The paradox of cell biology is that its methods of inquiry are forever changing while the fundamental questions being asked are forever the same, says Stanford University’s Julie Theriot, the Program Chair for ASCB’s 2015 Annual Meeting, December 12–16, in San Diego. “The reason cell biology is such a vital and exciting area of science to me is because nearly all the questions you might have about the nature of life or how life works have to be answered on the level of the cell,” says Theriot. “There is nothing more alive than a cell.”

The latest hot science in poster abstracts submitted by Oct. 14 will be displayed with regular posters (not segregated in their own section)

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Visit Booth 613 at the 2015 ASCB Annual Meeting in San Diego
What Cell Biologists Can Learn from Google Cars
by Stefano Bertuzzi

There is no doubt that the computer engineering industry has served up some unimaginable surprises. Just as the steam engine (in particular the highly efficient version devised by James Watt) was key to the industrial revolution in the 18th century, computers and other digital technologies have brought us to the second machine age and will do for mental power what the Watt steam engine did for muscle power.

This is the main argument articulated in a brilliant book I just read, The Second Machine Age, by Massachusetts Institute of Technology computer engineers Erik Brynjolfsson and Andrew McAfee. The truly exponential growth of computing applies not only to data collection, but also to data processing and data analysis. The intersection of all this is taking us to astonishing places we could not have imagined only a decade ago.

Enabling the Impossible

Think of Google self-driving cars, technically known as “autonomous cars.” What was once deemed an impossible engineering feat has been enabled by four fundamental advances:

- Very accurate digital road maps, together with a wealth of information not only about the roads themselves, but about terrain, obstacles, and other attributes
- Real-time traffic information (These days I don’t even undertake my five-minute commute to work without Waze turned on to ensure I do not hit any traffic. I am too impatient for that.)
- Laser and radar detection systems that can quickly map all the various still and moving objects within a large radius
- And finally, a hell of a lot of computational power to integrate all this information in real time

I have never ridden in a Google car, but those who have tell me it is quite an experience and that the accuracy is impressive, so much so that one very quickly forgets that a computer is actually driving the car among other, human-controlled cars! (I am only left to wonder if the system has been calibrated to deal with Italian drivers like me, but that is another problem, which I am sure engineers will be able to figure out.)

Our New Trajectory

So, what does this mean for cell biologists and for us biomedical scientists in general? I think it is obvious. What happened in the computer industry has enabled incredible transformations in our field, but even more importantly, our field itself is following the same exponential growth trajectory as the computer industry.

Because of the daunting complexity of biology and of the cell as the fundamental unit of life, up until only a decade or two ago most of the work in our labs was essentially descriptive, as we learned about the various subcellular components through electron micrographs and other static images. We then revisited all these amazing discoveries at a molecular and physiological level. Today we can begin to understand the cell at a systems level, thanks to the enormous amount of available data that allows us to develop machine learning algorithms to detect patterns that even the brightest mind could not identify. Think, for example, of ribosome profiling or super resolution microscopy. We can now understand relationships among cells and within the cell that were unknowable before.

Biology is being transformed by the data and with the data that biologists can now generate and analyze. Our field is becoming heavily data-driven, and although it is unlikely in the near future to be as theory-driven as physics—where the existence of the Higgs boson was forecast before the empirical evidence was available—certainly biology will come much closer to the

EXECUTIVE DIRECTOR’S Column

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SEPTEMBER 2015 ASCB NEWSLETTER 3
big data, big analytical approach of physics. It will become more high-tech like astronomy, physics, and engineering, but with the extra complication of what I call the pesky Factor B (Biology), the unpredictable and mysterious ways in which Mother Nature never finishes throwing curves that astonish and surprise us.

**Eliminating Bottlenecks**

I think there are some science policy lessons that we can immediately consider from this perspective. My instinct is that there are two major bottlenecks in our science that need to be addressed to ensure that we reap the same exponential growth as the computing industry.

The first potential bottleneck is data sharing. Think about it: Google cars can theoretically be driven by anyone today because Google maps and traffic information are readily available on our phones in real time. Unfortunately, in biology we do not have a strong tradition of data sharing (with the exception of GenBank and a few other resources, which in fact have been instrumental in originally launching and enabling the field of molecular biology worldwide). But today the hyper-competition in our labs and the lack of a nimble data sharing infrastructure often create incentives to keep data in as close a hold as possible, severely limiting crowd-sourcing approaches to analysis.

It is true that things are changing. The National Institutes of Health (NIH) now has several large databases, mostly on the genomics front, and we can applaud the Integrative Human Microbiome Project (phase 2 of the Human Microbiome Project), which has made many important datasets available to researchers. However, most of our imaging and metabolic data are not publicly available, and therefore the community cannot capitalize effectively on work done by others through simple “plug and play” use of data in new models, experiments, or theories. We should strongly encourage NIH, the National Science Foundation, and all science agencies to be as aggressive as is reasonable with data sharing. It is key for the future of biology.

The second potential bottleneck involves workforce issues. Just as the industrial revolution created what legendary British economist John Maynard Keynes recognized as technological unemployment, it is clear that the second machine age will create a dramatic shift in employment patterns. And this will also be true in biology.
There will very soon be a high demand for PhDs, postdocs, and biology professors with high-level programming skills who have a data-heavy approach to their science. This poses an urgent challenge for our training programs, which will need to adopt an interdisciplinary focus on computational and big data skills. There are some wonderful examples around the country of programs that do this, but they are not as widespread as they should be. It will be essential for students to start very early, in college or even in high school, to think of the biological sciences as highly quantitative and highly amenable to computational approaches.

Getting Ready for the Second Machine Age

ASCB is at the forefront. This year’s Annual Meeting, which is just around the corner, perfectly captures the challenge of big data and integration at different scales, from the intracellular to the cosmic level. But we also paid attention to the bottlenecks I mentioned above. Under the leadership of President Shirley Tilghman and Program Chair Julie Theriot, the Program Committee put together a very innovative meeting to help ASCB scientists leap forward into this new and exciting world of data integration.

If you are scared by all this, you are not alone. In many respects it is still a sea change for our field, and for this reason we will have several hands-on workshops in which participants can learn directly from the experts how to generate, use, and analyze big data in cell biology. This is my shameless plug for the ASCB Annual Meeting: Get ready for the second machine age of cell biology and experience how the new “steam engine” of big data will transform our research in ways that we can now hardly imagine. Don’t get stuck with the cell biology version of a plow pulled by an ox!

Questions and comments are welcome and should be sent to sb@ascb.org

Did You Know…?

You Can Still Submit an Abstract for the 2015 ASCB Annual Meeting

You still have time to submit an abstract for poster consideration for the 2015 ASCB Annual Meeting, to be held December 12–16, 2015, in San Diego. October 14 is the deadline. We welcome the latest, hottest science!

Are there nonmembers in your lab who want to submit abstracts?

• Now is the time to encourage them to join ASCB. Our “one-stop-shop” will allow submitters to apply for membership and submit their abstract with one payment without leaving the abstract submission site. They will also be eligible for the discounted member-only registration rate for the meeting.

• Nonmembers will pay a higher submission fee if they choose not to join the ASCB, so why miss out on the savings? Members can save up to 39% on registration/abstract fees.

For more information go to www.ascb.org/2015meeting and click “Submit Abstract”.

Serpe, Gladfelter, and Amon to Receive 2015 WICB Awards

Mihaela Serpe of the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) at the National Institutes of Health (NIH) has been selected by the ASCB Women in Cell Biology Committee (WICB) to receive the WICB Junior Award for Excellence in Research. Amy S. Gladfelter of Dartmouth College will receive the WICB Mid-Career Award for Excellence in Research. Angelika Amon of the Koch Institute for Integrative Cancer Research at Massachusetts Institute of Technology (MIT) was named recipient of the 2015 Sandra K. Masur Senior Leadership Award.

Mihaela Serpe

Mihaela (Ela) Serpe, Principal Investigator and Head of the Unit of Cellular Communication at NICHD, is the 2015 winner of the WICB Junior Award for Excellence in Research, which is awarded to a woman in an early stage of her career (within seven years in an independent position) who is making exceptional scientific contributions to cell biology, is developing a strong independent research program, and exhibits the potential for continuing at a high level of scientific endeavor and leadership.

Serpe received her undergraduate and master’s education at the University of Bucharest and then worked at the Institute of Cellular Biology and Pathology in Bucharest, where she focused on lipoprotein and atherogenesis and the role of oxidative stress. She earned her PhD at the University of Buffalo in the laboratory of Dan Kosman. As a graduate student, Serpe studied how simple eukaryotic cells—budding yeast—probe and respond to changes in their environment, in particular to iron and copper levels. During these years, she became fascinated by cellular signaling and embarked on a quest to understand molecular mechanisms of cell–cell communication. As a postdoc with Mike O’Connor at the University of Minnesota, she utilized Drosophila to study how cells reproducibly and selectively interpret information within a complex developing field. She made several significant contributions to understanding molecular mechanisms that apply to a diverse range of developmental processes in Drosophila.

She also investigated the assembly and organization of chemical synapses using the Drosophila neuromuscular junction (NMJ), a specialized cell–cell interaction zone, as a model system.

In her own lab at the NICHD, Serpe made the completely unexpected discovery that a novel, essential protein, Drosophila Neto, is absolutely required for clustering of the NMJ ionotropic glutamate receptor (iGluR) complexes at synaptic sites. Neto belongs to a family of highly conserved auxiliary proteins that regulate glutamatergic synapses, the major excitatory synapses in our brain. Her work utilized an impressive combination of genetics, cell biology, and electrophysiology tools. These findings provide an entry point to understand the molecular mechanism of synapse development and are expected to be “enormously influential within the field of development neurobiology for years to come,” according to her nominator Alan Hinnebusch.

Furthermore, her lab discovered that Neto is implicated in a noncanonical bone morphogenetic protein (BMP) signaling pathway, which is genetically distinguishable...
from any other known BMP signaling cascades. This novel BMP pathway acts locally at the fly NMJ and influences synapse formation and maturation in an activity-dependent manner. Thus, BMPs may monitor synapse activity and coordinate it with synapse growth and maturation, an unprecedented role for BMPs in regulating cellular junctions.

Serpe’s nominators have described her as a wonderful colleague whose enthusiasm and energy are infectious. She is “an emerging leader in the field of synaptic biology,” which is especially impressive because she entered that field after establishing her independent laboratory. In a short time, Serpe’s work has made significant contributions to understanding synapse assembly and development and characterized novel molecules and critical mechanisms for iGluR assembly, surface delivery, trafficking, clustering, and functioning at the synapses.

Serpe’s outstanding scientific contributions have been recognized by her colleagues, as demonstrated by invitations to speak at numerous conferences and to organize an important national meeting (55th Annual Drosophila Research Conference in 2014). In addition to her scientific contributions, she mentors students, post-baccalaureate fellows, and postdoctoral fellows. Serpe has also demonstrated a commitment to service as the head of the NIH Drosophila Neuroscience Interest Group, and by initiating the annual Howard Nash Poster Day, which fosters ties to the broader Drosophila community in the Maryland area.

Amy S. Gladfelter

Amy S. Gladfelter, Associate Professor, Biological Sciences, Dartmouth College, was named the winner of the 2015 WICB Mid-Career Award for Excellence in Research. This award is presented to a woman at the mid-career level (7–15 years in an independent position) who has made exceptional scientific contributions to cell biology and/or has effectively translated cell biology across disciplines, and who exemplifies a high level of scientific endeavor and leadership.

Gladfelter has made exceptional contributions to two areas of cell biology, cell-cycle control and the septin cytoskeleton. She made an important discovery that nuclei sharing a common cytoplasm can go through the cell cycle asynchronously and independently. This was an unexpected finding that challenged many previous assumptions. The septin cytoskeleton, recently recognized as the fourth component of the cytoskeleton, plays a role in cell migration, cell morphology, and cytokinesis. Gladfelter’s lab has made important advances in investigating how septin filaments assemble and how they are organized into structures.

Gladfelter grew up in the countryside outside of Orlando, FL, immersed in the natural world of lakes, snakes, oak hammocks, and sunshine. This environment fed a deep curiosity about and passion for the natural world, and when not swimming or climbing trees Gladfelter studied dance very seriously. At Princeton University, she studied molecular biology and augmented her education with summer experiences in bench research with Simon Lewis at the University of Texas Medical Branch, Galveston, with Toby Bradshaw at the University of Washington, and finally at Princeton, in Bonnie Bassler’s lab where Gladfelter studied bioluminescence in marine bacteria in the early days of quorum sensing.

Drawn to the strong microbial and fungal genetics program at Duke University’s graduate school, she began working with budding yeast Saccharomyces cerevisiae in Danny Lew’s lab. Her thesis work focused on understanding how cells polarize and on Cdc42 signaling. By analyzing
a variety of Cdc42 mutants, she found a subset with defects in assembly of septin proteins. That work began an interest in this understudied aspect of the cytoskeleton that continues to this day in her own lab. During her postdoc with Peter Philippsen at the Biozentrum (Basel, Switzerland), she began studying the problem of how nuclei sharing a common cytoplasm can divide autonomously, a problem that seeded the projects in her independent group at Dartmouth.

Her lab has focused on understanding how cytosol is compartmentalized, and she has revisited her old passion for the septin cytoskeleton. Gladfelter has made important contributions to the understanding of the dynamics of septins. Much of the work in the lab takes advantage of different fungal model systems, including budding and fission yeast, *Neurospora crassa*, as well as *Ashbya*, but recently the lab has begun work on several mammalian multinucleated cells, including muscle. Gladfelter made the unexpected and surprising discovery that in *Ashbya* different nuclei sharing a common cytoplasm go through the cell cycle asynchronously and independently. She also discovered that cell cycle regulators are not freely mixed in the cytoplasm as previously thought.

Gladfelter has steered her research group into quantitative cell biology and biophysics through collaborations with modelers, biophysicists, and microscopy developers. In particular, her research has been enriched by close work with Tomomi Tani and Rudolf Oldenbourg at the Marine Biological Lab in Woods Hole, where she and her family spend the summer. She began her lab at Dartmouth in January 2006, shortly after the birth of her son. (Her daughter was born two years later.) Gladfelter says that she couldn’t do any of this without the devotion and support of her husband, Mark Borsuk, a professor in the engineering school at Dartmouth.

Danny Lew wrote that Gladfelter is “a high-caliber quantitative cell biologist with a gift for identifying fascinating problems in biology.” She is the chair of the 2016 Gordon Research Conference on Molecular and Cellular Fungal Biology and also serves on the editorial board or as a reviewer for several journals. Gladfelter teaches a full load of courses at Dartmouth and mentors undergraduate and graduate students and postdocs in her lab. Her mentoring was recognized with the Graduate Faculty Mentoring Award from Dartmouth in 2014.

Gladfelter has been described by her nominators as “an exceptional and visible role model for students and postdocs,” having achieved tremendous career success while also raising a family.

**Angelika Amon**

The Sandra K. Masur Senior Leadership Award is presented to a woman or man at a later career stage (generally full professor or equivalent) whose outstanding scientific achievements are coupled with a record of active leadership in mentoring both men and women in scientific careers.

Angelika Amon is a leader in cell biology and exemplifies the criteria of the award. She studies the molecular mechanisms that prevent chromosome mis-segregation during mitosis and meiosis. Her work on meiosis has yielded critical insights into how the process of cell division is altered to bring about this specialized cell division. Amon also studies how gamete formation facilitates the resetting of life span from one generation to the next, an avenue of research that may provide insights into the mechanisms of aging and longevity.

Amon not only studies cell division, she also strives to understand the consequences of chromosome mis-segregation, a condition known as aneuploidy. Amon has pioneered this research area. Her studies showed that “aneuploidy-associated stresses” on cells lead to an increased need for energy and interfere with proliferation of those cells. Because aneuploidy is a hallmark of cancer, Amon strives to translate her research on the effects of aneuploidy into new medicines by developing therapeutics for cancer.

Amon obtained her PhD in 1994 from the University of Vienna for her work on the molecular mechanisms governing cell cycle progression in budding yeast. She then joined the laboratory of Ruth Lehmann at the Whitehead Institute as a Helen Hay Whitney Postdoctoral Fellow to investigate germ cell formation in *Drosophila*. In 1996, Amon accepted a Whitehead Fellow position to study the mechanisms governing chromosome segregation and exit from mitosis. In 1999 she joined the faculty of the Department of Biology and the Koch Institute for Integrative Cancer Research at MIT, where she now holds the Kathleen and Curtis Marble Chair of...
Cancer Research. Since 2000 she has been an investigator of the Howard Hughes Medical Institute.

According to her nominator, Elaine Fuchs, “Amon has shown consistently and brilliantly a remarkable ability to start new research areas, and to make paradigm-shifting discoveries.” Her nominators have described her research career as “dazzling” and “groundbreaking,” and have described her as “a leader in her field.” In recognition of her contributions toward our understanding of the cause and consequences of aneuploidy Amon has received numerous awards, including the 1999 Presidential Early Career Award for Scientists and Engineers, the 2003 Eli Lilly and Company Research Award, the 2007 American Society for Biochemistry and Molecular Biology Amgen Prize, the 2007 Paul Marks Prize, the 2008 National Academy of Sciences Award in Molecular Biology, and the 2013 Ernst Jung Prize for Medicine. In 2010 Amon was elected to the National Academy of Sciences, and she was named a Foreign Associate of the European Molecular Biology Organization in 2015. In 2014 Amon won the Genetics Society of America Medal.

In addition to Amon’s outstanding scientific achievements, she has been an exceptional mentor and role model to many in both the classroom and the laboratory. For several years she taught cell biology and currently teaches introductory biology to undergraduate students and genetics to graduate students. She runs a large laboratory with several graduate students and postdocs, and many of her trainees have successfully transitioned to independent positions at globally recognized research institutions. A number of Amon’s trainees have attested to her inspiring mentorship. One former trainee, Adel Marston, said “Amon is an exemplary role model….In particular, by example and encouragement she demonstrated that a family and an academic career are compatible.” One colleague said that “Amon is renowned as an inspirational advisor whose enthusiasm and drive quickly infect her students and postdoctoral fellows.”

—Desirée L. Salazar, Scientific Program Manager, and Sandra K. Masur, Chair, Women in Cell Biology Committee

**NIGMS Again Hosting Online “Cell Day” for Young Students**

The National Institute of General Medical Sciences is hosting Cell Day 2015, an interactive Web chat targeted to middle and high school students, but open to all, on Thursday, November 5, from 10 am to 3 pm ET. During that time, students from around the country can post questions about cell biology, research careers, and related topics. NIGMS staff scientists will provide written answers. Members of ASCB are welcome to join the live chat (no registration required) or access the transcript, which will be available a few days after the chat is over. More information about Cell Day, including how students and teachers can register to participate, is available at http://publications.nigms.nih.gov/cellday2015/.
Symposia
Symposia topics will cross disciplines, spatial scales, and systems within broad scientific question areas. All speakers will address different spatial scales.

Pushing the Limits: Visualization of Hidden Biological Processes
Supported by John Wiley & Sons, Ltd
Eric Betzig, Janelia Farm Research Campus/HHMI
WE. Moerner, Stanford University
Xiaowei Zhuang, Harvard University/HHMI

Wisdom of Crowds: Collective Decision-Making by Cells and Organisms
Deborah M. Gordon, Stanford University
Roberto Mayor, University College London, United Kingdom

Embraces across the Species Barrier: Complex Cell Interactions
Rachel Dutton, University of California, San Diego
Forest Rohwer, San Diego State University
William Sullivan, University of California, Santa Cruz

Like Oil and Water: New Principles Governing Cell Organization
Tony Hyman, Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany
Michael Rosen, University of Texas Southwestern Medical Center

Bending Nature to Our Purposes: Engineering of Cells and Tissues
Supported by SGI-DNA, A Synthetic Genomics, Inc. Company
Kristi Anseth, University of Colorado, Boulder/HHMI
Angela M. Belcher, Koch Institute for Integrative Cancer Research, MIT
Jennifer Doudna, University of California, Berkeley/HHMI

Going the Distance: Determining Size and Spacing of Biological Structures
Rebecca Heald, University of California, Berkeley
Shigeru Kondo, Osaka University Graduate School of Frontier Biosciences, Japan

Beyond the Five Senses: Detection of Magnetic and Electric Fields
Arash Komeili, University of California, Berkeley
Alex Mogilner, New York University

Minisymposia and Microsymposia Topics
Applications of Cell Biology in the Real World
Cell Biology of Genetic Information
Cell Cycle, Cell Division, and Cell Death
Cytoskeleton, Motility and Cell Mechanics
Education Minisymposium: Teaching How to Teach and Learn
Membrane Organization, Dynamics, Traffic, and Regulation
Multicellular Interactions, Tissues, and Development
Organelles and Spatial Organization of the Cell
Signaling and Differentiation

Visit www.ascb.org/2015meeting for more detailed session information.
Plan to arrive Saturday afternoon to attend a Special Interest Subgroup!

This is where ASCB members totally drive the scientific agenda; the focus of Saturday afternoon is on a wide range of topics self-organized by groups of interested scientists. These are among the most popular scientific sessions at the ASCB meeting.

Saturday Subgroups
1:00 pm–5:00 pm

**Subgroup A: Autophagy in Disease and Survival**  
Organizers: Nihal Altan-Bonnet and Rosa Puertollano, National Heart, Lung and Blood Institute, NIH

**Subgroup B: Building the Cell**  
Organizer: Suzanne Rafelski, University of California, Irvine and Allen Institute for Cell Science, Seattle

**Subgroup C: Cellular and Molecular Mechanobiology: New Approaches, Systems, and Responses**  
Organizers: Morgan Huse, Memorial Sloan-Kettering Cancer Center; Lance C. Kam, Columbia University; Bin Chen, Zhejiang University; and Baohua Ji, Beijing Institute of Technology, China

**Subgroup D: Connexins and Pannexins in Disease**  
Organizer: Dale Laird, University of Western Ontario, Canada

**Subgroup E: Cytoskeletal and Membrane Protein Dynamics at the T Cell Immunological Synapse**  
Organizers: John Hammer, Xufeng Wu National Heart, Lung and Blood Institute, NIH; and Larry Samelson National Cancer Institute, NIH

**Subgroup F: Diverse Roles of Glycans and Glycan-Binding Proteins in Human Diseases**  
Organizers: Wei-Sheng Chen, Tufts University; and Christopher J. Fisher, University of California, San Diego

**Subgroup G: Dynamic Interplay between Lipids, Curvatures, and Diseases of Biological Membranes**  
Organizers: Takanari Inoue, Johns Hopkins University; and Guillaume Thibault, Nanyang Technological University, Singapore

**Subgroup H: Extracellular Vesicles - Biogenesis and Function**  
Organizers: David Katzmann and Tushar Patel, Mayo Clinic

**Subgroup I: Increasing Diversity in a Changing Research Landscape**  
Organizers: Jana Marcette, Harris-Stowe State University; Gary McDowell, Tufts University; Tiffany Oliver, Spelman College; and Jessica Polka, Harvard Medical School

Subgroup J: Microtubule Networks in Differentiated Cells  
Organizers: Irina Kaverina, Vanderbilt University; Terry Lechler, Duke University; Evelyn Ralston, National Institute of Arthritis and Musculoskeletal and Skin Disease, NIH; and Melissa Rolls, Pennsylvania State University

Subgroup K: Neuronal Cytoskeleton: Cytoarchitecture and Dynamics  
Organizers: Anthony Brown, Ohio State University; Stephanie Gupton, University of North Carolina at Chapel Hill; Laura Ann Lowery, Boston College; and Subhojit Roy, University of California, San Diego

Subgroup L: Nuclear Envelope Dynamics  
Organizers: Dennis Discher, University of Pennsylvania; Harald Herrmann, German Cancer Research Center (DKFZ); Megan King, Patrick Lusk, Yale University; and Katherine Wilson, Johns Hopkins University

Subgroup M: Nucleation Phenomena in Cell Biology  
Organizers: Clifford Brangwynne, Princeton University; Gary Brouhard, McGill University, Montreal, Canada; and Xiaolei Su, University of California, San Francisco

Subgroup N: Polymerizing Enzymes: New Frontiers in Protein Compartmentalization and Localization  
Organizers: Justin Kollman, University of Washington; Ji-Long Liu, University of Oxford, UK; and Jeffrey Peterson, Fox Chase Cancer Center

Subgroup O: Quantitative Microscopy & Image Analysis: Measuring Cellular Organization & Dynamics  
Organizers: Hunter Elliott, Talley Lambert, Harvard Medical School; Thomas L. Schwarz, Boston Children’s Hospital and Harvard Medical School; Evgeny Shlevkov, Boston Children’s Hospital and Harvard Medical School; and Jennifer Waters, Harvard Medical School

**Tuesday Subgroup**  
3:00 pm–6:30 pm

**Subgroup P: The Cellular and Molecular Basis of Invasive Metastatic Cancer**  
Organizers: Mark A. McNiven, Mayo Clinic; Laura M. Machesky, Beatson Institute, Cancer Research UK; and Alissa M. Weaver, Vanderbilt University

Register for the meeting by October 1 to receive discounted registration rates!
Recognizing that modern research in cell biology relies increasingly on quantitative analysis of large datasets, we are offering a series of three workshops that provide practical skills training to do just that. Each workshop will begin with a one-hour introduction on the topic open to all registered attendees, followed by a hands-on 2.5 hour workshop (preregistration is required for the hands-on portion).

### Computational Methods for RNA Sequencing Analysis

**Presenters:** Manuel Garber and Alper Kucukural, UMASS Medical School

**Sunday, December 13**

3:00 pm-6:30 pm

The overview will focus on the main computational components of gene expression analysis. The hands-on portion of the workshop will illustrate the concepts discussed during the overview using a previously published dataset.

### Quantitative Analysis and Visualization of Signaling Networks

**Presenters:** John Albeck and Michael Pargett, University of California, Davis

**Monday, December 14**

3:00 pm-6:30 pm

The overview will introduce tools for visualizing trends, calculating useful metrics, and performing basic statistical analysis with large datasets focused on signal transduction networks. The hands-on portion will walk participants through the process of analyzing a time-lapse microscopy dataset with thousands of individual cells expressing multiple signal transduction reporters.

### Image Analysis in Quantitative Microscopy

**Supported by Hamamatsu Corporation**

**Presenters:** Mark Bray and Anne Carpenter, Broad Institute of Harvard and MIT

**Tuesday, December 15**

3:00 pm-6:30 pm

The overview will introduce biologists to the sorts of phenotypes that can be quantified in images and basic concepts of image analysis. The hands-on portion will instruct biologists in the use of CellProfiler (an open-source, freely downloadable software package designed for automated phenotypic image analysis) at both large- and small-scale, as well as CellProfiler Analyst.

Visit [www.ascb.org/largescaledataworkshops/](http://www.ascb.org/largescaledataworkshops/) for more information or to sign up for one or more of these workshops.
ANNUAL MEETING Update

First-Class Speakers, First-Class Science

Every biological question pivots on an understanding of the cell. ASCB 2015 this December in San Diego is your chance to gain valuable insight from leaders in the field, while contributing your own perspective to the conversation. Our speakers this year include Nobel laureates Eric Betzig of Janelia Farm Research Campus/HHMI and W.E. Moerner of Stanford University, CRISPR Pioneer Jennifer Doudna, E.B. Wilson Lecturer Elaine Fuchs of Rockefeller University, and invited Symposium Speaker Rebecca Heald of the University of California, Berkeley, along with many other top minds in the life sciences.

See the Future of Cell Biology. Be the Future of Cell Biology.

Don’t miss your last chance to present your research at the meeting. The final deadline for poster consideration is October 14. Abstracts submitted by this deadline will be included with the previously submitted posters in the ASCB Learning Center. Visit http://ascb.org/abstractinformation for more information.

Hotel Room Share is available for those who would like to share a hotel room during the meeting. ASCB provides a room share list. Just fill out the application and we will respond to you in late August with weekly updates.

Consider arriving early to attend our popular Member-Organized Saturday Subgroups from 1:00 pm-5:00 pm, then join us for the special Keynote and Opening Night Reception. Register today (www.ascb.org/2015meeting), and discover why there’s no better place than ASCB 2015 to advance your career!

DEADLINES

**October 1** Early Meeting Registration

**October 1** First-Time Member Application

**October 14** Final Abstract Submission

*(poster consideration only)*

**November 6** Hotel Reservations

**November 19** Meeting Registration Cancellation

*(to be eligible for a refund)*

**November 19** Room-Share Request

**November 28** Hotel Cancellation via onPeak, ASCB’s Official Housing Partner

#ascb15
The program that Theriot and her committee have assembled for San Diego showcases the new technologies and new concepts that are shaking up cell biology labs around the world. ASCB 2015 will feature big data, next-generation sequencing, CRISPR cas9 editing, limit-bending imaging, bioengineered cells and tissues, cells as self-organizing individuals, and cells (and multicellular organisms) in self-organized collectives. Says Theriot, “As new technologies become available, the field takes those new approaches to ask the questions that have fascinated us for so many years—How do cells divide? How do they communicate? How do they move? How do they form new tissue?”

Every time some sort of new technology comes along, we get new kinds of probes that can give us more insight than we’ve ever had before, says Theriot. “This year, we’re celebrating big data as being a new way to look at these same questions. There’s also super high-resolution microscopy and we have a Symposium on that. And then there are the ways that fundamental concepts of cell biology now apply to other areas of biology inquiry.”

Tackling the broad issues will be a line-up of big-name Symposium speakers. Co-winners of the 2014 Nobel Prize in Chemistry Eric Betzig and W.E. Moerner will lead a panel with Harvard’s Xiaowei Zhuang on visualizing hidden biological processes. Coming at the self-organization question from a novel direction will be Stanford behavioral biologist Deborah M. Gordon, who is an expert on the collective and individual behavior of red harvester ants. And highlighting self-organization of a different kind will be Roberto Mayor, a developmental biologist at University College London. Mayor’s studies of neural crest cell development led him to his “chase and run” hypothesis of cell movement to explain metastasis.

CRISPR cas9, the hottest new gene-editing technology to hit cell biology in recent years, grew out of the discovery of an innate immunity mechanism in bacteria. One of its pioneers, Jennifer Doudna, University of California, Berkeley and Howard Hughes Medical Institute (HHMI) investigator, will bring the CRISPR story to a panel on “Bending Nature to Our Purposes.” That Symposium also features Kristi Anseth, University of Colorado, Boulder and HHMI, who works at the molecular interface between cells and synthetic biomaterials, and Angela M. Belcher, a biomaterials engineer at the Massachusetts Institute of Technology, whose lab, among other things, has demonstrated how viruses can be used to improve the efficiency of lithium-ion batteries.

All these and the other novel-concept Symposia will stand on a robust foundation of classic and “classic plus novel variation” Minisymposia. The topics here will cover cell biology’s greatest hits—cell cycle, membranes, organelles, cytoskeleton, signaling, and differentiation plus sessions on the real world applications of cell biology and a new look at the cell biology of genetic information. Biology education is also on the Minisymposium roster with a session entitled “Teaching How to Teach and Learn.”

Theriot is hoping that the 2015 Annual Meeting program’s combination of old questions and new technologies will draw cross-disciplinary newcomers and core-question cell biologists. Early reaction has been positive, she reports, including “fan mail” from a developmental biologist and longtime ASCB member who confessed that he hasn’t been to an Annual Meeting in some time. “He wrote to tell me how excited he was to see all these new directions in cell biology and how he’s definitely coming,” says Theriot.

—John Fleischman

World Scale Biology
ASCB 2015 keynoters Sallie W. “Penny” Chisholm, Massachusetts Institute of Technology, and Jane Lubchenco, Oregon State University and former Administrator of the National Oceanic and Atmospheric Administration, will describe the challenges of doing real world biology in the oceans, from studies of microscopic phytoplankton to a vast nearshore Pacific ecosystem. Learn more about the speakers and their science in the October issue of the ASCB Newsletter.
The English poet William Blake, who aspired “To see a World in a Grain of Sand,” would have appreciated microbiologist Rachel Dutton’s scientific ambition: to understand the microbial world—which can be found in copious quantities everywhere on Earth, from soil to oceans to the human gut—in a slice of cheese.

Dutton will bring her Big Cheese microbiology this December to ASCB 2015 where she will present her unlikely experimental substrate at the Symposium entitled, “Embraces Across the Species Barrier: Complex Cell Interactions.” Dutton, who has been at Harvard University but is now in the midst of moving her lab to the University of California, San Diego (UCSD), studies interactions between microbial species. “We’re thinking a lot about how cells communicate with each other and how they exchange signals,” she explains. Cheeses, she decided, offered ideal microbial communities that could be replicated and manipulated in her lab much like scientists manipulate model organisms such as *Escherichia coli* and *Caenorhabditis elegans*. And her work on cheese communities has been fruitful, she says. It is generating scientific insights as well as public interest, since everyone has a connection to food, making her cheese research ideal for communicating science to nonscientists.

A “Go-To” Microbiologist

Of course a microbiologist doing cell–cell communication research on cheese is unusual, and Dutton’s work has attracted attention beyond PubMed among commercial cheesemakers, chefs, and others in the food sector. A September 2012 article in the *New York Times*’ Dining & Wine section portrayed her as the “go-to microbiologist” for gastronomists, describing how her laboratory in Harvard’s Northwest Science Building receives packages from chefs, bakers, and a California pickle maker asking her help in analyzing food samples. Dutton gladly contributes her scientific expertise to help the food experts understand their microbes.

Dutton was awarded a five-year Bauer Fellowship at Harvard’s Faculty of Arts and Sciences’ Center for Systems Biology, to apply genetic and genomic approaches to microbial communities on cheese. Through this research, her lab demonstrated that microbial communities growing on cheese rind express complex, reproducible behavior in situ. Her lab also developed a system for in vitro studies of the communities’ behaviors. With Dutton’s Bauer Fellowship ending this year, she is moving her lab back to her undergrad alma mater, UCSD, where she will continue her research as an assistant professor in the Division of Biological Sciences.
How a Community Works

Dutton’s interest in microbial diversity goes back to her graduate studies with Jon Beckwith at Harvard Medical School. Dutton researched the more than 400 bacterial genomes then available and identified an alternative pathway for the formation of disulfide bonds in many bacteria. But it was several years earlier—when Dutton was a junior at UCSD doing volunteer work in Kit Pogliano’s lab—that she first fell in love with microbiology and molecular biology. Working in the lab, “I was absolutely in my element,” she says, and decided to switch her major from communications, graduating cum laude in 2002 with a BS in molecular biology. During her last two undergrad years in Pogliano’s lab, Dutton studied spore formation in *Bacillus subtilis*, using genetic and cell biological methods to research the compartmentalized sigma factor activity that occurs during the early stages of sporulation in the microbe. Dutton notes, “Some of my first experiences in science were in cell biology.”

Dutton’s fateful cheese moment came in 2007 when she took the Microbial Diversity summer course at the Marine Biological Laboratory in Woods Hole. There she had her first exposure to the techniques of microbial ecology, which set her thinking about possible communities where she could apply her background in model organisms, genetics, and cell biology. Her goal, she recalled, was “to get down to a mechanistic understanding of how a community works.”

Cheese as a Model System

But Dutton needed a manageable system. In nature, microbial communities are vastly complex, with hundreds to thousands of species growing together, many of which defy all attempts at lab culture. Even though scientists can identify many of these unculturable species using DNA sequencing techniques, understanding their behavior and interactions is a major challenge, according to Dutton. “You can’t really understand a microbial community unless you understand how the species are interacting with one another.” Dutton realized that the microbial communities in fermented foods such as cheese are much simpler versions of “wild-type” communities in nature. Cheese, she realized, could be its own model system.

Over time, Dutton collected 137 different types of cheeses from 10 countries, using next-generation sequencing to determine the diversity of species in each cheese. Across different types of cheese, Dutton found 24 dominant bacterial and fungal genera. Dutton says that the contribution of most of these microbes to the cheese microbial community is unknown. One intriguing set of microbes she found in cheese are bacteria usually associated with marine environments—such as *Halomonas*, *Psychrobacter*, *Pseudomonas*, and *Vibrio*—prompting questions about the origins of microbes in cheese communities.

Sampling 362 cheese wheels, Dutton found wide fungal diversity including 10 dominant genera. Some fungi such as *Debaryomyces* and *Galactomyces*, had been studied previously, but one especially abundant fungus, *Scopulariopsis*, is poorly studied and may play an interesting role in cheese communities.

Dutton says that month to month, cheese communities go through dramatic changes while exhibiting a highly consistent, reproducible succession of microbial species. Now Dutton’s lab is parsing various combinations and permutations of cheese communities—for example, if *Staphylococcus* is removed, what happens? Her goal is to identify the as-yet elusive basic principles of microbial community mechanisms. And, of course, the practical implications of understanding those principles promise to be significant, not only for the making of cheese and other fermented foods but also for human health and environmental technologies such as anaerobic digesters and biofuels.

When not working, Dutton enjoys cooking and fermenting things and, yes, she loves cheeses of all kinds.

—David Clarke, Science Writer
ANNUAL Meeting

Professional Development Programs/Events
The Annual Meeting offers a wealth of programs and events to give you the tools, insights, and inspiration you need to advance your career or explore a new career trajectory.

- Administration of Research Grants Career Panel
- Advocacy Toolbox: How to Start and Sustain a Policy Advocacy Group
- Advocacy Toolbox: The Two-Minute Speech
- Career Discussion and Mentoring Roundtables
- Consulting and Entrepreneurship Career Panel
- Delivering Science: Effective Communication Skills to Become a Successful Scientist
- E.E. Just Award Lecture—Erich Jarvis, Duke University Medical Center/HHMI
- Grant-Writing Seminar ($35, preregister online when registering for the meeting)
- Industry and Sales Career Panel
- International Research and Training Exchange Fair
- Is an MD/PhD Right for Me?
- Meet the Editor of CBE—Life Sciences Education
- Meet the Editor of Molecular Biology of the Cell
- Mentoring Keynote—JoAnn Trejo, University of California, San Diego
- Poster Competition and Reception for Undergraduates
- Science Policy Career Panel
- Science Writing and Editing Career Panel
- Teaching and University Administration Career Panel
- Vendor Networking Happy Hour
- Women in Cell Biology Network Reception Goes International
- Women in Cell Biology Awards Presentation and Mentoring Theater: “Who, me?—I’m not biased. Embracing diversity to improve creativity”

Education Programs/Events
Foundational Cell Biology Workshop—Making BIG Data Accessible for Teaching and Learning

Education Minisymposium—Teaching How to Teach and Learn

Undergraduate Program—Translating Curiosity: Solving the Worm
Paul Sternberg, California Institute of Technology

High School Program—Explore the World with a Fold-Your-Own Microscope
Manu Prakash, Stanford University

Bruce Alberts Award for Excellence in Science Education, presented to Deborah Harmon Hines, University of Massachusetts Medical School

Talking about Evolution with Doubters: Practical Tips
Ann Reid, National Center for Science Education

Bringing Research into the Undergraduate Curriculum: Report of a NAS Convocation
Sarah Elgin, Washington University in St. Louis

“The variety of programming for cutting-edge techniques and professional development add to the entirely unique and valuable experience that you can’t find anywhere else!”
—Ted Ho, University of California, San Francisco
Postdocs/Students/Community College Instructors

Do you want to Organize a One-Day Local Meeting?

ASCB Financial Support Available

Build Community and Collaboration

ASCB helps fund and organize your local meeting. Such meetings will typically involve two or more local research institutions or colleges (within or outside of the USA). Topics may range from basic science to career development, with a clear relevance to the broadly defined field of cell biology.

For more information go to ascb.org/local-meetings or email aharris@ascb.org.

Deadline for Applications: September 30, 2015

#ascblocal
Planning for San Diego—Science in Paradise!

Already a natural beauty, sunny San Diego is quickly becoming one of the nation’s most exciting and sought-after destinations. In addition to year-round sunshine and near-perfect weather, San Diego is soaked in culture and has 70+ miles of sparkling coastline, friendly locals, a vibrant downtown, and an assortment of unique neighborhoods to explore.

Come Early, Stay Late!
Take the time before or after the meeting to enjoy everything San Diego has to offer. Whether you want to learn how to surf in La Jolla, taste the local flavors at a five-star restaurant in the Gaslamp Quarter, stroll the peaceful beaches of Coronado, explore the museums of Balboa Park, or take a cruise on the bay, San Diego has something for everyone.

Show Your Badge & Save
San Diego’s Show Your Badge & Save program offers exclusive deals for meeting attendees. Save money on restaurants, attractions, activities, and more while you are in town. Download the coupons or simply show your convention badge and save at participating businesses throughout San Diego. Visit http://bit.ly/1UtSLlvv for a list of participating businesses.

Housing
Be Sure to Book Your Hotel with onPeak, ASCB’s Official Housing Partner
Through onPeak, the ASCB has secured a limited number of hotel rooms at specially reduced rates to make your trip to San Diego affordable. Students rates are available for ASCB Student Members on a first-come, first-served basis. Reasons why you should book within the block:
- **Price**: We’ve secured the lowest available hotel rates.
- **Choice Hotels**: Hotels have been hand-picked to meet your needs.
- **Convenience**: A one-stop travel shop is at your service.
- **Support**: We’re your advocate before, during, and after your stay.
- **Reputation**: Uptake of rooms in the housing block demonstrates ASCB’s value to cities in which it holds meetings.

Visit www.ascb.org/hotelinformation for more information or to book a room.

Room-Share Information
The ASCB provides a room-share service for all registered meeting participants. Visit www.ascb.org/hotelinformation for more details. Applications can be submitted through November 19. While applications can be received through November

ASCB Poster Competition Judges Needed

The ASCB Minorities Affairs and Education Committees are looking for judges for the ASCB Poster Session Competition that will be held during the 2015 ASCB Annual Meeting in San Diego, on Saturday, December 12, 2015, from 3:30 pm–5:30 pm. There will be 80–100 posters to judge, but no more than two or three per judge.

If you are interested in judging, please sign up at https://my.ascb.org/initiatives/#/apply/31.

If you have any questions, please contact Desirée Salazar at dsalazar@ascb.org.
ANNUAL Meeting

19, please be advised that special ASCB hotel rates are guaranteed through onPeak only until November 6, 2015.

Final 2015 ASCB Annual Meeting Program and Mobile App
The final Program will be available online for viewing/download approximately three weeks prior to the meeting. A mobile app will be available at that time, at www.ascb.org/2015meeting or by searching for “ASCB2015” in your app store. Printed copies of the Program will be available for pick-up in the Registration area onsite.

Already Registered but Need to Access Your Registration?
Visit www.ascb.org/reg-resource to:
- Print a visa invitation letter
- Update your interests
- Update your contact information
- Add events
- Email another confirmation
- Print a receipt
- Invite a colleague
- View your badge information

Avoid Carrying Your Poster to the Meeting
Makesigns.com will be the ASCB’s poster printing service for the 2015 Annual Meeting. Makesigns.com will print posters 42 inches high by 66 inches wide on glossy paper or—new this year—on fabric. Information about the poster printing service will be sent to all poster presenters in their notification emails and is also available at www.ascb.org/2015meeting under “Present.” The cost for each glossy paper poster is $68.94, and the cost for each fabric poster is $149.87. Shipping is free on orders placed by 12:00 pm CST on Wednesday, December 2. The last day to upload your poster for printing and pick-up at the Convention Center is December 7, 2015, at 12:00 pm EST.

Oratory in an Elevator—Killer Science App Available Only at ASCB 2015
Think of ASCB’s “onsite, all-video, mostly selfies, 60-second Elevator Speech Contest” as a killer app. The ability to sell your science during a one-minute virtual elevator ride to a captive audience of academics, politicos, or lay people makes this skill the most powerful app you’ll ever have, no matter what’s on your smartphone. But you can’t download it because the algorithm is in your head. You can, however, pick up the basics and put your new science communication skills to the test at ASCB 2015 in San Diego this December.

To hone your elevator oratory, ASCB’s Public Information and Public Policy Committees will stage a joint all-video Elevator Speech Contest at the 2015 Annual Meeting. The premise is simple: The elevator door closes and you’ve got a trapped audience—a U.S. Senator, your dean, or Taylor Swift. Go for it! Sell your science in 60 seconds!

In San Diego, the Public Policy Committee’s Advocacy Toolbox Workshop on Monday, December 14, 10:30 am–noon, will teach you the essentials of elevator talking and give you the chance to practice live before experienced coaches. But you don’t have to attend the workshop to enter the Elevator Speech Contest. Just take a video of yourself and then upload it to YouTube or Vimeo. Then go to www.ascb.org/elevatorspeech and fill out the form with the link to your uploaded video. Don’t have the means to record your video in San Diego? Come to the Elevator Speech Contest Video Collection Point at the ASCB Booth in the ASCB Learning Center on Tuesday, December 15, 10:00 am–12:00 pm. A camera awaits you. Entry deadline is Tuesday at 1:00 pm. The winner and runners-up will be shown Tuesday at 3:00 pm in the ASCB Learning Center theater.

What’s at stake? Your pride, your scientific future, and a chance to win a shiny electronic gizmo. This is an onsite contest only. You must be registered for ASCB 2015 to enter and to win.

Want to see what it takes to win the ASCB Elevator Speech Contest? Check out last year’s winners at www.ascb.org/2014-elevator-speech-winners.

—John Fleischman
ASCB Learning Center: This Way Up!

The ASCB Learning Center is the center of the Annual Meeting, a place where your science, your career, and your skills get sharper. First and foremost are the ASCB’s legendary poster alleys, where young scientists and senior investigators meet to present, to get noticed, and occasionally to get grilled. It’s the meeting’s prime venue for first data, final results, and daring trial balloons. The ASCB poster alley is where collaborations begin, networks grow, and friendships—and rivalries—get started.

The poster alley is the heart, but all around the 275,000 square feet of the ASCB Learning Center is a dynamic mix of commerce, education, entertainment, information, and freebies. Here’s where attendees test-drive the latest commercial technologies, sample the newest products, and pick up some of the vital skills they need to improve their lab operation and career. They also go home with free pens, free t-shirts, free journal copies, free chocolate, and other meeting “loot.”

But the ASCB Learning Center experience goes well beyond an Internet listing, a catalog page, or an infomercial video. More than 200 companies are coming to San Diego this year with interactive and up-close presentations of products and services that researchers can use now—or will soon. Booths are staffed by trained reps who know how their equipment or service works but also how researchers work in the lab setting. You’ll get your questions answered in the Learning Center without being stuck on hold or referred to a 404 error page.

Another feature of the ASCB Learning Center is Publishers’ Row, where you can interact with the journal editors you want to meet, examine textbooks you might adopt, discover new journals where your papers could appear, and try out data services you could use. The ASCB journals will have their own booth—1226—with opportunities to meet editorial board members from Molecular Biology of the Cell and CBE—Life Sciences Education.

Activity in the ASCB Learning Center builds to a climax during a three-hour period (12:00 pm–3:00 pm) Sunday–Tuesday, when all outside scientific activities at the Annual Meeting take a break. Attendees can even have lunch in the ASCB Learning Center while checking out the exhibits, Tech Talks, and the poster alleys without fear of missing any of the headliner scientific sessions.

Tech Talks and the Mobile App
Exhibitors will provide 30 Tech Talks Sunday–Tuesday from 7:00 am–7:45 pm. These presentations will be held in two dedicated theaters inside the ASCB Learning Center or in special areas inside exhibitors’ booths. The emphasis in Tech Talks is on practical information and instruction from experts. You’ll find an abstract for each Tech Talk in the Program and on the mobile app.

Attention All PIs, Lab Heads, and Search Committees

Interested in recruiting postdocs for your lab or conducting some other type of search? We invite you to post your positions in the Career Center. What better place to begin your search? And it’s all free! Just post the position on one of our poster boards in the Career Center. For information, visit www.ascb.org/meetings and click on “Career Resources.”

Note: You can also take advantage of the ASCB Online Job Board (it’s 50% cheaper for ASCB members) (visit http://jobboard.ascb.org) and advertise in the ASCB Newsletter (email sales@ascb.org for more information).
Looking for a particular product or company? The ASCB 2015 Program and the mobile app (with multimedia links) carry full descriptions of every exhibitor’s product lines. You’ll also find special offers from the exhibitors in the new Coupon Book. The Program and the mobile app (iPhone and Android) will be available online approximately one month before the meeting at www.ascb.org/2015meeting or by searching for “ASCB2015” in your app store. Your print copy of the Program will be waiting for you at the San Diego Convention Center.

Fed Central
Want to discuss the status of current grants, the potential for future funding, and other types of collaborations with federal agencies? You’ll find the connections you want waiting in the dedicated Fed Central area.

Startup Central
Curious about the world of biotech startups? The ASCB Learning Center has its own Startup Alley where you can meet the personalities and the products behind a range of innovative startup companies, including LipoType GmbH, Montana Molecular, Nanolive SA, NanoSurface Biomedical, Open Imaging Inc., Reveal Biosciences, and VitaScientific.

Refreshments and Commentary
The ASCB Learning Center will be open Sunday–Tuesday from 9:30 am–4:00 pm. The opening is timed each morning to follow the first Symposium of the day, so we’ll lay on the coffee or tea you’re craving from 9:30 am–10:30 am. In the afternoon, a cash bar for beer and wine and free popcorn pep up the atmosphere from 12:00 pm–3:00 pm.

On Tuesday at 3:00 pm, Theater 1 will host the Celldance Video and Elevator Speech Contest (see p. 20). Grab some popcorn and a good seat for the world premiere of Celldance’s three commissioned “Tell Your Cell Story” films from leading ASCB member labs complete with live director’s commentaries. Then steel yourself for the rough and tumble of the Elevator Speech finals as contestants (on cell phones) try to sell their science to absolute strangers in 60 seconds flat. There’s a prize for the most persuasive elevator talker.

Make the ASCB Learning Center your meet-up point or daily rest stop. Prepare to be wowed by the science in the poster alleys and the exciting new science technologies and insights on offer in the exhibitor booths! Remember that the exhibiting companies help defray a significant slice of the ASCB 2015 registration fee. So it’s a classic win–win. By visiting the exhibits, you see the best in new science products and you also keep the ASCB Annual Meeting accessible to the new generation of students and researchers. Show your appreciation by visiting the exhibit booths and getting your badge scanned. And if you are making the buying decisions for your lab, be sure to let the exhibitors know that too.

To view a list of 2015 exhibitors and their products, go to www.ascb.org/MeetingExhibitorList.

—Louise Campbell-Blair, Director, Business Development

Be Sure to Visit the Learning Center for Tech Talks by These Companies

ACEA Biosciences, Inc.
Andor Technology
ASI/Applied Scientific Instrumentation
Baker
Beckman Coulter
BioTek Instruments, Inc.
Birplane, Inc.
Bruker Corporation
Carl Zeiss Microscopy, LLC
Cell Signaling Technology
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LipoType GmbH
Montana Molecular
Nanolive SA
NanoSurface Biomedical
Nikon Instruments, Inc.
Open Imaging, Inc.
Reveal Biosciences
ScienCell Research Laboratories
Thermo Fisher Scientific
VitaScientific
John Wiley & Sons

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**Gold**
- Allen Institute for Cell Science
- Beckman Coulter Life Science
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- Nikon Instruments, Inc.
- ScienCell Research Laboratories
- Thermo Fisher Scientific

**Silver**
- Chroma Technology Corporation
- BioMed Central
- Minisymposium
- Bruker
- Hanging Banner Aisle Sign
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- Hotel Room Keys
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- Travel Awards

**Bronze**
- Cosmo Biotechnologies Ltd
- Olympus
- Okolab SRL

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- Atlas Antibodies AB
- Enhanced Company Listing on Mobile App
- BioMed Central
- Minisymposium
- Bruker
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- Travel Awards
- EMD Millipore
- Hotel Room Keys
- Hanging Banner Aisle Sign
- Essen BioScience
- Enhanced Company Listing on Mobile App
- Getson & Schatz, P.C.
- Travel Awards
- Hamamatsu Corporation
- Large Scale Data Workshop
- Howard Hughes Medical Institute
- Travel Awards
- Foundational Cell Biology Workshop
- International Center for Genetic Engineering and Biotechnology (ICGEB)
- Travel Awards
- John Wiley & Sons Ltd.
- Minisymposium
- Symposium
- Journal of Molecular Cell Biology
- Registration Area Pens and Note Pads
- The Journal of Cell Biology
- Minisymposium
- Olympus America
- Lanyards
- Photometrics
- Abstract Submission System
- ProteinSimple
- Enhanced Company Listing on Mobile App
- SGI-DNA, A Synthetic Genomics Company
- Symposium
- Simons Foundation
- Wikipedia Edit-a-Thon
- Worthington Biochemical Corporation
- Travel Awards

**As of August 24, 2015**
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OPEN TO ALL ASCB MEMBERS!

FOR MORE INFORMATION VISIT ASCB.ORG/SCIENCE-COMIC-STRIP-COMPETITION/ ENTER BY OCTOBER 15, 2015!
Jumpstart Your Academic Research Career with Your Own Postdoctoral Fellowship

With all the talk about the downsizing of the life-science academic research operation, we need to remember that downsizing doesn’t mean shutdown. Many newly minted PhDs are opting to continue on the academic research track to become PIs. Getting their own postdoctoral training fellowships is a good way for those scientists to build the research skills and to further develop many of the leadership, managerial, organizational, and communication skills needed for heading an academic research lab. This article is for that audience as well as for the scientists who mentor them.

Who qualifies for postdoctoral fellowships?
In most cases only U.S. citizens and permanent residents qualify for most U.S. government fellowships, including awards from the National Institutes of Health (NIH) and the National Science Foundation. (See box for additional information about U.S. government fellowships.) One important exception is the NIH’s K99/R00 Pathway to Independence award, for which those who are not permanent residents are also eligible. For more information about the K99/R00, visit: http://1.usa.gov/1DQ8yRd.

Less well known is that some private disease-specific foundations make their fellowships available to non-U.S. citizens. Many foundations recognize that foreign postdocs make up a large pool of research talent worth supporting as future scientific leaders. Therefore noncitizens interested in having their own fellowship should investigate the possibilities in their own subject matter areas. See, for example, the following lists that identify some fellowships that are open to all: http://bit.ly/1KjqVe1, http://bit.ly/1J2mAet, and http://1.usa.gov/1TvWsnl.

Who qualifies as a mentor/co-mentor?
Because postdoctoral fellowships support training and mentoring efforts, the applications are evaluated largely on the strength of the mentor and the mentoring/training plan: Is that mentor (or, more commonly these days, that mentoring pair or team) equipped to provide good training? Therefore the application needs to demonstrate that the primary mentor has a track record of successful training, not just successful scientific accomplishments. Just as importantly, the mentoring team must demonstrate that they have sufficient funding over the next few years to purchase supplies, time on shared equipment, etc., for the fellow to complete the proposed plan.

These requirements often translate into the need for fellows to do some building and shuffling of their mentoring team, sometimes replacing their preferred primary mentor (who may be untenured or otherwise lacking in sufficient funding and/or training experience at the time of the fellowship application) with a more “appropriate” primary mentor.

This need to find an appropriate primary mentor is now openly acknowledged, largely because it gets mentioned in reviews of unfunded proposals. Importantly, therefore, planning-stage discussions frequently involve looking for ways to keep a more junior mentor as a key part of the team. Ideally this means finding a more senior scientist who has a strong training record and is well-funded to become a collaborator. Doing so means that the postdoctoral fellow’s project, which might already be underway, can be continued, possibly with modifications. And it means that the junior mentor gets the opportunity to continue in a documentable training/mentoring role.
Writing a fellowship application demands that you think about “the big picture” on which your work will be based.

Many foundations recognize that foreign postdocs make up a large pool of research talent worth supporting as future scientific leaders.

When

Getting a fellowship that commences at the beginning of your postdoctoral training period can certainly jumpstart your academic career. Doing so requires planning ahead: identifying a suitable mentor (team) and preparing fellowship applications while finishing the PhD experience. These days, getting a postdoctoral fellowship that lets you transition directly from graduate school typically requires that you have one or two first-author peer-reviewed publications at the time the proposal is reviewed. Therefore if you are not yet at that stage, it’s probably not worth submitting a postdoctoral fellowship application during graduate school.

While submitting a fellowship application before finishing graduate school seems attractive, it often means that the ideas in the proposal come largely from your mentor, not you. Waiting until a year or so into the postdoctoral experience before putting together an application means that you, the applicant, can contribute more to the planning and writing of the proposal, which gives greater depth to the scientific and training experience.

However, you cannot wait too long to submit an application, since funding sources typically stipulate an upper time limit of eligibility after the applicant received his or her terminal degree (e.g., PhD, MD, DVM, DO). Frequently they also limit the number of postdoctoral years the individual can have finished before beginning the award years. So plan ahead. Indeed, give yourself enough time for two rounds of submission so that if you don’t succeed on the first try, you can apply again.

Why

Getting a postdoctoral fellowship—indeed, even preparing and submitting an application—gives you an opportunity to exercise your creative scientific skills. If you are already functioning in a postdoctoral capacity, it’s likely that the questions driving your research are your mentor’s questions. Interesting and important as they may be, if you intend to become an independent PI, you will need to come up with your own research plans. Writing a fellowship application demands that you think about “the big picture” on which your work will be based. Then you get to develop your own hypotheses and ways to test them.

Another reason for getting your own fellowship is that your independent funding can free up laboratory funds that may be used, for example, to pay for otherwise unaffordable supplies or additional staff.

As I said before, preparing the application lets you work on your organization, leadership, and communication skills. For example, you will need to convince the reviewers that your plans are feasible given the resources you have available, and that they are ambitious but not overly so. To do that may take some careful planning including establishing some new scientific collaborations. In addition, you will need to work with your mentor(s) to build a training/mentoring plan that suits your own needs and interests, and complements the research component of the application. And then, working with your mentor(s), you will need to explain why the plan will prepare you to become an independent investigator.

How

Much of my advice for preparing competitive fellowship applications appears in an earlier column I wrote, which dealt with the general topic of grantsmanship. (See the January/February 2011 issue of the ASCB Newsletter: www.ascb.org/files/1101wicb.pdf.) But several factors are worth mentioning that apply more to a fellowship than to a research grant. For example, the fellowship application is, by definition, a collaborative effort involving you and at least one mentor. In addition, for those fellowships that include a training plan, you must figure out what sort of training you may need, sometimes including formal coursework and sometimes including “mini-sabbaticals” spent in the lab of another PI. Finding out about and arranging for such activities takes time, and may require letters of agreement. For all those reasons, starting to work on the application long before the deadline is essential.

Given that fellowships are awarded as much for the people as for the proposed research, make sure that your accomplishments and those of your mentor(s) and collaborators are spelled out clearly. Here I stress the adage given to writers in general: show, don’t tell. Minimize the use of adverbs and adjectives to describe your very important papers. Instead describe the questions that these studies answered or the impact they have had on the field.
Work with your mentor(s) to anticipate concerns that reviewers may have, and then address them explicitly. For example, make sure that the sources of funding for your research are clearly spelled out. If you have a short publication list because the work you did was technically challenging, have your mentor at the time mention explicitly in his or her document of support the problems you solved or the significance of the findings. If you have clinical responsibilities and require release time to conduct the funded research, make sure you have a chair’s letter assuring that you will be released from those responsibilities should you receive the fellowship.

Be sure to read recent examples of the types of proposals you will submit. If possible, read more than one. Also, try to find examples of the critiques of both funded and unfunded proposals to see first hand what reviewers are looking for. Sometimes people are reluctant to share their entire proposals because they contain proprietary information. Take what you can get, encouraging the author to “snip out” any secret information before sharing the proposal with you. And because you need to see examples of training/mentoring plans as much as you need to see the specific components of your proposal, don’t limit yourself to reading only proposals in your field.

Finally, start early. Putting together a successful proposal requires time for both creativity and attention to administrative details. Give yourself and your team enough time by starting months, not days, before the deadline.

— Beth Schachter, Beth Schachter Consulting
and Still Point Coaching & Consulting

Note

Beth Schachter of Beth Schachter Consulting (http://bethschachterconsulting.com) and Still Point Coaching & Consulting (www.stillpointcoaching.com) gives grantsmanship and fellowship workshops throughout the United States. Before becoming a PI herself, she received postdoctoral fellowships from the American Cancer Society and the NIH.

Useful Reading and Links

NRSA Individual Postdoctoral Fellowships FAQs (F32): http://1.usa.gov/1Wmc6Ri.

NIH has not yet posted sample postdoctoral fellowships. However, an NIH website does have examples of research fellowships and the accompanying critiques, which fellowship applicants might find useful, particularly for the presentation of the Specific Aims page. See examples at http://1.usa.gov/1N5NyZA. In particular, see the F31 Predoctoral Application at http://1.usa.gov/1fa2eJy.

A sample NIH postdoctoral biographical sketch is at http://1.usa.gov/1fa2Id; scroll down to Postdoctoral Fellowship Application Biographical Sketch sample.

A Practical Guide to Writing a Ruth L. Kirschstein NRSA Grant by Andrew Hollenbach (2013; Academic Press) is an excellent step-by-step resource for writing any postdoctoral fellowship applications, not just those that target the NIH.

U.S. Government Fellowships

NIH Postdoctoral Fellowships
- K-Type awards, which typically require that the individual have a faculty appointment. See https://researchtraining.nih.gov/programs/career-development, and use Awardee Role filter to select just those awards for postdoctoral fellows.

National Science Foundation Postdoctoral Fellowships
www.nsf.gov/funding/education.jsp?fund_type=3

Army Research Laboratory Postdoctoral Fellowships
www.orau.org/arlpostdocfellowship

U.S. Food and Drug Administration Commissioner’s Postdoctoral Fellowship Program
http://1.usa.gov/1wHu0yJ
Three Things That Don’t Belong Together

The federal budget, the Confederate flag controversy, and the Planned Parenthood controversy. You wouldn’t think these three things are connected, but in Washington, DC, anything is possible.

Congress had been making surprisingly steady progress toward approving the 12 appropriations bills that will ultimately make up the FY16 federal budget. While that work was quietly underway, the news media were focussing on the controversy surrounding the flying of the Confederate battle flag on the grounds of the South Carolina statehouse.

The two issues came together when the House of Representatives began debate on the bill to fund the Department of Interior, the Environmental Protection Agency, the U.S. Forest Service, and some other federal agencies. After quietly approving amendments that would prohibit the flying of the Confederate flag on federal lands, House Republicans tried to undo the amendments, which led to an anything-but-quiet debate on the House floor between Republicans and Democrats, who saw the opportunity to make political hay at the expense of the House majority party. The political dustup forced the House leadership to put a stop to debate on all appropriations bills, including the bill that funds the U.S. National Institutes of Health.

House Democrats later tried to cut a deal with the Republicans, proposing to refrain from offering Confederate flag amendments to future funding bills if the House leadership would allow a vote to make changes to the Voting Rights Act of 1965 on the House floor. In 2013 the Supreme Court invalidated several provisions of the Voting Rights Act, and many in Congress want to make repairs to the law.

Just as that controversy was dying down, recorded conversations with Planned Parenthood employees talking about the sale of fetal tissue emerged. Conservatives in Congress, intent on removing federal funds for Planned Parenthood, are now expressing a willingness to hold up the federal budget process, including shutting down the federal government, unless Congress removes funding for the group.

—Kevin M. Wilson

Budget Guidelines Make Fundamental Biological Discovery a Priority

It is a quirk of the federal budget process that before federal agencies know when or even if Congress will pass a budget for FY16, they are already beginning to put together their FY17 budget requests.

This process began in July when John Holdren, Director of the Office of Science and Technology Policy, and Shaun Donovan, Director of the Office of Management and Budget, sent a memo to the heads of federal agencies and departments outlining the President’s science and technology priorities. Ironically, the 2017 federal budget will be the last budget President Obama proposes to Congress and will not actually be implemented until his successor takes office.

In the memo, Holdren outlines nine research and development priorities, including global climate change, clean energy, and innovation in life sciences, biology, and neuroscience. In the life sciences section, agencies are instructed to “give priority to programs that support fundamental biological discovery research that could generate unexpected, high-impact scientific and technological advances in health, energy, and food security, particularly in the
NSF Forced to Defend Itself, Again

Rep. Lamar Smith (R-TX) has introduced another bill altering the grant approval system at the National Science Foundation (NSF). Rep. Smith, chair of the House Science, Space, and Technology Committee, has introduced two other bills in recent years that make significant changes to the grant review process at the NSF (see April 2014 ASCB Newsletter, p. 1).

His newest bill, the “Scientific Research in the National Interest Act,” takes a section from the America COMPETES Act (see May 2015 ASCB Newsletter, p. 13), already passed by the House of Representatives. The new bill requires that the NSF publish a statement with each grant it funds stating that the grant is 1) worthy of federal funding and 2) in the national interest.

In this latest bill, “national interest” is defined as having the potential to achieve
- Increased economic competitiveness for the United States;
- Advancement of the health and welfare of the American public;
- Development of a globally competitive U.S. science, technology, engineering, and mathematics workforce;
- Increased public understanding of science and engagement with science and technology;
- Increased partnerships between academia and industry in the United States;
- Support for national defense for the United States; or
- Promotion of the progress of science for the United States.

Along with introducing bills to make structural changes to the NSF, the House Science, Space, and Technology Committee has sent investigators to examine the internal peer reviewer notes from grants the committee considers questionable.

The Senate is currently reviewing the America COMPETES Act, which passed the House earlier this year. It is unclear if either bill will be approved by both houses of Congress before Congress completes its work this year.

—Kevin M. Wilson

ASCBB Member Benefit: Publicize Your Book

Are you publishing a book? If so, let ASCB know! Send the title, publisher, ISBN information, and a thumbnail (300 dpi) of the cover. We’ll include it in the ASCB Newsletter. This publicity is available only to ASCB members. Please send submissions to Thea Clarke at tclarke@ascb.org.
Win $500 in ASCB’s New Share Your Science Video Contest

COMPASS wants to increase basic science awareness and improve public attitudes about research funding through short, entertaining videos. Win $500 for best video. Open to all members.

Enter by October 15, 2015

For more information visit: ascb.org/share-science-contest
Diversity in the Biomedical Workforce: The SCOTUS Decision and the Implications for LGBTQ Scientists

On June 26, the Supreme Court of the United States (SCOTUS) delivered a historic civil rights decision. It is now the law of the land that same-sex couples have the right to marry. This decision puts the United States into a select group with 21 other countries in which same-sex marriage or civil unions are allowed. The SCOTUS decision has implications related to individual liberties and moral issues, but also in business and the workforce.

Benefits for LGBTQ Scientists

What does the Supreme Court’s decision bring to the scientific workforce and to LGBTQ scientists in general? A first clear positive effect will be the right to file for benefits for partners any place in the country, since marriage is now available to all couples. Thus it is expected that all U.S. research institutions will have to recognize same-sex married couples, providing employees with spousal benefits just as they do for married heterosexuals.

This is happening right now in several states. For instance, the University of Georgia system, which previously followed state rules denying benefits for gay couples, included same-sex partners on its benefit programs right after the SCOTUS decision on June 26. Similar actions occurred in Texas, Oklahoma, and Florida, which previously had rulings against such benefits. The fact that LGBTQ scientists can provide benefits (such as health insurance) to their spouses will probably allow gay scientists to apply to grad schools or for jobs and/or postdoctoral positions in places they would not have considered before June 26.

Challenges Remain

Despite the right to marriage being the law of the land, places can be more or less “welcoming” to openly gay scientists. Some universities do not include “sexual orientation” as part of their nondiscrimination statements. Instead, they use the phrase “other applicable status protected by law,” which may (or may not) include LGBTQ minorities. Prospective students, postdocs, and job seekers still need to closely examine university and research institution statements on diversity. These can tell you a lot about the environment you might find in your new workplace.

Private and religious academic institutions can still be difficult for openly gay scientists. Religious institutions may be able to claim First Amendment protection for discriminatory practices. Also a significant number of universities offer “diversity/minority awards” that do not include LGBTQ scientists. Some institutions do not even consider LGBTQ a minority.

Another problem is that some gay scientists fear prejudice from their peers during hiring and other selection processes, since not all scientists have the same socially progressive mentality. This seems to be a major reason why scientists don’t come out of the closet. We can’t deny the advances of the LGBTQ cause, but prejudice is still out there.

What should we do as LGBTQ advocates after Obergefell v. Hodges? First of all, make sure the law is being followed. If you are in an institution in a state that didn’t issue same-sex marriage benefits before June 26, check whether it changed its policies regarding same-
sex spouses. Another important action is to look for diversity employment statements. Does your institution make clear that there is no official bias based on sexual orientation and identity?

**A Complex Diversity Puzzle**

LGBTQ is a minority, invisible and present, but still a minority. Therefore we are a piece of the complex diversity puzzle. And like members of all minorities, LGBTQ individuals need institutional protection and guidance to avoid discrimination. The ASCB is doing its part as a scientific society that advocates a diverse workforce. Last year, a LGBTQ diversity taskforce was approved by Council, and it will be implemented soon. Also, the LGBTQ Diversity Session at last year’s Annual Meeting was a success with a great blend of cell biology and career advice. This year’s speaker will be Matthew Welch, Professor of Cell and Developmental Biology at the University of California, Berkeley. So please join us in San Diego for this event!

Minorities are a very important part of our society. For successful inclusion, we need to establish equality in law and policy, showcase examples of professional/personal success, and provide guidance. It is always good to see that we are heading in the right direction, and June 26 was a great day. We are moving forward in science and in society.

— Bruno da Rocha-Azevedo, Federal University of Rio de Janeiro

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**Search Open for Graduate Student Co-Chair of the Committee for Postdocs and Students**

ASCB is searching for a graduate student Co-Chair of the Committee for Postdocs and Students (COMPASS; www.ascb.org/about-compass), ASCB’s freshest committee. The graduate student Co-Chair, together with the postdoc Co-Chair, will serve in a leadership role for a one-year term, which can be renewed for an additional year, for a maximum term of two years total. The ideal attributes of a COMPASS graduate student Co-Chair are:

- Strong scientific leadership skills, interest, and time to serve the mission of the Society and COMPASS
- A demonstrated passion for addressing graduate student and postdoc issues
- Excellent communication, speaking, and writing skills

The goals of COMPASS are to:

- Create programming and resources that directly address the training and career development needs of graduate students and postdocs
- Promote opportunities for science advocacy and outreach that facilitate active engagement between young scientists and society
- Increase the visibility of student and postdoc perspectives within the ASCB by authoring content for society publications and the ASCB website
- Foster community and connection between young scientist members of ASCB

Applications will be reviewed and approved by the ASCB Council. ASCB members interested in this unique leadership opportunity (or in nominating someone else) are asked to provide the following:

- Name of applicant
- Title, affiliation of applicant
- If a self-nomination, a one-page statement of why you want to be Co-Chair
  - If a nomination of someone else, a one-page statement by the nominator of why the person would be a good Co-Chair. The person should know he or she is being nominated.
- Applicant’s CV

Please submit applications or questions to COMPASScochairsearch@ascb.org by November 1, 2015.
**MBoC Offers New Brief Report Format**

*Molecular Biology of the Cell (MBoC)* has introduced a new Brief Report format to give authors another option in how they present their research. Brief Reports are short articles on findings that represent a conceptual advance for the field or that enable or stimulate progress in the field. “This is a format for publishing work that represents an important advance that can be communicated in a pithy piece,” explained *MBoC* Editor-in-Chief David Drubin. Brief Reports will be limited to 20,000 characters (exclusive of Materials and Methods and References), five display items (tables or figures) in the text, and four display items in supplementary material. The new format will also require a combined Results and Discussion section.

Visit [www.mbcpapers.org](http://www.mbcpapers.org) to submit a Brief Report or Article to *MBoC*.
Minorities Affairs Committee Workshops Enhance Career Development for Postdocs and Junior Faculty

The ASCB Minorities Affairs Committee (MAC) held its Tenth Annual Junior Faculty and Postdoctoral Fellows Career Development Workshop and its Second Annual Faculty Research and Education Development (FRED) Program Mentoring Workshop in Houston, TX. The MAC is committed to enhancing the professional development of minority scientists and students. In addition to hosting these career development programs, the MAC supports faculty at minority-serving institutions for collaborative research with a host scientist though the Visiting Professors Program.

MAC Tenth Annual Junior Faculty and Postdoctoral Fellows Career Development Workshop

The Career Development Workshop is designed for junior faculty and postdoctoral fellows who are interested in academic careers at research-intensive or teaching institutions. The workshop covers a variety of topics essential for a successful academic career including professional conduct, time management, mentorship, leadership, lab management, getting published, networking, collaborations, securing tenure, grantsmanship, and funding opportunities.

The workshop is a great opportunity for postdocs and early-career scientists to enhance their professional development and to plan for a successful academic career. It is also a fantastic networking opportunity because participants are able to meet and interact with the ASCB MAC members, program officers from funding agencies, guest speakers, and the other workshop participants. The response from the participants was overwhelmingly positive. (See box for comments from attendees.)

One important emphasis of the workshop was grant funding. Hinda Zlotnik, a program director in the National Institute of General Medical Sciences Center for Research Capacity Building ran a session on National Institutes of Health (NIH) grant opportunities. Luis Marky, a rotating program director in the Molecular Biophysics Cluster of the Division of Molecular and Cellular Biosciences at the National Science Foundation (NSF) ran a session on NSF grant opportunities. There was also a session on education grants and grantsmanship run by Franklin Carrero-Martínez, a program director.
What Some Attendees Thought about the MAC Workshop

“This meeting was loaded with pertinent information on how to efficiently navigate my postdoc while preparing to successfully obtain a tenure track faculty position. The meeting was structured in such a way that I was able to have personal, meaningful interactions with my peers who are on the same academic/career climb as I am, as well as junior and senior faculty in positions that I aspire to secure.”
—Cheryl L. Bell, Postdoctoral Fellow, University of Pittsburgh

“This workshop provides a roadmap to success in academia. What’s more, workshop participants become plugged into the ASCB network. Isolation is a danger in academia, particularly for faculty from underrepresented groups. The [workshop] is the remedy to academic isolation.”
—Sheila Davis, Assistant Research Professor, University College, University of Denver

“The ASCB 2015 junior faculty workshop experience was phenomenal. Many speakers presented professional topics with a twist of personal experiences embedded into the themes. The mentors and speakers were relatable and accessible…thus mentees could easily communicate and approach them at all times.”
—Wilfredo López-Ojeda, Assistant Professor of Medicine, University of Central Florida

“This was my first experience with the ASCB MAC program, and I wish I had done it sooner. The wealth of information provided to attendees was not only immense, but also very timely…I would recommend this workshop to any scientist who is just starting in a new career path.”
—Lynnsay A. Marsan, Postdoctoral Fellow, University of Texas at El Paso

“This workshop was a great opportunity to network with fellow minority scientists who are aspiring to move to the next level. I also got to network and hear real life experiences from established minority scientists who are successful in their work.”
—Boniface Mailu, Postdoctoral Scientist, Center for Infectious Disease Research

“Now that I am back in the lab, I am eager to implement all the new strategies that I learned!”
—Maria Radu, Postdoctoral Fellow, Fox Chase Cancer Center

in the Office of International and Integrative Activities at NSF.

Additional guest speakers at the workshop included Deborah Harmon Hines, Vice Provost and Professor at the University of Massachusetts Medical School; Steve Lee, the Graduate Diversity Officer for graduate students and postdocs in the STEM disciplines at the University of California, Davis; Rick McGee, Associate Dean for Faculty Professional Development and Professor of Medical Education at Northwestern University Feinberg School of Medicine; and Stephanie Herrera, Chief Operating and Development Officer at the Hispanic Heritage Foundation. Nine MAC members also presented sessions at the workshop.

The workshop was held at the University of Houston on July 16–18, 2015, and attended by 24 junior faculty members and postdoctoral fellows from a variety of institutions across the country. This workshop was sponsored by an NIH grant to the ASCB MAC.

Second Annual FRED Program Mentoring Workshop

The FRED program is designed to promote the competitive grant writing skills of junior faculty at minority-serving institutions by matching junior faculty with experienced mentors who are successful senior faculty at research-intensive institutions. The year-long structured mentoring program begins with the FRED Mentoring Workshop. Additional components of the FRED program include at least monthly communication between mentors and mentees, reciprocal visits by junior faculty and their mentors to give seminars at each other’s institutions, and a mock study section.
at the ASCB Annual Meeting to review mentee proposals.

Both junior faculty and their mentors attend the mentoring workshop that kicks off the year-long FRED program. The workshop has sessions on a variety of career development topics, including grant writing and funding opportunities. Junior faculty also have the opportunity to present their research and receive feedback on an outline of the project for which they will seek grant funding. This year, the FRED Mentoring Workshop had one day of joint programming with the Career Development Workshop to expand the networking opportunities for attendees of both workshops.

Applications for the third cohort of FRED mentees and mentors will be available in early 2016. The FRED program is sponsored by a National Science Foundation grant to the ASCB MAC.

Members of the 2015 Cohort of FRED Mentors and Mentees are:

- **Mentee:** Nathan Bowen, Clark Atlanta University  
  Mentor: Anita Corbett, Emory University School of Medicine
- **Mentee:** Jamaine Davis, Meharry Medical College  
  Mentor: Ian Wilson, The Scripps Research Institute
- **Mentee:** Hadiyah-Nicole Green, Tuskegee University  
  Mentor: Lalita Shvede-Samant, University of Alabama at Birmingham
- **Mentee:** Jessica Lucas, Santa Clara University  
  Mentor: David Ehrhardt, Carnegie Institution for Science
- **Mentee:** Jana Marcette, Harris-Stowe State University  
  Mentor: Melissa Harrington, Delaware State University
- **Mentee:** Alexis Rodriguez, Rutgers University-Newark  
  Mentor: Edward Hinchcliffe, University of Minnesota
- **Mentee:** Charles Spencer, University of Texas at El Paso  
  Mentor: Michelle Lennartz, Albany Medical College
- **Mentee:** Cecilia Zurita-Lopez, California State University, Los Angeles  
  Mentor: Mark Mamula, Yale University School of Medicine

**MAC Summer Visiting Professors Program**

The MAC was pleased to offer a second year of support to sponsor four scientists to do collaborative research with host scientists over the summer. The Visiting Professors Program offers research support for professors at minority-serving institutions to work in the laboratories of ASCB members at research-intensive institutions for 8–10 weeks during the summer. Visiting Professors are provided with a stipend, funds for research expenses, and travel expenses. The MAC Visiting Professors Program is supported by a Minority Access to Research Careers grant from the NIH and a grant from the Howard Hughes Medical Institute. The four Visiting Professors conducting a second year of
research with host scientists in 2015 are:

- Visiting Professor: **Paul Kim**, Grambling State University
  Host Scientist: **Michael Pagliassotti**, Colorado State University
- Visiting Professor: **Sylvia Lopez-Vetrone**, Whittier College
  Host Scientist: **Paul W. Sternberg**, California Institute of Technology
- Visiting Professor: **Melvenia Martin**, Grambling State University
  Host Scientist: **Mirit I. Aladjem**, National Cancer Institute, NIH
- Visiting Professor: **Mesia Moore Steed**, Winston Salem State University
  Host Scientist: **Sandra Murray**, University of Pittsburgh School of Medicine

—Desirée L. Salazar, Scientific Program Manager

**Comments from Two FRED Mentee-Mentor Pairs**

“Coming together face to face with my mentor, Dr. Anita Corbett from Emory University, and with the other mentors, mentees, and the MAC members for a few days of intentional mentoring was a career-affirming experience. …Dr. Leibowitz and the entire FRED/MAC team of mentors are to be commended.”

—**Nathan J. Bowen**, Assistant Professor of Biological Sciences, Clark Atlanta University

“I am delighted to be a 2015 FRED Mentor. On paper, I already had a mentoring relationship with my mentee, Nathan Bowen….However, the FRED program is helping us to formalize this mentoring relationship. Nothing is more critical than dedicated time to discuss attainable goals and plans for the future that is created by the FRED interaction.”

—**Anita H. Corbett**, Professor of Biochemistry, Emory University School of Medicine

“I learned a great deal and truly appreciate the organizers and mentors who participated not only in the planning but who also contributed insights and freely gave valuable advice during our discussions….Finally, thanks to the particular focus on funding agencies, I am more motivated to write proposals.”

—**Cecilia I. Zurita-Lopez**, Assistant Professor of Biochemistry, California State University, Los Angeles

“The FRED program allows new scientist/scholars the opportunity to learn important fundamentals in succeeding in academic research….Moreover, the FRED program also cultivates scientific collaborations among junior and senior investigators in ways that may not have otherwise developed.”

—**Mark J. Mamula**, Professor of Medicine, Yale University School of Medicine
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TOP STORIES from the ASCB Post

Serene Indifference, Data behind Bars, Few Ferns
Visit ascb.org/ascbpost for more.

Can Cultivating Serene Indifference Fix Issues in Research?
Martin Schwartz believes the answer to the reproducibility and ethics crisis in research is to embrace an attitude of serene indifference. Schwartz, professor at Yale University and ASCB member, contends that discoveries, not discoverers, are what really matter in science. Confusing the two is what is contributing in these hyper-competitive days to irreproducibility and outright fraud in science.

Unveiling the Data Hidden Behind Bar Graphs
Bars are great for karaoke, chocolate, prison, and salad—but in presenting research data, bar graphs should be used cautiously, says the Mayo Clinic’s Tracey Weissgerber. She tells ASCB Science Writer Christina Szalinski that important scientific information is being obscured by the way data are presented in most papers.

Plant Biology—Many Beetles, Few Ferns, Why?
Whether or not he was ever asked by an Anglican bishop for his thoughts on the nature of the Creator, the English evolutionary biologist J.B.S. Haldane’s response is legendary. The Creator, Haldane allegedly replied, seemed to have “an inordinate fondness for beetles.” But did He have a grudge against ferns? There are relatively few fern species, especially when compared with the riot of biodiversity displayed by angiosperms today. A new genomic discovery of a deep time “intergeneric hybridization event” might help explain the fern family’s slow “speciation clock.”

Upcoming Local Meetings

ASCB is pleased to provide funds for graduate students, postdocs, and community college instructors to organize one-day local meetings. Such meetings usually involve two or more institutions (within the United States or international), and topics can range from basic science to career development as long as there is clear relevance to the broadly defined field of cell biology.

The next deadline to apply for funds is September 30, 2015. Applicants must be or become members of the ASCB. For more information visit www.ascb.org and click on “Meetings.”

2015 Triangle Cytoskeleton Meeting
Research Triangle, NC
September 21, 2015

Bay Area Meeting on Lymphocyte Cell Biology
San Francisco, CA
October 12, 2015

Third Annual Cell Biology of Eukaryotic Pathogens Meeting
Clemson, SC
October 23, 2015

BioImaging of Living Systems—Single Cells to Whole Organisms
St. Lucia, Queensland, Australia
November 10, 2015

Bay Area Cilia Symposium
San Francisco, CA
January 14, 2016

Toronto Organelle Function and Dynamics (TOOFAD)
Toronto, ON, Canada
February 2016 (date TBD)

Non-Academic Careers for Life Scientists—Reach Out to Resources beyond Your Lab
Baltimore, MD
March 16, 2016
A complex of ZO-1 and the BAR-domain protein TOCA-1 regulates actin assembly at the tight junction
C. M. Van Itallie, A. J. Tietgens, E. Krystofiak, B. Kachar, and J. M. Anderson
An alternative splice in TOCA-1 targets it to tight junctions. Knock-out of TOCA-1 results in increased flux and decreased tight junction membrane dynamics. Ultrastructural analysis shows actin accumulation at the adherens junction. Identification of the ZO-1/TOCA-1 complex provides insights into tight junction barrier dependence on the dynamic nature of cell–cell contacts and junctional actin.
Mol. Biol. Cell 26 (15), 2769–2787

Where to Find Research Funding Opportunities
Check out ASCB’s new online resource for information and advice about funding sources: http://ascb.org/where-to-find-research-funding-opportunities.

The image shows a COS1 cell expressing an active version of the GTPase Rac1 (red) and a mutant version (E26K) of the cytoskeletal protein Coronin 1A (green). After fixation, the cell was stained with antibodies to cytokeratins (blue). Coronin 1A_E26K forms highly stable cytosolic filaments that cannot move to the membrane ruffles triggered by Rac1 in the periphery of the cell. As reported by Ojeda et al. (Mol. Biol. Cell 26, 2895–2912), these filaments are highly resistant to the action of actin-disrupting agents and cannot be stained with conventional cytoskeletal, cytokeratin, and microtubule markers. These structures are not observed in cells expressing wild-type Coronin 1A. The mutant protein is of interest because its expression is associated with the development of immunodeficiency in mice. (Image: Virginia Ojeda, Salamanca Cancer Research Center, Spain)
Cryopreserved human mammary epithelial cells were revived and stained for cytokeratin 18 (in red) to reveal the keratin-containing intermediate filaments found in the intracytoplasmic cytoskeleton of epithelial tissue, E-cadherin (in green) to visualize the calcium-dependent cell–cell adhesion glycoprotein, and DAPI (in blue) to label nuclei. This image (www.cellimagelibrary.org/images/48102) is by Natalie Prigozhina and is licensed under a Creative Commons Attribution License.

The Cell has now been accessed from 216 different countries, with Faroe Island being the latest to join us.

Want to get your cell images on the go? Haven't had a chance to download the Cell Library mobile app for iPhone and iPad? Just visit the App Store and search for “Cell Library.” It’s free.

Don’t forget, if you are applying for a grant soon and need a Data Management Plan (DMP) be sure to contact us before submitting your grant application so we can help with your DMP for your cellular images.

The Cell: An Image Library-CCDB (www.cellimagelibrary.org) is a freely accessible, easy-to-search, public repository of reviewed and annotated images, videos, and animations of cells. The Cell-CCDB was developed by ASCB under a Grand Opportunities grant from the National Institute of General Medical Sciences. It now resides at the National Center for Microscopy and Imaging Research Cell Centered Database (CCDB), which manages the Library under a perpetual license from ASCB.

—David Orloff

Volunteer to Review CVs

We are always looking for volunteers, including ASCB members in academia and industry, to help review cover letters, CVs, and resumes of young ASCB scientists. We will match you, and will only ask you to review two or three times a year. If you can help, please contact Thea Clarke at tclarke@ascb.org.
MEETINGS Calendar
A complete list of upcoming meetings can be found at ascb.org/global-meetings-calendar. No meetings have been added since the last issue of the Newsletter.

ASCB Annual Meetings
December 12–16, 2015. San Diego
December 3–7, 2016. San Francisco
December 2–6, 2017. Philadelphia
December 8–12, 2018. San Diego
November 18–20, 2019. Boston

MEMBER in the News
Jodi Nunnari, of the University of California, Davis, an ASCB member since 1998 who is now serving on the ASCB Council and the Public Policy Committee, has been named editor-in-chief of the Journal of Cell Biology.

BOOKS by Members

Managing Your Membership
Keep your profile up to date. Update your profile online to get information that is relevant specifically to you. Or, if you move, update your email or phone number. Visit ascb.org/myprofile.

Need to recover login info? Visit ascb.org/recover

Add ASCB to your safe sender list
Receive the ASCB resources, news, and information important to you. Ask your systems administrator to whitelist our domain “@ASCB.org”

What are you up to?
Did you get a postdoc? Win an award? Did you publish? Were you promoted? Are you now at another organization? Your colleagues at ASCB want to know… send news on your achievements to ascbinfo@ascb.org

We welcome your comments and suggestions at ascbinfo@ascb.org

Other ways to stay in touch
Facebook ASCBiology Twitter @ASCBiology LinkedIn ASCB
What can you do with MyASCB portal?

Introducing MyASCB portal, a seamless, easy-to-use tool for members to automatically renew dues and create a payment account for abstract submissions, optional subscriptions, and donations. Members can quickly update their information and interests—allowing ASCB to provide information relevant to their careers and scientific interests.

- **Create a Payment Account (NEW)**  
  If you wish, create an online payment account that will allow you to securely store your credit card information to auto renew your ASCB membership dues every year. We will send you notification when you will be charged. You can also use this account to pay for other ASCB expenses such as abstracts and donations.

- **Enroll in AutoPay (NEW)**  
  AutoPay is the easiest way to continue to support ASCB through annual dues renewal. Simply create a Payment Account and then select AutoPay to have your dues automatically charged to your credit card every January 1. We will notify you by email before charging your card.

- **Create Your Own Username/Password**  
  You now have the ability to set your own username and password.

- **Indicate Your Areas of Interest**  
  Provide us with your areas of interest, so we can provide you with relevant information throughout the year.

- **Register Your ORCID**  
  Make sure you receive the credit you deserve. Registering your ORCID will distinguish your research activities from those of others with similar names.

Visit www.ascb.org/myascb

Other ways to stay in touch  

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The ASCB is grateful to the following donors whose contributions between August 1, 2014, and July 31, 2015, support Society activities.

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ASCB Member Gifts
An Interloper?

Dear Labby,

I am a faculty member at a U.S. medical school with my primary appointment in a department of molecular pharmacology. I am also a member of an intramural drug development research institute at my institution. We recently recruited, to both entities, a stellar investigator whom we all knew already from his fine work and through encounters at many meetings over the years. But just when his decision was announced we also learned that he holds a sponsored research agreement (SRA) from a company and that this will come with him. The company, and this SRA, is focused on glycobiology. And therein is the concern I and some of my colleagues have. We are also working on glycobiology and have many novel ideas and have filed patents for ways in which our work might be the basis for improved immunological approaches to human disease. We are excited to welcome this new colleague but are worried that his connections to this company could be a conduit for our ideas, shared openly in our inter-lab conferences and in the hallways, to be carried back, either deliberately or inadvertently. Do you have any advice?

—Worried

Dear Worried,

This is an intriguing situation and you are right to express your concerns. A “best practices” standard that covers these circumstances has probably not been erected, so this is a very constructive case to ponder and try to create a sensible approach. Here goes.

Your new colleague’s transferred SRA will surely contain a confidential disclosure agreement (CDA) that binds him from disclosing to others outside the company (including you and your colleagues in the drug development institute) information resulting from the SRA-funded research. This is standard and appropriate. Given his SRA (plus perhaps he is also serving as a consultant to the company, which you didn’t specify), it would be entirely appropriate for your institution to ask him to sign a “reciprocal” CDA that restricts him from conveying to the company any information he acquires from being a member of your research institute or from being at your institution. It is likely he would not balk at this because his relationship with the company has probably already sensitized him to such conflicts. As a legal matter, your institution would be within its rights to demand this CDA, on the grounds that it is protection for intellectual property your institute may generate in the future, which would be owned by your institution.

As complexities at the biomedical academia–industry interface continue to arise and evolve, you are very wise to have anticipated this particular one, which is not an abstract scenario but a situation you and your colleagues are facing in real time. Labby hopes that the possible resolution suggested above will be helpful as you, your colleagues, and the institution seek to address this issue thoughtfully.

—Labby
Cell culture basics

The Gibco™ Cell Culture Basics handbook and videos are designed to ensure everyone can learn the essential techniques needed to culture cells.

Go to thermofisher.com/cellculturebasics to download the handbook and view the videos.

Visit Booth 613 at the 2015 ASCB Annual Meeting in San Diego
San Francisco

DORA
Declaration on Research Assessment

12,554 individual signatures
588 institutional signatures

What are you waiting for? Make your voice heard!

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Coming soon: How to apply DORA principles in Search Committee discussions