Check Out Our Image Library—And Contribute!

Have you taken a recent look at The Cell: An Image Library, ASCB’s library of cell images? At www.cellimagelibrary.org, the site is one click from the ASCB homepage. We are proud of how far the project has come in 16 months, but we want it to go much further.

How Can You Help?
We need feedback concerning the software, the layout, and most of all the images themselves, such as:

- Can you find images of the kind of cell, or cellular process, you are interested in? If not, can you provide some to help populate the library?
- Do the annotations provide the information you need to use the images?
- Do we have the right balance of light micrographs, electron micrographs, and movies?
- Would you use this site for teaching? If you have, please let us know how.
- Would you recommend The Cell to colleagues and friends?

The site was initially conceived mainly as a tool for research, but we, and our sponsors at the National Institute of General Medical Sciences (NIGMS), would also like it to serve educational and outreach purposes. (This project is supported by Award Number RC2GM092708 from the NIGMS.) So we would welcome feedback from users at all levels. Please visit www.cellimagelibrary.org/pages/about to provide feedback.

Did You Know...?

- You still have time to vote for next year’s ASCB President-Elect, Secretary, Treasurer, and four Council members.
- The President-Elect will serve as President in 2013 and Past President in 2014.
- The term of office for all positions is three years.
- This year the ASCB Council, as empowered by the ASCB Bylaws, has segmented the ballot to ensure continued diversity on the Council, specifically to increase representation from faculty at small teaching colleges.
- The two small-college faculty members will run against each other for Council.
- The top three vote recipients of the other six Council nominees will be elected according to traditional election procedures.
- All eligible voters—regular, postdoctoral, and emeritus members—are invited to vote.
- The deadline to cast your ballot is June 30.
- If you didn't receive or save your email notification to vote online, go to ascbinfo@ascb.org today and ask for the PDF form of the ballot to cast your vote!
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Lessons from Baseball

In many ways, baseball is a good metaphor for science. It provides lessons on teamwork, strategies for success, and the importance of metrics. For the non-afficionado, let me first describe the relevant aspects of the game. Baseball is played on a large field subdivided into a vast, lush green outfield and a dusty, diamond-shaped infield with four bases: home plate, 1st, 2nd, and 3rd. Unlike football, soccer, or basketball, only one team is on the field at a time. The “fielding” team’s pitcher throws to a batter on the “batting” team who tries to hit the ball. But it isn’t easy because it’s moving very fast and, like science, the pitcher can deliver “curve-balls” and “sinkers” that take unexpected turns as they approach. Indeed, even the very best players only successfully hit the ball approximately 30% of the time. The success rate for most experimentalists is even lower.

The object of the game is to score more “runs” than the opposition. A run happens when a player traverses all four bases. In science, a “run” creates paradigm shifts, establishes new concepts, or resolves long-running dilemmas. In both baseball and science, runs can be accomplished by a single powerful “hit,” called a “home run,” that sends the ball soaring high and beyond the limits of the field. More frequently, however, runs are scored through a series of “single,” “double,” or “triple” base hits. Importantly, multiple runs can only be scored from a single hit if there are multiple players “on base.” Indeed, if the bases are loaded (i.e., there are players on 1st, 2nd, and 3rd) a run can be scored even without a hit, e.g., if the pitcher walks a batter. A bases-loaded home run, called a “grand slam,” will score four runs. Thus, a key to winning baseball games is to have a high on-base percentage.

Baseball games move at a leisurely pace, leaving plenty of time to keep records of all events and hence to gather statistics (referred to as “stats”). Every aspect of an individual player’s performance is tracked, giving rise to individual stats, including batting averages, on-base percentages, extra base hitting percentages, home runs, strike-outs, pitching and defensive stats, etc. Wikipedia lists over 70 statistical categories that track all aspects of the game.1 Over time, these stats can be used to build mathematical models that endeavor to be predictive of success in the game. Indeed, an entire science, called sabermetrics,2 has developed with this goal in mind. Thus, like cell biology, baseball is becoming increasingly quantitative.

Scientific Teams

Baseball may provide the best model for an effective scientific team. Most team sports require the temporally coordinated activities of multiple team members, but in baseball many plays involve only an individual hitting, throwing, or catching the ball. As mentioned above, the individual’s success rates in these categories, in comparison to both teammates and competitors, are monitored, reported, and, importantly, rewarded. Most experimental work is also performed individually. An individual’s “batting” average (i.e., publication record) is an important metric, and the successful independent scientist is much heralded. But innovation almost always requires input from multiple perspectives, and the increasing complexity of cell biological problems demands a multidisciplinary approach not possible outside the context of teams. The coordinated efforts of successful scientific teams, like baseball teams, create more opportunities for hits and runs, while still leaving room for individual credit. There are many other tangible benefits to individual members of a consistently successful team/laboratory. For example, success buoyed the confidence of all team members, freeing them to take greater risks; it increases the chances of attracting talented individuals with unique skill sets as new colleagues; and a lab’s reputation for consistent quality opens doors to numerous opportunities, such as invitations to attend and/or speak at meetings, job interviews, and more receptive journal editors and referees that benefit all members.
Home Runs: A Game-Winning Strategy?

I equate hits to published papers: singles, doubles, and triples correspond to papers published in increasingly higher-tier journals. American scientists frequently talk about “hitting a home run” when they make an important discovery and publish in a high-impact journal. Scientists, like baseball fans, hold these rare occurrences in high esteem—as they should. However, as I have lamented in a previous President’s Column (March 2011), the metaphor was perhaps more accurate before the age of supplemental material. At that time these “home run” papers revealed new concepts and reported singular discoveries analogous to out-of-the-park hits in short three- to five-figure formats. Today, most papers in the infamous top-tier journals represent endurance races with reams of data and supplemental figures: less a home run than a series of base hits, sacrifice flies, and bunts that nonetheless still culminate in only a single run (i.e., paper). Moreover, because real discoveries (home runs) cannot be predicted, time spent on the obvious and often incremental next experiments suggested by well-intentioned referees may prevent or delay a lab from making the next unexpected discovery. Instead, these additional experiments could produce a string of hits resulting in multiple runs being scored. Winning baseball teams have high on-base percentages. Likewise in science, consistent publication of high-quality papers in rigorously peer-reviewed and well-respected journals such as Molecular Biology of the Cell is important for both individual and team success. In reality, paradigm-shifting, concept-establishing, controversy-resolving runs most frequently emerge from a coherent series of hits. The infrequent home runs of a team’s star batter cannot be counted on to win games; indeed, home-run hitters are also the most likely players to strike out.

Relevant (and Irrelevant) Stats
In his book Moneyball, Michael Lewis describes how the Oakland A’s became one of the “winningest” teams in baseball, despite being one of the poorest and having the lowest payroll. His chapter entitled Field of Ignorance bemoans the stats that most teams used to judge players in terms that conjure up the current situation in science today: “What got counted was often simply what was easiest to count”; “statistics were not merely inadequate; they lied. And the lies they told led people... to misjudge their players, and mismanage their games.” When reading this, I immediately thought about “impact factor.” This easily measured metric was devised and commercially implemented by Eugene Garfield, founder of the Institute for Scientific Information; now owned by Thomson Reuters. Besides being statistically flawed (it measures average citations and not the median of a highly skewed distribution) and opaque (Thomson Reuters is a private for-profit company that does not freely release the data used to generate impact factors), directly conflating a journal’s impact factor to the impact of the individual papers published in it is like saying a hit or run in New York’s Yankee Stadium is more valuable than one in Denver’s Coors Field! Moreover, just as simply counting hits or runs does not capture the game situation and numerous other variables that influence the result, simply counting citations or impact without considering other factors, such as the nature of the discipline, the multiple preceding hits that set up the run, etc., is meaningless. In an ideal world, we would read all the papers and individually judge their contributions; however, the sheer volume of scientific literature is incompatible with this ideal situation. We need meaningful metrics. Scientifically minded baseball fans—the creators of sabermetrics—did just this. They collected large amounts of data on all aspects of the game from the Internet and then used this information to create statistics that could be validated and incorporated into models that were predictive. In so doing, they created meaningful statistical information that could improve the game. Scientists know that “impact factor” is woefully insufficient; yet might there be other metrics that more accurately and constructively measure scientific value and quality across disciplines? Certainly we...
Scientists need to eschew the commercial monopoly of for-profit journals and Thomson Reuters and use the information freely available on the Internet to develop more meaningful metrics. Let’s put our heads together. What would you measure and, thinking as a scientist, how would you validate this measurement?

Comments are welcome and should be sent to president@ascb.org.

References
2http://en.wikipedia.org/wiki/Sabermetric
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There are many reasons to submit images. Your work, with your name attached to it, will be archived and made easily accessible to a much wider audience than an image in a typical paper would. You can archive primary images or movies in an uncompressed format; this may be much more useful to working scientists than the compressed and processed images a journal will store. The Cell also offers a chance to archive some of the movies I made back when I was an assistant professor. Those were lost when we moved on. But there it was in the image library, found in less than 10 seconds of searching. We were able to zoom in to view details of microtubule morphology in sequential frames, which wouldn’t have been possible using the compressed version we sent to the journal. I only wish this resource had been available to my group moved from video to digital format.

Finally, there are practical reasons we need your image contributions in the next few months. The American Recovery and Reinvestment Act grant that enabled the project has only months left to run. With a strong software platform now established, we are looking for funding to continue the project. Success in raising ongoing support will be predicated on what is in the library, and how it is organized and annotated, but perhaps most of all on community response. Is the image library on track to becoming an important tool for researchers and teachers? Are working cell biologists “buying in” by contributing and downloading images? A positive evaluation of our project depends on your submissions and page views, as does success in real terms. Please help us make this resource a success and contribute your images and videos; it really is easy to do.

—Timothy J. Mitchison, ASCB Past President; Chair, The Cell Advisory Board
How is it that some people seem calmly to manage their careers and lives while the rest of us become overwhelmed, feeling like we are not doing anything as well as we could and that we are letting important tasks slip through the cracks?

Is multitasking the answer to our problems? While that may sound good, it turns out that answering email while simultaneously consulting with a colleague on the phone and perusing the latest issue of Molecular Biology of the Cell may actually be turning our brains to mush. Instead, consider some ancient and low-tech strategies for living a fulfilling, productive, and healthy life. Even the Dalai Lama, if he had the life of an assistant professor with young children at home, might occasionally need to be reminded of these basic principles.

Try some of these strategies to get the most out of your day. They are endorsed by His Holiness (we’re pretty sure) and by the Women in Cell Biology thespians who performed at the mentoring theater at the 2010 ASCB Annual Meeting in Philadelphia.

**Appreciate**
First, anything is more enjoyable when done with the realization that, all things considered, it is exactly what you want to be doing. Remember to enjoy the process; goals serve to motivate, but the pleasure in life is found en route. Be glad you are a cell biologist instead of, say, an investment banker. Savor the small victories, be it capturing the perfect image of your fluorescently tagged protein, seeing the face of a student light up as she suddenly grasps the concept you’re explaining, or fixing a broken shaker in the lab.

**Meditate**
Do you ever feel like your scattered brain is on overdrive? Do you try to concentrate on troubleshooting your latest experiment, but find yourself thinking about 10 different things instead, including the clogged toilet that’s waiting for you at home? Developing a meditation practice is one way to train your mind to focus. Try this 10-minute exercise: Sit quietly with your eyes closed. Count each in breath until you reach 10 breaths and then start again at one. Notice when your mind has wandered and bring it back to the breath. When this happens you will have lost count, so start again at one. How many times did you manage to count all the way to 10? With practice, your ability to achieve mental focus will improve.

If meditation is not for you, find something that does work and stick with it—take a walk, go for a run, or listen to a piece of music. Most importantly, find a way to rein in your thoughts so you can apply your attention to the task at hand.

**Calculate**
Once you’ve focused your mind, there is still that monumentally important skill called organization, without which you will continue to feel overwhelmed. Along with the dream job that allows you to follow your passion come many obligations that may not lie directly under the umbrella of your personal priorities. The trick is to balance tasks that are critical to you with those that are critical to others (e.g., your department chair) and those that are essential for your sanity (e.g., sleeping, eating well, exercising, and having a social life).

Try making a list of the immediate tasks at hand, and calculate how much time each will take. Schedule major tasks into your calendar and consult your list for small tasks to do in those in-between moments. Be sure to break projects down. Instead of “Write manuscript,” make several entries: “Prepare figures” or just “Prepare Figure 1.” List things that can be accomplished in a single sitting to maximize the satisfaction you feel when a task is finished.

If an item remains on your list for several days, it’s time to assess why the task has not been completed.
been accomplished. Does it need to be broken down? Does it actually need to be done? Is it distasteful? Start a new list that includes only tasks you deem worthy, and employ appropriate devices to overcome procrastination: “If I write 2,000 characters, then I get to go for a bike ride.”

Relegate
Did you ever notice that the hour you set aside to work on a grant or manuscript evaporates when you check your email every 10 minutes? We all have ways of tripping ourselves into being “productive” while failing to address the most important task of the day. One way to avoid this pitfall is to relegate your favorite time-wasting activities to a specific time of the day. If you are most alert in the morning, set aside that time for writing and limit email correspondence, student advising, committee meetings, and gossip time with your colleagues to the end of the day when the brain cells are flagging.

Delegate
As your career progresses, your duties will rapidly expand beyond the scope of any one individual’s capabilities. Happily, this provides an opportunity to develop your mentoring skills. Ask junior scientists, either in your lab or in your department, to help you with appropriate tasks. Give them direction and support, and be sure to acknowledge and appreciate their efforts. Before you know it, the number of tasks on your list has shrunk, and your mentee’s confidence has grown.

Discriminate
Ever heard of “just say no”? Be realistic about your available time. Forget what you’ve read about relativity—you’re a cell biologist, not a physicist, and there really are only 24 hours in a day even if you fly across three different time zones. Do everything in your power to avoid being sucked into tasks that you and everyone you know see as low value.

A career in cell biology is a privilege; be grateful for the opportunity you’ve been given. Take charge of your life, but do it your way and have fun. And about those people who seem to be doing it all, smiling and laughing all the way to high-impact papers, big grants, and prestigious appointments. Fabulous! Let’s celebrate their accomplishments and be grateful for their leadership, but let’s not adopt their achievements as our goals. We each have our own personal circumstances, limitations, and values. It is only by a genuine assessment of ourselves that we can define our own meaningful work and ways to achieve it. Celebrate and cherish your own accomplishments!

—Lynne Quarmby, Simon Fraser University, and Martha Cyert, Stanford University

References

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EdComm Plans Future Programming

Many exciting education programs are in the works for the 2011 ASCB Annual Meeting. During the Education Committee’s spring conference call on April 26, subcommittees provided updates on all programs, which are noted below.

Educating the Educators

- Education Workshop—“2020 Vision: Using Scientific Teaching to Address the Challenges of the NRC’s BIO2010,” Justin Hines and Sara Miller, University of Wisconsin–Madison, on Saturday, December 3, 1:30 pm–4:00 pm. This workshop is primarily geared toward those who teach undergraduate students.
- Education Minisymposium—“Innovations in Cell Biology Graduate Education,” chaired by EdComm Chair Caroline Kane and Vice Chair Sue Wick, on Sunday, December 4, 4:30 pm–6:35 pm. Speakers will be invited as well as chosen from submitted Science Education abstracts. This year’s Minisymposium will include talks about programs around the U.S. that are taking graduate students in innovative directions.
- K–12 Science Education Workshop—Sunday, December 4, 12:00 Noon–2:00 pm. The speaker is still being finalized for this hands-on workshop for all teachers. Denver-area high school teachers will be invited to attend this program as well. Free registration is available for high school teachers.
- Education Initiative Forums on Monday and Tuesday, December 5 and 6, 9:45 am–10:15 am. Two novel approaches to cell biology education will be selected from submitted Science Education abstracts for presentation during this time slot between major scientific Symposia.

Educating Students

- Undergraduate Program—“Of Mice and Men (and Yeast and Flies): The Ongoing Evolution of a Scientist,” Anita Corbett, Emory University, on Saturday, December 3, 3:30 pm–4:30 pm. Local students will be invited as well as meeting attendees.
- Undergraduate Poster Session on Saturday, December 3, 4:45 pm–5:45 pm. All faculty and scientists are encouraged to stop by this special poster session to talk to ASCB’s young scientists about their research questions and conclusions.
- High School Program—“The Sense of Taste—From Tongues to Lungs,” Thomas Finger, University of Colorado, Denver, on Sunday, December 4, 2:00 pm–3:00 pm. Denver area teachers will be invited to bring their students.

Career Programs

- Graduate School Fair on Saturday, December 3, 1:30 pm–3:30 pm. All undergraduate students are invited to attend this informal event to get information about graduate cell biology programs around the U.S.
- Postdoc Panel Presentation—“Getting Out of the Box: Transitioning to a Career Outside of Academic Research,” on Sunday, December 4, 10:00 am–12:00 Noon. This program is organized by the Subcommittee on Postdoctoral Training for graduate students, postdocs, and early-career scientists.
- Career Program—“Planning Ahead as a Student/Postdoc: What You Can and Should Be Doing Now to Ensure Success on the Job Market in a Few Years,” organized by Tony Koleske, Yale University, on Tuesday, December 6, 3:30 pm–5:00 pm.
- Informal Presentations at the Educational Resources/Minorities Affairs Booth during the entire Annual Meeting

Besides firming up program plans, call participants heard an update about the ASCB’s BioEducate website. This site is being updated and reorganized by a subcommittee of EdComm Associate members. It is hoped that work on the website can begin in early summer.

The Committee also finalized a statement of its mission and goals, which has been in process for some time. It is now on the EdComm homepage at www.ascb.org. Click on “Committees,” then “Education.”

Participants in the conference call included Kane, members Alison Adams, Shubhik DebBurman, Erin Dolan, Kyle Draheim, Joel Goodman, Karen Kalumuck, Elisa Konieczko, Fran Norflus, Omar Quintero, Sarah Szarowicz, Bill Wallace, Wick, and Mike Wolyniak; Associate member Lena Diaw; ASCB Executive Director Joan Goldberg and Editorial and Education Senior Manager Thea Clarke.

—Thea Clarke
Peter Bruns to Receive Bruce Alberts Award

In recognition of his leadership in catalyzing revolutionary changes in biology education, the ASCB has selected Peter Bruns to receive the Bruce Alberts Award for Excellence in Science Education. As one of his nominators, Jo Handelsman of Yale University, noted, “[H]e has touched the science curricula of most colleges and universities in the U.S. through the programs he conceived, and that is a remarkable achievement.”

After a distinguished scientific career at Cornell, where he also directed education programs and helped start the Cornell Institute for Biology Teachers, Bruns was recruited to Howard Hughes Medical Institute (HHMI) in 2001. As Vice President for Grants and Special Programs he was tasked with leading a major effort in education. Until his retirement from HHMI in August 2010, he expanded established education grants that support research opportunities and outreach and began new programs that support improvements in the teaching of biology, both in the U.S. and around the world. His core philosophy at HHMI was the integration of teaching and research.

Programs he initiated include:

- The HHMI Professors Program, which provides large, unrestricted grants to top research scientists to put their innovative ideas for science education into practice. To date, 40 HHMI professors have received support to use their own research interests as the inspiration for classroom training activities to convey the excitement of scientific research to students.

- The Exceptional Research Opportunities Program (EXPROP), which provides undergraduates from disadvantaged backgrounds with a summer research experience in the lab of an HHMI investigator. Since 2003 the program has supported more than 400 students, over half of whom are now pursuing advanced degrees in biomedical science.

- The Science Education Alliance (SEA), which is a group of individuals and institutions committed to scientific advancement and scientific education. The initial SEA project integrates authentic research into introductory biology labs at universities through participation in a large-scale genomics project. Since its beginnings as one pilot course at a single institution with four students in 2007, the project has grown into an alliance of more than 2,800 students and 60 colleges and universities.

- The National Academies/HHMI Summer Institute for Undergraduate Education in Biology, which is a professional development workshop for university faculty teaching large undergraduate biology courses. It introduces instructors to research-based teaching (“Scientific Teaching”). Thus far more than 300 faculty have attended.

Bruns also has provided moral and financial support for CBE—Life Sciences Education, the ASCB’s education journal. HHMI has provided partial support for the journal since its inception in 2002 as Cell Biology Education. It has become the premier biology education journal, publishing about half of the analytical research papers in biology education research during the past decade.

Bruns is still hard at work, even in “retirement.” He is currently building a technology-enabled, peer-reviewed, course-sharing network (“CourseSource.org”), which will be a resource for undergraduate biology faculty. The portal is being organized by course. Each course will have a collection of modules, consisting of a learning objective with accompanying high-quality assessment and learning materials.

Bruns will accept the award on Sunday, December 4, at the 2011 ASCB Annual Meeting in Denver, CO, at 9:45 am.

—Thea Clarke
WICB Names Awardees, Discusses Programs

Choosing from a large pool of truly outstanding candidates, the Women in Cell Biology (WICB) Committee met via conference call on May 3 to select the 2011 awardees. Melissa Rolls was named recipient of the WICB Junior Award, and Susan Wente was selected for the WICB Senior Award.

The Committee also discussed recent accomplishments, including the launch of the new WICB Speaker Referral Service that provides to meeting organizers the names, research areas, and contact information of outstanding women cell biologists as potential speakers or reviewers (visit www.ascb.org/wicb/srs.html).

The Committee focused on planning WICB events at the 2011 ASCB Annual Meeting in Denver. WICB’s Career Discussion and Mentoring Roundtables, which continue to get rave reviews, will be held on Monday, December 5, starting at 3:00 pm. The WICB Workshop at 2:00 pm on Saturday, December 3 is entitled “Transitions between Biotech and Academia: Multiple Career Options.” The session will explore and provide expert advice on career paths in biotechnology and pharmaceutical companies.

On Tuesday, December 6, after the WICB Awards presentation at 3:30 pm, WICB Thespians will perform once again. The theme will be “Creative Responses to the Current Economic Climate,” and will offer humor and coping strategies. Finally, the WICB Network will again host a reception, on Sunday, December 4, at 2:30 pm, at the Annual Meeting for interested attendees.

Childcare awards for childcare-related expenses associated with attending the ASCB Annual Meeting will be available once again, supported by generous grants from Elsevier, Nature Publishing Group, and anonymous donations. To apply, visit www.ascb.org/meetings/WICB/wicbgrant.cfm.

WICB also has a blog and a Facebook page and will soon have a LinkedIn page to encourage members to interact, share issues, and provide support. For details, go to www.ascb.org/sc/wicb.html.

WICB call participants were: Sandy Masur (Chair), Alexandra Ainsztein, Julie Brill, Susan Forsburg, Phyllis Hanson, Triscia Hendrickson, Harvey Lodish, Elizabeth Marincola, James Nelson, Jennifer Roecklein-Canfield, Sue Shafer, Brookhart Shields, Vivian Siegel, Anne Spang, JoAnn Trejo, Angela Wandinger-Ness, Ora Weisz, and Beverly Wendland. They were joined by ASCB Executive Director Joan Goldberg and Committee Liaison and Executive Assistant/Office Manager Cheryl Lehr.

—Cheryl Lehr and Sandra Masur

Nachury to Receive Early Career Award

Maxence (Max) Nachury, Stanford University, has been named the 2011 ASCB Early Career Life Scientist Awardee. He was selected because of his pioneering work in two major, recently emerging areas in cell biology, Ran-regulated spindle assembly and the nature of the ciliary compartment. The Selection Committee also noted his interest in, and contributions to, the widely documented but poorly understood process of tubulin acetylation. Nachury’s publications, conference presentations, and seminars at leading institutions attest to his growing reputation.

The ASCB Early Career Award will be presented at a 2011 ASCB Annual Meeting Minisymposium in Denver. The ASCB congratulates Nachury, an assistant professor in the Department of Molecular and Cellular Physiology, and thanks the Selection Committee.

—Cheryl Lehr
ASCB Awards

Three Former ASCB Presidents Named E.B. Wilson Medalists

Gary G. Borisy, J. Richard McIntosh, and James A. Spudich have been awarded ASCB's highest honor as pioneers in microtubule, actin, and myosin structure and function, cytoskeletal filaments, mitosis, motor proteins, and in vitro motility assays. Borisy is Director and CEO, Marine Biological Laboratory. McIntosh is Distinguished Professor Emeritus, Department of Molecular, Cellular, and Developmental Biology, University of Colorado, Boulder. Spudich is Douglass M. and Nola Leishman Professor of Cardiovascular Disease, and Professor, Department of Biochemistry and Developmental Biology, Stanford University.

Borisy has authored important papers on the basic cell biology of microtubules and actin filaments throughout his 40 some years as a cell biologist. He recently published a new study in Proceedings of the National Academy of Sciences on the imaging of prokaryotes in complex mixtures, advancing the field of microbial biology.

McIntosh has made seminal contributions to the study of mitosis for over 40 years, largely from the perspective of microtubule structure and function. Furthermore, he has contributed to the identification of microtubule-associated proteins, particularly motor proteins. McIntosh has had a keen interest in force generation in the mitotic spindle.

Spudich has pioneered our understanding of how ATP is harnessed by a molecular motor to accomplish movement along cytoskeletal filaments. He is responsible for the development of the first in vitro motility assays that revolutionized molecular motor research. He also elucidated how chemical energy is transduced into mechanical movement in cells by myosin.

The E.B. Wilson Medals will be presented at the 2011 ASCB Annual Meeting on Tuesday, December 6, 7:00 pm–8:00 pm in Denver. ASCB congratulates the Medalists and thanks the Selection Committee.

—Cheryl Lehr

McGough to Receive British Society for Cell Biology Young Cell Biologist of the Year Award

Ian McGough of the University of Bristol has received the 2011 British Society for Cell Biology (BSCB) Young Cell Biologist of the Year Award. The award was presented at the Joint BSCB–British Society for Developmental Biology meeting at the University of Kent, UK in April 2011. McGough was honored for his work on “A novel SNX3-dependent retromer pathway is required for Wnt secretion.”

The award is presented to a PhD student who has not yet received a degree and who is the first author and presenter of a poster at the BSCB spring meeting in any area of cell biology. McGough will receive an expense-paid trip (compliments of BSCB) and meeting registration (compliments of ASCB) to attend the ASCB’s 2011 Annual Meeting in Denver. McGough will present his poster or talk during the ASCB Annual Meeting, and will report on his meeting experience for both the ASCB and BSCB Newsletters.
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Don’t Stop Thinking about Tomorrow

The rock group Fleetwood Mac first sang it in the 1970s, and politicians have adopted it as their campaign theme songs since the 1990s. Now, the U.S. National Institutes of Health (NIH) has decided that it needs to think about tomorrow too.

NIH Director Francis Collins has created a new committee to look at the future of the biomedical research workforce in the U.S. The committee, the External Working Group on the Future Biomedical Workforce, is co-chaired by Princeton University President Shirley Tilghman and NIH Deputy Director for Extramural Research Sally Rockey. Working Group members include ASCB member Keith Yamamoto.

In a press release announcing the formation of the Working Group, Collins was quoted as saying, “The working group [sic] will help lay the foundation for ensuring that we have the biomedical workforce we will need to usher in the next generation of scientific discoveries.” The Working Group will explore questions like:

- What is the proper size of the biomedical workforce?
- What positions should be supported in order to allow for successful careers?
- How should these positions be supported?
- What training should be provided?

The Working Group’s recommendations will be presented to the Advisory Committee to the NIH Director, which advises the NIH Director on policy issues.

—Kevin M. Wilson

“Tense” Ruling Saves Stem Cell Research

The future of federally funded human embryonic stem cell (hESC) research may have been decided, in part, by a 2010 United States Supreme Court decision that said, in part, “the present tense generally does not include the past.”

In a long-awaited decision on the merits of a lower court order halting federally funded hESC research, the United States Court of Appeals for the District of Columbia ruled that the U.S. National Institutes of Health (NIH) Guidelines for Human Stem Cell Research do not violate the Dickey-Wicker amendment. Dickey-Wicker is a provision of annual NIH funding bills that prohibits the use of federal funds to create human embryos for research purposes or for research in which embryos are destroyed, discarded, or knowingly subjected to risk.

The Court of Appeals was asked to review a preliminary injunction on federally funded research issued by United States District Court for the District of Columbia. The District Court had issued the preliminary injunction after concluding that the plaintiffs were likely to succeed in showing that the NIH Guidelines violated Dickey-Wicker.

Citing the 2010 Supreme Court opinion, the Appeals Court disagreed, ruling that the language of Dickey-Wicker was ambiguous and does not extend to past actions, particularly the derivation of embryonic stem cells. According to the Appeals Court ruling, “The use of the present tense in a statute strongly suggests it does not extend to past actions.”

The District Court also ruled that the NIH Guidelines would threaten the livelihoods of the plaintiffs without harming other stem cell researchers. The Appeals Court rejected that line of thinking as well, saying that “The hardship a preliminary injunction would impose on ESC researchers, by contrast, would be certain and substantial.”

Elaborate legal options, including an ultimate review by the United States Supreme Court, still exist for the plaintiffs. However, legal experts familiar with the court case are confident that the decision by the Court of Appeals will play a positive and significant role in the future of the court case.

The ruling by the Appeals Court may also open the door for legislation on both sides of the political debate in Congress.

To read the complete Appeals Court decision, go to www.camadvocacy.org/resources.cfm.

—Kevin M. Wilson
A Discussion of Mentoring in the STEM Fields

A Tribute to Morris Karnovsky and James Jamieson

According to The Odyssey, Odysseus left Mentes, King of the Taphians and a trusted, aged counselor, in charge of his court and as advisor to his son Telemachus. The term mentor, derived from Mentes, is defined as a close, trusted, and experienced counselor or guide. But Mentes’ advice to the hesitant and diffident Telemachus was, “Let no man holding scepter as king be thoughtful, mild, kindly and virtuous. Let him be cruel and practice evil ways.” Upon overhearing this bloodthirsty advice, Athena assumed the guise of Mentes and instead gave Telemachus sage and useful advice in his search for his father, who had abandoned his wife, home, and hearth for 17 years.

In today’s world of science, technology, engineering, mathematics (STEM) and medicine, what sage and useful advice can mentors provide to prepare the next generation to be distinguished scientists, teachers, administrators, explorers, creators, or discoverers? Today’s mentors must function as trailblazers and torchbearers to prepare the path and point the way for those who will come after.

To mentor effectively in today’s world, we must pause and examine where science is going and recruit and advise our students accordingly. This requires a much broader approach than a purely academic or scientific perspective can provide.

In considering the future of mentoring in science and industry, we must consider the rapid and massive changes that are occurring in the structure of science, the number of faculty positions available, and the exponential growth in scientific information in the last decade. Here we propose that as academic jobs become scarcer, students need a broader background and the adaptability to change careers, and they need an environment that encourages their curiosity. We comment on the needs of those who are “semi-perpetual postdocs,” and offer some observations on the nature of mentoring.

The Crowded Academy

There is a paucity of academic jobs relative to the number of people with doctorate degrees. A former president of Princeton University predicted in 1989 that by 1997 the demands for PhDs would exceed the supply. In fact, that was not true in 1997 and certainly is not true in 2011. The academic scientific industry can grow no more. Today fewer than 50% of PhDs are in academia because the economics are against it. Moreover, only a third of those in academia are on a tenure track. Universities suffer from administrative bloat and a decline in tenure-track positions over the last three decades (from 57% in 1975 to 31% in 2007), while at many universities tenured faculty are not retiring, leaving little room for junior faculty to move up into the tenure ranks.

Many PhDs take three or four postdoctoral positions, unable to penetrate the academic ranks. If they are lucky, they find roles as senior scientists and engineers in the private sector: business, industry, management, or law. In light of today’s academic career market and the dog-eat-dog-world of job searches and availability, there is a danger that some students may be tempted to heed Mentes’ advice to Telemachus rather than take the wise counsel of Athena.

There is a job depression in academe, and unless universities re-invest in full-time tenure-track faculty, aspiring postdocs will not find jobs in academe. We must, therefore, develop more innovative programs to prepare students and postdocs to meet real-world demands. Consequently, we need a change in the philosophy of mentoring in the STEM fields. In a sense, we in academia have become gatekeepers at academic gates that are too narrow, gates that need to be widened to reflect the realities of the academic and research needs of society.
Taking a Broader View

The National Academies have stressed the need for broader and more diverse experiences for graduate students as part of their research, education, and training in order to prepare them for changing employment opportunities. One problem, for example, is that today’s highly focused disciplinary orientation of graduate institutions is seen by industry to be increasingly inappropriate for its needs.

Beginning in the 1950s, the emphasis in the academy has been on research, followed by teaching, and then service. Consequently, the number of positions in academic science ballooned, and the academy trained even more people with an emphasis on research. Scientists recruited, trained, socialized, and mentored students in their own image, as researchers. Many of us have been guilty of trying to clone ourselves.

But now we need to offer a different model. Some universities are already trying to broaden students’ awareness of career options. For example, at the Massachusetts Institute of Technology, physics students are exposed to alternative careers as patent lawyers and in business as analysts and brokers. And at Northwestern University, researching diverse career paths is part of the PhD training program in the biological sciences.

We must realize that in the future only a few institutions may be able to maintain the posture of science for science’s sake and art for art’s sake. Consider the success of the University of Phoenix, where a huge number of students are being educated and trained purely in practical and vocational skills. Public institutions, too, have increasing pressure placed upon them to “deliver the goods” in terms of vocational training. Even at large and prestigious institutions, we should consider that our students need mentoring to face the real-world future of science and industry. Perhaps the science PhD should become more like the degree in law, opening up a variety of career paths, just as law does for a variety of fields, including politics.

We should broaden our mentees’ perspectives in both the science and humanities, and open up the possibility of careers not only in research and academia, but in industry, K–12 teaching, and healthcare. But keep in mind: Although it is important to emphasize some breadth, it is obviously also important to emphasize depth and sophistication in at least one field. We should beware of shaping young scholars in our own image, which may be dated. We should encourage new and unexpected images, not what best fits fashion or market trends.

Encouraging the Curious

Thirty years ago there was much more open communication among scientists. Now there is often a veil of secrecy because many scientists feel they must focus on capitalizing on their discoveries and competing for available research funding. Students and postdocs may perceive that fear of losing grant support drives their mentors to choose the safe and practical over the untried and adventurous. In some labs, students have been instructed by their thesis advisors not to discuss their research with persons outside their labs!

Many graduate students and postdocs are disturbed by these trends—they retain their idealism about the nature of scientific discovery—but others are excited about the potential commercialization of their discoveries. We must encourage those who are truly curious, those who will venture into science where others fear to tread, for it is from the adventurous that the truly important discoveries will come.

Cultivating Adaptability

It is critical that our students and postdocs be trained to be adaptable. Careers may change very suddenly, and students must learn to be flexible and have the ability to remain up-to-date as technology advances. It is important for the mentor and the student to be aware that the highly specialized hot fields of science today may be dead tomorrow. Students should learn as many basic skills as possible, which will enable them to explore different fields and to branch out into new areas. The greater one’s foundation in the basic natural sciences, the better off and more adaptable one is.

In some cases, non-science students exposed to science courses have been known to change their career goals as they learned of the vast opportunities in the health sciences. In contrast, some science students and postdocs who quite clearly are not entirely suited, or have less desire, for laboratory science, may wish to
combine their science background with careers in business, administration, patent law, etc. For such possible outcomes interdisciplinary programs and exposure to other disciplines are very important.

Great discoveries are often serendipitous and are often collaborative, building on teamwork. For that reason, and because of the complexities of modern science and the rapidly changing work environment, it is important for students and junior faculty to be exposed to interdisciplinary programs, collaborative efforts, and teamwork. But community does not mean conformity. Solidarity should go hand in hand with self-reliance.

**What Mentees Need**

Today, because of the job market, the reality is that a student may have to undertake several postdoctoral experiences—sometimes three or four. This has good and bad effects. Such semi-perpetual postdocs need a good deal of mentoring. Sometimes postdocs have scant supervision, ill-defined goals, poor access to peers, a sense of stagnation and isolation, poor benefits, and a lack of institutional connectivity. They need help in all these areas, and they need help in developing original ideas and independence.

Postdocs need help learning the ways of the research world. Not only can the mentor help a postdoc perform research, but also to design a good CV, rehearse for interviews and seminars, prepare manuscripts, raise money and learn how to raise money, learn about the current job market, and maintain contact about personal or other problems that could hinder progress. In other words, mentors need to help postdocs grow into mature and productive colleagues, independent thinkers who can undertake independent research, while developing their own originality.

**How to Mentor**

We invite the reader to consider some points about the nature of mentoring:

First, faculty, by their teaching, their personalities, their eccentricities, and their competencies, set examples for their students.

Second, it is important to note that mentees choose mentors, not vice versa; mentors are not made or appointed, unlike advisors. Mentors are chosen by the mentee for reasons of perceived “greatness” and “inspiration.”

Third, mentoring should be an individual activity, a personal style, and might even be eccentric, within broad guidelines. Mentors should not occupy pedestals.

And finally, the habit of training students just to be scientists is like minting a one-sided coin. If you complete the coin, by adding, for example, the qualities of a teacher to the other side, then you have minted both a scientist and a teacher—you have made a scholar.

—Winston Anderson, Howard University; Sandra Murray, University of Pittsburgh; Winston Thompson, Morehouse School of Medicine; and Broderick Eribo, Howard University

**Note**

The authors dedicate this article to Morris Karnovsky and James Jamieson, under whose ASCB presidencies the Minorities Affairs Committee was formed.

**References**


Symposia
- Consecutive sessions showcase increasing complexity.

Molecular Mechanisms
Sunday, December 4, 8:00 am–9:30 am
Jennifer A. Doudna, University of California, Berkeley/HHMI
Judith Frydman, Stanford University
Thomas Surrey, Cancer Research UK London Research Institute

Function of Multi-Molecular Machines
Sunday, December 4, 10:30 am–12:00 pm
Raymond Deshaies, California Institute of Technology/HHMI
Melissa Moore, University of Massachusetts Medical School/HHMI
David Drubin, University of California, Berkeley

Cellular Networks and Information Processing
Monday, December 5, 8:00 am–9:30 am
Michael Elowitz, California Institute of Technology/HHMI
Christine Jacobs-Wagner, Yale University/HHMI
Tony Pawson, Samuel Lunenfeld Research Institute, Toronto

Self-Organization of Cellular Structures
Monday, December 5, 10:30 am–12:00 pm
Gaudenz Danuser, Harvard Medical School
Benjamin Glick, University of Chicago
Francois Nedelec, European Molecular Biology Laboratory, Heidelberg, Germany

Complex Cellular Functions: Linking Networks and Structures
Tuesday, December 6, 8:00 am–9:30 am
Kristin Baldwin, The Scripps Research Institute
William Bement, The University of Wisconsin–Madison
W. James Nelson, Stanford University

Mechanism of Multicellular Functions
Tuesday, December 6, 10:30 am–12:00 pm
Darren Gilmour, European Molecular Biology Laboratory, Heidelberg, Germany
Arthur Lander, University of California, Irvine
Jennifer A. Zallen, Sloan-Kettering Institute/HHMI

Design Principles of Cells and Tissues
Wednesday, December 7, 11:00 am–12:15 pm
Linda Griffith, Massachusetts Institute of Technology
Wallace Marshall, University of California, San Francisco

Minisymposia
- Stimulating, interactive sessions, December 4–6, 4:30 pm–6:35 pm, and December 7, 8:30 am–10:35 am
- Additional presentations selected from abstracts

Actin Dynamics
Marie-France Carlier, French National Center for Scientific Research (CNRS), Gif-sur-Yvette, France
Rong Li, Stowers Institute for Medical Research

Bioengineering and Mechanobiology
Adam J. Engler, University of California, San Diego
Celeste Nelson, Princeton University

Cancer Cell Biology
Franziska Michor, Dana-Farber Cancer Institute
Michael Yaffe, Massachusetts Institute of Technology

Cell Biology of Micro-Organisms and the Evolution of the Eukaryotic Cell
Sean Crosson, The University of Chicago
Joel B. Dacks, University of Alberta, Canada

Cell Biology of RNA
Xavier Darzacq, Ecole Normale Superieure, France
Leemor Joshua-Tor, Cold Spring Harbor Laboratory/HHMI

Cell Cycle Dynamics and Checkpoints
Frederick Cross, The Rockefeller University
Silke Hauf, Friedrich Miescher Laboratory of the Max Planck Society, Germany

Cell Migration
Diane Barber, University of California, San Francisco
Alex Mogilner, University of California, Davis

Cell Polarity
Thomas Lecuit, Institut de Biologie du Développement de Marseille-Luminy (IBDML), France
Lesliee Rose, University of California, Davis

Cell-Cell and Cell-Matrix Interactions
Josephine Adams, University of Bristol, UK
Kris DeMali, University of Iowa
Cell-Pathogen Interactions (Viruses and Bacteria)
Nihal Altan-Bonnet, Rutgers University
Olivia Steele-Mortimer, Rocky Mountain Laboratories, National Institute of Allergy and Infectious Diseases, NIH

Cellular Functions of Ubiquitin and Ub-related Proteins
Claudio Joazeiro, The Scripps Research Institute
Frauke Melchior, German Cancer Research Center (DKFZ), DKFZ-ZMBH Alliance, Germany

Cellular Mechanism of Disease and Aging
Craig Blackstone, National Institute of Neurological Disorders and Stroke, NIH
Coleen Murphy, Princeton University

Chemical Biology: Probes and Therapeutics
Lisa Belmont, Genentech, Inc.
Alice Ting, Massachusetts Institute of Technology

Chromosome Structure and Epigenetics
Sue Biggins, Fred Hutchinson Cancer Research Center
Job Dekker, University of Massachusetts School of Medicine

Cilia and Centrosomes
Ingrid Hoffmann, German Cancer Research Center (DKFZ), Germany
Meng-Fu Bryan Tsou, Memorial Sloan Kettering Cancer Center

Collective Cell Behavior and Morphogenesis in Development
Ryoichiro Kageyama, Kyoto University
Denise Montell, Johns Hopkins University School of Medicine

Innovations in Graduate Cell Biology Education
Caroline Kane, University of California, Berkeley
Susan Wick, University of Minnesota

Intracellular Sorting and Trafficking
Federica Brandizzi, Michigan State University
Rainer Peperkok, European Molecular Biology Laboratory, Heidelberg, Germany

Meiosis and Oogenesis
Laurinda A. Jaffe, University of Connecticut Health Center
Marie Verlhac, Centre for Interdisciplinary Research in Biology, CNRS/INSERM, Collège de France, Paris, France

Mitosis
Tarun Kapoor, The Rockefeller University
Béla Novák, University of Oxford, UK

Modeling and Simulation of Cellular Functions
Hana El-Samad, University of California, San Francisco
Ewa Paluch, Max Planck Institute of Molecular Cell Biology, Dresden, Germany

Motors and Microtubule Dynamics
Jonathon (Joe) Howard, Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany
Patricia Wadsworth, University of Massachusetts

Nuclear Organization and Control of Gene Expression
Orna Cohen-Fix, National Institute of Diabetes and Digestive and Kidney Diseases, NIH
Yaron Shav-Tal, Bar-Ilan University, Israel

Organelle Biogenesis and Autophagy
Anne Simonsen, University of Oslo, Norway
Gia Voeltz, University of Colorado at Boulder

Signal Transduction Networks
Philippe Bastiaens, Max Planck Institute of Molecular Physiology, Germany
Wendell Lim, University of California, San Francisco/HHMI

Stem Cells and Pluripotency
Fernando Camargo, Children’s Hospital Boston and Harvard University
Leanne Jones, Salk Institute for Biological Studies

Synthetic Cell Biology
Pamela Silver, Harvard Medical School
Ron Weiss, Massachusetts Institute of Technology

The Nuclear Periphery
Brian Burke, Institute of Medical Biology, Singapore
Valérie Doye, Institute Jacques Monod, France

Working Groups
• Interactive “town hall” for “big questions,”
  December 4-6, 4:30 pm-6:35 pm, and
  December 7, 8:30 am-10:35 am
• Co-chairs present and select speakers

Using Large Data Sets as Tools to Understand Cell Biology
Lani Wu, University of Texas Southwestern Medical Center
Wolfgang Huber, European Molecular Biology Laboratory, Heidelberg, Germany

Learning from Heterogeneity and Stochastic Cell Behavior
Johan Paulsson, Harvard Medical School
Lucas Peikmans, Swiss Federal Institute of Technology Zurich (ETH)

Imaging Cellular Structure across Scales
John Briggs, European Molecular Biology Laboratory, Heidelberg, Germany
Melike Lakadamyali, Institute of Photonic Sciences (ICFO), Spain
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If his teacher in Advanced Placement (AP) Biology had a first name Stephen Doxsey can’t recall it, but it was Mr. Tulve who made all the difference. Dragging his AP class to ponds on field trips or into the lab to work up the results, Mr. Tulve gave Doxsey the notion that biology could be his future, even if it took him a decade to figure it out. In the interim, Doxsey competed in high school pole vaulting, intercollegiate diving, and serious softball. He earned a biology degree at the University of Connecticut, having greatly enjoyed a class on electron microscopy (EM) but without having been caught up in lab life.

At loose ends after graduation, Doxsey went to Boston on a whim with a high school chum who was looking for something in accounting. Doxsey thought he’d try lab work. He turned up at Harvard Medical School (HMS) in a heavy corduroy suit one hot summer afternoon and went door-to-door, asking if anyone needed a lab tech with minimal EM experience. The neurobiologist Elio Raviola took him on. Two years later, Doxsey was in the midst of a complicated freeze fracture set-up for Raviola when Don Fawcett came into the EM facility. Seeing that Doxsey was busy, Fawcett turned to leave, only pausing at the door to ask over his shoulder if Doxsey would like to go to Africa. Doxsey ran down the hall after him, shouting, “Yes! Yes!”

Fawcett, who was a pioneer in the application of EM to cell biology (and the first president of the ASCB), had decided to step down as chair of the Anatomy Department at HMS. He was taking a position at a state-of-the-art research station in Kenya, funded in part by the World Bank, to study cattle diseases. For the local Masai and Kikuyu people, who have much of their culture (and wealth) tied up in cattle, East Coast Fever was a constant threat. The parasite vector was the tick *Rhipicephalus appendiculatus*. Over the next two years, Doxsey became particularly intimate with the tick’s salivary gland. Doxsey was fascinated by the tick’s evolutionary resourcefulness—its self-made chisels, tanning agents, skin-dissolving enzymes, and anticoagulants. “I still have a love for ticks,” he admits, “even though I had a deer tick on me the other day. They just have this incredible [biological] repertoire.”

Outside the lab in Kenya, Doxsey was having the time of his young life. The research center was in the country far enough from Nairobi that he could live in a traditional Kikuyu community but close enough for softball games on Saturday with the American consular staff. His Western salary gave him an incredible standard of living and the means to explore East Africa’s legendary wildlife reserves. Most of all, Doxsey worked, one-on-one, with Fawcett. “That’s what transformed me into a scientist,” he says. Fawcett gave him a nonstop course on EM, cell biology, evolution, parasitology, mammalogy, East Africa, running a research lab, and wildlife photography. Fawcett, who was an (otherwise) nonpracticing MD, even gave him his shots. Says Doxsey, “After that experience with Fawcett, there was no doubt where I was going—research.”

Graduate school was Yale. Cell biology was still so new a discipline that Yale had a program, not a department, in 1982. The Yale program featured some of the field’s founders, such as George Palade and Marilyn Farquhar, plus rising stars such as Ira Mellman and Ari Helenius. Sandy Schmid and Judy White were postdocs in the all-but-officially merged “Mel-enius lab” where Doxsey arrived as an older-than-average grad student with an exotic résumé. White, now at the University of Virginia, remembers Doxsey as a great friend and a formidable bench partner. “An absolutely incredible experimentalist, one of those, I say, whose hands should be insured by Lloyds of London,” declares White. “Steve was a no-nonsense, unpretentious person who got the job done and was—and still is—always excited by the science.”
protein of the centrosome complex that controls cell division. Kirschner, who is now at HMS, recalls that Doxsey’s breakthrough grew from an unusual observation—antibodies taken from a patient with the autoimmune disorder scleroderma stained something in the centrosomes of cultured cells. The same antibodies also stained an unidentified protein in early-stage mouse blastomeres, which don’t have centrioles, the barrel-shaped structures that orient the mitotic spindle. A protein that preceded centriole formation looked interesting, and Doxsey went after it using the cumbersome technology of the day. Kirschner explains, “The present generation of students who are used to looking these things up [in genomic databases] may not appreciate what a difficult job it was to get the full sequence of this protein. The story is of historical interest now but it was way ahead of its time, and basically Steve did the whole project.”

Ambitious Things

The result was pericentrin. Says Kirschner, “We discovered it. We named it. We cloned it. And we understood its structure and how it formed this network of filamentous material which became the scaffold on which a lot of microtubule nucleating activity took place.” Looking back, Kirschner said Doxsey demonstrated considerable ingenuity and technical flair at the bench. “But it also took a certain kind of determination to succeed and persistence to follow all these connections,” he adds. “That’s part of Steve’s character too. He likes to do ambitious things.”

In the years since establishing his own lab in 1993 at the University of Massachusetts Medical Center (UMass Med) in Worcester, Doxsey has largely stayed with the centrosome while pursuing its biological implications ambitiously. Along with making basic findings on chromosome segregation, polyploidy, and tumorigenesis, Doxsey has worked on a variety of human diseases, including prostate cancer, scleroderma, and polycystic kidney disease, all tied to centrosome defects. Perhaps none is more startling than the connection between pericentrin and a type of primordial human dwarfism, Majewski osteodysplastic primordial dwarfism type II (MOPDII).
In 2008, Doxsey began exploring links between mutations in the human pericentrin gene and the severely stunted growth and other physiological characteristics typical of patients with MOPDII. The condition was not officially described until 1982, but its scientific history has been traced back more than a century to Lucia Zarate. At 20 inches in height and five pounds in weight, she may have been the smallest woman who ever lived.

Zarate was a protégé of the great American fabulist, P.T. Barnum, who featured her on tour across two continents as the “Mexican Lilliputian.”

In recent work presented in part at the 2010 ASCB Annual Meeting in Philadelphia, Doxsey reported that a pericentrin-null knock-out mouse developed by his lab shows features strikingly similar to primordial dwarfism in humans. This includes structural defects in the circulatory system that make heart attack and stroke a common cause of early death in people with MOPDII. Pericentrin-null mice exhibit a reduction in the number of cell divisions. They produce fewer of the stem cells and their progeny that give rise to the billions of cells needed to build an organism, Doxsey explains. Stem cell divisions are often controlled through the orientation of the plane of cell division. Positioning the plane of cell division and positioning the mitotic spindle is a known function of pericentrin. “It is easy to imagine how reduction in stem cell self-renewing divisions could decrease cell number in all tissues, leading to a smaller organism,” says Doxsey.

[MOPDII] was not officially described until 1982, but its scientific history has been traced back more than a century to Lucia Zarate. At 20 inches in height and five pounds in weight, she may have been the smallest woman who ever lived.

Outdoorsy Family

Today Doxsey lives north of Worcester outside the tiny town of Sterling, MA, with his family: wife, Cindy Sparks, their 10-year-old twins, Will and Dylan, and 8-year-old daughter, Samantha, whom they adopted as a baby from Vietnam. Sparks is a lab manager at UMass Med, but she also teaches college biology, deals in antiques, and sells real estate. The Doxsey kids are all extremely outdoorsy, report their father. They’re keen on hiking, climbing, swimming, and diverse childhood sports. Doxsey is teaching them the rudiments of competitive diving in their backyard pool.

And then there is Mr. Tulve. About a decade ago, Doxsey began thinking again about that fateful AP Biology class at the Newburgh Free Academy, his public high school in New York’s Hudson River Valley. Doxsey decided to call up the AP Biology teacher at North High School in Worcester and offer to host four of the 12 mandatory AP labs at UMass Med. The labs were a huge success. “They got to squeeze the frogs, stain some slides, and look through a decent microscope,” Doxsey reports. The program has expanded to all four Worcester high schools (with two more area schools in the wings). Doxsey now recruits 20–30 of his PI colleagues at UMass Med to host the AP labs each year for a program that earned Doxsey the university’s President’s Public Service Award in 2007. “I guess it comes full circle,” says Doxsey, “from Mr. Tulve right back to my laboratory.”

—John Fleischman

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To the Editor,
I’d love a chance to respond to Erin L. Dolan’s letter in the May issue of the ASCB Newsletter. How many of the type of papers mentioned by Erin track students who had research experiences in K–12 or as undergraduates well into their actual future degrees and careers? Very few papers do. So, I’m sorry for not making it clear that it is those types of data that are bottom-line indicators of the impact of research experiences on youngsters. That’s what I meant by my statement on the literature being often prescriptive and lacking in data. Erin is right in pointing this out. I am not condemning the excellent literature in science education. I’m just saying that my bottom line of long, long-term tracking is usually not seen in these papers. What I presented are interesting “tidbits” mainly to provide ideas for others to consider. What I presented is indirect, yet well documented.

— Steven B. Oppenheimer, Center for Cancer and Developmental Biology, California State University Northridge

To the Editor,
Thanks to Steve Oppenheimer for clarifying his perspective on the value of science education literature. His point is well taken that longitudinal studies of the impacts of educational interventions and programming are not often conducted because of the extraordinary effort and expense necessary to do so. I would like to point out that Roberts and Wassersug conducted such a study of their own high school research internship program. They found that students who had opportunities to participate in research during their high school years were significantly more likely to enter and maintain a career in science than those whose first research experience took place during their undergraduate careers. As the authors note and as is often the case with internship experiences, these findings are subject to a number of biases, such as students’ self-selection into the program.

Thanks also to Steve for clarifying how he defines impact of research experiences on participating youth, namely, the pursuit of future degrees and careers in science. Although these outcomes are certainly desirable, I would argue that students who participate in science research realize many other outcomes of value to the scientific community, including increased interest in and value of scientific research, increased understanding of the nature of science, and more positive views toward scientists and the practice of science. I hope that our dialog inspires readers to seek out and read the literature where these outcomes as well as the other impacts, challenges, and limitations of engaging students in research and effective strategies for doing so have been published.

— Erin L. Dolan, Editor-In-Chief, CBE—Life Sciences Education

Reference
MBoC Editorial Cites Need for “Bio-innovation Ecosystems”

Universities should work to create a “bio-innovation ecosystem” in which they can interact more productively with government and the private sector. In an invited editorial in the June 1, 2011, issue of Molecular Biology of the Cell (MBoC), Regis B. Kelly and Douglas Crawford of the California Institute for Quantitative Biology reach that conclusion after pondering why the capacity to innovate in the biomedical sciences lags behind that in other fields. In particular, they ask, why is there a dearth of new therapeutic drugs coming to market?

The authors also call for universities to reevaluate their focus on specialized training and to recruit, reward, and promote academic generalists. Academic generalists could work to “extract value from our silos of specialization” by fostering partnerships, making stakeholders aware of available resources and of society’s pressing needs, and advocating improvements in government funding and policies.

The June 1, 2011, issue of MBoC is available at www.molbiolcell.org/content/vol22/issue11.

—W. Mark Leader

Take Part in the World’s First Cell Race

For the first time in history, labs will compete to identify the world’s fastest cell. Are your cells the fastest? Send your cells, and the race organizers will measure their speed and record it at locations around the world. Take advantage of this opportunity to compare models, and to discuss hypotheses and interpretations of cell migration mechanisms with colleagues around the world. The winning entries/videos will be shown and prizes given at the 2011 ASCB Annual Meeting in December in Denver.

September 14-18, 2011
InterContinental San Francisco
San Francisco, CA

Conference Chairperson:
Elizabeth H. Blackburn, University of California, San Francisco, CA

Conference Co-Chairpersons:
René Bernards, The Netherlands Cancer Institute, Amsterdam, The Netherlands
Rakesh K. Jain, Harvard University and Massachusetts General Hospital, Boston, MA
William G. Kaelin, Jr., Dana-Farber Cancer Institute, Boston, MA
David P. Lane, Agency for Science, Technology, and Research (A*STAR), Singapore
Helen M. Piwnica-Worms, Howard Hughes Medical Institute, Washington University School of Medicine, St. Louis, MO

Abstract Submission and Award Application Deadline: July 6, 2011
Advance Registration Deadline: August 1, 2011

ABOUT THE CONFERENCE
This prestigious conference will be the second of its kind focused on the latest advances in basic cancer research. It is a broad-based meeting with the goals of presenting the best in basic cancer research and giving early-career investigators a unique opportunity to interact with luminaries in the field. The goal of the conference is to create a synergy between many subfields of basic cancer research that will encourage and strengthen collaborative efforts. With a speaker list of the finest leaders in the field, one-on-one meetings with the experts over breakfast, and mentoring roundtables over lunch, this conference promises many invaluable opportunities for scientific interaction. We hope you will join us in San Francisco for this exciting program.

Keynote Speakers:
Roger Y. Tsien, University of California, San Diego, Howard Hughes Medical Institute, La Jolla, CA

Special Plenary Session Opening Lecture:
Bert Vogelstein, Johns Hopkins Sidney Kimmel Comprehensive Cancer Center, Baltimore, MD

Session Topics Include:
• Understanding the Cancer Genome
• Cancer as an Organ
• Immunomodulation
• Genomic Instability and Genome Surveillance
• Risk Factors
• Emerging Technologies for Cancer Research
• Reprogramming and Plasticity of Cancer Stem Cells
• Metabolism and Autophagy
• Epigenetics and Cancer
• Killing the Tumor Cell
• Mechanisms of Drug Resistance
The Editorial Board of *Molecular Biology of the Cell* has highlighted the following articles from the May 1 and 15, 2011, 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.

**N-cadherin-mediated cell adhesion restricts cell proliferation in the dorsal neural tube**
*K. Chalasani and R. M. Brewster*

N-cadherin (N-cad), an adherens junction (AJ) component, restricts neural progenitor division and couples progenitor cell-cycle exit and differentiation. The effect of N-cad on cell proliferation is mediated by ectopic activation of Hedgehog (Hh) signaling. Hh itself promotes AJ assembly, suggesting a reciprocal interaction between AJs and Hh signaling.

*Mol. Biol. Cell* 22 (9), 1505–1515

**Nestin as a regulator of Cdk5 in differentiating myoblasts**
*H.-M. Pallari, J. Lindqvist, E. Torvaldson, S. E. Ferraris, T. He, C. Sahlgren, and J. E. Eriksson*

Results reported here show that the intermediate filament protein nestin regulates the early stages of myogenesis by a bidirectional interrelationship between nestin and Cdk5. Cdk5 regulates the organization and stability of its own scaffold nestin, which in turn controls the effects of Cdk5.

*Mol. Biol. Cell* 22 (9), 1539–1549

Images of gap junctions between two rat epicardial cells indicate that interactions (red) between ZO-1 and Cx43 (green) are enriched in the perinexus. Bottom inset: low-intensity Cx43 signal highlighted in blue and surrounding the gap junction. (Image: J. Matthew Rhett and Robert G. Gourdie, Medical University of South Carolina, Charleston, SC)
Kinesin-5, a mitotic microtubule-associated motor protein, modulates neuronal migration
A. Falnikar, S. Tole, and P. W. Baas

Kinesin-5 is traditionally considered a mitotic motor protein. This article presents evidence that kinesin-5 is also critically influential in the process of neuronal migration, wherein terminally postmitotic neurons undergo orderly movement from their sites of birth to their final destinations.

Mol. Biol. Cell 22 (9), 1561–1574

Cytosolic aggregates perturb the degradation of nontranslocated secretory and membrane proteins
O. Chakrabarti, N. S. Rane, and R. S. Hegde

Protein aggregates are a common feature of numerous diseases and may have various detrimental effects that remain poorly understood. Here the authors show that one consequence of cytosolic aggregates is to selectively delay degradation of mislocalized secretory and membrane proteins, leading to their aberrant accumulation over time.

Mol. Biol. Cell 22 (10), 1625–1637

Clathrin-dependent mechanisms modulate the subcellular distribution of class C Vps/HOPS tether subunits in polarized and nonpolarized cells
S. A. Zlatic, K. Tornieri, S. W. L'Hernault, and V. Faundez

We describe a new modality of interaction between coats and membrane tethers that provides insight into the question of what mechanisms define specific subcellular location of tethers. We propose that clathrin-dependent mechanisms segregate class C Vps/HOPS (HOmotypic fusion and Protein Sorting) tethers to specialized domains of mammalian cells bearing complex architectures.

Mol. Biol. Cell 22 (10), 1699–1715
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On the Cover

(1) Schematic/Diagram (top): This schematic depicts the song control system found in zebra finches and other songbirds. Circles represent collections of cell bodies, and arrows represent axonal connections among them. Some of these regions, Area X, HVC, and RA, are dramatically larger in males and are sensitive to the trophic effects of gonadal steroids in early development. Area X and HVC are proper names; IMAN is the lateral magnocellular nucleus of anterior nidopallium; DLM is the nucleus dorsolateralis anterior thalami, pars medialis; RA is the robust nucleus of arcopallium; and auditory nucleus is the hypoglossal nucleus. (2) Zebra Finches (bottom): This image shows the sexually dimorphic plumage of zebra finches. The male, on the right, sports orange check patches, fawn-colored brown feathers down his sides, and black and white stripes on his breast and throat, which give this species its name. The female, on the left, tends toward monochrome gray plumage. Sexual dimorphism in plumage is paralleled by sex differences in song behavior and in the brain circuit underlying this behavior, which is more elaborated in males. Image courtesy of Arthur P. Arnold, PhD, Department of Integrative Biology and Physiology, University of California, Los Angeles. See the article by William Grisham et al. on p. 222 on “Using Digital Images of the Zebra Finch Song System as a Tool to Teach Organizational Effects of Steroid Hormones: A Free Downloadable Module.”

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Dear Labby,

I had always looked forward to defending my thesis and then moving on to a postdoc, both of which will be happening in the next few months. But a dark cloud has come over things and several people have suggested I write to you. The lab in which I have done my thesis research works on mouse developmental biology. During my third year, while I was slugging away on another project (one that turned out OK and will be a chapter in my thesis), a postdoc in the lab discovered a gene involved in kidney morphogenesis. The postdoc and my PI wrote and published a paper and, meanwhile, with the encouragement of my advisor, I set off to look for other genes in this renal morphogenesis pathway. During this time the postdoc drilled down on the particular gene he had found to understand more about it. We were not, prior to this, a kidney lab, but in this field a found gene can redefine your tissue or organ of (sudden) interest. Over the next 18 months I discovered four other genes that play essential roles in differentiation of either the glomerulus or proximal tubules. The genetic design of both organ shape and function is especially revealed by these genes, and I am thrilled to have made these findings. Indeed, this work is the reason I have been offered a postdoc in one of the foremost labs in this field.

All seemed well until a year ago, when my lab head announced he was moving to another institution (and that one of the lab members who would be moving with him was the aforementioned postdoc). I was a bit concerned but my new project (the search for other genes) was already going extremely well, plus I had a very supportive thesis committee, including a leading expert in renal developmental biology and another working on polycystic kidney disease. But when I sent my advisor, now at his new institution, drafts of my thesis and manuscript he said, regarding the latter, that the postdoc would “of course be the second author.” I was dumbfounded (and further irritated by his term “of course”) because the postdoc had not done anything in my project, nor is one datum of his work in either my thesis or draft manuscript. When I challenged him, my advisor dug in his heels, saying the gene discovered by the postdoc had engendered my project. Labby, I had emphasized this to the hilt in the drafts of both my thesis and manuscript, referring to that work as having been “foundational.” Not to get technical, but my screen was designed in a different way. The postdoc’s finding was truly the reason I set forth to find additional genes, but I took a different experimental approach. So I feel strongly that my work was not collaborative with him, but nicely evolved from his. Granting him second authorship, which dilutes my impact, seems totally unwarranted.

Lately my advisor has started to rattle sabers. He has contacted our patent office to lay claim for the postdoc on my discovered genes (I actually don’t think genes should be patented) and also went so far as to contact the Dean to suggest that maybe I should be encouraged to wait another year to finish. My thesis committee members and another advisor I am lucky to have went absolutely ballistic.

My Mom and Dad and sister are coming to my graduation soon, an event I have always dreamed of. But this dispute with my advisor has taken some of the joy out of it. I should mention that he is not coming back to hand me my diploma on the stage, which saddens me. The good news is that my committee and others have been so wonderfully supportive, and have promised to help me as I move on. But as to the authorship dispute, they all said “Ask Labby.”

—Saddened at the End

Dear Saddened at the End,

It always pains me to hear such stories. You have presented yours with uncommon eloquence, and between the lines one surely senses your intrepid courage and scientific momentum.

The authorship dispute on the nascent manuscript can be taken directly to the Dean. It does not seem that the postdoc has any entitlement to coauthorship. As to invention rights and possible patent protection, U.S. patent law places enormous weight on non-obviousness and enablement. If the genes you have found, notwithstanding the other one the postdoc found, were not ones whose encoded proteins had been anticipated to be involved in kidney morphogenesis, or if any of them might have a persuasive degree of clinical relevance in the diagnosis or envisioned therapy of inherited (or even acquired) kidney disease, then this is something your institution should pursue. Patent applications that omit a demonstrable inventor are subject to disqualification or legal challenge by adversaries and, if a filing is contemplated, your institution will surely remind your advisor of this.

So go to your Dean, aided by your committee, and ask for a direct engagement with your mentor on the postdoc’s invalid authorship. Labby is encouraged by your description of all the support you are
getting. The term “mentor” in your query and this reply taxes the true definition. In Homer’s epic *The Odyssey*, the “PI” entrusts a friend, named Mentes, to care for and educate his beloved child. The present meaning of the word has evolved, but its etymological root is worth remembering. (See page 17.)

—Labby

Direct your questions to labby@ascb.org. Authors of questions chosen for publication may indicate whether or not they wish to be identified. Submissions may be edited for space and style.

---

**ASCB Has a New Single Sign-On System for the Annual Meeting**

Now, one login will let you:
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- Register for the 2011 Annual Meeting
- Change your meeting registration
- Renew your membership

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**2011 Half-Century Fund Donors**

The ASCB is grateful to the following donors* whose contributions support Society activities:

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  - Paul Forscher
  - Jani Lewis
  - Maryanne McClellan

*As of May 18, 2011

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**ARVO/ISOCB**

**Ocular Cell Biology Conference**

*September 7 – 10, 2011*  
*Vancouver, BC, Canada*

**Abstract deadline**
June 27, 2011

**Registration deadline**
August 22, 2011

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**MEMBER Gifts**

The ASCB is grateful to the following members who have recently given a gift to support Society activities:

- Celeste A. Berg
- Ann E. Cowan
- Hans Laufer
- Jennifer Lippincott-Schwartz
- Nikolay B. Pestov
- Howard Riezman
Discover The Association of Medical Illustrators through our Annual Conference: July 20—23, 2011 in Baltimore, MD

The Association of Medical Illustrators’ Annual Conference is a unique opportunity to learn from members of a growing field who use the power of visual media to advance scientific understanding, communication, education and research.

For our 66th Annual Conference, the Association of Medical Illustrators will convene in Baltimore, the North American birthplace of our profession. Medical illustration has a rich history in ‘Charm City,’ which we will honor as we both celebrate the 100th anniversary of our profession and explore the latest advances in medical and scientific imaging. Sessions will be held at the regal Tremont Plaza Hotel and Johns Hopkins University.

Conference highlights include the opportunity to register for over a dozen technical and creative workshops, covering topics ranging from the embedded Python Molecular Viewer (ePMV), developed by the Scripps Research Institute, to Integrating Social Media into Your Web Presence. The Salon, opening with a breakfast on Thursday, July 21, will showcase this year’s best in biomedical art and animation. The general program encompasses sessions on scientific art and visualization, biomedical advances and technology, and best business practices. Featured presenters include Keynote Speaker Juan Velasco, Art Director for National Geographic magazine and Brödel Memorial Lecturer Drew Berry, biomedical animator and 2010 MacArthur Fellow.

For more information on the Conference and to register, visit www.ami.org/meetings/2011

Want to receive a discounted registration rate? Join the AMI!

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MEMBERS in the News

Mary C. Beckerle, of the University of Utah, an ASCB member since 1980 and 2006 ASCB President, has been appointed a new independent director of the Huntsman Corporation’s Board of Directors.

Carl-Henrik Heldin, of the Ludwig Institute for Cancer Research, an ASCB member since 1991, was elected one of two new vice presidents of the European Research Council (ERC). Heldin is one of the founding members of the ERC Scientific Council.

Mary C. Beckerle, of the University of Utah, an ASCB member since 1980 and 2006 ASCB President, has been appointed a new independent director of the Huntsman Corporation’s Board of Directors.

Five ASCB members were among the 212 scientists elected American Academy of Arts and Sciences Fellows:

David P. Corey
Harvard Medical School
Member since 1988

George Daley
Children’s Hospital and Dana-Farber Cancer Institute
Member since 2004

Raymond J. Deshaies
California Institute of Technology
Member since 1994

Scott E. Fraser
California Institute of Technology
First became a member in 1994

Jean Yin Jen Wang
University of California, San Diego
Member since 1994

MEETINGS Calendar

A complete list of upcoming meetings can be found at http://ascb.org/othermeetings.php. The following meetings were added since the last issue of the Newsletter:

July 23–27, 2011. Boston, MA
25th Anniversary Symposium of the Protein Society.

August 6–10, 2011. Minneapolis, MN

August 7–10, 2011. Sào Paulo, Brazil
International Meeting on Cell Biology of Pathogens.

September 4–7, 2011. Geneva, Switzerland
Human Proteome Organisation (HUPO) 2011 10th World Congress.

October 9–11, 2011. Rennes, France

October 11–15, 2011. Montreal, Canada
12th International Congress of Human Genetics and 61st Annual Meeting of the American Society of Human Genetics.

October 24–28, 2011. Suzhou, China


May 4–8, 2012. Boston, MA


ASCB Annual Meetings

December 3–7, 2011. Denver
December 15–19, 2012. San Francisco
December 14–18, 2013. New Orleans
December 6–10, 2014. Philadelphia
December 12–16, 2015. San Diego
Items shown in blue have been added or updated since the last issue of the Newsletter.


High-Throughput-Enabled Structural Biology Research (U01). The National Institute of General Medical Sciences (NIGMS) encourages applications to establish partnerships between researchers interested in a biological problem of significant scope and researchers providing high-throughput structure determination capabilities through the NIGMS PSI:Biology network. Applicants should propose work to solve a substantial biological problem for which the determination of many protein structures is necessary. Expiration: September 8, 2014. http://grants.nih.gov/grants/guide/pa-files/PAR-11-176.html.

Mentored Quantitative Research Development Award (K25). The purpose of these National Institutes of Health (NIH) awards is to attract to NIH-relevant research those investigators whose quantitative science and engineering research has thus far not been focused primarily on questions of health and disease. Expiration: January 8, 2012. http://grants.nih.gov/grants/guide/pa-files/PA-09-039.html.


The National Academies’ Research Associateship Programs administer postdoctoral (within five years of the doctorate) and senior (normally five years or more beyond the doctorate) research awards sponsored by federal laboratories at over 100 locations in the U.S. and overseas. Quarterly application deadlines. www7.nationalacademies.org/rap.

National Centers for Biomedical Computing (R01). This funding opportunity is for projects from individual investigators or small groups to collaborate with the National Institutes of Health Roadmap for Medical Research National Centers for Biomedical Computing (NCBCs). Collaborating projects are intended to engage researchers in building an excellent biomedical computing environment, using the computational tools and biological and behavioral application drivers of the funded NCBCs as foundation stones. Expiration: September 8, 2011. http://grants.nih.gov/grants/guide/pa-files/PAR-08-184.html.


Pathway to Independence Award. The primary purpose of the National Institutes of Health (NIH) Pathway to Independence Award (K99/R00) program is to increase and maintain a strong cohort of new and talented NIH-supported independent investigators. The program is designed to facilitate a timely transition from a mentored postdoctoral research position to a stable independent research position with independent NIH or other independent research support at an earlier stage than is currently the norm. Expiration: January 8, 2012. http://grants.nih.gov/grants/guide/pa-files/PA-09-036.html.
GRANTS & OPPORTUNITIES

Research Supplements to Promote Diversity in Health-related Research. The National Institutes of Health (NIH) and the Centers for Disease Control and Prevention have announced to PIs holding specific types of NIH research grants that funds are available for administrative supplements to improve the diversity of the research workforce by supporting and recruiting students, postdoctoral researchers, and eligible investigators from groups that have been shown to be underrepresented. Expiration: September 30, 2011. http://grants.nih.gov/grants/guide/pa-files/PA-08-190.html.

Research Supplements to Promote Re-entry into Biomedical and Behavioral Research Careers. These supplements are intended to encourage individuals to re-enter research careers within the missions of all National Institutes of Health (NIH) program areas. This program will provide administrative supplements to existing NIH research grants to support full-time or part-time research by individuals in a program geared to bring their existing research skills and knowledge up-to-date. Expiration: September 30, 2011. http://grants.nih.gov/grants/guide/pa-files/PA-08-191.html.

SHIFT Awards: Small Businesses Helping Investigators to Fuel the Translation of Scientific Discoveries (SBIR: R43/R44). These National Institutes of Health awards are intended to foster research that is translational in nature and to transform academic scientific discoveries into commercial products and services. They require that an investigator who is primarily employed by a U.S. research institution at the time of application transition to a small business concern (SBC) and be primarily employed (more than 50% time) by the SBC by or at the time of the award. Expiration: January 8, 2013. http://grants.nih.gov/grants/guide/pa-files/PA-10-122.html#SectionIV3A.

Structural Biology of Membrane Proteins (R01). This National Institutes of Health funding opportunity is for research that will lead to the determination of membrane protein structures at high resolution. In addition to the structures of integral membrane proteins, the structures of the complexes formed between these proteins and their biological partners are of interest. Expiration: September 8, 2013. http://grants.nih.gov/grants/guide/pa-files/PA-10-228.html.

Supplements for Functional Studies Based on High-resolution Structures Obtained in the Protein Structure Initiative. The National Institute of General Medical Sciences (NIGMS) announces the availability of administrative supplements to provide funds to enable investigators interested in protein function to capitalize on the information and material products of the Protein Structure Initiative (PSI). These supplements are available for 1) NIGMS-funded research grants (R01, R37, and P01) as well as 2) investigators with peer-reviewed research grants not funded by NIGMS, through the PSI research centers. www.nigms.nih.gov/initiatives/PSI/supplements.

Support of NIGMS Program Project Grants (P01). The National Institute of General Medical Sciences encourages innovative, interactive program project grant applications from institutions/organizations that propose to conduct research that aims to solve a significant biological problem through a collaborative approach involving outstanding scientists who might not otherwise collaborate. Expiration: September 8, 2013. http://grants.nih.gov/grants/guide/pa-files/PAR-10-266.html.

AAAS Seeking Nominations for 2011 Mentor Awards

The two categories of the American Association for the Advancement of Science Mentor Awards, the Lifetime Mentor Award and the Mentor Award, honor individuals who have demonstrated extraordinary leadership to increase the participation of underrepresented groups in the science and engineering PhD workforce. These groups include: women of all racial or ethnic groups; African American, Native American, and Hispanic men; and people with disabilities.

All nominations are due by July 31, 2011. For more information and to submit an application, visit http://www.aaas.org/aboutaaas/awards/mentor.

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Funded by NIGMS Grand Opportunities grant RC2GM092708 to the American Society for Cell Biology (ASCB)