Cytoskeleton Pioneers Brinkley, Heuser, and Satir Receive E.B. Wilson Medal

If cells were cars, then the three pioneering cell biologists just named winners of the 2014 E.B. Wilson Medal, the highest scientific honor bestowed by the ASCB, helped write the essential parts list. 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 and showed how these elements drive life at the cellular level.

E.B. Wilson, continued on p. 8
Recognizing the profound influence that concepts and technologies from the physical and computational sciences are having on cell biology, *Molecular Biology of the Cell (MBoC)* welcomes research articles, including methods papers, in:

- Quantitative imaging
- Superresolution imaging techniques and their applications
- Biophysical properties of cells and cell structures
- Computational and mathematical modeling
- Systems studies of cell signaling and complex physiological processes
- Innovative physical or computational approaches to cell biological problems

Work in these areas is welcome at all times, but submission by June 15, 2014, may allow it to be included in the November special issue on Quantitative Biology. Results of your research will be highly visible to cell biologists, including more than 10,000 recipients of *MBoC*’s electronic tables of contents. And a printed collection of articles from the online special issue will be distributed to all attendees at the 2014 ASCB/IFCB Meeting. Leaders in the field know that *MBoC* presents conceptual advances of broad interest and high quality.

Visit [www.molbiolcell.org](http://www.molbiolcell.org) or contact Editor-in-Chief David Drubin at mboc@ascb.org.
What the ASCB Annual Meeting Means

by Wallace Marshall

You are a cell biologist, whether you think of yourself that way or not. Regardless of what field is stamped on your union card, if you care enough about cell biology to read the ASCB Newsletter, then you are a cell biologist and you need to go to the ASCB Annual Meeting, which this year is being held jointly with the International Federation for Cell Biology (IFCB). Here are four reasons why:

First of all, you need to go to the meeting because it is simply the most efficient way to learn about the latest thinking, methods, and results in the field. Whether you are an established investigator or someone just starting out, you need to have access to this cutting-edge information.

The ASCB Annual Meeting was the first scientific conference I ever attended. I had been in graduate school only a couple of years, and as an electrical engineer who had become interested in living cells, I had the sense that many of my classmates had some outside source of information about cell biology that I didn’t have access to. Gradually it emerged that this magic source of information was the ASCB Annual Meeting. So that year I signed up for the meeting and showed up with my poster. It was like a window onto a whole wider world had been opened! Now I could see the people whose papers I had been reading, hear them discussing their latest results in their own words, and even have the chance to talk about my own science with these same individuals when they came to my poster. I haven’t missed a single ASCB Annual Meeting since. I make sure to go every year because I can’t afford to miss it, and neither can you.

Second, we are truly blessed in our field to have a single unifying event each year that brings us all together in one place. The tradition of a single, recurring meeting in cell biology that has now been running for 54 years helps to create a group identity. This is particularly important for cell biology, an inherently interdisciplinary field that has historically drawn on methods and concepts from a wide range of disciplines including molecular biology, cytology, genetics, microscopy, and physics.

Third, ASCB has a strong tradition of providing mentoring and career support for its members, especially students and postdocs. Again this year, the meeting will include a Professional Development thread comprising a host of activities that can help you get a job or enhance your career. These activities include a grant writing workshop, scientific career panels, one-on-one CV review, sessions on international training and funding opportunities, career discussion and mentoring roundtables, and much more.

Finally, the ASCB as a society fights for science funding and helps all of us through its advocacy, outreach, and career development activities. The Annual Meeting provides a focal point for regrouping and discussing where these efforts are going. By attending the meeting you have access to workshops and special sessions in a range of important issues and topics. This is the best time and
place to make your voice heard in guiding the future of the field and shaping its role in society.

Building the Meeting

The field of cell biology is constantly evolving, and an important goal of the Annual Meeting is to track new developments. In recent years, there has been a growing appreciation of the role of cellular dysfunction in diseases. Studies at the interface of medicine and cell biology have shed important light on both fields, and so for the past several years the ASCB Annual Meeting has devoted special attention to highlighting the cell biological basis of disease and medicine. At this year’s ASCB/IFCB Meeting we will continue this trend in two ways. First, we will have a special bench-to-bedside panel discussion on translation of cell biological discoveries to the understanding and treatment of disease. Second, we have included disease experts as organizers of many of the sessions, and these experts will help stimulate thinking about disease connections across the full spectrum of cell biological topics.

Another emerging trend in cell biology is the constantly increasing importance of quantitative concepts and approaches. The living cell is an emergent phenomenon, produced by the mutual interaction of huge numbers of molecules. The only way to begin to understand how such a complex system assembles and functions is to harness the same tools and conceptual approaches that have proven themselves useful in engineering and physics. In recent years, the importance of computational modeling and quantitative methods has been emphasized in special sessions (on mathematical modeling, for example).

But having one or two special sessions on quantitative thinking also creates a sense that this is a different way of approaching cell biology, perhaps as a supplement to “real” cell biology. Indeed, I attended one session on the role of modeling in which it was implied that models are something to be added onto the end of a cell biology paper to increase publishability, much as a piece of parsley may be added as a garnish to a steak dinner. In my humble opinion, this approach is completely backwards and misses the most important value of a model, that it can be used to help design the experiments from the outset of a project. So this year, rather than isolating modeling and quantification in their own separate compartment, like toxic enzymes to be sequestered in the lysosome, we decided to let quantitative and physical sciences pervade the entire meeting by appointing quantitative cell biologists to co-chair many of the Minisymposium sessions.

To balance the tasks of increasing coverage of disease and quantitative biology, while retaining the traditional core topics of cell biology, we assembled a tripartite Program Committee, consisting of a “core” subcommittee (Mohan Balasubramanian, Magdalena Bezanilla, Orna Cohen-Fix, Ana Maria Cuervo, Beatriz Fontoura, Cynthia Jensen, Franck Perez, William Prinz, Lois Weisman, Mark Winey, Richard Youle, and Xiaodong Wang); a “cell biology and disease” subcommittee (Helen Blau, Catherine Dulac, Tom Misteli, Gregory Pazour, Jody Rosenblatt, and Marino Zerial); and a “physical and quantitative cell biology” subcommittee (Marileen Dogterom, Aki Kusumi, David Odde, and Jitu Mayor). Keeping all the conference calls between these groups organized was only possible through the tireless efforts of ASCB’s Meeting and Abstracts Manager Alison Harris.

Three other participants deserve special mention. ASCB President Jennifer Lippincott-Schwartz and Executive Director Stefano Bertuzzi never failed to offer their own insights and perspectives, which we found invaluable as we grappled with difficult decisions about topics and organization. In addition, Cynthia Jensen of the IFCB has been one of the most active participants in all of our conference calls and has played an invaluable role in helping to organize this joint meeting.
I’d Rather Be in Philadelphia

Movies like Rocky depict Philadelphia as a gritty, tough city, but this image belies the architectural beauty, cultural diversity, and rich history of one of America’s oldest cities. Within cell biology, Philadelphia has long been a research hub, and that continues to be the case today. We couldn’t ask for a more appropriate city for the ASCB/IFCB Meeting. But make sure to get there early because Saturday starts the meeting off with member-organized special interest sessions. These intense sessions feature topics and speakers selected by the people who know cell biology best—the members of ASCB. That night, keynote talks from Steven W. Squyres and Robert M. Hazen will offer us a panoramic view of reality that spans the history of the cosmos to the origin of life. Special award talks from Keith Porter Lecturer Michael Sheetz and E.B. Wilson Medalists Bill Brinkley, John Heuser, and Peter Satir will cap the program on Sunday and Tuesday evenings.

But while these special talks will be exciting and thought-provoking, another important reason you go to a meeting is to learn detailed information that can help you in your own research. And for this purpose you just can’t beat posters. Posters provide the best way to learn the most cutting-edge information from the people actually doing the work, and to engage in a back-and-forth discussion that simply cannot take place during talks, however interactive the talk format. Posters are the heart of any serious meeting, and this has always been particularly true at ASCB.

In recognition of the importance of posters, this year we have carefully structured the meeting schedule to ensure that everyone has plenty of opportunity to view them and meet the presenters. The former Exhibit Hall has been transformed into the ASCB Learning Center, and from12:00–3:00 pm Sunday–Tuesday all meeting activities will take place there. Poster presentations and ePoster talks are scheduled for that time slot. This will also provide a great opportunity to interact with the exhibitors, who have been encouraged to provide attendees with a variety of learning experiences, not just “sales pitches.” Visit the exhibitors and attend their tech tutorials and tech showcases to learn about the latest technical advances that help us move our field forward. Between the posters and exhibits, you really can learn a lot in the ASCB Learning Center.

Each day the posters are augmented with Symposia and Minisymposia on a range of exciting topics that span all of cell biology. Between the special talks, workshops, posters, Symposia, and Minisymposia, the ASCB/IFCB Meeting presents an all-you-can-eat buffet of cell biology for your mind to feast on.

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.
The 11th International Federation for Cell Biology (IFCB) meeting will be held jointly with the 2014 ASCB Annual Meeting, December 6–10 in Philadelphia. As president of IFCB I would like to invite you all to this exciting international meeting.

IFCB's mission is to promote international cooperation and to contribute to the advancement of cell biology in all its branches around the world.

Back in 1972, ASCB leaders, among them George Palade, Keith Porter, and Daniel Mazia, decided to take action to promote cell biology worldwide. They decided to resurrect what had been the International Society for Cell Biology by founding the IFCB. The Federation's major goal was to stimulate the organization of scientific meetings around the world, which was deemed an important way to expand the frontiers of the flourishing field of cell biology.

The first IFCB meeting, the International Congress on Cell Biology (ICCB), was hosted by ASCB in Boston in 1976 and was organized by Keith Porter. The proceedings of this historic meeting published one year later by Rockefeller University Press is a memorable document of the roots of modern cell biology.

Nobutaka Hirokawa

The ICCB then traveled around the world (Tokyo, Berlin, Montreal, Madrid) before coming back to the United States 20 years later, in an ASCB/IFCB joint meeting in San Francisco. The Program Committee chair was Mina Bissell, and the ASCB President was J. Michael Bishop. The meeting then went to the Gold Coast (Australia), Nice, Seoul, and Rio de Janeiro. An important decision made in Rio de Janeiro was to change the periodicity of the Congress from every four years to biennial to keep up with the advances in cell biology and to be more effective in the Federation's primary mission. We are excited about having another ASCB/IFCB joint meeting this year in Philadelphia.

Besides working to increase the international participation at the ASCB Annual Meeting, which is usually around 25–30%, we have increased participation of international speakers and session chairs. And we are pleased to be working with the ASCB International Affairs Committee to achieve our mutual objectives.

In the opening ceremony at the 1976 meeting, Daniel Mazia announced that IFCB’s next action would be to launch a journal, which was named Cell Biology International Reports, now Cell Biology International. This journal has performed very well under the chief editorship of Denys Wheatley, who has also acted as IFCB Secretary General and President. The journal is fulfilling its role to provide an alternative venue in which authors from around the world can publish papers in the ever-expanding field of cell biology.

Cell biology is at the core of the life sciences and covers broad areas of research that integrate fields from genes, molecules, cells, tissues, and organs to whole organisms and their behavior. It relies on cutting-edge methodologies including super-light microscopy, cryo-electron microscopy, molecular cell biology, physiology, biophysics, structural biology, and systems biology. Cell biology is also contributing...
significantly to our understanding of the molecular pathogenesis of human diseases. All of these threads make this a very exciting era for cell biology.

It was in 1976 in Boston when I first attended the ICCB. I was a young researcher in my late twenties and this was my first opportunity to go abroad and present my studies at an international meeting. You may imagine how excited and stimulated I was by the cutting-edge cell biology research and by the chance to see world-class cell biologists working at the field’s frontiers. I presented my thesis work in a poster session. Later that study was published in the *Journal of Cell Biology.* This experience had a tremendous impact on my career as a researcher in cell biology.

On this occasion as president of IFCB, I would like especially to encourage younger researchers from all over the world, including developing countries, to experience the same excitement that I had a long time ago by attending that first ICCB. The IFCB and ASCB both provide support for travel to the meeting for younger researchers around the world. To apply for funds, go to http://ar.ascb.org/meetings/forms/TravelAwards/international1.cfm.

I am looking forward to seeing you in Philadelphia in December! —Nobutaka Hirokawa, University of Tokyo

**Reference**


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Thery to Receive 2014 Early Career Life Scientist Award

Manuel Thery, a research director at the Saint Louis Hospital in Paris, will receive the 2014 ASCB Early Career Life Scientist Award.

Thery was selected for his development of a novel and innovative microfabrication technology, which he has applied to fundamental cell biological problems. For example, he has used micro-patterning to geometrically constrain cytoskeleton assembly. His interests include cell architecture, cell polarity, and organelle positioning. In addition to his research accomplishments, Thery is also involved in creative outreach, including helping to organize the World Cell Race and making science accessible to the public by combining science with art in *Architectures Cellulaires* during *Nuits Blanches* in Paris. In the latter event, movies of cytoskeletal dynamics were projected onto a building. Thery has also generously helped disseminate his microfabrication technology through the publication of a methods book.

The ASCB Early Career Award will be presented in a Minisymposium at the 2014 ASCB/IFCB Meeting. The ASCB congratulates Thery and thanks the Selection Committee.

—Jodi Nunnari, University of California, Davis; and Christina Szalinski
Named for Edmund Beecher Wilson (1856–1939), America’s first modern cell biologist, the Wilson Medal will be presented to the winners in December at the ASCB/IFCB Meeting in Philadelphia. “We selected these three people because of their lifetime contributions to the field of cell biology, particularly to the study of the cytoskeleton,” says Joseph Gall of the Carnegie Institution for Science, who chaired the Wilson Medal selection committee for ASCB. “The E.B. Wilson Medal is the highest award given by the ASCB and it means a great deal to ASCB members, who recognize that our science is both collaborative and shaped by exceptional individuals. These three are exceptional.”

Brinkley is best known for his discovery of the kinetochore, the crescent-shaped, three-layered laminated plate that attaches the center of a duplicated chromosome to microtubule spindle fibers that pull it apart from its sister duplicated chromosome during cell division. This is the culmination of the whole process of DNA replication and thus the basis of growth. Brinkley’s work was also critical in the description of the microtubule organizing center (MTOC), another major piece of cell machinery, and in later work to link MTOC defects to cancer. Brinkley was also the first to successfully employ an immunofluorescent antibody to study tubulin, the family of proteins that combine to generate microtubules.

Heuser helped develop and refine new methods for fixing samples for electron microscopy (EM) through freeze-fracturing, using his technique of “quick freeze–deep etch EM” to reveal for the first time cellular processes too fleeting for traditional microscopy, including calcium-regulated exocytosis and membrane recycling. These “Heusergrams,” as his former students called them, revealed details of the cytoskeleton in amazing high resolution, including cytoskeletal motors, clathrin and coated pits, SNARE complexes that are the mechanism of vesicle fusion, and endosomal sorting complexes that are required for vesicle transport.

Early in his career, Satir made major breakthroughs using the then-novel technology of EM to visualize the famous 9+2 cross-section of bundled microtubules in the flagellum, the whip-like extension that drives motile cells like sperm, and in the ciliary cells that line human airways, sweeping out debris in synchronized waves. Satir discovered that the microtubules in the bundle move by sliding past each other, proving they were powered by a one-way motor protein now called dynein. Satir’s continued work and continued insistence that ciliary action was central to many life processes led to the discovery by other researchers in 2000 that defects in the nonmotile cilium—a cell’s single, non-moving “antenna”—were at the root of the common, lethal human disorder polycystic kidney disease. This touched off a scientific land rush that linked cilium defects to a long list of “ciliopathies,” diseases such as Bardet-Biedel syndrome, situs inversus, and nephronophthisis.

All three 2014 Wilson Medal winners are longtime ASCB members. Brinkley, who has been a member since 1964, was ASCB President in 1980. Heuser joined the ASCB in 1976 and delivered the prestigious Keith Porter Lecture in 1985. Satir was a founding member of ASCB in 1961 and served on the ASCB Council from 1981 to 1983. ASCB congratulates Brinkley, Heuser, and Satir and thanks the E.B. Wilson Medal Selection Committee.

—John Fleischman
The progression from assistant to associate professor is a critical step for an academic scientist. Several simple, innovative programs provide models for how institutions can help faculty through this transition.

Advancement to a tenured position is often dependent on continued success in one’s research program toward the end of the initial academic appointment. This can include the renewal of a first National Institutes of Health (NIH) or National Science Foundation grant, initiation of new research directions, a steadily increasing publication record, and recognition of scientific excellence by the broader scientific community. This critical period in early–mid career frequently coincides with increased family responsibilities, especially for women scientists. The tenure clock and the biological clock often tick loudly and simultaneously, and this has been pointed to as one cause for many women leaving science.1–3

Facing a potential waste of talent and financial investment, several academic institutions have found creative ways to support women scientists and physicians during this vulnerable period to mutual benefit. Here we focus on the use of Distinguished Scholar Awards at Massachusetts General Hospital (MGH) and other, similar award programs as one successful model that addresses support during this critical time. We present four versions of such programs that were established by enlightened institutions to support women (and in some cases, men) so that they continue to thrive, contribute scientifically, and move into leadership positions. These elegantly simple programs have a quantifiable impact on retention and advancement of junior women faculty and on the return on an institution’s investment.

**Clafin Distinguished Scholar Awards**
The first such program established was the Clafin Distinguished Scholar Award,4 which was initiated in 1993 by the Women in Academic Medicine Committee at MGH “…to facilitate the academic careers of women in science (both basic and clinical MGH investigators).” The purpose is to “provide funding for junior faculty women to sustain research productivity during their child-rearing years.” The thinking behind this program is that “…this transitional funding will increase opportunities for women to advance to senior positions in academic medicine…”

The specifics: Junior faculty women who are basic or clinical researchers and who are within 10 years of their full-time faculty appointment are eligible to apply for Clafin Awards. The awards provide funding of $50,000 per year for two years. Funds can be used to pay for technical support, postdoctoral or student stipends, and supplies but are not intended for support of the investigator’s salary. Applicants must have external funding and a record of strong research training and productivity. And the essential piece: The candidate must be responsible for care of children.

The application process (with a 9:00 pm deadline that seems to acknowledge that this will be done after work and also after putting children to bed) is very user friendly, data driven, and simple. It requires a three-page research project description that shows that the “…applicant is clearly the principal investigator whose academic progress would benefit from such funding support” and has the usual Specific Aims, Background and Significance, Preliminary Data, and Experimental Design sections. In addition to the proposed budget...
and NIH biosketch, a letter is required from the applicant’s chief including a “…statement of applicant’s independence and institutional commitment of resources.” And finally applicants must submit a letter from a research colleague or former mentor, if possible an individual outside the applicant’s current department.

An analysis of the results of Claflin funding from 1993–2004 indicates remarkable success for the awardees and for the institution. Ninety percent of awardees were retained and promoted. MGH invested $2,100,000 in 35 awards and the subsequent funding from outside sources to these Claflin Distinguished Scholars was $51,401,314—a 24.5-fold return on investment!

In the absence of cloning herself, the Claflin Award is an effective alternative to enable a PI to juggle her competing responsibilities. It provides funds to pay a technician, postdoc, or graduate student for two years during this critical period to generate sufficient data to continue to grow the PI’s career.

Junior Scholar Awards
Our next example is the Junior Scholar Awards, which were established in 2007 in the Department of Medicine at the University of Pittsburgh School of Medicine. The awards are largely based on the Claflin Awards but cover faculty in a single department rather than an entire hospital. Junior Scholar Awards are given to female and male junior faculty who have significant extraprofessional responsibilities, including childcare, elder care, or personal illness. Applicants are asked to submit a three-page proposal that describes existing or planned research, an NIH biosketch, a statement of need, and a letter of support from her or his division chief. Awards are typically made for two years at $35,000 per year and can be used in flexible ways to support the candidate’s research trajectory. Funds have been used to support staff and trainee salaries, to “buy” protected time for research by reducing a physician’s clinical responsibilities, for supplies, and to attend career development workshops. Perhaps the most creative use of this award to date was the hiring of a professional grantwriter by a clinical investigator with many ideas but not much time to write. This proved to be a remarkably successful choice: By the end of the award, four of the six grants they wrote together had been funded on their first submission!

Although Pittsburgh’s Junior Scholar Award program has been in existence for only seven years, there is already a dramatic return on investment: The department has made 18 awards for a total of $>1 million while the awardees have cumulatively garnered over $23 million in external funding. A small pilot grant from the Doris Duke Charitable Foundation was recently used to fund a 19th scholar in the program.

Faculty Scholar Awards
The newest example of programs based on the Distinguished Scholar Awards model is the Faculty Scholar Awards (FSA) at the University of Massachusetts Medical School (UMMS). This program was initiated with the idea of improving the retention and advancement of junior faculty members and of promoting gender diversity at the higher faculty ranks. The award mechanism is generally based on the programs described above, and addresses the same goal—to enable faculty to surmount obstacles that inhibit academic productivity and advancement. The FSA is available to female and male assistant and associate professors and provides supplementary funding to enable PIs to continue their research and make scientific advances while meeting family obligations, such as childcare or elder care.

Since 2010, the FSA has funded 12 faculty members, each awarded up to $30,000 for one year (four awards are given each year). The award was initiated by the Women’s Faculty Committee, the Women’s Leadership Work Group, and the Faculty Affairs Office. It is funded from multiple sources: UMMS, the Clinical and Translational Science Center, and UMass Memorial Health Care. The awarded funds may be used for personnel, services, supplies, and/or clinical time “buy out.” The application itself is similar to the above programs, except that the project plan is only two pages long. One special feature of this program is that the FSA also provides faculty and peer mentoring during the course of the award, and the mentoring continues in subsequent years.

Although the program was started too recently to permit assessment of its long-term return on investment, the FSA program has demonstrated success in helping junior faculty obtain additional data, write papers, and submit...
grant applications while maintaining a reasonable work–life balance during times of increased family need.

**McCormick Faculty Awards**

Our final example is the McCormick Faculty Awards at Stanford University. McCormick Faculty Awards provide research/project funding to junior faculty women for career advancement, or to junior faculty men or women who support the advancement of women in medicine through research. Fellows are awarded up to $30,000 per year for two years for stipend support and may also receive a travel supplement of $1,000.

**A Simple Solution to an Important Problem**

Any of these highly successful programs is relatively easy to replicate due to their simple design, and they require only a modest investment on the part of the university or department. The programs described above have similar templates with specifics tailored to the needs of individual institutions/departments. If you know of a similar program, please send a brief description to us at wicb@ascb.org so that we can generate a more comprehensive list of creative solutions to this challenging problem.

We encourage all faculty to approach their institutions about initiating similar programs. It's worth doing for the benefit of the science, the scientists, the challenge, and the return on investment. These award mechanisms have clearly enabled women and men with increased family responsibilities to continue their successful research trajectories. As one successful applicant later commented. “if it wasn't for the combined vote of confidence from my department and the material resources afforded by the award, I would have been one of the casualties on the academic ladder. Instead, I got tenure!”

—Mary Munson, University of Massachusetts Medical School; Ora Weisz, University of Pittsburgh; Sandra K. Masur, Chair, Women in Cell Biology Committee

**References and Footnotes**


4www2.massgeneral.org/facultydevelopment/owc/claflin.html.


6www.umassmed.edu/ofa/Equity-Diversity/Faculty-Scholar-Award.

7http://med.stanford.edu/diversity/about/mccormick.html.

**Comments from Award Applicants and Recipients**

**From a Junior Scholar Award recipient at the University of Pittsburgh**

“On July 1...I gave birth to [a son] … His big sister thanks you for giving me the kind of support I needed to decide I could give her a sibling without ruining my career. In other news, I was promoted to associate professor … and have been told that my packet will be advanced for tenure consideration … Thank you so much for this award!”

**From a Junior Scholar Award applicant at the University of Pittsburgh**

“The details of my ‘work–life balance’ are pedestrian. They are not the reason that you should fund me; rather, the reason is my vulnerability, despite my formidable strengths, to failure at a critical stage in my career.”

**From Faculty Scholar Award recipients at UMMS**

“My personal life was turned upside down when my father was diagnosed with an aggressive blood cancer. The FSA bolstered my research program at a time when my attention was focused on family.”

“The FSA provided a launching pad for my transition to independent research. The award was critical to my receiving a young investigator award from the UMMS CCTS/NIH.”

“As a mother of four school-aged children, the Faculty Scholar Award has enhanced my path to independent research in the area of neurodegenerative diseases, yielding a significant positive impact on my career trajectory.”

“The FSA gave me the gift of time in a time of need! At a transitional time in both my professional and family life, it has prevented academic progress from stalling.”
At the end of April, members of the Senate Appropriations Committee paused from the regular partisan bickering to look at the role federal investments play in scientific innovation and discovery.

A stellar group of federal research agency leaders testified at a Senate Appropriations Committee hearing. The group was led by John Holdren, Director of the Office of Science and Technology Policy and Assistant to the President for Science and Technology. Also testifying were Francis Collins, Director of the U.S. National Institutes of Health (NIH); France Córdova, the recently confirmed Director of the National Science Foundation (NSF); Arati Prabhakar, Director of the Defense Advanced Research Projects Agency (DARPA); and Ernest Moniz, Secretary of the Department of Energy.

Each witness provided a strong statement about the role his or her agency has played in major scientific and technological advances. The examples ranged from the role the NSF played in the development of Web browsers to the role NIH-funded research has played in the increase of life expectancy, the drop in cancer-related death rates, and huge expansion in life expectancy for those with HIV/AIDS. Each witness also argued for increased funding from Congress for his or her agency.

In his remarks, NIH Director Collins told the committee that the financial strains on the American biomedical research enterprise keep him awake at night. In his testimony, Collins told the Senators, “If you want talented, young scientists to pursue long-term, high-risk and high-reward research, they need timely and stable funding.”

Some of the most interesting comments came from Arati Prabhakar, the head of DARPA. DARPA, known both for inventing the Internet and for making a wide range of defense-related technological advances, is now becoming interested in biology. Prabhakar called biology nature’s ultimate innovator. She said, “Any agency that hangs its hat on innovation would be foolish not to look to this master [biology] of networked complexity for inspiration and solutions.”

She went on to outline the biology-related areas DARPA is currently involved in, including the BRAIN Initiative, the rapid and accurate diagnosis of biological threats, and new methods to accelerate the testing of critical therapeutics. She also discussed the agency’s interest in synthetic biology through its Living Foundries program.

—Kevin M. Wilson

A difference of opinion between the scientific community and the U.S. House Committee on Science, Space, and Technology took a new turn in April when, for the first time in recent memory, the National Science Board (NSB) issued a statement criticizing a bill pending in Congress. The NSB is appointed by the President and establishes the policies of the National Science Foundation (NSF) and advises Congress and the President on science and engineering issues.

The issue at hand is H.R. 4186, the Frontiers in Innovation, Research, Science, and Technology (FIRST) Act, which makes both policy and funding changes to the NSF and other federal science agencies.

In a statement, the NSB expressed its concern about several elements of the FIRST Act. In general, the board said that the FIRST Act does not advance the NSF’s goals of supporting the next generation of scientists and staying focused on scientific breakthroughs. The NSB is particularly concerned that the bill provides specific funding recommendations for each NSF directorate, which it feels will hinder the agency’s flexibility. Many view these specific
funding targets as an attempt by the Science Committee to steer money away from the NSF directorates that fund social and behavioral sciences.

The NSB also highlighted changes the bill makes to the NSF grant making process. In its statement, the NSB said, “We are concerned that the proposed new legislative requirements might discourage visionary proposals or transformative science at a time when advancing the decades-long U.S. leadership in science and technology is a top priority.”

To read more on the FIRST Act, see the April 2014 issue of the ASCB Newsletter.

—Kevin M. Wilson

Anthony Fauci, Director of the National Institutes of Allergy and Infectious Disease, a component of the National Institutes of Health, presented a talk to the Congressional Biomedical Research Caucus on May 7, 2014. Fauci’s presentation was titled “HIV/AIDS in 2014: Progress and Priorities” and may be viewed on the CLS website, www.coalitionforlifesciences.org.

On the same day, the Coalition for the Life Sciences (CLS) hosted a Capitol Hill Day. Capitol Hill Days are open to all scientists from across the country. They provide an opportunity to come to Washington, meet your elected officials, and talk about the need for a strong and vital scientific enterprise. Shown (left to right) are Pinar Gurel of Dartmouth University with Senator Jeanne Shaheen (D-NH) and Senator Cory Booker (D-NJ) with Alexander Perryman of Rutgers University-New Jersey Medical School.
Where Will a Biology PhD Take You?

Based primarily on the 2012 National Institutes of Health workforce report, this infographic represents current workforce sizes and annual fluxes before and after a PhD in the biomedical sciences in the United States. The picture is not as dire as that painted for the United Kingdom by a 2010 Royal Society report, but many of the figures shown here are based on estimates and self-reporting. We’ll have to wait for the National Academies postdoc report for better data. In the meantime, the chair of the committee preparing that report, Greg Petsko, has divulged some...
interesting tidbits in an iBiology talk: The data on postdocs are so poor that many institutions can’t estimate the number of postdocs they have within an order of magnitude. Hopefully, clear data on these job markets will empower trainees to make better-informed career decisions.

—Jessica Polka, Co-chair, Committee for Postdocs and Students

Footnotes

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.
Registration and abstract submission are now open for the 2014 ASCB/IFCB Meeting in Philadelphia. See the program on p. 18 and watch the ASCB Newsletter and www.ascb.org/2014meeting for information about some of the exciting changes being introduced this year. Here is some information you may need as you plan your trip to Philadelphia.

**Media Training—Back by Popular Demand with Additional Time Slots!**
During your meeting registration process, sign up for a private 45-minute, one-on-one professional development training session, available Sunday–Tuesday.

Through intensive on-camera practice and playback, your trainer will:
- Evaluate and improve your spoken and visual presentation
- Critique your body language, gestures, and timing
- Show you how to improve vocal delivery and cadence
- Teach you how to relax and slow down, if necessary
- Give you a lesson on handling Q&As

You will leave with a DVD of your on-camera work and copies of the presentation preparation worksheets for further practice. Fee is $50. First-come, first-served until sold out.

**Expanded Opportunities to Present ePoster Talks**
This year we are doubling the number of ePoster sessions with seven talks in each session scheduled Sunday–Tuesday in two rooms located within the ASCB Learning Center.

**Free Networking Cards with Your Contact Info and Abstract**
The ASCB has partnered once again with Quartzy, a lab management company, to provide each poster presenter with 25 free 4 × 6-inch cards with his or her name and contact information on one side and abstract on the other. The cards are for you to distribute to contacts you make at the meeting. During the abstract submission process you will be asked if you would like to receive these cards.
**Important Information for International Participants Who Require Visas**

International meeting participants who will require a visa should register for the 2014 ASCB/IFCB Meeting early (preferably by August 5) so that they will have plenty of time to complete the visa application process. Customized Letters of Invitation can be issued only to confirmed registrants, defined as those who have paid the meeting registration fees.

Expedited abstract review is available for those who need to apply for a visa and who submit their abstract by the August 5 deadline. Requests for expedited abstract review will be considered on a case-by-case basis. If for visa-related reasons you need to know before September 25, 2014, if your abstract has been accepted, please submit your abstract and then email your request to abstracts@ascb.org by August 5, 2014. For more information, visit www.ascb.org/2014meeting.

**Important Hotel Information**

There are many advantages to booking your hotel through ASCB’s official housing partner onPeak (https://compass.onpeak.com/e/42CEL14/1):

- **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:** ASCB’s ability to fill its housing block illustrates the Society’s value to the host city.

**Book by November 3.** After that date, rooms are not guaranteed at the negotiated rate.

**Avoid Housing Pirates!** Only onPeak may contact you on behalf of the ASCB about booking hotels for the 2014 ASCB/IFCB Meeting in Philadelphia. If someone other than onPeak contacts you via email, phone, or fax and claims to represent ASCB, do not provide your personal information, especially your credit card number, or you may become a victim of fraud. Instead, please get as much information as you can about the company contacting you and inform Trina Armstrong, ASCB Director of Meetings, at tarmstrong@ascb.org or 301-347-9325.

**Travel and Parking Discounts**

The ASCB has partnered with American, Delta, and United Airlines for discounts of up to 5%. In addition, we have partnered with Amtrak for a 10% rail discount and a parking company close to the convention center for 25% off parking. Please visit www.ascb.org/2014meeting for further information.

More details at www.ascb.org/2014meeting
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 Institute 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

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

TRAVEL AWARDS

• Childcare
• Junior Faculty
• Postdocs
• Undergraduate Students
• Graduate Students
• International Postdocs, and Students living in Developing Countries

Deadline: September 3

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

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

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

ABSTRACT SUBMISSION DEADLINES/FEES

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!
On Friday, April 11 in Baltimore, MD, the ASCB sponsored a local meeting titled Navigating Lipid Research in Baltimore: From Cell to System. The meeting brought together Baltimore’s basic scientists and clinical researchers with a shared interest in the role of lipids in cellular processes, metabolism, and pathophysiological conditions. Although Baltimore is not geographically large, researchers at the various institutions within our city do not often make enough time to meet with each other. An ASCB local meeting seemed like a perfect solution to this problem: We would gather all of Baltimore’s lipid biologists under one roof.

As organizers, we quickly found that we had hit the mark with the idea behind the meeting as we were flooded with support and enthusiasm from our speakers and participants. Planning the meeting was a delightful lesson in the benefits of working as a team, and we all learned the art of defining roles and distributing tasks. I am a postdoc at the Carnegie Institution for Science. My fellow organizers were Jessica Otis (a postdoc at The Carnegie Institution), Vanessa Quinlivan-Repasi (a graduate student at Johns Hopkins University), and Jessica Ellis (a postdoc at Johns Hopkins University School of Medicine). They worked tirelessly to make the meeting a success.

Captivating talks were grouped into sessions progressing from the cellular role of lipids to the signaling and transport of lipids and finally to the role of lipids in both curing and causing disease. The last session was a heartening reminder of the importance of connecting basic research to clinical outcomes as we heard about the clinical studies at Johns Hopkins University School of Medicine and the University of Maryland Medical School.

One of the highlights of the day was the lunchtime table talks. Attendees sat at tables of eight, each with a leader discussing a topic of his or her choice, from nontraditional animal models to public policy. ASCB Executive Director Stefano Bertuzzi joined us to lead a lunchtime table talk on how professional societies can help accelerate the careers of their members. The lunchroom was abuzz with conversation, and the universal response to being told that it was time to get back to the speaker sessions was that the time had flown by.

The day was topped off by a stellar poster session coupled with a networking happy hour. The best praise of the meeting came from Carole Ształryd of the University of Maryland School of Medicine, who suggested that we make this meeting an annual event. We hope to see you there next year.

—Erin Zeituni, Carnegie Institution for Science
Since 2008, the Research Experience for Peruvian Undergraduates (REPU) program has given Peruvian students the opportunity to participate in a three-month research internship in laboratories in the United States and Europe. Current participants come from the fields of biology, chemistry, and nanotechnology. At the end of the internship period, the REPU Seminar brings together all the participants and provides them the opportunity to present their research.

The 2014 REPU Seminar took place at Yale University and was among the most successful to date. For the first time in our meeting, the attendees had the opportunity to interact with Peruvian and Latin American scientists currently working in the United States. Thanks to the support of the ASCB we were able to invite two Peruvian speakers, Fernando Camargo from the Harvard University Department of Stem Cell and Regenerative Biology and Eduardo Torres from the Program in Gene Function and Expression at the University of Massachusetts Medical School. The experience of the participants was greatly enriched by the discussions throughout the Seminar. Our guest speakers shared their experiences about subjects that ranged from their early steps on the academic path to their most recent research projects. Even more important, we exchanged ideas for the improvement of scientific capacity in Latin America. Student attendees found in the keynote speakers a voice of inspiration and role models to look up to.

The students also participated in an informal talk with Daniel Colón-Ramos of the Department of Cell Biology at Yale University. The discussion focused on how scientists propose a hypothesis and how that hypothesis changes by the time it is finally captured in a paper. During this talk, Colón-Ramos’s passion for research was transmitted to the students. In addition, the 2014 REPU participants learned that research does not follow a straight line and that outcomes are not always what one expects them to be. The take-home message: Researchers must establish a continuous cycle of hypothesis proposal and rejection.

There is no better way to describe the success of this REPU Seminar than in the words of Marija Podolski, a postdoc at Yale University: “The meeting was a great opportunity for scientists to get together, meet each other, and discuss their research.” From this experience we have learned about the importance of networking with our Peruvian and Latin American peers in the United States. These connections help us to expose highly motivated and talented Peruvian undergraduates to experiences to which they can relate. Furthermore, the Seminar transcended the limitations of the conference room at Yale University, since the complete event was broadcast live so the Peruvian scientific community could have access to the talks.

—Javier Marquina-Solis, Yale University, and Juan Manuel Iglesias-Artola, Universidad Ricardo Palma
Upcoming Local Meetings

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

**Advances in 3D Cell Cultures: From Biology to Technology**  
Center of Microelectronics in Provence (Gardanne, France)  
June 20, 2014

**Workshop on Postdoctoral Training in Industry**  
University of California, Los Angeles (Los Angeles, CA)  
June 28, 2014

**Triangle Cytoskeleton Dynamics and Regulation Meeting**  
The Research Triangle Park (Durham, NC)  
September 12, 2014

**Visualizing Cancer: Microscopy and Beyond**  
CR-UK Beatson Institute (Glasgow, United Kingdom)  
September 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

**Visualizing Cancer: Microscopy and Beyond**  
CR-UK Beatson Institute (Glasgow, United Kingdom)  
September 2014

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

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

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Did You Know…?

**The ASCB Kaluza Prize Has Been Expanded for 2014**

If you are a graduate student or postdoc

- You may win a cash prize of $1,000, $3,000, or $5,000 this year.
- Or you may receive a travel award to the 2014 ASCB/IFCB Meeting to be held December 6–10 in Philadelphia.
- You may even be invited to speak at a Minisymposium supported by Beckman Coulter Life Sciences at the meeting.

The annual ASCB Kaluza Prizes, supported by Beckman Coulter, will be awarded to honor academic excellence in graduate student research.

All applicants must be ASCB members and either current graduate students or researchers who received their PhD within two years of this year's application deadline of July 31. If you applied for the award in 2013 you may again. Is someone in your lab a good candidate but not an ASCB member? No problem. She or he may apply for membership now and become eligible for the prizes.

For further details, go www.ascb.org and click on “Career Development.”
TOP STORIES from the ASCB Post

An Information Graphic on Biology PhDs Goes Viral, Nontraditional Lab Animals Shake Tradition, and the Kaluza Prizes Are Back

Visit ascb.org/ascbpost for more.

“Buckle Your Seatbelt or Grab Your Parachute? Turbulent Times Make ‘Something Else’ the New Majority Career Choice in Bioscience”
COMPASS blogger Jessica Polka’s infographic “Where will a biology PhD take you?” went viral (or at least bacterial) on the Internet. Scoring over 117,000 hits in six days, her chart revealed the disconnect between who goes into the scientific training pipeline and who comes out where. Hint: Academic PI is a minority outcome. “Something else” is the new black. (See p. 14.)

“Nontraditional Animal Models—The Axolotl”
“A” is for axolotl, a funky looking salamander regarded by the Aztecs as a delicacy and by cell biologists as the key to unlocking regeneration. Christina Szalinski reports that while the axolotl has been nearly extirpated in central Mexican lakes due to habitat destruction, *Ambystoma mexicanum* is prospering in a lab at the University of California, Irvine, as a model system in which to study tissue regeneration.

“The Kaluza Prizes Are Back, Bigger Than Ever as ASCB and Sponsor Beckman Coulter Increase Number of 2014 Cash Awards”
Last year’s announcement of the first $5,000 Kaluza Prize for excellence in graduate research drew hundreds of entries from ASCB members eager for recognition and cash from the competition organized by ASCB in collaboration with Beckman Coulter Life Sciences. (A flurry of hits occurred in response to this year’s announcement that the 2014 Kaluza Prizes are growing to include all three top winners in ranked order of $5,000, $3,000, and $1,000.) Seven other Kaluza finalists will also receive travel awards to attend the ASCB/IFCB Meeting in Philadelphia, PA, December 6–10.

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 Ph.D. or MD/Ph.D 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)
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On the Cover
Most college science instructors would benefit from more sustained support in implementing evidence-based teaching strategies. Typically, faculty receive feedback on their teaching through student evaluations or observations and evaluation by other instructors or administrators. These feedback mechanisms have drawbacks. In this issue, Gormally, Evans, and Brickman review best practices for providing instructional feedback. For example, faculty are more likely to make significant changes in their teaching when supported by coaching and formative feedback, rather than evaluative feedback. Gormally and colleagues outline additional strategies for providing and seeking feedback, and highlight areas for further research. In the top image, Kara Moloney, Assessment Coordinator, and Brad Henderson, Lecturer in the University Writing Program, discuss strategies for examining student learning to inform curricular and programmatic decision making. In the bottom image, Faculty Developer Cara Harwood and Michelle Vyvlecka with the Undergraduate Research Center discuss ways to incorporate learner-centered teaching strategies in undergraduate STEM courses. All images courtesy of Leonard Cross with the Center for Excellence in Teaching and Learning at the University of California at Davis.

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.

ASCB Member Comments
We welcome your comments and suggestions at ascbinfo@ascb.org.
The iBiology Scientific Teaching Series

iBiology has been developing the Scientific Teaching Series to provide undergraduate biology faculty with the tools to design and implement a student-centered curriculum that uses evidence-based pedagogy (“scientific teaching”). The first module in the series—Active Learning—has been released and is available at www.ibiology.org/STS.html.

The American Association for the Advancement of Science and the National Science Foundation have been advocating the adoption of evidence-based teaching across undergraduate biology programs, including through the “Vision and Change” report released in 2010. However, for instructors unfamiliar with scientific teaching, the prospect of developing new approaches and new curricula often seems daunting.

iBiology Course Directors Malcolm Campbell (Davidson College), Kimberly Tanner (San Francisco State University), and Bill Wood (University of Colorado, Boulder) designed the Active Learning module for audiences that include graduate students, postdocs, and new instructors who have little or no teaching experience, as well as experienced educators who have limited access to training opportunities in scientific teaching.

The Active Learning Module

The Active Learning module was designed to encourage viewers to reflect on their own pedagogical practices. The series was developed with the contributions of dozens of undergraduate instructors from a wide range of institutions and backgrounds, and includes footage from a variety of classrooms. The module comprises five sections:

**The problem.** This video engages viewers who are new to active learning by describing the shortcomings of traditional undergraduate biology education. It targets an audience that has not been involved in the discussions about active learning.

**Classroom models.** This video presents different models of classrooms, encouraging viewers to compare active learning to traditional classrooms and to reflect on the differences between a teacher-centered and a student-centered model.

**Addressing the problem.** This video describes the change that takes place when shifting to an active learning classroom. It also discusses the benefits of active learning for students and faculty, using interview footage with instructors from a range of institutions and backgrounds.

**The tools.** Instructors provide suggestions on how to get started with active learning. This section also includes two videos describing how to use simple and effective active learning methods—such as clickers and “think-pair-share”—that can easily be implemented in large-enrollment courses.
The evidence. The final videos highlight several studies that demonstrate the effectiveness of active learning. Viewers use their scientific training to reflect on the evidence supporting some of the teaching practices presented in the series. They are prompted to make predictions about the results of a particular study, analyze education research data, and draw their own conclusions on the studies.

We expect that this project will make scientific teaching accessible to undergraduate biology educators. To stay informed about new releases in the Scientific Teaching Series, sign up for the iBiology newsletter at www.ibiology.org/join.html.

—The iBiology Team

Footnote
The Editorial Board of *Molecular Biology of the Cell* has highlighted the following articles from the May 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.

**Translational and posttranslational regulation of XIAP by eIF2 and ATF4 promotes ER stress–induced cell death during the unfolded protein response**

*N. Hiramatsu, C. Messah, J. Han, M. M. LaVail, R. J. Kaufman, and J. H. Lin*

Chronic ER stress down-regulates XIAP by activating the PERK branch of the UPR. PERK attenuates *Xiap* translation via eIF2α phosphorylation. PERK promotes XIAP degradation via ATF4. CHOP induction and XIAP suppression act in parallel to sensitize cells to ER stress–induced apoptosis.

*Mol. Biol. Cell* 25 (9), 1411–1420

**The stoichiometry of the nucleoporin 62 subcomplex of the nuclear pore in solution**

*A. Ulrich, J. R. Partridge, and T. U. Schwartz*

The stoichiometry of the nucleoporin 62 (Nup62) subcomplex of the nuclear pore complex is investigated in solution using gel filtration and analytical ultracentrifugation. The Nup58-Nup54-Nup62 complex assembles in a 1:1:1 ratio. Different stoichiometries are obtained only once the interacting, predicted, coiled-coil domains are fragmented.

*Mol. Biol. Cell* 25 (9), 1484–1492

**Systematic identification of pathological lamin A interactors**

*T. A. Dittmer, N. Sahni, N. Kubben, D. E. Hill, M. Vidal, R. C. Burgess, V. Roukos, and T. Misteli*

As essential components of the cell nucleus, lamins play key roles in organizing genomes and as protein–protein interaction platforms. Mutations in lamin A cause a diverse set of human diseases. This work describes the identification of lamin A partners and assesses how interactions are affected by a comprehensive set of lamin A disease mutations.

*Mol. Biol. Cell* 25 (9), 1493–1510
Myelination of neuronal axons by oligodendrocytes in cocultures of primary rat oligodendrocyte precursor cells with primary rat embryonic dorsal root ganglion neurons. Red staining indicates mature myelin sheath positive for a myelin marker protein, myelin basic protein (MBP), along axons (green). Each oligodendrocyte has a number of finger-like processes, which undergo morphological changes and finally produce MBP-positive myelin sheaths to wrap axons. Knockdown of small GTPase Rab35 by retrovirus-encoded small hairpin RNA enhances myelination. Thus Rab35 is a negative regulator for myelination. See Mol. Biol. Cell 25, 1532–1542. (Image: Yuki Miyamoto and Junji Yamauchi, National Research Institute for Child Health and Development)

Reciprocal knock-in mice to investigate the functional redundancy of lamin B1 and lamin B2
To assess the redundancy of lamins B1 and B2, knock-in lines were created that produce lamin B2 from the Lmb1 locus and lamin B1 from the Lmb2 locus. Both lines developed severe neurodevelopmental abnormalities, indicating that the abnormalities elicited by the loss of one B-type lamin cannot be prevented by increased synthesis of the other.
Mol. Biol. Cell 25 (10), 1666–1675

Angiomotins link F-actin architecture to Hippo pathway signaling
S. Mana-Capelli, M. Paramasivam, S. Dutta, and D. McCollum
Angiomotin proteins, together with LATS kinase, regulate the Hippo pathway transcriptional coactivator YAP in response to changes in the F-actin cytoskeleton. Competition between F-actin and YAP for binding to angiomotins makes YAP regulation responsive to F-actin levels. Phosphorylation by LATS can switch angiomotins from F-actin to YAP binding.
Mol. Biol. Cell 25 (10), 1676–1685
Institutional Development Award Networks of Biomedical Research Excellence (P20). The National Institute of General Medical Sciences Institutional Development Award (iDeA) Networks of Biomedical Research Excellence (INBRE) program is designed to augment and strengthen the biomedical research capacity of eligible states. Awards are made to independent biomedical research institutes and/or biomedical research institutions that award doctoral degrees in the health sciences or sciences related to health. The INBRE program represents a collaborative effort to sponsor research between research intensive institutions and institutes, primarily undergraduate institutions, community colleges, and minority-serving institutions. Applicants are encouraged to establish a state-wide network before submission; only one application should be submitted per eligible state. The primary goals of the INBRE program are to: 1) strengthen the biomedical research expertise and infrastructure of the lead and partner institutions; 2) build and increase the research base and capacity by providing support to faculty, postdoctoral fellows, and graduate students at the participating institutions; 3) provide research opportunities for students from primarily undergraduate institutions, community colleges, and minority-serving institutions; and 4) enhance science and technology knowledge of the state’s workforce. Letter of intent deadline: 30 days before application deadline. Application deadlines: July 29, 2014; May 27, 2015; May 26, 2016. http://grants.nih.gov/grants/guide/pa-files/PAR-14-233.html

Science Education Partnership Award. The National Institutes of Health Science Education Partnership Award (SEPA) encourages interactive partnerships between biomedical and clinical researchers and teachers, schools, and other interested organizations. SEPA supports diversity in the workforce by providing opportunities for students from underserved communities to consider careers in basic or clinical research; provides teachers with professional development in science content and teaching skills; and improves community health literacy through its science centers and museum exhibits. Educational activities supported include courses for skills development; research experiences; mentoring activities; curriculum or methods development; and outreach. Letter of intent deadline: 30 days before application deadline. Application deadlines: July 30, 2014; June 22, 2015; June 22, 2016. http://grants.nih.gov/grants/guide/pa-files/PAR-14-228.html

Members in the News

Five ASCB Members Were Elected Fellows of the American Academy of Arts and Sciences

Nancy Bonini
University of Pennsylvania
First joined in 1987

Christopher Q. Doe
University of Oregon
Member since 1996

Warner C. Greene
Gladstone Institute of Virology and Immunology
Member since 1991

Leslie A. Leinwand
University of Colorado, Boulder
Member since 1988

David L. Spector
Cold Spring Harbor Laboratory
Member since 1980

Daniel F. Louvard
of Institut Curie, who first joined in 1983, was elected a Foreign Honorary Member of the American Academy of Arts and Sciences.

Three ASCB Members Were Elected to the National Academy of Sciences

Michael Hall
Biozentrum
University of Basel
Member since 2002

Timothy J. Mitchison
Harvard Medical School
2010 ASCB President
Member since 1983

Andrew W. Murray
Harvard University
Member since 1993

Six ASCB Members Were Elected to the 2014 Class of Fellows of the AACR Academy

Günter Blobel
The Rockefeller University
1989–1990 ASCB President
Member since 1973

David Botstein
Princeton University
Member since 1985

Joan S. Brugge
Harvard Medical School
Member since 1994

Titia de Lange
The Rockefeller University
First joined in 1992

Richard O. Hynes
Massachusetts Institute of Technology
2000 ASCB President
Member since 1980

Inder M. Verma
The Salk Institute for Biological Sciences
Member since 2004

Credit: Paul Fetters
Credit: Casey A. Cass
Credit: Sam Ogden
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- Thoru Pederson
- James Sabry
- Sandra Schmid
- Michael Schulanski
- Mary Ann Stepp
- Kenneth Yamada

**Silver ($500 to $999)**
- William Bement
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- Henry Brown
- Jayme Dyer
- Robert Goldman and Anne Goldman
- Daniel Lew
- Timothy Mitchison and Christine Field
- Joel Rosenbaum
- Tim Schedl
- Jonathan Scholey

**Bronze ($250 to $499)**
- Celeste Berg
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- Maryanne Herrzig
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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.
M. Daniel Lane (1930–2014)

ASCB member M. Daniel Lane, the former chair of the Department of Biological Chemistry at Johns Hopkins University and a prolific investigator into adipogenesis and the mechanisms of satiety and hunger, died April 10, aged 83, at his home in Baltimore. Lane joined the ASCB in 1985.

As chair of the department, Lane mentored the careers of dozens of Hopkins researchers, including that of ASCB member and Nobel laureate Peter Agre. It was Lane, according to Agre, who rescued his tiny basic research lab from eviction, by inviting Agre to move into Biological Chemistry. Agre said the new space allowed him to continue the experiments that led to the discovery of aquaporins, the water channels that cells use to rapidly and selectively move water in and out. For the Nobel ceremonies in 2003, Agre invited Lane and his wife, Patricia, to join his official party to Stockholm.

—John Fleischman

In Memoriam

M. Daniel Lane

M. Daniel Lane

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An Enemy Within

Dear Labby,

I have a tough issue and although some of my friends have offered advice, I am still not 100% sure what to do. Here is the story. I’m a third-year graduate student and things are going pretty well except for one problem. I am on good terms with everyone in the lab except for one senior postdoc (eight years post-PhD) with whom, despite my best efforts, I just can’t connect. She slams me every chance she can, both one on one and in lab meetings. Not only does she seem to have a hypercritical/hypernegative attitude about my work, but I also detect personal animosity. Why in the world this should be I can’t fathom. When I try to respond on matters of my science she just gets nasty and goes outside the matters at hand. I guess the chance that there would be two people who don’t get along in a lab with eight members isn’t that low, and yet this is worse than us not “getting along”—she is really beating me up.

I was biding my time for a while, but as this situation continued I sought advice from other students. This generated moral support but no ideas for a remedy. Then everything changed when one day it became known in the department that this postdoc and a member of my thesis committee are in a personal relationship. At that moment I am like, “Now my nemesis in the lab is in a direct pillow talk with a guy who is on the committee that is judging my research.” All my friends said this is totally crazy and that I should go right to my lab head and demand that this person be removed from my thesis committee. I probably will do so, but my grandmother always said to take another night’s sleep and another day of reflection before you act. Is going to my PI the right step?

—Searching

Dear Searching,

First, a grandmother’s advice is always right. Now, let’s proceed from that venerable principle. There is bad news and good news. This is such an egregious situation, and the conflict on the part of your committee member so profound, that if he is aware of the intense ill will his new-found partner holds for you, he should have had the ethical sense to resign instantly. (And this would be the case even if you and she were very close—that too would be a conflict.) That’s the bad news. The good news is that this situation is so bad that you will surely have no difficulty in having this member of your committee removed.

Go to your lab head first. It may be that she or he doesn’t know about this relationship or otherwise would already have raised the issue. But there is one note of caution. You say of this relationship that “one day it became known in the department.” It is important to validate this and not have your actions be based on gossip. Your PI could seek confirmation from either the lab member or your committee member, and while there are nuances as to which would be better, confirmation is important to protect everyone from being the innocent victims of an untrue rumor. If the relationship is confirmed, ask your PI to request that this member be removed from your committee. That request also could go to the chair of your committee, the chair of your department, or the dean of the graduate school, in that ascending order, if needed.

The good news trumps the bad news here. This is because however unpleasant this experience has been for you, and it surely has, it will not impair your progress at all. Your determination to resolve this is commendable. In addition, Labby hears in your voice evidence of strong character, a passion for high standards of conduct, and a zeal to get to the bottom of a complicated situation. All these will serve you well on your journey as a scientist. And that’s really good news.

—Labby
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