Roll-aboard suitcase in tow, the passenger in the red *chinoiserie* jacket was coming up the ramp to Terminal C in Washington Dulles International Airport at a determined rate when her eye was caught by a blaze of color on the wall. She stopped to study the image glowing on the wall-mounted light box. Then she read the label. It was an enormous blow-up of mouse cancer cells with actin labeled in green to show the cell–cell adhesion points. And it was

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**Michael P. Sheetz Named 2014 Porter Lecturer**

Michael P. Sheetz of Columbia University, who is Distinguished Professor and Founding Director of the Mechanobiology Institute at the National University of Singapore, will give the 33rd Annual Keith R. Porter Lecture at the 2014 ASCB/IFCB Meeting this December in Philadelphia.

Sheetz's research interests include cell motility, motor molecules, and integrin–cytoskeleton interactions. He has been credited with pioneering the fields of mechanobiology and biomechanics. Sheetz earned his bachelor's degree at Albion College in 1968, received his PhD in 1972 from the California Institute of Technology, became a professor of cell biology and physiology at the Washington University in St. Louis in 1985, and in 1990 became the William R. Kenan, Jr., Professor of Cell Biology at Columbia University in New York. Among the many honors Sheetz has received are the Albert Lasker Award for Basic Medical Research, the Wiley Prize in Biomedical Sciences, and the Massry Prize.

The Porter Lecture, named for Keith Porter, a legendary figure in electron microscopy and the driving force behind the formation of the ASCB in 1961, will be given December 7 at 6:45 pm at the Pennsylvania Convention Center in Philadelphia.

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—Cheryl Lehr
Join a new series of ASCB webinars on imaging technologies by top leaders in the field. During these highly interactive online journal clubs, cell biologists from around the world will be able to not only listen & ask questions, but also see what everyone else is saying, in real time. Not to be missed!

The webinars are free for everyone!

Register here: www.ascb.org/webinar

Here is the complete list of upcoming webinars:

**July 16, 2:00 pm EDT: Navigating the Cellular Landscape through Imaging**
Emerging visualization technologies are capturing processes at the level of whole organisms down to single molecules. Lippincott-Schwartz will discuss new fluorescence imaging techniques and the ways they are helping researchers navigate through the cell to unravel long-standing biological questions.

**Sept 17, 2:00 pm (EDT): Imaging Life at High Spatiotemporal Resolution**
The imaging of living systems involves inevitable tradeoffs between resolution, speed, non-invasiveness, and imaging depth. Betzig will describe new technologies that balance these tradeoffs and allow us to image molecules, living cells, or embryos either at nanometric resolution in 2D, at hundreds of planes/sec for hundreds of time points in 3D, or with optimal diffraction-limited resolution across whole organisms.

**Oct 17, 4:00 pm (EDT): Bringing Bioelectricity to Light**
The combination of optical perturbation and optical readout of membrane voltage opens the door to studies of electrophysiology in a huge variety of systems previously inaccessible to electrode-based measurements. Yet the application of optogenetic electrophysiology requires careful reconsideration of the fundamentals of bioelectricity. Cohen will cover fundamental aspects of bioelectricity and new tools for all-optical electrophysiology.

**Nov. 18, 2:00 pm (EST): Using Dynamic Intravital and Advanced Multiplex Static Ex Vivo Imaging to Visualize Immune System Function**
Germain will cover the application of intravital 2-photon microscopy and highly multiplexed ex vivo confocal imaging to the analysis of immune function in complex tissues, including intravital imaging experiments, major findings using the method, and future developments.

And in January—A fifth cutting-edge webinar presented by Hamamatsu scientists.
Date, topic, and speaker to be announced soon

SAVE THE DATES, register, and please let your colleagues know—thece webinars are for everyone in cell biology.
Nurturing Curiosity: ASCB’s Approaches to Education

by Stefano Bertuzzi

In our contemporary society, science has a significant presence in people's daily activities, and it informs how people experience and understand the world, themselves, and their health. Perhaps because of this, scientists are generally trusted and respected people in society. But if this is the case, why do we pay so little attention to science education? I just read a chilling statistic—in California about 16% of K–12 students have never had any hands-on experience in science classes. And this is California, arguably the world’s innovation hub!

Problem Solving Is Fun

We all recognize that the approach taken by a science teacher can easily make or break the future of a curious student in high school or in college. This was certainly my experience, when in a small town in Northern Italy I attended what was supposed to be the ultimate training for someone who liked to study: the liceo classico, which focused on Latin, ancient Greek, and all the wonderful humanities, which are particularly treasured in a country so rich in the arts.

In my high school curriculum we had two hours of math and two hours of science per week. That’s it. Math and science teachers had the lowest status in the unofficial pecking order among faculty because it was assumed that to train thought leaders and intellectuals a curriculum did not need to include much science.

A phenomenal science teacher, Giuseppina Silva, changed this stale situation, at least for many of her students. Whether it was chemistry, biology, or astronomy, Ms. Silva did not care at all about teaching prescribed notions or weird names (we already had our share in Greek class, after all). Instead she taught us problem solving. She focused on making us think and explore with our own eyes, with our hands, with our minds, and sometimes with our noses as well; all senses were called on deck during science class!

My introduction to Mendelian genetics came with hands-on experiments mating fruit flies with red eyes to those with white eyes—writing down what to expect, doing the experiment, and finally recording results and elaborating conclusions. This experience made such an impression on me that at night I literally dreamed of being a real scientist in a real lab. It was sheer fun, and I very quickly came to realize that science was the coolest thing on earth and that it was what I wanted to do in my life. I never for a moment regretted that decision.

Tragic Results of an Uninspiring System

Unfortunately, this teaching approach is not the standard in the United States (and is far from standard in Italy as well!). Instead, we have a teaching system based on mnemonic learning and acquisition of existing knowledge, which I view as the least interesting and motivating parts of science. I fear we generate in students an immune response to science even before they come in contact with the antigen! And the tragic results of this approach are demonstrated in the recent report by The Economist Intelligence Unit, called The Learning Curve,1 which analyzes data
for 50 countries around the world from many studies such as the Programme for International Student Assessment and Trends in International Mathematics and Science Studies. In essence this report consists of a sort of “poll of polls.”

The report points out that half (half!) of the economic growth in the past ten years in developed nations is directly attributable to the development of better skills as a result of improved education. Second, the report shows the continuing strong rise of Asian-Pacific countries and geographical areas such as Singapore, South Korea, Japan, and Hong Kong as dominant leaders in the quality of education. In this poll of polls the United States ranks fourteenth. While it is great to see emerging areas of the world so focused on the value of education, it is alarming, but not surprising, that the report reveals significant deficits in many European and North and South American countries, with Mexico and Brazil trailing in these rankings.

As President Obama has pointed out multiple times, the success of a nation depends on strengthening its role as the engine of discovery and innovation, because tomorrow’s leadership depends on how we educate our students today.

Taking Education Seriously

Part of the core mission of ASCB is to foster the best in science education, and we take this mission very seriously. The Education Committee under the leadership of plant biologist Sue Wick has developed several evidence-based initiatives that shape the education program of the ASCB Annual Meeting, together with innovative teacher mentoring programs that take place outside of the Annual Meeting.

ASCB is also the publisher of *CBE—Life Sciences Education (LSE)*. In the past year, we have formed an important editorial partnership with the Genetics Society of America (GSA) to strengthen and broaden *LSE*’s effectiveness, circulation, and visibility. Erin Dolan, recently appointed Executive Director of the Texas Institute for Discovery Education in Science at the University of Texas, Austin, is Editor-in-Chief of *LSE*, and together with a very strong editorial board she has positioned the journal as one of the leading scholarly publications in biology education and even science education more broadly.

Recently, Dolan convened a group of thought leaders in the field of science education to take a fresh look at the journal’s mission and strategies and identify what more could be done to ensure that educators around the country have a sound, peer-reviewed, high-quality evidence base they can use to improve their teaching and their students’ learning.

First of all, the group recognized the significant achievements of the publication and encouraged ASCB to develop further editorial partnerships similar to the one with GSA. Such partnerships help to ensure the financial stability of the journal and most of all give us a chance to join forces with sister organizations in support of science education, which screams for help.

Second, the group called for better dissemination of *LSE* articles by connecting with
universities’ public information officers when articles from their faculty are published. Such efforts will ensure that this type of research receives the attention it deserves.

Third, the group encouraged ASCB to develop a multipronged approach to disseminate evidence-based teaching. One strategy is to couple articles published in _LSE_ with relevant curriculum materials such as those available in Course Source. Another strategy might be to use the successful iBiology videos or other, ad hoc videos to disseminate findings and let educators know how to teach concepts and skills based on empirical evidence of what is effective. We need to make it easy for our busy teachers.

Finally, ASCB needs to think what partnerships could be developed with other organizations to disseminate the findings reported in _LSE_. _LSE_ needs to become, even more than it already is, the go-to place for learning how to teach, not only for the inner circle of teaching aficionados, but for those whose mission may be mostly research but who also teach college classes. Such researcher-teachers can benefit from the sort of *bundled* approach described above that will enable them to quickly gain insight on how to teach about a specific topic as well as why specific strategies work or not and for whom. Reaching this audience is essential. As one participant in the meeting said with regard to the journal’s reach, sometimes “the audience doesn’t know they should be the audience.”

The _LSE_ editorial board under Dolan’s leadership together with our capable staff, Education Director Thea Clarke and Publications Director Mark Leader, will help flesh out these ideas and find ways to implement them. In the meantime, the ASCB Council will also establish an education working group to explore opportunities to increase ASCB’s presence in the education arena, with particular attention to undergraduate education and especially to community colleges. Stay tuned, some exciting things are happening at ASCB on the education front.

**Footnotes**


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**Volunteer to Review CVs**

We are always looking for more volunteers, especially ASCB members in industry, to help review cover letters, CVs, and resumes online for young ASCB scientists. If you can help, please contact Thea Clarke at tclarke@ascb.org.
strangely beautiful. The passenger continued
slowly up the ramp, examining each of the 46
giant images displayed on the light boxes, from
Ebola virus to gecko lizard toe hairs to mitotic
chromosomes. This airline passenger was one
of the 1.25 million expected to pass through
the Gateway Gallery at Dulles during the six
months when Life: Magnified, a collaborative
project of the ASCB and the National Institute
of General Medical Sciences (NIGMS) of the
National Institutes of Health (NIH), will be on
display. Life:Magnified was made possible by the
Metropolitan Washington Airports Authority
with funding support from the Carl Zeiss
Company.

The exhibit’s official opening on Tuesday,
June 10, drew reporters and an array of top
science leaders including NIH Director
Francis Collins, NIGMS Director Jon Lorsch,
National Institute of Heart, Lung, and Blood
Institute Director Gary Gibbons, and NIH
Deputy Director for Intramural Research
Michael Gottesman. ASCB Executive Director
Stefano Bertuzzi and ASCB President Jennifer
Lippincott-Schwartz led the ASCB contingent.
The White House Office of Science &
Technology Policy sent Associate Director
(and Yale cell biologist and science education
reformer) Jo Handelsman.

The Life: Magnified display is inside the
TSA security perimeter, so without boarding
passes all the VIPs, staffers, and press had to
be escorted by Airports Authority personnel. It
was a full hands-up, shoes-off TSA screening
and then a ride on the crowded Dulles shuttle
train to Terminal C where the Life: Magnified
party tried to stay to one side as time-challenged
passengers raced by, desperate to catch their
planes. For them, cell biology was a blur.

For the ASCB and NIGMS organizers of
Life: Magnified, the results were spectacular.
After the Airports Authority gave the okay for
the project, the organizers rounded up more
than 600 submissions, winnowed that down to
46, and then transferred the winners as immense
high-resolution image files (one file was 10,000
pixels on a side) to a photo processing house
to be made into poster-sized transparencies.
Then came permissions, credits, captions, and
the building of a Life: Magnified site through
NIGMS. The lion’s share of the work was done
by Alisa Machalek of the Science Writing,
Editing and Education office at NIGMS and
Thea Clarke, Director of Communications and
Education for ASCB.

Collins was particularly taken by the back-lit
transparencies. “I had seen the pictures printed
out on paper and they were impressive enough
in that fashion,” he said. “But when you walk
down the concourse and see them displayed so
artfully back lit, it was almost like seeing some
of them in three dimensions.”

The juxtaposition of eye-popping scientific
images and airplane-bound travelers was on
the mind of ASCB’s Bertuzzi after the group
trooped back through TSA to a conference
room for a reception and remarks. “So what
are great art and great science doing out
here at an airport?” Bertuzzi asked. “For the
passengers who will stream by Life: Magnified

Hairs on a gecko lizard’s toes, allowing them to stick to walls. Dennis Kunkel, Dennis
Kunkel Microscopy, Inc.
in the coming months, this will be, at best, a pleasant interlude. But the ASCB and our partners have brought this exhibit out here for a very serious purpose.” Science, he said, suffers from a public image problem that is in some ways self-inflicted. An excess of jargon and stodgy science instruction in the schools leaves many Americans with the idea that scientists live by themselves on another planet. But said, Bertuzzi, “To counter that dangerous perception and to draw the public into our science, cell biology has a secret weapon—the beauty of the cell.” The Dulles images would exploit that secret weapon.

Bertuzzi observed that when someone stops to examine an image, others slow down to see what the person is gawking at. Bertuzzi urged scientists who fly through Dulles in the next six months to create small “gaper’s blocks” in the Life: Magnified exhibit. “You could help improve public education about the wonders—and the importance—of bioscience,” Bertuzzi declared.

For Lorsch, Life: Magnified was a rare opportunity to put art and science in a place where the public can see it, using the sheer beauty of the images to stop travelers in their tracks. “We especially hope to captivate the minds of young travelers,” said Lorsch. “A child walking through the airport this afternoon may be the person who in the future discovers the cure for some terrible disease.”

While serving as ASCB President this year, Lippincott-Schwartz’s day job is at the NIH Eunice Kennedy Shriver National Institute of Child Health and Human Development where her lab is a pioneer in the use of super-high resolution and live cell imaging to analyze the dynamic interactions of molecules in cells. She is working in an amazing era, Lippincott-Schwartz reported. “I can say that there has never been a more exciting time in microscopic imaging than the present.” But the microscopic world we take for granted is a relatively recent discovery in human history, she said. “This microscopic world has been carrying on around us for hundreds of millions of years and yet it was completely invisible to humans until the 17th century.” That’s when the English microscopist Robert Hooke gave us the word cell. “Our microscopic vision grew sharper and sharper until in the mid-20th century, when the powers of imaging technology exploded. In the hands of cell biologists like Keith Porter and George Palade, electron microscopy revealed another invisible world—the inner structure of the cell,” said Lippincott-Schwartz. Making what was invisible visible to the wider world is what this exhibit is all about.

Collins picked up on the reference to Hooke, quoting from Hooke’s first account of viewing well water: “By this means I examined the water… as if I had been looking upon a Sea, I saw infinite of small living Creatures swimming up and down in it, a thing indeed very wonderful to behold.” Science is an amazing adventure for researchers, said Collins. “It helps us too to stop for a moment and recognize just how awesome it is to be part of this experience.”

“Cells lining a mouse trachea. Eva Mutunga and Kate Klein, the University of the District of Columbia and the National Institute of Standards and Technology.”
And how far we’ve come, Collins added. “Imagine if Robert Hooke could see these.”

These images were made for scientific reasons, Collins said, to visualize mechanisms or structures for study. But many of these pictures also tell a story. Collins singled out an image from the exhibit by Eva Mutunga and Kate Klein from the University of the District of Columbia and National Institute of Standards and Technology that showed cells lining a mouse trachea. The fiber-like clumps of cilia are false-color labeled to stand out. “It’s just a beautiful image but also one that cries out for explanation,” said Collins. “What are those fiber-like structures and what do they do? What they do is to keep all sorts of particulate matter out of your lungs. They beat those bits of matter out of your lungs and also out of the lungs of mice too. There’s that story but again there’s a sense of wonder that it’s possible to uncover things at this scale. They were there all along that we didn’t know about them for hundreds of millions of years.”

Collins said the fact that 1.25 million people will walk through Life: Magnified in the next six months should be taken as “a great encouragement” by those who do bioscience. Here is our chance to put both the scientific importance and the sheer beauty of what we do before people, giving them a chance to glimpse things they haven’t seen before. “These are images of beauty that offer glimpses into an unseen world,” said Collins.

Life: Magnified will run through November at Washington Dulles International Airport. The Gateway Gallery inside the TSA secure zone is accessible to all Dulles passengers with the time to take the shuttle train to Terminal C and walk up the ramp. But all the ASCB and NIH-NIGMS Life: Magnified images are also accessible through the NIGMS site (www.nigms.nih.gov/Education/life-magnified/Pages/default.aspx). All are freely available for downloading in high-res versions for educational, news media, or research purposes provided that the source for each is credited.

—John Fleischman

Mana-Capelli to Receive MBoC Paper of the Year Award

Sebastian Mana-Capelli of the University of Massachusetts Medical School was named by the Molecular Biology of the Cell (MBoC) Editorial Board as recipient of the 23rd annual MBoC Paper of the Year Award. As a postdoc in Dannel McCollum’s lab, Mana-Capelli was first author of the article “Angiomotins link F-actin architecture to Hippo pathway signaling” (Mol. Biol. Cell 25, 1676–1685).

“Mechanical tension and actin stress can regulate cellular proliferation mediated by the Yap transcriptional regulator,” explains Benjamin Margolis of the University of Michigan Medical School, the MBoC Associate Editor who served as monitoring editor of the paper. “In this manuscript Mana-Capelli and coauthors define novel interactions between the actin binding angiomotin proteins and the Hippo signaling pathway in controlling nuclear Yap targeting and cellular proliferation.”

Mana-Capelli will present his research at a Minisymposium at the ASCB/IFCB Meeting in Philadelphia this December. The MBoC Paper of the Year is selected by the Editorial Board from among papers published in the journal each year between June and May that have a postdoc or student as the first author.

—W. Mark Leader
Fowlks to Receive Alberts Award

In recognition of his contributions to improve science education, especially his efforts to bring modern biology laboratory experiences to students and his steady, sustained work to model what it means to be a successful African American scientist, the ASCB has selected Edison R. Fowlks to receive the 2014 Bruce Alberts Award for Excellence in Science Education.

Fowlks earned his PhD the same year the Civil Rights Act became law and then was a postdoc at the University of California, Berkeley, from 1968–1970. Since the 1970s, Fowlks has worked steadily to bring hands-on learning to African American biology students. As his nominator, A. Malcolm Campbell, noted in an eloquent nomination letter, “I don’t know anyone who has been teaching science by having students DO science as long as Edison has. His passion to help students succeed has been burning brightly for over four decades!”

In 1988 Fowlks moved to Hampton University, a historically black university that began informally in 1861 to educate freed slaves. At Hampton, he continued his push to bring laboratory experiences to his students. He has since mentored many students who have earned their PhDs, including the current chair of the Biology Department at Hampton. Fowlks has served as the PI of Hampton’s Howard Hughes Medical Institute (HHMI) grants as well as an ongoing $3 million National Science Foundation (NSF) training grant.

Campbell met Fowlks at a Genome Consortium for Active Teaching (GCAT) DNA microarray workshop in 2004. According to Campbell, Fowlks was so energized by the workshop that he volunteered to be a co-PI on a grant proposal to the NSF to fund three years of workshops. Fowlks was a key organizer in that series of workshops, two of which were hosted at Morehouse College. He was also the PI on Hampton University’s HHMI and W.M. Keck grants that brought genomics and bioinformatics training to his campus. In 2012, when DNA microarray workshops were winding down, Fowlks enrolled in the GCAT Synthetic Biology workshop where he learned how to conduct research in that hot new biotechnology discipline. Forty-four years after he began teaching, Fowlks is still looking for the best ways to keep his students on the front edge of biology education, Campbell noted.

Campbell concluded, “Many people talk loudly about bringing diversity to science while Edison has been quietly doing just that. A back of the envelope calculation shows that Edison has taught approximately 8,400 African American science students.”

You can learn more about Fowlks’ personal story of becoming a biologist and educator in an iBiology segment at http://bit.ly/1lG1iNw.

Fowlks will accept the award at 3:15 pm on Sunday, December 7, at the 2014 ASCB/IFCB Meeting in Philadelphia.

—Thea Clarke

WICB Speaker Referral Service

Looking for a New Career Path? First, Articulate Your Professional Story

Most readers of this column have or soon will have a PhD in cell biology or a related discipline. Many of you, I’m guessing, are aiming to leave the traditional career path of postdoctoral fellow → academic principal investigator and look for a new and viable alternative. And you have probably already discovered the growing array of resources to help you identify a range of science-related professions to consider.1,2

If this resonates with you but you still haven’t figured out your next move, let me suggest that the hurdle may not be just a lack of knowledge about what your options are but also a lack of knowledge about yourself, specifically an inability to articulate, both to yourself and to others, what your natural strengths and interests are.

The aim of this article is to help you work on your career move by doing some self-assessment based on the experiences of real cell biologists. I recently explored a very well-thought-out professional self-assessment called Strengthsfinder,3 which was assembled by the Gallup Poll people and is based on lots of data they collected. I liked Strengthsfinder but thought it was too generic and wasn’t relevant enough to the experience of highly trained specialists such as experimental research scientists/scholars. So I developed the Science Interest & Aptitude Self-Assessment questionnaire (also known as the ScienSelfie). I did this in my role as career consultant/coach to life scientists, one of the several hats I wear.

If you choose to answer the ScienSelfie questionnaire below, you can use those answers to help narrow (or broaden) the selection of career paths you want to explore. In addition, you can use what you learn via this exercise to help develop new resumes that are organized in ways that best present your strengths. In other words, use your answers to tell your story.

### ScienSelfie: Approaches to Biomedical Research as Exemplified by “Different” Types

The ScienSelfie assessment tool asks different questions of different types of researchers. Your type(s) is determined by the kind of research topic you prefer and the approach you like to take. To use ScienSelfie, select the types below that best describe you. But note that ScienSelfie is not a black-or-white type of questionnaire. There is overlap between categories, because that’s the way real life is. And my list of types is far from complete. I encourage you to expand it with types relevant to your own strengths, talents, and interests.

It is important that as you take the survey you don’t just think your answers; write them. The process of visualizing those thoughts and then recording them helps you brainstorm with yourself, and this self-assessment is meant as a brainstorming activity to help you articulate your own professional story.

#### The Hypothesizer

You do research in which you make predictions and then test to see if those predictions are correct. For example, you may be testing the hypothesis that a certain biochemical pathway is essential for the decision of neural stem cells to become glia or neurons. Ask yourself these questions about your research:

- Do I typically get the expected outcome in the experiments I set up? When I get an unexpected outcome, what actions have I taken?
- Do I feel stymied by the technical complexity of just setting up the experiment and getting it to “work right”?
- What’s the part I like best about this type of work?
- What’s the most frustrating part of doing this sort of hypothesis-testing research?
What resource (written or human) might I turn to help me get beyond this frustration, to solve the problem so that I can move on?

The Explorer. You do the type of studies in which you learn about a biological/pathological system by comparing two or more conditions in an unbiased way, perhaps by knocking out a gene and assaying for newly made proteins or mRNAs in the same cells under different conditions. Now ask yourself the following questions:

- Have I detected differences between the experimental and control groups yet? If not, do I have a predefined stopping point?
- Am I able to independently replicate the experiment and the results?
- During the conduct of these studies, have I been learning about the tools I am using, to understand the strengths and limitations of the assay systems themselves?
- Would I like to have assay systems that worked better?
- What resource (written or human) might I turn to for help in learning about the limits of the assay systems?

The Inventor. You see problems/limitations imposed by current tools and aim to build better tools, such as new software that can make existing databases more interoperable or an antibody that gives a stronger, cleaner result. Or you see a new use for old tools, like the current pioneers of synthetic biology. Ask yourself the following questions:

- Can I carry my plan to completion in my current setting or would I be better served by doing it elsewhere?
- Have I identified all the possible beneficiaries of my new development and am I making sure that I inform them of the new assay/device/application?
- What more must I do before I see if someone else can use the assay/device/application?

The Ponderer. You would rather think, and maybe talk, and maybe delegate and/or write, than do the work itself. Your analytical strengths and opinions outweigh your efforts at the bench. Ask yourself the following questions:

- Am I thinking/talking/delegating more than doing because I find the bench work
  - Physically taxing, preventing me from getting believable and satisfying results, irrespective of the outcome
  - Boring: Even though I can execute experiments well, I don't care about the answer because I don't find them (or the question) very interesting
  - Difficult to do, given the available resources
- How can I show progress for all the thinking/talking/delegating that I am doing?

The Interpreter/Communicator. You would rather teach, opine, or translate someone else's work than do research yourself. Ask yourself the same questions the Ponderer asked. And also ask:

- Do I have a preferred audience? Other life scientists? Other scientists? Adults, young and/or old? Kids?
- Do I have a preferred medium (oral, written, visual, or some combination)?
- Do I get and take the opportunities to discuss my work at regular meetings (e.g., with the PI and/or at lab meetings)?
- Do I take opportunities to present my work at conferences?
- Can I effectively communicate my work to people outside my field?
- What aspect of communicating my work do I find satisfying? Challenging? Off-putting?

Questions for all. Readers of all types should answer these questions:

- Do I prefer working alone, with others, or a mix?
- Do I participate in peer learning, where nonexperts collectively educate themselves about a topic, e.g., finding ways to visualize data or write new code or helping each other with presentations or proposals?
- Do I care more about the big picture issues than the experimental details?
- What resources should I be tapping to help me overcome my weaknesses?
- Might I be suited better for work that rebalances my time, i.e., a profession that allows me to spend fewer long hours in isolation and gives me some free time at night and on weekends?
- What resources should I be tapping to help me develop my strengths?
How to Use Your New Professional Story

Now use what you’ve written — this new professional story — to develop a couple of different versions of your resume. (A presentation by Laura Malisheski of Harvard University offers information about resumes for academic scientists and provides several examples.) Then use your draft resumes with the goal of arranging informational interviews, i.e., interviews in which you can gather first-hand information about the kinds of jobs that intrigue you. (The University of California, San Francisco Office of Career and Professional Development offers an excellent informational interview template.)

To help you find potential candidates for informational interviews, discuss your resumes with colleagues and mentors. Discuss them also with resource people in your institution (e.g., in the graduate school and postdoctoral offices) and in professional societies such as ASCB and the National Postdoctoral Association. Also use online resources such as LinkedIn, searching on key words, to find people in jobs that sound like they might play to your natural talents, and request informational interviews from them. In other words, use your current story to help you find the next phase of your career.

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

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2Naturejobs Career Expo: www.nature.com/naturejobs/science/career-expo.
3www.gallupstrengthscenter.com/?gclid=CMjR35vV4L4CFZSMMgodYjEACQ.
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Notes

This article is based on an invited presentation for the 2013 Ohio State University College of Medicine’s Biomedical Sciences Graduate Program Annual Retreat. Information about Beth Schachter Consulting and Still Point Coaching & Consulting can be found at www.bethschachterconsulting.com, www.stillpointcoaching.com, and www.linkedin.com/in/drbethie and by contacting Beth Schachter at drbethie@rcn.com.
May 30th began as a quiet day on Capitol Hill. Members of the Senate were home for the week meeting with constituent groups. The House of Representatives had been in session until almost 2:00 am the night before voting on funding for the Departments of Commerce and Justice and other agencies, including the National Science Foundation. And then members of the ASCB Council and leadership arrived.

After two days of meeting to discuss ASCB business at the spring Council meeting, 14 members stayed on for a full day of meetings on the Hill. When it was all over, they had met with 21 congressional offices from all over the United States. Along with meeting a number of House and Senate staff members, the ASCB contingent met with Representatives Joe Crowley (D-NY), Derek Kilmer (D-WA), Beto O’Rourke (D-TX), Adam Smith (D-WA), and Todd Young (R-IN).

Executive Director Stefano Bertuzzi; ASCB Treasurer Kathy Green; Councilors Sue Biggsins, A. Malcolm Campbell, Marty Chalfie, Ruth Lehmann, Laura Machesky, Jodi Nunnari, Mark Peifer, and Claire Walczak; Minorities Affairs Committee Chair Renato Aguilera; Public Policy Committee Chair Connie Lee; COMPASS Co-Chair Jessica Polka; and Education Committee Chair Sue Wick made up the ASCB delegation.

The ASCB members were met with overwhelming enthusiasm from members of Congress and their staffs, but they also received acknowledgments that the current federal budget will not allow Congress to match that enthusiasm with money. Discussion topics included the exciting research being done in biology labs around the country, the difficulties of conducting that research because of shrinking federal funding, the challenges facing the next generation of scientists, and the limits Congress has unintentionally placed on the ability of investigators who work for the federal government to travel to and participate in scientific meetings.

—Kevin M. Wilson

Federal Science Budget Starts to Take Shape

At first glance, it looks like Congress is as unproductive and acrimonious as ever. However, away from the reporters, TV lights, and press releases, some progress is being made on important issues, including the FY15 federal budget.

The budget for the National Science Foundation (NSF) has already been approved by the House of Representatives. The House budget bill provides $7.4 billion for the NSF for FY15, which is $232.3 million (3%) more than the current funding amount. The Senate’s
version of the NSF budget provides $7.25 billion, $83 million (1.2%) more than current funding.

The Senate has not officially released its budget for the U.S. National Institutes of Health (NIH), but the Senate Appropriations Committee is expected to provide the NIH with a budget of $30.45 billion. That amount would be $605 million (1.9%) above the NIH’s FY14 budget. The National Institute of General Medical Sciences budget is expected to be $2.4 billion for FY15, $45.167 million (1.8%) more than FY14. The House has yet to make decisions on its budget for the NIH.

In all likelihood, these funding levels will not change as the budget process continues. The difficult question is when or if they will become law.

—Kevin M. Wilson

How Much Does a Neuron Cost?

According to a U.S. National Institutes of Health (NIH) working group, a neuron costs five cents.

ASCB member Cori Bargmann serves as the co-chair of the Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative working group that has recently outlined a 10-year plan to achieve the goal of mapping the human brain.

The project was announced by President Obama on April 2, 2013, at a White House event. The plan proposed by Bargmann was presented at the spring meeting of the NIH’s Advisory Committee to the Director.

The proposal outlines a two-phased plan over 10 to 12 years. The first phase will focus on the development of new tools, refinement of existing tools, and improvement of recently invented ones. In the second phase, the project will continue to support technology development but turn its focus to investigation of how the brain works.

After presenting an exciting plan of research and technological development, Bargmann left the difficult part for the end. The working group estimates the price tag for the plan to be $300–$500 million per year or $4.5 billion over the life of the project. This would be in addition to any funding for the rest of the NIH. In a tweet about the report, NIH Director Francis Collins said, “86 billion Neurons take note: I’ve accepted a scientific vision for #BRAINI that will transform neuroscience….”

To read the complete report, go to www.nih.gov/science/brain/2025.

—Kevin M. Wilson

New HHS Secretary Approved

The U.S. Senate has approved the nomination of Sylvia Mathews Burwell to be Secretary of the U.S. Department of Health & Human Services (HHS), the parent agency of the U.S. National Institutes of Health. Notably, the Senate confirmed her nomination with almost no rancor and with relatively stunning speed.

Talking heads in Washington had expected her nomination to be a platform for continued criticism of the Affordable Care Act, often referred to as Obamacare.

Before being nominated by President Obama to be HHS Secretary, Burwell was the Director of the Office of Management and Budget (OMB), which is responsible for preparing the President’s annual budget proposal and for monitoring the fiscal activities of the various federal agencies.

Before joining OMB, Burwell was first the President of the Global Development Program at the Bill & Melinda Gates Foundation and then President of the Walmart Foundation.

—Kevin M. Wilson
Microbes, Bubbles, and Poop: The Wonders of Microscopic Life in the Eyes of Children

The USA Science and Engineering Festival is more than a science fair on steroids; it is a whole different level of science festival. Think of Comic-Con, with all the costumes, celebrities only nerds know about, and random off-the-charts weirdos, then increase the level of geekiness 10-fold and the number of people by three. Yep, that's about right: a gigantic gathering of people experiencing science and loving it!

I have to admit, I didn't know what to expect when I volunteered to represent the ASCB at the festival, which took place in Washington, DC, in April. I knew it was supposed to be the biggest science festival in the world, but I never imagined it was going to be 325,000 people big. Honestly, I can't even guess how many people stopped at our booth. All I can say is that we spent two days, nine hours each day, talking non-stop and playing with wonderful portable microscopes called CellScopes.1

With the goal of bringing cell biology to the public, we set up four CellScopes and brought a bunch of unicellular and simple multicellular organisms for people to look at. We chose fresh-water microorganisms because they were easy to keep for two days in a “lab” that consisted of three tables, two chairs, and no lab equipment besides the microscopes and plastic slides. Distilled water was brought in a sports bottle (thanks Christina!), and used coffee cups were recycled into improvised waste flasks.

In contrast to the simplicity of our setup, the response we got from fairgoers was deliciously complex. From the three-year-old who was fascinated by the bubbles trapped in the microscope slide rather than by the microorganisms swimming in it, to the high school biology teacher who taught me that Volvox colonies have specialized germ cells, I found each interaction interesting and rewarding. There were funny moments: My colleague Pinar Gurel looking at a brown planarian with a boy who was excitedly yelling Reprinted from the COMPASS blog, which is moderated by the ASCB Committee for Postdocs and Students. To view more blog content or contact COMPASS, visit http://ascb.org/ascbpost.
that it was a piece of poop. Adrenaline rushes: A kid just grabbed the plastic slide and put it in his mouth. What do I do? Moments of awe: Many high school students and adults correctly remembering the names and characteristics of the microorganisms from their science classes (kudos to all science teachers, you are doing a great job!). And true eureka moments: The priceless expressions of hundreds of kids and adults discovering for the first time that a drop of water can hold so much life that is invisible to the naked human eye.

Of course there were also a few annoying moments: Adults spoiling the experience for their children by quizzing them like it was a test, or the random philosophical person wanting to discuss the purpose of microorganisms in the grand scheme of intelligent design. But these were very few and far between. For the most part everyone was pleasant, genuinely curious, and excited about the opportunity to experience microscopy in a new way. And by the way, to the awesome people in Dan Fletcher’s lab\(^2\): Thank you so much for making the CellScopes. They are truly amazing! Now, can you make some more? Every single person who used them wants one, and I am first on your list.

For my part, I’m glad I volunteered. There’s nothing like seeing the wide eyes of wonder and the gasps of realization to remind me why I do science and why I have a passion for sharing it with others. After this weekend, I feel enthusiastic, focused, and re-energized, even if my feet still hurt from standing so long!

—Laura Diaz-Martinez, University of Texas Southwestern Medical Center

Footnotes
1http://cellscope.berkeley.edu.
2http://fletchlab.berkeley.edu/scope.
Office Hours with EdComm

Regardless of our current role in the academe, education—for us and for our students—is central to our identity as scientists. With that in mind, the ASCB Education Committee (EdComm) is pleased to launch Office Hours with EdComm, a new column addressing broad issues in education, ranging from career choice to curriculum development to incorporating technology into your lectures. EdComm Members and Associates look forward to answering your questions; please direct them to DearEdComm@ascb.org.

Paths to a Career in Secondary Education

Dear EdComm,

I finish my dissertation next year and I am trying to forge my next steps. With the support of my advisor, I am discussing postdoctoral options with several labs, and I have received positive feedback from a few PIs. The only problem is that my heart isn’t in it, and I don’t think I want to do bench research anymore! I have been working as a teaching assistant with students in the introductory cell biology course as well as a seminar for majors, and I would love to continue teaching. My former undergraduate lab partner is a high school science teacher. Her career sounds enjoyable, but I’m worried that if I try to do this, everyone will think I’m a failure. Has it been a waste of my time earning a PhD if I end up going that route? Also, would a school even hire me? What can I do?

—Secondary Options

Dear Secondary Options,

First, you are most certainly not a failure! Your accomplishments to date have only served to make you a viable candidate for a myriad of careers. Jessica Polka’s recent COMPASS blog post on outcomes for biology PhDs may be of interest to you, in particular, the observation that fewer than 8% of students entering a biology PhD program will ultimately become tenure track faculty.\(^1\) Although your graduate work can feel like a “one size fits all” proposition, nothing could be further from the truth. You have cultivated skills that many different types of employers desire while discovering your own academic and personal interests.

To that end, your interest in teaching is hardly obscure. Indeed your (likely required) teaching assistant assignments have laid the groundwork for this. A transition to secondary school teaching may seem daunting, but consider this: The first-year students you worked with in introductory cell biology are only a year or two older than the students you may work with in high school. As well, you are, by definition, highly qualified in your discipline and in your ability to quickly research and understand novel information. When you frame it this way, explaining cell theory to 15-year-olds is no big deal!

That said, teaching at the secondary level comes with its own unique challenges and requires the development of its own skill set. Expect to lose some autonomy on specific topics that you teach, and realize that the experience levels of your students may limit what you can discuss. In addition, you will not be too successful simply standing in front of a room and lecturing, so if that is your current comfort level, start developing new skills now. There are many resources for effective ways to teach—reach out to your high school teaching friend for advice, or peruse CBE—Life Sciences Education\(^2\) for ideas. Ask around. Many universities have programs to help graduate students, postdocs, and faculty improve their teaching. Try to gain as much experience as you can in the next year.

Practically speaking, there is no single path to a career in secondary education. Jobs in public schools are dependent on state rules and regulations, and you’ll need to do your own research to find out what your state requires. An easier path for many PhDs is through independent schools, which are private schools that operate under their own governing body. This affords them slightly more flexibility to attract teachers with PhDs (and often to help them develop their teaching skills).\(^3\) Regardless of the direction you take, rest assured that your knowledge and experiences will benefit you as you take your next steps. And if you do choose to pursue secondary education, you will find it to be a rewarding and interesting path!

—Daniel J. Goduti (EdComm Associate), Culver Academies

Footnotes

**the 2014 ascb / ifcb meeting**

December 6-10, 2014 | Jennifer Lippincott-Schwartz, President | Wallace Marshall, Program Chair | Michael Marks, Local Organizer

**SYMPOSIA**

**Self Organization and the Origin of Life**
- **Erik Karsenti**, European Molecular Biology Laboratory, Heidelberg, Germany
- **Steven McKnight**, University of Texas Southwestern Medical Center
- **Petra Schwille**, Max Planck Instituté of Biochemistry, Martinsried, Germany

**Cells in Motion**
- **Patricia Bassereau**, Institut Curie, Paris, France
- **Clare Waterman**, National Heart, Lung, and Blood Institute/NIH

**Cell Structure and Signaling across Scales**
- **Eric Betzig**, Janelia Farm Research Campus/HHMI
- **Eva Nogales**, University of California, Berkeley/HHMI/LBNL
- **Jeff Lichtman**, Harvard University

**Machinery of the Cell**
- **Nobutaka Hirokawa**, University of Tokyo, Graduate School of Medicine, Japan
- **Satyajit "Jitu" Mayor**, National Centre for Biological Sciences, Tata Institute of Fundamental Research, Bangalore, India

**Life and Death in the Cell**
- **Andrea Ballabio**, Telethon Institute of Genetics and Medicine (TIGEM), Naples, Italy, and Baylor College of Medicine
- **Yoshinori Ohsumi**, Tokyo Institute of Technology
- **Richard Youle**, National Institute of Neurological Disorders and Stroke/NIH

**Membrane Trafficking**
- **Pietro DeCamilli**, Yale University School of Medicine
- **Michael Kozlov**, Tel Aviv University, Israel

**New Perspectives on the Nucleus**
- **Titia de Lange**, Rockefeller University
- **Clodagh O’Shea**, The Salk Institute for Biological Studies

**TRAVEL AWARDS**

- Childcare
- Junior Faculty
- Postdocs
- Undergraduate Students
- Graduate Students
- International Postdocs, and Students Living in Developing Countries

**Deadline: September 3**

**MINISYMPOSIA TOPICS**

**Cytoskeleton Organization, Mechanics, and Motor Transport** (3 sessions, 21 talks)
- **Renata Basto**, Institut Curie, Paris, France
- **Margaret Gardel**, University of Chicago
- **Bruce Goode**, Brandeis University
- **Marcel Janson**, Wageningen University, Netherlands
- **Jennifer L. Ross**, University of Massachusetts, Amherst
- **Kristen Verhey**, University of Michigan Medical School

**Membrane Traffic: Dynamics and Regulation** (3 sessions, 21 talks)
- **Arnaud Echard**, Institut Pasteur, Paris, France
- **Volker Haucke**, Leibniz-Institut für Molekulare Pharmakologie, Berlin, Germany
- **Cathy Jackson**, Institut Jacques Monod, CNRS, and University of Paris 7, Paris, France
- **Ludger Johannes**, Institut Curie, Paris, France
- **Elizabeth Miller**, Columbia University
- **Ben Nichols**, MRC Laboratory of Molecular Biology, Cambridge, UK

**Stem Cells, Tissues, and Organs: From ECM/Cell Junctions to Cell Fate Determination** (3 sessions, 21 talks)
- **Gerard Apodaca**, University of Pittsburgh
- **Guangshuo Ou**, Tsinghua University, Beijing, China
- **Jean E. Schwarzbauer**, Princeton University
- **Nan Tang**, National Institute of Biological Sciences, Beijing, China
- **Sachiko Tsukita**, Osaka University, Japan

**Cell Division and Cell Cycle Control** (2 sessions, 14 talks)
- **Fred Cross**, Rockefeller University
- **Sophie Dumont**, University of California, San Francisco
- **Amy Gladfelter**, Dartmouth College
- **Ahna Skop**, University of Wisconsin, Madison

**MEETING THREADS**

- Medicine
- Biophysics
- Professional Development
Cell Dysfunction in Cancer and Other Diseases (2 sessions, 14 talks)
Crislyn D’Souza-Schorey, University of Notre Dame
Peter Friedl, Radboud University Nijmegen, Netherlands, and The University of Texas MD Anderson Center, Houston
Michael Overholtzer, Memorial Sloan-Kettering Cancer Center
Valerie Weaver, University of California, San Francisco

Cell Signaling and Decision-Making (2 sessions, 14 talks)
Michael Dustin, The University of Oxford and Kennedy Institute of Rheumatology, Oxford, UK
Jay T. Groves, University of California, Berkeley/HHMI
Tobias Meyer, Stanford University School of Medicine
Kim Orth, University of Texas Southwestern Medical Center, Dallas

Nuclear Organization, Structure, and Dynamics (2 sessions, 14 talks)
Jason Brickner, Northwestern University
Yuh Min Chook, University of Texas Southwestern Medical Center, Dallas
Snezhana Oliferenko, King’s College London, UK
Christophe Zimmer, Institut Pasteur, Paris, France

Cell Motion and Mechanobiology (1 session, 7 talks)
Dennis Discher, University of Pennsylvania
Ewa Paluch, University College London, UK

Cell Organization and Polarity (1 session, 7 talks)
Matthieu Piel, Institut Curie, Paris, France
Rong Li, Stowers Institute

New Ways for Probing and Interrogating Cells (1 session, 7 talks)
Jean-Christophe Olivo-Marin, Institut Pasteur, Paris, France
Manuel Thery, French Atomic Energy Research Center (CEA), Paris, France

Optical Microscopy and Superresolution Imaging (1 session, 7 talks)
Joerg Bewersdorf, Yale University
Katharina Gaus, The University of New South Wales, Sydney, Australia

Pathogens and Parasites (1 session, 7 talks)
Matthias Machner, Eunice Kennedy Shriver National Institute of Child Health and Human Development/NIH
Naomi Morrissette, University of California, Irvine

Synthetic and Chemical Biology: Reconstituting and Probing Cells (1 session, 7 talks)
Daniel A. Fletcher, University of California, Berkeley
Kinneret Keren, Technion, Israel Institute of Technology, Haifa, Israel

KEYNOTE SPEAKERS
spanning the origin of life to the cosmos

Steven W. Squyres
Cornell University
Robert M. Hazen
Carnegie Institution of Science and Deep Carbon Observatory

Organelle Dynamics and Crosstalk in Health and Disease (2 sessions, 14 talks)
Madan Rao, National Centre for Biological Sciences, Tata Institute of Fundamental Research, India
Sharon A. Tooze, Cancer Research UK, London Research Institute
Ida J. van der Klei, University of Groningen, Netherlands
Roberto Zoncu, University of California, Berkeley

AUG 5: Minisymposium talk, ePoster talk, or poster consideration; ASCB members $75, nonmembers $100
SEPT 3: Poster consideration only; ASCB members $75, nonmembers $100
OCT 16: Final for poster consideration; ASCB members $90, nonmembers $125

Abstract Sponsorship No Longer Needed!

Hotel rates start at $99.50*
for ASCB Student Members

Over 50% of speakers in 2013 were postdocs or graduate students!

ASCB members save up to 37% on registration

Details at www.ascb.org/2014meeting
Jessica Lucas from Santa Clara University and I organized the ASCB local meeting Cell Biology across the Bay, which had a special focus on quantitative imaging in cell biology. The meeting took place on May 3, 2014, at Santa Clara University and was held jointly with the Western Section Meeting of the American Society of Plant Biologists (ASPB). The ASPB meeting was entitled Cell and Developmental Biology in Plants and took place the following day. We received tremendous support and much advice from Kathryn Barton, Richard Jorgensen, Matthew Evans, and David Ehrhardt from the Carnegie Institution for Science throughout the whole process—thank you!

Biological themes of the meeting included mechanisms of cell division and cell growth and the regulation and quantification thereof, as well as the organization, dynamics, and functions of cytoskeletal structures and accessory proteins. Julie Theriot (Stanford University), K.C. Huang (Stanford University), Wallace Marshall (University of California, San Francisco), David Ehrhardt (Carnegie Institution for Science), and Ke Xu (University of California, Berkeley) gave outstanding talks, as did several graduate students, postdocs, and young faculty members from the Bay Area. The talks inspired extensive discussions throughout the meeting. Also inspirational was a Joint Keynote session on Saturday night that featured James Spudich from Stanford University, who gave a historical depiction of four decades of research on the structure and function of myosins.

The subsequent ASPB meeting covered a diverse set of topics including the regulation of stomata and root development, different aspects of cell wall formation, and plant responses to various biotic and abiotic stresses. Invited speakers Laurie Smith and Lacey Samuels traveled from the University of California, San Diego, and the University of British Columbia, respectively, to attend the meeting, which concluded with an engaging talk by Dominique Bergmann (Stanford University).

One attendee mentioned that he rarely attends a meeting where every talk is as eagerly anticipated and thoroughly discussed. This exemplifies the attitudes of the attendees, who were very engaged and welcomed discussions on the ideas, experiments, and results of the talk and poster presenters.

Organizing the meeting required a lot of time, from outlining the meeting, communicating with attendees, speakers, sponsors, and co-organizers, advertising the meeting, and fundraising to little details like creating award certificates and nametags. Nevertheless it was a very satisfying process to create an event around topics and questions we are interested in, to share this excitement with fellow scientists, and to enjoy the scientific discussions throughout the event. Thank you to everyone who participated for a great weekend of cell biology.

—Renate Weizbauer, Carnegie Institution for Science, Stanford

Early Bird Prizes Available!

Register for the 2014 ASCB/IFCB Meeting by August 5 and we’ll enter you into a drawing to win prizes. For rules and guidelines, go to www.ascb.org/2014meeting and view “Registration Information.”
Upcoming Local Meetings

ASCB is pleased to provide funds for graduate students and postdocs 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 1, 2014. Applicants must be or become members of the ASCB. For more information visit www.ascb.org and click on “Meetings.”

The Triangle Cytoskeleton Meeting
The Research Triangle Park (Durham, NC)
September 12, 2014

Visualizing Cancer: Microscopy and beyond….
CR-UK Beatson Institute (Glasgow, United Kingdom)
September 12, 2014

Appalachian Regional Cell Conference (ARCC) 2014
Marshall University (Huntington, WV)
October 3, 2014

Second Annual Cell Biology of Eukaryotic Pathogens Symposium
Clemson University (Clemson, SC)
October 17, 2014

First Puerto Rico Cancer Research Meeting
Universidad Central del Caribe (Bayamon, Puerto Rico)
October 2014

Bay Area Trafficking Symposium
University of California, San Francisco (San Francisco, CA)
October 2014

Stem Cell Biology in Regeneration: Mechanistic Insights from the Zebrafish
University of California, San Diego (San Diego, CA)
November 7, 2014

Towards the Use of Novel Therapeutic Interventions in Developing Countries
University of the West Indies (Kingston, Jamaica)
November 2014

Alternative Careers for PhDs in Biomedical and Life Sciences
University of Helsinki (Helsinki, Finland)
November 2014

Membrane Trafficking and Signaling Symposium
University of Louisville (Louisville, KY)
Fall 2014

Chemotherapy Induced Peripheral Neuropathy
University of California, Santa Barbara (Santa Barbara, CA)
February 2015

Bay Area Meeting on Organelle Biology (BAMOB)
University of California, San Francisco (San Francisco, CA)
Spring 2015

Did You Know…?

Member Sponsorship of Abstracts Is No Longer Required

August 5 is the abstract submission deadline for abstracts to be considered for a Minisymposium talk or ePoster talk at the 2014 ASCB/IFCB Meeting, to be held December 6–10, 2014, in Philadelphia, PA.

- Member sponsorship of abstracts is no longer required. You may submit as many abstracts as you like without a member sponsor, but ASCB members get extra savings.
- Are there nonmembers in your lab who want to submit abstracts?
  - Now is the time to encourage them to join ASCB. New this year, a 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.
  - Also new this year, there is now tiered pricing for member and nonmember submissions. Nonmembers will pay a higher submission fee if they choose not to join the ASCB, but why miss out on the savings? Members can save up to 37% on registration/abstract fees.

For more information go to www.ascb.org and click on “Meetings.”
TOP STORIES from the ASCB Post

Scientific Diplomats, Essential Lamins, and E.B. Wilson Medalists
Visit ascb.org/ascbpost for more.

“Scientist in the Diplomatic Corps: Economy Class Seats to World Class Events”
The first line of Franklin Carrero-Martínez’s CV is a showstopper—“Scientist, Diplomat and Educator with a PhD in Neurobiology.” On leave from the University of Puerto Rico, Carrero-Martínez is a AAAS Science & Technology Policy Fellow, currently with the U.S. State Department at the embassy in Mexico City to advise on environment, science, technology, and health issues. Science and diplomacy do mix, he says.

“It’s Not Which Lamin but How Much That’s Essential”
Nuclear lamins have come up in the cell world, tied in recent years to transcriptional regulation and human aging. But their fundamental role in eukaryotes remained unclear. Lamins are ubiquitously conserved across metazoans, but are they essential to cell life? Now comes a surprising answer from Yixian Zheng and collaborators in a recent issue of Molecular Biology of the Cell (Mol. Biol. Cell 25, 1287–1297). Zheng’s data say, yes, lamins are essential to nuclear structure but not in the way imagined previously.

“Giants of the Cytoskeleton Win E.B. Wilson Medal”
Three pioneering cell biologists have been named winners of the 2014 E.B. Wilson Medal, the ASCB’s highest scientific honor. William “Bill” Brinkley of the Baylor College of Medicine in Houston, John Heuser of the Washington University School of Medicine in St. Louis, and Peter Satir of the Albert Einstein College of Medicine in the Bronx identified crucial pieces of the cytoskeleton, the cell’s shape-shifting framework, and showed how these elements drive life at the cellular level.

The ASCB 2014 Call for Nominations

**Merton Bernfield Memorial Award**

*Who is Eligible:* An outstanding graduate student or postdoctoral fellow (at the time of nomination) who has excelled in research.

*How to Apply:* The student or postdoc or his or her advisor should submit a one-page research statement, a CV, a list of publications, a copy of the abstract submitted to the current year’s Annual Meeting, and the advisor’s letter of recommendation. Postdocs may also submit the recommendation of their graduate student advisor. Duplicate applications from graduate students may be submitted for the Gilula and Bernfield Memorial Awards. Nominators or self-nominators must be ASCB members.

*Awards:* The winner is presented a plaque, is given financial support, and will speak at a Minisymposium at the Annual Meeting. Expenses to attend the Annual Meeting are paid.

*Deadline:* July 15 (electronic submission to ascbinfo@ascb.org)

**Norton B. Gilula Memorial Award**

*Who is Eligible:* An outstanding graduate or undergraduate student (at the time of nomination) who has excelled in research or first-year postdocs whose work was performed while a PhD or MD/PhD student.

*How to Apply:* The student or advisor should submit a one-page research statement, a CV, a list of publications, if any, the abstract submitted to the current year’s Annual Meeting, and the advisor’s letter of recommendation. Duplicate applications from graduate students may be submitted for the Gilula and Bernfield Memorial Awards. Nominators or self-nominators must be ASCB members.

*Awards:* The winner is presented a plaque, and a ribbon for his/her poster board. Expenses to attend the Annual Meeting are paid. Funded by an annual grant from Rockefeller University Press.

*Deadline:* July 15 (electronic submission to ascbinfo@ascb.org)
Be Part of The Cell Community

- Sign up for a free account at The Cell so you can save images in folders for future reference: www.cellimagelibrary.org/accounts/login_prompt.
- Use the buttons on the detailed image pages to share images on Facebook, LinkedIn, StumbleUpon, and other social networks.
- Join The Cell on Facebook (www.facebook.com/cellImageLibrary) or LinkedIn (www.linkedin.com/groups/about-&gid=3733425).
- Consider donating a tweet a day to The Cell at http://justcoz.org/cellimagelibrar.
- If you have used The Cell in interesting ways or in an article or are interested in submitting images or collaborating with The Cell-CCDB, please contact David Orloff at dorloff@ncmir.ucsd.edu.
- Donate to The Cell to help it continue to grow. You can use the Donate button on the homepage.

Pig epithelial (LLC-PK1) cells undergoing mitosis. The image shows microtubules (green) and chromosomes (purple) and was collected using spinning disk confocal and deconvolution microscopy (http://www.cellimagelibrary.org/images/42513). It received an Honorable Mention in the 2005 Olympus BioScapes Competition and is one of the images on display in the ASCB/NIGMS exhibit at Washington Dulles International Airport (see p. 1). This image is by Nasser Rusan and is licensed under a Creative Commons Attribution, Non-Commercial, No Derivatives License.

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

ASCB 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.

First Abstract Submission Deadline for the 2014 ASCB/IFCB Meeting

Submit your abstract by August 5 for consideration as a Minisymposium talk, ePoster talk, or poster presentation at www.ascb.org/2014meeting.
HIGHLIGHTS from MBoC

The Editorial Board of *Molecular Biology of the Cell* has highlighted the following articles from the June 2014 issues. From among the many fine articles in the journal, the Board selects for these Highlights articles that are of broad interest and significantly advance knowledge or provide new concepts or approaches that extend our understanding.

**NeuroD1 mediates nicotine-induced migration and invasion via regulation of the nicotinic acetylcholine receptor subunits in a subset of neural and neuroendocrine carcinomas**


Nicotine up-regulates NeuroD1 in bronchial epithelial cells and certain undifferentiated carcinomas. NeuroD1 enhances expression of nicotinic acetylcholine receptor subunits. Increased invasion in Matrigel depends on these receptor subunits. Nicotine may induce positive feedback through NeuroD1 and increased expression of its own receptor.

*Mol. Biol. Cell* 25 (11), 1782–1792

**The Ca²⁺-activated Cl⁻ channel ANO1/TMEM16A regulates primary ciliogenesis**

C. C. Ruppersburg and H. C. Hartzell

The Ca²⁺-activated Cl⁻ channel ANO1/TMEM16A is located in the primary cilium, and blocking it pharmacologically or knocking it down with shRNA interferes with ciliogenesis. Before ciliogenesis, the channel is organized into a torus-shaped structure (the “nimbus”) enriched in proteins required for ciliogenesis.

*Mol. Biol. Cell* 25 (11), 1793–1807

**Lipid domain–dependent regulation of single-cell wound repair**

E. M. Vaughan, Jae-Sung You, Hoi-Ying Elsie Yu, A. Lasek, N. Vitale, T. A. Homberger, and W. M. Bement

Cell repair is a conserved and medically important process. Cell damage triggers the rapid accumulation of several different lipids around wounds, and the lipids sort into distinct domains around them. One of these lipids—diacylglycerol—is required for activation of Rho and Cdc42 and healing.

*Mol. Biol. Cell* 25 (12), 1867–1876
A dimeric equilibrium intermediate nucleates Drp1 reassembly on mitochondrial membranes for fission

P. J. Macdonald, N. Stepanyants, N. Mehrotra, J. A. Mears, Xin Qi, H. Sesaki, and R. Ramachandran

Drp1 catalyzes mitochondrial division, but the mechanisms remain elusive. The mitochondrial lipid cardiolipin stimulates Drp1 activity and supports membrane constriction. In addition, Drp1 populates two polymeric states that equilibrate via a dimeric intermediate. Dimers nucleate Drp1 reassembly on mitochondria for fission.


The adaptor protein GULP promotes Jedi-1–mediated phagocytosis through a clathrin-dependent mechanism


The engulfment receptor Jedi-1 mediates phagocytosis through association with the adaptor GULP, which results in the recruitment and tyrosine phosphorylation of clathrin heavy chain. Preventing GULP association with clathrin or its phosphorylation inhibits Jedi-mediated engulfment, indicating a noncanonical role for clathrin in phagocytosis.


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A mouse embryonic fibroblast transfected with the engulfment receptor Jedi-1 (blue). The cell has engulfed a red fluorescent microsphere, and the image shows a ring of actin (green) and Jedi-1 around the engulfed bead. Jedi-1 promotes internalization of microspheres in an actin-dependent process that also depends on the adapter protein GULP and phosphorylated clathrin heavy chain. See Mol. Biol. Cell 25, 1925–1936. (Image: Chelsea Sullivan, Vanderbilt University).
A list of current grant and other opportunities can be found at www.ascb.org/grants. The following items were added since the last issue of the Newsletter:

**ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers.** The National Science Foundation ADVANCE program seeks grant applications designed 1) to develop systemic approaches to increase the representation and advancement of women in academic STEM careers; 2) to develop innovative and sustainable ways to promote gender equity in the STEM academic workforce; and 3) to contribute to the development of a more diverse science and engineering workforce. Within ADVANCE, the Partnerships for Learning and Adaptation Networks (PLAN) track is meant to provide a larger scale environment for adapting, implementing, and creating knowledge about the effectiveness of a particular strategy for change within a context of networked adaptation and learning. PLAN is focused on adaptation/implementation and learning either in particular STEM disciplines (PLAN D) or across institutions of higher education (PLAN IHE). Letter of intent deadline: August 11, 2014 (PLAN IHE); August 20, 2014 (STEM Disciplines [PLAN D]). Application deadline: September 22, 2014 (PLAN IHE); October 3, 2014 (STEM Disciplines [PLAN D]). www.nsf.gov/funding/pgm_summ.jsp?pims_id=5383.


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**MEETINGS Calendar**

A complete list of upcoming meetings can be found at http://ascb.org/global-meetings-calendar. The following meeting was added since the last issue of the Newsletter:

**September 17–21, 2014. Warsaw, Poland**

**ASCB Annual Meetings**

- December 6–10, 2014. Philadelphia
- December 12–16, 2015. San Diego
- December 3–7, 2016. San Francisco
- December 2–6, 2017. Philadelphia
- December 8–12, 2018. San Diego

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**ASCN Member Comments**

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

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**Got Questions?**

Labby has answers. ASCB’s popular columnist will select career-related questions for publication and thoughtful response in the *ASCB Newsletter*. Confidentiality guaranteed if requested. Write us at labby@ascb.org.
In Memoriam:

**Jerrold Schwaber**
1947–2014

Jerrold Schwaber, an immunologist and cell biologist who pioneered the concept and technique for monoclonal antibodies (hybridomas) died at home in Haddonfield, NJ, on June 6. He was 67. Schwaber was a longtime member of the ASCB, joining in 1980 and moving to emeritus status in 2002.

As a graduate student at the University of Chicago, Schwaber fused human lymphocytes to mouse myeloma tumor cells, demonstrating that the resulting hybrid cells made both human and mouse immunoglobulins. This work, published in 1973, laid the groundwork for further development of monoclonal antibodies.

Schwaber continued his research into the genetic causes of immunodeficiency for which he was awarded the Lifetime Achievement Award from the Jeffrey Modell Foundation in 1992. Cell lines that he developed from patients with primary immunodeficiency were donated to the Coriell Institute for Medical Research in Camden, NJ. He worked at Harvard Medical School in Boston and at Hahnemann University Hospital and Jefferson University in Philadelphia.

Born in Evanston, IL, Schwaber is survived by his wife, Susan Hoch, his sons, Jason and Jeff, and four grandchildren. He loved to cook, work with wood, rebuild houses, scuba dive, bike, listen to classical music, opera, and jazz, and read.

According to family, Schwaber was proud of his long association with ASCB and specifically asked that donations in his memory be made to the Society.¹

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**Footnote**

¹Donations can be made at www.ascb.org/donate.
A Bad Model?

Dear Labby,
I just got the decision about a grant application and am furious. It was on cell signaling in the early sea urchin embryo and got very high scores from all six reviewers and the panel. But the program manager turned it down because I didn’t propose to include mathematical modeling of my results. I don’t want to identify this agency as I will likely be seeking their funding again. In a follow-up conversation it emerged that this is a recently adopted policy for this section of the agency. Some basic research just doesn’t lend itself to, or even need, modeling. Can I be such an outlier?

—Unmodeled

Dear Unmodeled,
As you have presented it, this policy does indeed sound draconian. During the past decade in the United States there has been a legitimate push to apply mathematics to the biological sciences, and this effort has been accompanied by training initiatives in K–12 and higher education. One would have imagined that funding agencies might reasonably encourage the inclusion of modeling (not all of which is necessarily mathematical by the way; it can also be based on physics or physical chemistry, for example) in projects where there is a good case that it could be enabling, but to make this a formal requirement seems inappropriate. Does this agency not at least allow the applicant to state in the application why modeling would not be useful in a particular project?

You could consider exploring this issue with a group of cell and developmental biologists who may be subject to this agency’s rule in either recent or planned grant applications and see if some sort of collective protest is in order. If the agency in question is a federal one (as it sounds to be), be prepared to discover that the policy may have been in response to congressional pressure, a phenomenon we have seen in several recent scenarios.

In the meantime, if you do plan to submit a revised or other proposal to this agency, you would do well to reach out to appropriate colleagues to verify your position that a modeling approach would not be beneficial. This might at least serve to validate your instinct. Or, conceivably, it might open a new vista. In the latter case, the downside would be that you were forced into a reactive mode by an unfair policy of the granting agency, but the upside might be promising new approaches and collaborations.

—Labby

Important Information for International Participants in the 2014 ASCB/IFCB Meeting

International meeting participants requiring a visa to attend the December 2014 meeting should register by August 5 to complete the visa application process. Customized Letters of Invitation can be issued only to confirmed (paid) registrants. To assist with the visa application process, we also offer expedited abstract review. Deadline: August 5. Visit www.ascb.org/2014meeting.
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