- 5:20 pm M93 Kinetochores inactivation by expression of a repressive mRNA. **E. Ünal**¹, **J. Chen**¹, **A. Tresenrider**¹, **M. Chia**², **F. van Werven**²; ¹Molecular and Cell Biology, UC Berkeley, Berkeley, CA, ²Francis Crick Institute, London, United Kingdom
- 5:35 pm M94 Most kinetochore fibers in human cells form via mechanisms intrinsic to the kinetochores and not by capture of astral microtubules. **V. Sikirzhyski**¹, **F. Renda**¹, **I. Tikhonenko**¹, **B.F. McEwen**¹, **A. Khodjakov**¹; ¹Transnational Medicine, Wadsworth Center, Albany, NY
- 5:50 pm M95 Identification and characterization of novel spindle assembly checkpoint components. **J.Z. Torres**¹, **Y.A. Garcia**¹, **I. Ramirez**¹, **A. Gholkar**¹, **Q. Yang**¹, **S. Senese**¹, **J. Ong**¹, **T. Falegan**¹, **K.S. Morillo**¹, **N. Filbert**¹, **Q. Dam**¹; ¹Chemistry and Biochemistry, University of California Los Angeles, Los Angeles, CA
- 6:05 pm M96 The Mad1/Mad2 spindle checkpoint complex is repurposed in development to promote cell cycle progression. **P. Lara Gonzalez**¹, **J. Mendoza**¹, **M. Moyle**², **K. Oegema**^{1,3}, **A.B. Desai**^{1,3}; ¹Ludwig Cancer Research San Diego, La Jolla, CA, ²Yale School of Medicine, New Haven, CT, ³Department of Cellular and Molecular Medicine, University of California, San Diego, La Jolla, CA
- 6:20 pm M97 Sensing of the Magnitude of Centromeric Tension at Metaphase Elicits a Graded Cellular Response. **S. Mukherjee**¹, **D. Tank**¹, **Q. Yang**¹, **M.K. Gardner**¹; ¹Genetics, Cell Biology, and Development, University of Minnesota, Minneapolis, MN
- 6:35 pm M98 Microtubule sliding in the bridging fiber pushes kinetochore fibers apart to segregate chromosomes in human cells. **P. Risteski**¹, **K. Vukušić**¹, **R. Buđa**¹, **A. Bosilj**², **A. Milas**¹, **N. Pavin**², **I.M. Tolić**¹; ¹Division of Molecular Biology, Ruđer Bošković Institute, Zagreb, Croatia, ²Department of Physics, Faculty of Science, University of Zagreb, Zagreb, Croatia

● Minisymposium 10: Lipids in Signaling and Membrane Organization

4:15-6:50 pm

Room 115B

Co-Chairs: **Christopher Burd**, Yale University School of Medicine; and **Maria Antonietta De Matteis**, Telethon Institute of Genetics and Medicine, Italy

- 4:15 pm Introduction
- 4:20 pm M99 Structural determinants of raft partitioning for single-pass transmembrane proteins and their effects on subcellular localization. **J.H. Lorent**¹, **B.B. Diaz-Rohrer**¹, **K.R. Levental**¹, **I. Levental**¹; ¹Integrative Biology and Pharmacology, Mc Govern Medical School at UT Health Science Center at Houston, Houston, TX
- 4:35 pm M100 SNX-BAR mediated retrograde trafficking of yeast synaptobrevin/Snc1 is conferred by its transmembrane domain. **M. Ma**¹, **L. Purushothaman**², **M. Babst**³, **C. Ungermann**², **C.G. Burd**¹; ¹Department of Cell Biology, Yale University, New Haven, CT, ²Department of Biology/Chemistry, University of Osnabrueck, Osnabrück, Germany, ³Department of Biology, University of Utah, Salt Lake City, UT
- 4:50 pm M101 A role of an inositol 5-phosphatase in ER architecture. **R. Dong**^{1,2,3}, **T. Zhu**⁴, **L. Benedetti**^{1,2,3}, **S.**

Gowrishankar^{1,2,3}, H. Deng⁴, X. Wang⁴, K. Shen^{5,6}, P. De Camilli^{1,2,3,7}; ¹Department of Neuroscience, Yale University School of Medicine, New Haven, CT, ²Department of Cell Biology, Yale University School of Medicine, New Haven, CT, ³Howard Hughes Medical Institute, Yale University School of Medicine, New Haven, CT, ⁴Institute of Biophysics, Chinese Academy of Sciences, Beijing, China, ⁵Department of Department of Biology and Department of Pathology, Stanford University School of Medicine, Stanford, CA, ⁶Howard Hughes Medical Institute, Stanford University School of Medicine, Stanford, CA, ⁷Kavli Institute for Neurosciences, Yale University School of Medicine, New Haven, CT

- 5:05 pm M102 Regulation of sites for organelle biogenesis at the endoplasmic reticulum. **P. Carvalho¹, S. Wang¹, F. Idrissi¹**; ¹Sir William Dunn School of Pathology, University of Oxford, Oxford, United Kingdom
- 5:20 pm M103 Lipid droplet emergence from the ER membrane is mediated by phospholipids. **V. Choudhary¹, G. Golani², A. Joshi¹, M.M. Kozlov², W. Prinz¹**; ¹Laboratory of Cell and Molecular Biology, NIH/NIDDK, Bethesda, MD, ²Department of Physiology and Pharmacology, Tel Aviv University, Tel Aviv, Israel
- 5:35 pm M104 Mechanism of Targeting of Amphipathic Helix-Containing Proteins to Lipid Droplets. **C. Prévost^{1,2,3}, M. Cohen^{4,5,6}, N. Kory^{1,2,3}, Q. Lin^{1,2,3}, G.A. Voth^{4,5,6}, R.V. Farese, Jr.^{1,2,3}, T.C. Walther^{1,2,3,7}**; ¹Department of Genetics and Complex Diseases, Harvard T. H. Chan School of Public Health, Boston, MA, ²Department of Cell Biology, Harvard Medical School, Boston, MA, ³Broad Institute of Harvard and MIT, Cambridge, MA, ⁴Department of Chemistry, The University of Chicago, Chicago, IL, ⁵James Franck Institute, The University of Chicago, Chicago, IL, ⁶Institute for Biophysical Dynamics, The University of Chicago, Chicago, IL, ⁷Howard Hughes Medical Institute, Boston, MA
- 5:50 pm M105 Pattern formation and stochastic geometry sensing in a lipid kinase-phosphatase competitive reaction. **S.D. Hansen^{1,2}, W. Huang³, Y. Lee³, P. Bieling^{1,4}, J.T. Groves^{1,3}**; ¹California Institute for Quantitative Biosciences, University of California Berkeley, Berkeley, CA, ²Chemistry and Biochemistry, University of Oregon, Eugene, OR, ³Chemistry, University of California Berkeley, Berkeley, CA, ⁴Systemic Cell Biology, Max Planck Institute of Molecular Physiology, Dortmund, Germany
- 6:05 pm M106 ER-Golgi contact sites are maintained through redundant and essential roles of ORPs and use FAPP1 to control Golgi PI4P. **R. Venditti¹, M.C. Masone¹, L.R. Rega¹, M. Santoro¹, G. Di Tullio¹, E.V. Polishchuk¹, R. La Montagna¹, M. De Matteis^{1,2}**; ¹TIGEM, Telethon Foundation, Pozzuoli, Italy, ²Molecular Medicine and Medical Biotechnology, Federico II University, Naples, Italy
- 6:20 pm M107 PI(4,5)P2 controls the level of its precursor, PI4P, in the plasma membrane by regulating PI4P/PS transport at ER-plasma membrane contact sites. **M. Sohn¹, M. Korzeniowski¹, G. Hammond², E. Boura³, T. Balla¹**; ¹National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD, ²Department of Cell Biology, University of Pittsburg, Pittsburg, PA, ³Institute of Organic Chemistry and Biochemistry, Czech Academy of Sciences, Prague, Czech Republic
- 6:35 pm M108 SAC1 degrades its lipid substrate PtdIns4P in the ER to maintain a steep electrochemical gradient on donor membranes. **J.P. Zewe¹, S.J. Sangappa¹, R.C. Wills¹, B. Goulden¹, G.R. Hammond¹**; ¹Department of Cell Biology, University of Pittsburgh School of Medicine, Pittsburgh, PA

● Minisymposium 11: Multicellular Interactions: Tissue Regeneration and Mechanisms of Disease

4:15-6:50 pm

Room 120B

Co-Chairs: **Elly Tanaka**, Research Institute of Molecular Pathology (IMP), Vienna Biocenter (VBC); and **Philipp Niethammer**, Memorial Sloan Kettering Cancer Center

- 4:15 pm Introduction
- 4:20 pm M109 Probing the physiological purpose of tissue damage-induced inflammation in zebrafish. **C. Huang¹, P. Niethammer¹**; ¹Cell Biology, Sloan Kettering Institute, New York, NY
- 4:35 pm M110 Building a barrier: survival of the fittest in the developing skin. **S. Ellis¹, E. Fuchs¹**; ¹Laboratory of Cell Biology and Genetics, The Rockefeller University, New York, NY
- 4:50 pm M111 Src oxidation directs cell polarity to promote rapid embryonic wound healing. **M.V. Hunter^{1,2}, J. Woszczyk^{3,4}, P. Laprise^{3,4}, R. Fernandez-Gonzalez^{1,2,5,6}**; ¹Cell and Systems Biology, University of Toronto, Toronto, ON, ²Ted Rogers Centre for Heart Research, University of Toronto, Toronto, ON, ³Centre de Recherche sur le Cancer, Université Laval, Quebec, QC, ⁴Oncologie, Centre de Recherche du CHU de Québec - Université Laval, Quebec, QC, ⁵Biomaterials and Biomedical Engineering, University of Toronto, Toronto, ON, ⁶Developmental and Stem Cell Biology Program,

		Hospital for Sick Children, Toronto, ON
5:05 pm	M112	Hepatokine induction mediates anti-inflammatory actions of Colchicine. J. Weng¹, R. Jiang¹, H. Tu², T.J. Mitchison¹ ; ¹ Department of Systems Biology, Harvard Medical School, Boston, MA, ² Anlylam Pharmaceuticals, Inc., Cambridge, MA
5:20 pm	M113	The generation and sensation of fluid flow by cells: roles in development and disease. D.T. Grimes¹, R.D. Burdine¹ ; ¹ Molecular Biology, Princeton University, Princeton, NJ
5:35 pm	M114	The Cell Biology of Regeneration Initiating Factors. E.M. Tanaka¹, T. Sugiura¹, P. Murawala¹ ; ¹ Research Institute for Molecular Pathology, Vienna, Austria
5:50 pm	M115	Acoel regeneration mechanisms indicate ancient and widespread role for muscle in regenerative patterning. A.A. Raz¹, M. Srivastava², P.W. Reddien¹ ; ¹ Biology, MIT/Whitehead Institute, Cambridge, MA, ² Organismal and Evolutionary Biology, Harvard University, Cambridge, MA
6:05 pm	M116	NIX functions as a mitophagy receptor in human keratinocytes during epidermal differentiation. C.L. Simpson¹, E.L. Holzbaur² ; ¹ Dermatology, University of Pennsylvania, Philadelphia, PA, ² Physiology, University of Pennsylvania, Philadelphia, PA
6:20 pm	M117	Collective epithelial intravasation in breast cancer metastasis. V.L. Silvestri¹, A. Wong^{2,3}, P. Searson^{2,3,4}, A.J. Ewald^{1,5,6} ; ¹ Cell Biology, Johns Hopkins University School of Medicine, Baltimore, MD, ² Institute for Nanobiotechnology (INBT), Johns Hopkins University, Baltimore, MD, ³ Department of Materials Science and Engineering, Johns Hopkins University, Baltimore, MD, ⁴ Sidney Kimmel Comprehensive Cancer Center, Johns Hopkins University, Baltimore, MD, ⁵ Oncology, Johns Hopkins University School of Medicine, Baltimore, MD, ⁶ Biomedical Engineering, Johns Hopkins University School of Medicine, Baltimore, MD
6:35 pm	M118	Discovering the embryonic origins and cell cycling behavior of the mesodermal stem cells using live-imaging in a marine annelid. B. Ozpolat^{1,2}, M. Handberg-Thorsager³, M. Vervoort¹, G. Balavoine¹ ; ¹ Institut Jacques Monod, CNRS, Paris, France, ² Eugene Bell Center for Regenerative Biology and Tissue Engineering, Marine Biological Institute, Woods Hole, MA, ³ Molecular Cell Biology and Genetics, Max Planck Institute, Dresden, Germany

● Minisymposium 12: Protein Folding, Misfolding and Neurodegeneration

4:15-6:50 pm

Room 118B

Supported by BMC Biology

Co-Chairs: **Ursula Jakob**, University of Michigan and University of Michigan Medical School; and **Simon Alberti**, Max Planck Institute of Molecular Cell Biology and Genetics, Germany

4:15 pm		Introduction
4:20 pm	M119	Prion-specific Hsp40 functions promote amyloid diversity in yeast: reciprocal roles for J-proteins in promoting and preventing amyloid elimination. J.K. Hines¹ ; ¹ Chemistry, Lafayette College, Easton, PA
4:35 pm	M120	Potentiated Hsp104 Variants to Counter Protein Misfolding. M.E. Jackrel¹ ; ¹ Chemistry, Washington University, St. Louis, MO
4:50 pm	M121	Role of Polyphosphate in Amyloidogenic Processes. U. Jakob¹, C.M. Cremers¹, D. Knoefler¹, M.J. Gray¹, N. Yoo¹, J. Dahl¹, L. Xie¹, J. Lempart¹ ; ¹ MCDB, University of Michigan, Ann Arbor, MI
5:05 pm	M122	Rapid heat-shock response depends on intracellular pH. C.G. Triandafillou¹, A.R. Dinner², D.A. Drummond³ ; ¹ Biophysical Sciences Graduate Program, University of Chicago, Chicago, IL, ² James Franck Institute, University of Chicago, Chicago, IL, ³ Biochemistry and Molecular Biology, University of Chicago, Chicago, IL
5:20 pm	M123	A prion domain that promotes cellular fitness by pH-regulated protein phase separation. T. Franzmann¹, M. Jahnel¹, S.W. Grill¹, A.A. Hyman¹, S. Alberti¹ ; ¹ Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany
5:35 pm	M124	Tardigrade intrinsically disordered proteins mediate desiccation tolerance. T.C. Boothby¹, S. Piskiewicz¹, A. Mehta¹, A.H. Brozena², H. Tapia³, D.E. Koshland³, A.S. Holehouse⁴, R.V. Pappu⁴, B. Goldstein⁵, G.J. Pielak¹ ; ¹ Chemistry, UNC, Chapel Hill, NC, ² Chemical Engineering, NC State, Raleigh, NC, ³ Molecular and Cell Biology, UC Berkeley, Berkeley, CA, ⁴ Biomedical Engineering, Washington University in St. Louis, St. Louis, MO, ⁵ Biology, UNC, Chapel Hill, NC
5:50 pm	M125	Characterization of p97 mutations causing multisystem proteinopathy support a gain-of-function model for pathology. E.E. Blythe¹, A. Martin², R.J. Deshaies¹ ; ¹ Division of Biology and Biological Engineering, California Institute of Technology, Pasadena, CA, ² Department of Molecular and Cell Biology, University of California, Berkeley, Berkeley, CA
6:05 pm	M126	Protein arginylation targets alpha synuclein, facilitates normal brain health, and prevents

neurodegeneration. **J. Wang¹, X. Han², N.A. Leu¹, S. Sterling¹, S. Kurosaka¹, M.E. Fina¹, V.M. Lee³, D.W. Dong^{1,4}, J. Yates III², A.S. Kashina¹**; ¹School of Veterinary Medicine, University of Pennsylvania, Philadelphia, PA, ²The Scripps Research Institute, La Jolla, CA, ³Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA, ⁴Institute for Biomedical Informatics, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA

- 6:20 pm M127 Poly (ADP-ribose) modulates phase separation of the ALS-associated protein TDP-43. **L. McGurk¹, E. Gomes², L. Guo², J. Mojsilovic-Petrovic³, V. Tran¹, R.G. Kalb³, J. Shorter², N.M. Bonini¹**; ¹Department of Biology, University of Pennsylvania, Philadelphia, PA, ²Department of Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA, ³Department of Neurology, Children's Hospital of Philadelphia, Philadelphia, PA
- 6:35 pm M128 Small molecules for modulating protein driven liquid-liquid phase separation in neurodegenerative disease. **R.J. Wheeler¹, H. Lee¹, A. Pal^{2,3}, A. Murthy⁴, I. Poser¹, L. Marrone³, T. Doeleman^{2,3}, J. Sternecker³, M. Bickle¹, A. Hermann^{2,3}, S. Alberti¹, A.A. Hyman¹**; ¹Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany, ²Department of Neurology, Dresden, Germany, ³Center for Regenerative Therapies, Dresden, Germany, ⁴Department of Molecular Pharmacology, Physiology, and Biotechnology, Brown University, Providence, RI

● Minisymposium 13: Subcellular Organization of Neural Cells

4:15-6:50 pm

Room 119A

Co-Chairs: **Stephen Liberles**, Harvard Medical School; and **Avital Rodal**, Brandeis University

- 4:15 pm Introduction
- 4:20 pm M129 Airway mechanoreceptors that control breathing. **R. Chang¹, D. Strohlic¹, K. Tanaka², S. Woo², A. Patapoutian², S. Liberles¹**; ¹Cell Biology, Harvard Medical School, Boston, MA, ²Molecular and Cellular Neuroscience, The Scripps Research Institute, La Jolla, CA
- 4:35 pm M130 Apical cell-cell adhesions reconcile symmetry and asymmetry in zebrafish neurulation. **C. Guo¹, X. Wei¹**; ¹Ophthalmology, University of Pittsburgh, Pittsburgh, PA
- 4:50 pm M131 The Golgi Outpost Protein TPPP Mediates Uniform Microtubule Polarity and Branching in Oligodendrocytes. **M. Fu¹, J.A. Osos-Prieto², C. Lee¹, N.L. Saw³, R. Shi¹, M. Nori¹, M. Shamloo³, A. Burlingame², B.A. Barres¹**; ¹Neurobiology, Stanford University, Stanford, CA, ²Pharmaceutical Chemistry, University of California, San Francisco, San Francisco, CA, ³Neurosurgery, Stanford University, Stanford, CA
- 5:05 pm M132 A Wnt Signaling Pathway Acts as a Master Coordinator of Microtubule Regulators at Dendrite Branch Points. **A.T. Weiner¹, D.Y. Seebold¹, N.L. Michael¹, M.A. Guignet¹, B. Follick¹, C. Feng¹, C. Kozlowski¹, D.J. Barbera¹, E. Jones¹, C.T. Folker¹, B.A. Yusko¹, N. Wasilko¹, M. Patel¹, P.G. Torres¹, M.M. Rolls¹**; ¹BMB, The Pennsylvania State University, University Park, PA
- 5:20 pm M133 A microtubule-associated septin maintains neuronal polarity by directing motor-cargo traffic in dendrites. **E.P. Karasmanis¹, C. Phan¹, D. Angelis¹, I. Kesiso¹, C.C. Hoogenraad², R.J. McKenney³, E.T. Spiliotis¹**; ¹Biology, Drexel University, Philadelphia, PA, ²Cell Biology, Utrecht University, Utrecht, Netherlands, ³Molecular and Cellular Biology, University of California Davis, Davis, CA
- 5:35 pm M134 Neuronal membrane remodeling machinery controlling the traffic of extracellular vesicle cargoes. **A. Yeh¹, Z. Zhao¹, K. Koles¹, A.A. Rodal¹**; ¹Biology, Brandeis University, Waltham, MA
- 5:50 pm M135 ER-shaping proteins form functionally distinct microdomains in the ER membrane of neurons. **J. Nixon-Abell^{1,2}, C.J. Obara², J. Lippincott-Schwartz², C. Blackstone¹**; ¹NINDS, National Institutes of Health, Bethesda, MD, ²Janelia Research Campus, Ashburn, VA
- 6:05 pm M136 Expression of WIPI2B counteracts age-related decline in autophagosome biogenesis in neurons. **A.K. Stavoe¹, E.L. Holzbaur¹**; ¹Physiology, University of Pennsylvania, Philadelphia, PA
- 6:20 pm M137 The ataxia disease gene VPS13D plays an essential role in mitochondrial morphology and transport in *Drosophila* neurons. **R. Insolera¹, E. Seong², L.M. Rivera-Perez¹, D. Lozano¹, M. Burmeister^{2,3,4,5}, C.A. Collins¹**; ¹MCDB, University of Michigan, Ann Arbor, MI, ²Molecular and Behavioral Neuroscience Institute, University of Michigan, Ann Arbor, MI, ³Department of Human Genetics, University of Michigan, Ann Arbor, MI, ⁴Department of Computational Medicine and Bioinformatics, University of Michigan, Ann Arbor, MI, ⁵Department of Psychiatry, University of Michigan, Ann Arbor, MI
- 6:35 pm M138 A requirement for Mena, an actin regulator, in local mRNA translation in developing neurons. **M. Vidaki¹, F.B. Gertler¹**; ¹Koch Institute for Integrative Cancer Research, Massachusetts Institute of Technology, Cambridge, MA

MONDAY

● Elevator Speech Videotaping

5:00-6:00 pm

Room 103B

If you want some help making a 90-second video to enter in the Elevator Speech Contest, members of the Public Information Committee will be here to help.

● Exhibitor Tech Talk

5:30-6:30 pm

Theater 2, Learning Center

Oxford Nanoimaging Ltd.

The Nanoimager: a desktop super-resolution microscope with d-STORM/PALM and SIM functionality

Presenter: Ben Owen

Level: Intermediate

The Nanoimager, the world's first desktop super-resolution microscope, this year introduces a game-changing development. As first released at ASCB, the Nanoimager from ONI now boasts structured illumination microscopy (SIM) and localization microscopy (d-STORM/PALM) in one desktop device at an astounding new price-point. This talk will discuss the Nanoimager capabilities from super-resolution imaging to single-molecule tracking and single-molecule FRET. The Nanoimager provides unrivaled stability and performance: it is proven in a range of key applications, from tracking exosomes in cells and solution, to visualizing the endocytic process with exceptional resolution. This talk will discuss key features of the Nanoimager that are relevant for cell biologists, provide the first look at the Nanoimager confocal/SIM upgrade and highlight some exciting recent results.

● Resilience in Science: A Panel and Networking Reception

7:00-8:30 pm

Room 123

Panelists:

Judith Coché, Director of The Coché Center, LLC and Clinical Professor of Psychology in Psychiatry, Perelman School of Medicine at the University of Pennsylvania

Pamela Mertz, Professor of Chemistry & Biochemistry, St Mary's College, MD

Oana Tomescu, Associate Professor of Clinical Medicine and Pediatrics and Director of the Personal Resilience Curriculum, Perelman School of Medicine at the University of Pennsylvania

Elisabeth Van Bockstaele, Dean of the Graduate School of Biomedical Sciences & Professional Studies and Professor of Pharmacology & Physiology, Drexel University College of Medicine

This panel discussion will be led by experts on resiliency and grit as it pertains to succeeding in a career in cell biology. The format will consist of a short introduction by each panelist followed by questions and comments from the audience. Content will include informative elements, but will have a particular focus on practical advice and methodologies for developing one's own resiliency and persistence in the face of adversity and setbacks. In addition, we will discuss the role of institutions in creating an environment that fosters success. The panel discussion will be followed by a networking reception with the panelists and audience. Refreshments will be served during the networking reception.

Outcomes:

1. Understand resiliency and its role in professional success
2. Learn factors and practical strategies that build resilience
3. Understand the role of the individual and of institutions in promoting success
4. Share stories of resiliency in science and network with other cell biologists to make personal and professional connections

Target audience: all attendees