Streamlining NIH Peer Review in Turbulent Conditions

The latest trial balloons for reforming peer review of grant applications at the National Institutes of Health (NIH) are like high-altitude probes sent up to gauge the wind without alarming anyone on the ground. It’s been almost non-stop stormy weather at NIH’s Center for Scientific Review (CSR) for nearly a decade since the doubling of the NIH budget at the millennium ran into the headwinds of war, the Great Recession, and the fiscal stalemate. Richard Nakamura had been serving as the CSR’s temporary head since September 2011 but with his confirmation last December as permanent director, the CSR has cautiously released the latest suggestions1 from its Peer Review Advisory Committee on protecting an institution that for academic researchers renders life-or-death decisions, the NIH study section. The latest from the Advisory Council includes the idea of abolishing all resubmissions of rejected grant applications—what are called A1 amended proposals—for an A0, all-or-nothing, single-tier application system. This would effectively leave it to PIs themselves to decide whether a given proposal is really new or if submitting it is a futile gesture.

NIH Peer Review, continued on page 5

ASCB Members Dominate First-Ever Breakthrough Prizes in Life Sciences

The call that she had just been awarded a $3 million Breakthrough Prize in Life Sciences came out of the blue, and Cori Bargmann says that there is no other word to describe her reaction but stunned. Bargmann had just reached her office at the Rockefeller University on the morning of February 20 when a phone call came through from Art Levinson, chair of Genentech and Apple, and Yuri Milner, a Russian entrepreneur, Silicon Valley venture capitalist, and now scientific philanthropist. Last year Milner stunned the physics world with nine individual $3 million Breakthrough Prizes. This year, he organized a squad of internet entrepreneurs—Sergey Brin of Google, Anne Wojcicki of 23andMe (and wife of Brin), and Mark Zuckerberg and his wife, Priscilla Chan, of Facebook—to fund a prize of $3 million for each of 11 winners of the inaugural Breakthrough Prizes in Life Sciences. The group now says that the Life Science prizes will continue annually.

Breakthrough, continued on page 7
The iMIC digital light microscope supports all fluorescence applications with millisecond response times. And, with its adaptable design the instrument can easily and quickly be configured to match changing experimental needs.
EXECUTIVE DIRECTOR’S Column

An Exciting Journey Begins with a Revamped ASCB Website

Last month we entered a new era for ASCB communications with the launch of the revamped ASCB website at www.ascb.org. We tried to act on the consensus reached at December’s ASCB Council meeting in San Francisco: ASCB needs a more comprehensive communication strategy. This would start, it was decided, with electronic communications, i.e., the website, videos, social media, and blogs. Historically, ASCB has used communications to bring people to the Society—to the Annual Meeting, to service on committees or Council, to advocacy. Electronic communications, however, now allow us to bring ASCB to its people, wherever they happen to be. To appreciate the power of this idea, consider that in 2013 the number of mobile devices is expected to overtake the number of desktop and laptop computers.

New Look, New News, New Blog

I am proud to say that the reinvention of our website was done entirely in house, drawing on the ASCB staff’s amazing skills in graphics, website design, IT, writing, and organization. I believe that you will be struck at once by the site’s new look, its new openness, and the way it allows easy access to valuable information for ASCB members. The homepage is completely new, cleaner, and, we hope, organized more intuitively to appeal to today’s ASCB membership. Besides a new homepage, you can find two clear innovations in the website.

First of all, “The ASCB Post” (www.ascb.org/news; Senior Science Writer John Fleischman is editor-in-chief) was designed as a source for science news and professional information. We intend to update the Post at least twice a week, on Tuesdays and Thursdays, with information of particular interest to ASCB members. Year round, we will endeavor to keep the Post as “newsy” as possible. I was pleased that just two days after the new website went up, stories from the ASCB Post were picked up by writers for the national press. Although new material will appear frequently, articles in the ASCB Post will be archived and remain available.

The ASCB Post was designed from the ground up as a group effort. Members, leadership, and staff, are in this together. In fact, I see an important role for members in the ASCB Post as our “embedded reporters” stationed at the front lines of research. When you see a cool paper, an odd one, a surprising one, or a forgotten one that you deem relevant for the ASCB Post, let us know. And if you ever had the dream of being a reporter or a columnist, why not send us your piece for consideration in the ASCB Post?

The second major innovation on the website is a blog, which I started, called Activation Energy (www.ascb.org/activationenergy). It is designed to do just that—activate our membership and bring it into serious discussions of science and science policy. I will strive to post weekly on a range of topics. Some posts will present in-depth analysis; others will feature lighter comments on things I notice or hear. I expect the blog to be an open and active forum, a place for day-to-day conversation among all members, regardless of time zone or seniority status. To encourage candor, we allow blog comments to be posted under a pseudonym; to keep things civil, we require a not-for-publication email address. Comments are the heart of a good blog. I see blogging as a two-way street: It is not just about writing, but also about listening. Activation Energy

I see an important role for members in the ASCB Post as our “embedded reporters” stationed at the front lines of research.
needs your comments, corrections, additional thoughts, pushback, and, I hope, an occasional “bravo” (well, at least no rotten tomatoes). So post your comments and your ideas. This is a space for ASCB members and all those interested in cell biology, science policy, and science communications.

We have in the oven more surprises for the website, which we will serve up throughout the year. Stay tuned, because this project has just begun. Besides the major changes that I’ve mentioned above, we’ll be tweaking the website in ways large, small, and sometimes temporary. This is far from a finished product; indeed, it is in many ways a handmade prototype, which we will rebuild in the spring around a new content management system. By late in the year, we expect to have a structurally new website, which will extend the look of the new homepage throughout the site.

We Cannot Make This Trip Alone
In the January-February ASCB Newsletter, the Society’s new President Don Cleveland described ASCB as the overachiever of scientific societies. Our science, journals, advocacy activities, and professional development opportunities are outstanding; ASCB has always tried to make every member consider the Society as a primary professional and scientific home. We want to build on this strong base to make sure that the results of these activities are effectively communicated to our members and to external audiences. We’re hoping that electronic communications will allow us to build an ASCB that is present for its members 365 days per year. The Annual Meeting is certainly not to be missed, but we think a broader communications platform will offer ASCB more opportunities for serving its members and a bigger canvas for illustrating the power and beauty of cell biology. We are planning more training tools, more webinars, and a high-tech scientific intelligence aggregator that could be valuable for graduate students as well as for deans!

I believe that these new electronic communication technologies are to professional societies in the 21st century what the assembly line was to manufacturers in the early 20th—game changers. The assembly line totally disrupted manufacturing until the technology was no longer optional. At ASCB, we want to think creatively, innovatively, and responsibly, but without fear of the future. We want to seize those opportunities that can better serve our members. We have taken the first step on a long journey, but we cannot make the trip alone. We need you as companion and guide. How? First, let us know what you think about the new tools and products that we are rolling out. Chime in, comment on the blog, send us your ideas, or point out what we never noticed. Get involved. Send us your articles or links to papers and items that you think are interesting. Tell us what ASCB members are doing in your lab or on your campus. Obey the sacred social media commandments: Like us on Facebook; follow us on Twitter; re-tweet and re-post ASCB news and blogs everywhere. This is an amazingly effective way to boost ASCB’s outreach to the public because social media content is catnip to the big cats of Web search engines.

I especially encourage students and early career cell biologists to participate in our new communication efforts, as well as in other aspects of the Society. You may have already heard that the ASCB Council has decided to create a new committee composed of postdocs and graduate students. We are currently recruiting members, and this is an ideal opportunity to exercise leadership skills, get more involved in the Society, and become more visible in your field. Join us! It will be fun, and together we may be able to toss around ideas that can make our field better and stronger, and who knows, maybe we will even solve a problem or two!
But before a cold front of objections sweeps in, Nakamura is at pains to insist that what is new here is not the elimination of A1 amendments, which is only one suggestion from the Advisory Council, but CSR’s determination to listen to the research community. “I would say that it’s less about the specifics of the proposed system as our approach to thinking about the future of the peer review system,” Nakamura explained in a recent interview. “The reason we are talking about some of these ideas now is not because they are about to be implemented. We’re looking for advice and input from the scientific community about the directions they would like to see us going in.”

Nakamura says that some of the issues raised by the Advisory Council are beyond CSR’s domain. Yet without wide discussion at NIH and in the research community, NIH would have no sense of what impact certain changes would have on individuals, Nakamura continued. “What would be most helpful in the long run for the future of science? Is our thinking reasonable from their perspective? What should we do to ensure that we get the details right before anything is implemented? It’s an attitude for moving towards the future rather than any specific idea.”

Double Toil and Trouble

Certainly CSR is well aware that the history of peer review reform has been tempestuous. Nakamura traced it to the recent surge of grant applications that began in 2002 at 55,000, plateaued around 76,000 in 2005 and 2006, sprang up to 112,000 in response to the American Recovery and Reinvestment Act (ARRA), and still remains in the 80,000 range, long after ARRA funds are gone. Success rates on R01 proposals have dropped to historic lows in recent budget years. The original NIH doubling did increase the number of PIs seeking grants, said Nakamura, and the ARRA spurred many PIs to write more grant applications, which together led to a slight increase in the number of grants per PI. But in Nakamura’s analysis, arithmetic is still the dilemma. “There are more PIs seeking what is essentially a flat amount of money. And that is essentially the core of our problem right now. With success rates at historic lows, our scientific constituency is a lot less happy than it was 10 years ago for obvious reasons.”

The unhappiness coincided with CSR’s attempts to address longstanding criticism of the peer review process—that it took too long, that it took far too much time from researchers both in rewriting amended applications and serving on study sections. Others complained that NIH peer review favored an “old boys” network of insiders and that, in particular, younger investigators were being frozen out before they even get started. In 2007, CSR began tightening up its internal policies on recruiting, training, and rotating peer reviewers.

The A2 Waiting Line

And in 2008, NIH decided to end A2 resubmissions. These were re-amended amended applications. They were a waste of valuable time for applicants and reviewers, according to Nakamura. “The key reason that the A2 was ended was the realization in 2008 that it had become the most commonly awarded application. The A0 and A2 had essentially switched places and committees were making PIs wait in line for their awards. The order in line was not significantly shifting as you went from A0 to A2. All that was happening by having the A2 was lengthening the time to award.” A commitment not to let the ending of the A2 disadvantage any subgroup such as new or early-stage investigators sealed its fate, says Nakamura. “The change was relatively fair. The main consequence we have seen as a result of the change is that awards are made sooner. Yes, we recognize as real the pain of PIs who get great scores but no award.”

These changes in peer review came just as the bottom seemed to drop out of the world economy and NIH success rates fell to historic lows. Big changes amid big uncertainty made the research community doubly unhappy, says Nakamura. “There has been a tendency for applicants to blame the peer review changes when they fail to get funding though the fall in success rates and inflation cut their chances for funding.”

Nakamura admits that CSR reform was...
not an unalloyed success. “I’d like to emphasize the overarching point that we don’t claim that changing peer review has fulfilled all the goals we had for it. We recognize that some of our expectations have not been met. Among other expectations was that changing the length of our applications would have two great effects: reduce the overall workload, which would allow our reviewers to focus on the significance of applications rather than the details of the experiments.” The workload did not decrease, said Nakamura, nor did “significance” overtake “approach” in its impact on final scoring and funding, according to CSR studies. “Approach remains the single most important correlate. Significance is a distant second place. All other factors apparently account for one percent of the variance. Approach appears to be by far the leading aspect of review,” he said. Still, Nakamura believes that the greater emphasis on significance, innovation, and overall impact improved peer review by forcing applicants and reviewers to focus on these criteria.

**Factoring Futility**

With the new suggestions about eliminating amended resubmissions entirely, Nakamura says that the Advisory Council and CSR are wary of unforeseen effects. If NIH considered all applications as new, PIs could respond with endless variations of the same proposal. “This issue of how many applications a PI can send in, especially if it significantly increased the number of applications, would be a major problem and a major flaw of this strategy,” he conceded. “It would only work if we kept at the present level or fewer applications each year. We wouldn’t want to harm the success rate and we wouldn’t want further workload at very low success rate.” Still Nakamura said, “We think it’s better if PIs decide when futility has been reached in the application process.”

Again, it’s only one proposal, says Nakamura, but it’s an example of the kind of thinking CSR is doing about the future. “The goal here is to look at new ideas to see if we can come up with ideas that can solve current problems. Test them. We’re very aware that what we proposed could cause harm.”

Harm may be in the forecast with federal funding for all basic research taking a dive off a fiscal cliff and getting swept away by a sequestration tsunami. Nakamura says that CSR has no direct role in deciding how NIH will face such a perfect storm. “It’s the institutes that have plans for what to do if there are great restrictions in funding,” Nakamura explained. “I think we would continue to work at the idea of identifying the best science for whatever award money is available inside the NIH system.”

—John Fleischman

**Footnote**

http://public.csr.nih.gov/AboutCSR/NewsAndPublications/PeerReviewNotes/Pages/Peer-Review-Notes-Jan-2013.aspx

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**Don’t miss the 2013 ASCB Annual Meeting, December 14–18 in New Orleans!**

Mark your calendars now and plan to attend the largest international meeting of cell biologists.

Three Threads will unite programs throughout the meeting: Cell Biology and Medicine; The Intersection of Cell Biology and the Physical Sciences; and, new this year, Professional Development. And of course the core areas that have traditionally been part of the ASCB Annual Meeting will be featured as well. More information will be coming soon. Check the ASCB Newsletter and www.ascb.org.
Bargmann is one of four current ASCB members to receive a prize, along with David Botstein of Princeton University and a member of the ASCB Council, Titia de Lange, also at Rockefeller, and Eric S. Lander of the Broad Institute of the Massachusetts Institute of Technology (MIT) and Harvard University. Counting recent ASCB members—Bert Vogelstein of Johns Hopkins University and Robert A. Weinberg of MIT—ASCB accounts for six of the 11 Breakthrough/Life Science winners, or $18 million in prizes.

Botstein, who is on sabbatical and traveling this year, happened to be home in Princeton, NJ, when he received an email from his old friend Levinson asking him to call. They talk from time to time, Botstein explained, but he had no inkling of what was on Levinson’s mind this time. “I was in my office at home, sitting down,” Botstein recalls, “otherwise it might have been difficult. Art introduced the fact that they have these prizes. We talked about that and eventually he came round to the sum.”

At twice the cash value of a Nobel Prize, a $3 million Breakthrough/Life Science award might lift a research biologist to the celebrity realm of a professional athlete. At least that’s the stated intention of the donors, according to Botstein. “I hope it works out that it will give more recognition to scientists as opposed to football players. I’m certainly for that.”

Botstein continued, “I think that there needs to be balance in what’s important in human culture. Most of the world is besotted with sports while some people are really into celebrities of various kinds. Science is arguably as important as any of these things, but it rarely gets the kind of notice that these donors want.”

Whatever each of the 11 winners does with the prize money, Botstein believes that this recognition comes for their years of work on basic science, mostly cancer biology. “This is something which is given for being good at something that brings forward human understanding and knowledge.”

In the aftermath of the announcement, Bargmann was still grappling with the reality of the award. “It’s a surprise and it’s an opportunity to try to do something that has meaning for me like conservation in developing countries,” Bargmann said. “Perhaps something in Africa about aligning the interests of animals and people.”

To get over the shock, Bargmann headed for a party at Rockefeller that evening where she was a guest of honor together with de Lange. Rockefeller is a small institution and two of the Breakthrough winners are there, Bargmann said. “And the two of us are women. And that’s kind of cool as well.”

—John Fleischman

Volunteer to Review CVs

We are looking for more volunteers to help review cover letters, CVs, and resumes online for young ASCB scientists. If you can help, please contact Thea Clarke at tclarke@ascb.org.

Are You Getting ASCB Pathways?

You should now be regularly receiving our monthly email update, ASCB Pathways—alerting you to the latest ASCB happenings and Annual Meeting updates. If you aren’t seeing the e-newsletter in your inbox, please check your spam filter, and/or contact your system administrator to whitelist *ascb.org.

Focus your efforts on discovery. Retain more viable cells and improve the physiological relevance of your results using X-tremeGENE DNA Transfection Reagents.

Free sample and protocols at www.x-tremegene.roche.com

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X-TREMEGENE is a trademark of Roche.
You’re a new assistant professor and your first manuscript was just rejected following review. The editor does not encourage you to resubmit. Your hopes dashed, you first consider quitting science. Upon further reflection, you ponder submitting the manuscript elsewhere or perhaps contacting the editor, who you feel did not properly appreciate your work. Should you contact the editor? If so, how? And what should you say?

**Mechanics of Manuscript Submission and Review**

In the normal course of events, you may communicate with the editor at various times before and after hitting “submit.”

At *Molecular Biology of the Cell (MBoC)* and many other journals, your initial communication with the editor occurs at the time of manuscript submission.¹ When you write a cover letter to *MBoC*, you don’t need to overstate or oversell your story. Your letter should briefly point out the most important results in your article and identify members of the journal’s editorial board and others in the field who could handle and review the work. This will simplify the initial evaluation and help the editor choose suitable referees.

However, this advice may not apply equally at all journals: Commercial journals have different priorities and a different business model than society journals. When submitting articles to these journals, it may be helpful to argue the broad relevance and potential impact of your study.

On receiving your submission, the editor first decides whether to send it for review or to reject it immediately, if he or she believes this will save time for you as well as the journal. If the manuscript is to be reviewed, the editor then selects the expert reviewers who will prepare detailed reviews of the manuscript. Ultimately, armed with advice from two or more reviewers, the editor will decide to accept or reject your manuscript, or to invite you to make specific revisions.

**Revising the Manuscript**

If the editor invites you to revise your manuscript, you may be uncertain about how to proceed. You may not be clear about which revisions the editor feels are essential. Or, after studying the reviewers’ comments, you may see several alternative ways to address their concerns. In such cases, you may want to contact the editor before making revisions. If you wish to do this, keep your correspondence to the point. It is best to communicate by email through the journal’s editorial office rather than by contacting the editor directly. If you end up having a discussion with the editor by telephone, be sure to follow up by email so there will be a written record of the discussion and you can each confirm what was communicated. Be sure to consult the journal’s administrative staff, rather than the editor, about procedural matters and inquiries about manuscript review status.

When submitting a revised manuscript, your cover letter should be addressed to the editor and adopt a gracious tone. This letter should outline the changes made in the context of the original reviews and disposition letter. It should justify how each point was or was not addressed. The editor may be able to make an immediate decision regarding the revised manuscript or may send it out for re-review. In either case, your manuscript may be accepted as is, accepted with minor revisions, rejected with hope, or rejected outright. In the latter case, you will need to decide how to respond.

**Dealing with Rejection**

If you feel that a decision to reject your manuscript was based on a faulty or biased
assessment, it is appropriate to write an appeal to the editor. When appealing an editor’s decision, first ask yourself if there might be some merit to the criticisms. Read the reviews and editor’s disposition letter carefully. What was the nature of the criticism? Reread your manuscript and consider whether the points raised by the reviewers are valid, or if you perhaps did not communicate your findings clearly.

If you wish to write a rebuttal letter, be polite, respectful, scholarly and professional. While some very famous scientists might be able to force a paper through the review process at a commercial journal by aggressive behavior, for most of us such an approach is more likely to backfire. It is a good idea to wait a day or so after receiving a decision before writing a rebuttal so emotions are not running high. After drafting the rebuttal, give it to a colleague to read before sending it to the journal. If there were things you could have done better in your study, acknowledge that in the letter.

If a manuscript review is delayed, authors often suspect that this is due to a conflict of interest. However, remember that journal editors and reviewers are typically academics and may be overwhelmed with duties such as teaching and grant writing. Family emergencies and holidays can also cause unavoidable delays.

You may also have a strong suspicion about the identity of the reviewers and feel tempted to share these with the editor. In our experience, these suspicions are usually wrong. Even if you have guessed right, raising accusations is unlikely to strengthen your case.

In extreme cases, some authors may have suspicions about the motivations of the editor. These are not accusations to make lightly. However, as a final recourse, you may bring your appeal to the journal’s editor-in-chief, who is ultimately responsible for providing consistency and fairness in the handling of a journal’s manuscripts.

Identify Your Goal
If you decide to write an appeal letter, you presumably are not writing just to vent, but to ask for a tangible outcome. You should have specific ideas about what you are trying to accomplish, so keep the letter factual and succinct. Be sure to make clear what specific action you would like to see taken. Are you trying to communicate through the journal to the reviewers? Do you want the editor to seek an additional review? Be clear about your own motivations for writing the appeal, and be sure that everything you put in your letter is fully justified.  

—Julie Brill (Associate Editor) and David Drubin (Editor-in-Chief), Molecular Biology of the Cell

Notes
The authors thank John Ashkenas for editing this column.

1 Some journals invite authors to send a presubmission inquiry letter, which will allow them to pass an initial judgment about whether the material is likely to be of interest. This is not the usual practice at MBoC.

2 An earlier editorial by one of us (Drubin) “…provides guidelines to help reviewers, editors, and authors make the peer review process more constructive and civil, and highlight[s] what MBoC is doing to realize these principles”: Drubin D (2011). Any jackass can trash a manuscript, but it takes good scholarship to create one (how MBoC promotes civil and constructive peer review). Mol. Biol. Cell 22, 525–527.
Congressional Leader Cantor Hails Basic Research

In February U.S. Representative Eric Cantor (R-VA) delivered a major policy speech in which he outlined a wide-ranging domestic agenda for the Republican Party that focused on scientific research, education, healthcare, and job training.

In a speech setting modeled on that of a State of the Union address, complete with invited guests to personalize portions of his remarks, Cantor said that he wanted to move beyond the recent focus on budget cutting and debt ceilings and provide a new agenda for his party. “Over the next two years,” the House Majority Leader said, “the House Majority will pursue an agenda based on a shared vision of creating the conditions for health, happiness, and prosperity for more Americans and their families. And to restrain Washington from interfering in those pursuits.”

One of his guests was Katie, a 12-year-old from Richmond, VA, who was diagnosed with a brain tumor soon after her first birthday. Cantor outlined for the audience the many trials Katie and her family had endured while seeking treatment. Along with being concerned for Katie, Cantor said “we also must pray that scientists and researchers find cures to these diseases so our parents and grandparents don’t leave us too soon, or that children like Katie are not robbed of a healthy life.”

The Congressman said that he sees a role for federally supported basic research. He said that supporting that research includes a reduction in government red tape to help speed the development of drugs and treatments. He also remarked that federal funding for social sciences should be reprioritized for biomedical research. This is the second time in recent months that Cantor has spoken so supportively of basic biomedical research.

While the Congressman’s remarks are welcomed by the basic research community, they have not been well received in Washington, even by fellow Republicans. In part, there is confusion about how the policy goals outlined in his speech conflict with the impact of existing legislation currently being considered by the U.S. House of Representatives.


—Kevin M. Wilson

Sequestration Delay Brings Rivals Together

The development of the annual U.S. government budget is supposed to be simple. The President proposes a budget in the first weeks of the year. Then, Congress ignores most of his proposals and creates its own budget by the first week in October. Over the years, October became November and then November became December. In the last couple of years, December has slipped to as late as March of the next year.

And those were the good old days! Now President Obama has proposed a budget for FY14 even though Congress has yet to approve a budget for FY13 and has yet to address the sequestration problem that is still hanging around from FY12.

What about Sequestration?
The United States avoided a debt ceiling crisis in 2011 by resorting to sequestration, a program of across-the-board cuts that kicked in when a congressional Supercommittee failed to reach agreement on budget cuts. Then it avoided falling off the fiscal cliff last December when Congress and the President decided to delay sequestration until March.

On Friday, March 1, President Obama signed the order implementing sequestration. The federal government began issuing furlough notices for some employees on the next Monday. As of press time, the White House and Congress had not started any discussions...
to undo sequestration. The next deadline facing lawmakers is the March 27th expiration of the Continuing Resolution (CR) that is currently funding government operations. While that may serve as an opportunity to resolve this latest budget crisis, a failure to reach an agreement by the expiration of the CR could lead to a shutdown of the federal government.

But There Is Some Good News

Some positive signs came out of the delay to sequester. For most of the last year, supporters of the defense part of the federal budget and supporters of the domestic portion of the budget were pitted against each other. During the second half of 2012, members of the defense industry carried out a very effective campaign designed to exempt the defense budget from sequestration cuts. Even though defense was not excused from sequestration cuts, the defense industry was successful in reframing the debate leading up to sequestration so that the impact of sequestration was almost always talked about in terms of the impact on the defense industry alone.

In February, a very unusual event took place in Washington. Leaders of defense companies and advocates for the domestic programs joined together for a news conference to call for a balanced, bipartisan solution to averting sequestration completely, not just for one portion of the federal budget at the expense of the other parts.

In remarks at the press conference, Wes Bush, Chair of the Aerospace Industries Association (AIA) and Chair, CEO, and President of Northrup Grumman Corporation said, “The impact—the very real impact on university research and student aid—would haunt us for many years. And the impacts on our public health and safety are simply unacceptable.”

During the press conference, leaders of NDD United, an umbrella group representing organizations, including the ASCB, concerned with the domestic portion of the federal budget, and AIA each announced that they were sending letters to Capitol Hill calling on Congress and the President to work together on a balanced solution to the current problem. The NDD United letter was signed by 3,200 national, state, and local organizations, including the ASCB. The AIA letter was signed by almost 140 CEOs of defense-related companies.

To watch the joint news conference, go to www.c-span.org/Events/Organizations-Discuss-Joint-Effort-to-Stop-Sequestration/10737437956-1.

To read the letters sent to Capitol Hill regarding sequestration, go to www.ascb.org/ScienceFederalFunding.html.

—Kevin M. Wilson

Congress Unites over Immigration Reform

In politics, the phrase “elections have consequences” is often used to justify major, post-election policy advances or significant shifts to party agendas. In rare instances these election mandates and post-election changes in agenda bring opposite sides together on a single issue.

The 2013 election results seem to be bringing Republicans and Democrats on Capitol Hill together, each for different reasons, to address the ongoing issue of immigration reform. Within a few weeks of the new year, two different bipartisan groups of senators announced plans to solve the problems that until now have blocked meaningful reform efforts. One group of eight, led by Senators John McCain (R-AZ) and Charles Schumer (D-NY), unveiled a blueprint with a series of wide-ranging proposals that includes increased border security, a path to citizenship for illegal immigrants already in the United States, awards of citizenship, and employment verification. Included in the McCain/Schumer blueprint is a provision to provide greencards to foreign citizens who earn a PhD or master’s degree in
science, technology, engineering, or mathematics from a U.S. university. (Read ASCB Executive Director Stefano Bertuzzi’s blog post on this topic at http://ascb.org/StapleAGreenCard.html.)

A second bipartisan group of four, led by Senators Orin Hatch (R-UT) and Amy Klobuchar (D-MN), has introduced a bill to make it easier for foreign students to train and then remain in the United States at the completion of their studies. Because the Hatch/Klobuchar bill is limited in focus, it is likely to be wrapped into a larger, more comprehensive bill, most likely the McCain/Schumer bill.

Reform efforts in the House of Representatives are less certain to succeed. Press reports indicate that a secret, bipartisan group of House members is working on its own plan, but the details are not known. In the House, most immigration reform efforts, including reforming visa and greencard policies for foreign-born scientists, will be secondary to solutions to the illegal immigration issue. Initial indications are that it will be harder to get immigration reform approved by the House than by the Senate.

The debate in Congress may not provide opportunities to fix all of the immigration-related problems the scientific community is facing, but it has opened a door. The ASCB will be working to make sure that any changes to existing visa and greencard policies make it easier for foreign students to study in the United States and also improve the free flow of scientific knowledge across national boundaries.

—Kevin M. Wilson

Suresh to Leave NSF

Subra Suresh (Courtesy: National Science Foundation)

At the beginning of February, National Science Foundation (NSF) Director Subra Suresh announced that he would be leaving the NSF to become president of Carnegie Mellon University. Suresh served a little more than two years of a six-year term.

In an eight-page letter to members of the NSF community announcing his departure, Suresh highlighted a number of NSF accomplishments during his tenure. In particular, he mentioned programs that provide increased international opportunities for American investigators and an annual doubling of the number of Graduate Research Fellowships since 2010.

In a statement after Suresh’s departure was announced, President Obama said, “We have been very fortunate to have Subra Suresh guiding the National Science Foundation for the last two years. Subra has shown himself to be a consummate scientist and engineer—beholden to evidence and committed to upholding the highest scientific standards. He has also done his part to make sure the American people benefit from advances in technology, and opened up more opportunities for women, minorities, and other underrepresented groups. I am grateful for his service.”

—Kevin M. Wilson
Congressional Biomedical Research Caucus
2013 Briefing Series

Each year the Coalition for the Life Sciences (CLS) plans a series of caucuses on Capitol Hill that are designed to foster an appreciation for and understanding of biomedical research. (ASCB is a founding member of the CLS.) Thanks to a generous grant from Howard Hughes Medical Institute, the caucuses provide a forum where congressional members and staff can interact directly with preeminent researchers responsible for important scientific research. ASCB members are invited to attend. All presentations take place on Capitol Hill in Washington, DC, and start at 12:00 Noon.

Here are some of the 2013 topics and speakers:

April 10  **Mind Over Matter**
Krishna Shenoy, Stanford University
Rayburn House Office Building
Room B-340

April 24  **The State of Personalized Therapy for Breast Cancer Patients**
Alana Welm, Huntsman Cancer Institute, Utah
Rayburn House Office Building
Room B-340

May 15  **Lung on a Chip**
Donald Ingber, Children's Hospital, Boston
Rayburn House Office Building
Room B-338

June 12  **Digging Up New Antibiotics**
Sean Brady, The Rockefeller University, New York
Rayburn House Office Building
Room B-340

June 26  **Why Pharma Needs the NIH**
James Sabry, Genentech, San Francisco
Rayburn House Office Building
Room B-340

July 17  **Genetic Surgery: Curing Hemophilia**
Katherine High, Children's Hospital of Philadelphia
Rayburn House Office Building
Gold Room

July 24  **Traumatic Head Injury: What Football Players and Returning Veterans Have in Common**
Walter Koroshetz, NIH
Rayburn House Office Building
Gold Room

Sept. 11  **Transplanting Cells to Reduce Seizures**
Arturo Alvarez-Buylla, UCSF
Rayburn House Office Building
Gold Room

(*) Title may change.
Cell Sightings

The Cell: An Image Library-CCDB (www.cellimagelibrary.org) continues to evolve. We are pleased to announce that more than one million pages of cell information have been served since our launch on August 9, 2010. Some interesting new or anticipated uses for images in The Cell include the following:

- Núria Soler-Lluís used an image from The Cell in her doctoral thesis, titled “Afectació de l’endoteli corneal en Pacients amb Malaltia Pulmonar Obstructiva Crònica” (“Involvement of the Corneal Endothelium in Patients with Chronic Obstructive Pulmonary Disease”).
- An interesting project using images from The Cell needs your help to compare two different techniques for cell volume visualization (rendering Z-stacks as 3D images). It will take only a few moments of your time and can be found at https://survey.vt.edu/survey/entry.jsp?id=1355866408333.

Many have signed up for a free account at The Cell. Have you? An account lets you save images in folders for future reference, and it takes less than a minute to set up: just go to https://www.cellimagelibrary.org/accounts/login_prompt. Don’t forget that you can share images right from the detailed image page by using the buttons just below the licensing information. These buttons allow you to share images on Facebook, LinkedIn, StumbleUpon, and other social networks. Help promote The Cell by selecting and sharing just one image.

Another way to keep up with The Cell is to join us on Facebook. Simply go to www.facebook.com/cellImageLibrary and click “Like.”

Prefer LinkedIn? Join our group for more conversation on everything microscopy related at www.linkedin.com/groups?about=&gid=3733425.

Have you used The Cell in interesting ways or in an article? Are you interested in submitting images or collaborating with The Cell-CCDB? Please let us know by sending an email to David Orloff at dorloff@ncmir.ucsd.edu. All documented usage helps support our efforts to obtain continued funding.

—David Orloff

The Cell was developed by ASCB under a Grand Opportunities grant from the National Institute of General Medical Sciences. Now The Cell has moved to the National Center for Microscopy and Imaging Research Cell Centered Database (CCDB) for its day-to-day management. ASCB maintains a role in advertising the Library, soliciting images, serving as an advocate for the resource, and creating a community committed to The Cell-CCDB.
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FEATURES

From the National Science Foundation

News from the Funding Front: Upcoming Opportunities, Proposals Welcomed
Helen L. Vasaly, Jose Herrera, Charles H. Sullivan, and Katherine J. Denniston . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 1–4

Many life sciences faculty and administrators are unaware of existing funding programs and of the strategies needed for writing an educationally related proposal. We hope to remedy this problem by making the life sciences audience aware of two National Science Foundation programs underutilized by the biology community.

From the National Academy of Sciences

Glycoscience: Integrating a Key Macromolecule More Fully into the Curriculum
Katherine Bowman and Douglas Friedman . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 5–8

The recent report from the National Research Council, Transforming Glycoscience: A Roadmap for the Future, explores an important area of the life sciences. Glycoscience examples are suitable additions to many areas of the curriculum, and their inclusion will help ensure that students have an understanding of the diverse functions played by this key class of macromolecules.

Current Insights

Recent Research in Science Teaching and Learning
Deborah Allen . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 9–11

This feature is designed to point CBE—Life Sciences Education readers to current articles of interest in life sciences education as well as more general and noteworthy publications in education research.

ESSAY

The Teaching Demonstration: What Faculty Expect and How to Prepare for This Aspect of the Job Interview
Michelle K. Smith, Mary Pat Wenderoth, and Mary Tyler . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 12–18

To help job candidates understand faculty expectations of the teaching demonstration portion of an interview for a tenure-track faculty position, we canvassed biology faculty from a variety of institutions. We asked faculty to identify the elements of an effective teaching demonstration and to give advice on how candidates can best prepare for this aspect of the interview.

ARTICLES

Addressing the Challenge of Diversity in the Graduate Ranks: Good Practices Yield Good Outcomes
Nancy L. Thompson and Andrew G. Campbell . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 19–29

This paper describes practices designed to improve graduate student training outcomes in the sciences. It describes work to increase student diversity in the graduate ranks and documents the success of trainees. The practices designed to achieve these outcomes are broadly applicable to all graduate training programs and students.

Stereotyped: Investigating Gender in Introductory Science Courses
Shanda Lauer, Jennifer Momsen, Erika Offerdahl, Mila Kryjevskaia, Warren Christensen, and Lisa Montplaisir . . . . . . . . . 30–38

This study investigated the performance of women and men across introductory science courses, stereotype threat endorsement, and the utility of a values-affirmation writing task in reducing achievement gaps. Data analysis revealed no achievement gap, little stereotype threat endorsement, and no impact of the values-affirmation writing task on performance.

Figure Facts: Encouraging Undergraduates to Take a Data-Centered Approach to Reading Primary Literature
Jennifer E. Round and A. Malcolm Campbell . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 39–46

Figure Facts is a versatile instructional tool designed to help college students tackle complex data figures in the primary literature.
Questions for Assessing Higher-Order Cognitive Skills: It’s Not Just Bloom’s  
Paula P. Lemons and J. Derrick Lemons ................................................................. 47–58

Biologists’ conceptions of higher-order questions include Bloom’s, difficulty, time, and student experience. Biologists need more guidance to understand the difference between Bloom’s and item difficulty. Biologists’ conceptions about higher-order questioning can be used as a starting point for professional development to reform teaching.

CREATE Cornerstone: Introduction to Scientific Thinking, a New Course for STEM-Interested Freshmen,  
Demystifies Scientific Thinking through Analysis of Scientific Literature  
Alan J. Gottesman and Sally G. Hoskins ............................................................... 59–72

This study shows that a one-semester course aimed at STEM-interested freshmen and focused on scientific literature analysis using the CREATE strategy can produce gains in thinking/design ability as well as epistemological maturation.

Improvement in Generic Problem-Solving Abilities of Students by Use of Tutor-less Problem-Based Learning in a Large Classroom Setting  
Andis Klegeris, Manpreet Bahnwal, and Heather Hurren ......................................... 73–79

Problem-based learning (PBL) was introduced in a large classroom setting. Two generic problem-solving tests were administered at the beginning and end of the term, and a statistically significant 13% increase in the test scores of students exposed to PBL was demonstrated; no change in test scores was observed in the control groups not using PBL.

Developing the Inner Scientist: Book Club Participation and The Nature of Science  
Phyllis Baudoin Griffard, Tayseer Mosleh, and Saad Kubba .................................... 80–91

First-year premedical students’ understanding of Nature of Science (NOS) improved over one academic year. Those who participated in a nonfiction book club as a curricular option showed better understanding of NOS than students who did not participate. Pre- and postcourse surveys and course documents suggest that book club may attract students with higher NOS status and further improve it.

Evolving Impressions: Undergraduate Perceptions of Graduate Teaching Assistants and Faculty Members over a Semester  
K. Denise Kendall and Elisabeth E. Schussler ......................................................... 92–105

This study explored student ratings of instruction by GTAs and faculty members to see whether perceptions differed by instructor type, whether they changed over a semester, and whether certain instructor traits were associated with student perception of their instructor’s teaching effectiveness or how much they learned from their instructor.

Implementing Recommendations for Introductory Biology by Writing a New Textbook  
Mark J. Barsoum, Patrick J. Sellers, A. Malcolm Campbell, Laurie J. Heyer, and Christopher J. Paradise ................................. 106–116

A new introductory biology textbook responds to national calls for reform and promotes critical learning gains in scientific, quantitative, and metacognitive ability.

On the Cover

Integrating Concepts in Biology (ICB) is a new textbook and teaching approach developed by reverse engineering the undergraduate introductory biology course in response to many national calls for teaching reform. As depicted in the diagram, ICB divides biology into five big ideas that encompass the entire field: information, evolution, cells, emergent properties, and homeostasis. To emphasize the interconnectedness of all aspects of the biosphere, each of the five big ideas is explored at all levels of life’s size scale: molecular, cellular, organismal, population, and ecological system. Students are guided in critical interpretation and quantitative analysis of primary data, often from classic publications. ICB stresses the importance of mathematics in biology and the ethical and social implications of biology, while deemphasizing content coverage, memorization, and passive acceptance of information. Barsoum and colleagues (see page 106) report that ICB students show significant improvement in critical thinking outcomes and metacognition over comparison group students, while recalling content knowledge at the same level.
**METRAPOLIS: Where Membrane Trafficking and Polarity Meet in the Big Apple**

What is the connection between the molecular biology of individual polarity proteins and the broad spectrum of events during cell and tissue morphogenesis? This was the main question addressed by the speakers when the Albert Einstein College of Medicine held the first Membrane Trafficking and Polarity Symposium (METRAPOLIS) in New York City on November 27, 2012. Hosts Dawn Fernandez and Aleksandr Treyer, both graduate students at Albert Einstein, organized the meeting with support from ASCB’s One-Day Local Meetings grant initiative. Further cosponsored by the Sue Golding Graduate School and the Albert Einstein Cancer Center, METRAPOLIS drew more than 120 attendees. Guests and speakers came from Columbia, New York, Yale, and Rockefeller Universities; Memorial Sloan-Kettering Cancer Center; and Mount Sinai, Albert Einstein, and Cornell Schools of Medicine. Nine seminars, given by Jeremy Nance, Sergei Sokol, Marek Mlodzik, Qais Al-Awqati, Michael Caplan, Enrique Rodriguez-Boulan, Geri Kreitzer, Gregg Gundersen, and Elaine Fuchs, summarized open questions in the field.

Topics included the developmental perspective as well as molecular, cell, and tissue physiology, with experimental approaches ranging from the worm–fly–frog trio to MDCK model epithelia and whole-animal studies in mice. Presentations emphasized polarity complexes that function across the plasma membrane to convey and regulate both intra- and intercellular polarity cues, as well as differential transport of membrane proteins out of the Golgi and its relevance to epithelial physiology. In addition to the plasma membrane and the secretory pathway, speakers explored microtubule motor function, asymmetric cell division, and the less-discussed polarity aspects of nuclear migration.

A poster session by students and postdocs ended the day. The poster presenters were able to go beyond the limits of published material and show their most recent, just-out-of-the-oven work, which merited more discussion than the allotted two hours.

METRAPOLIS received positive feedback. Continued communication between attendees was a major goal of this event, and some participants have already expressed interest in organizing the next iteration.

— Aleksandr Treyer and Dawn Fernandez, Albert Einstein College of Medicine

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**ASCB Support for Local Meetings**

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

The next deadline to apply for funds is April 1, 2013. Applicants must be or become members of the ASCB. For more information visit www.ascb.org and click on “Meetings.”
Did You Know...?

ASCB is here to help you in your career development with a wide variety of career resources:

- **Career Advice For Life Scientists Vols. I & II (combined) and Vol. III.** In these compilations of Women in Cell Biology columns from the *ASCB Newsletter*, you'll find information on writing and publishing; graduate and postdoctoral issues; and careers in academia, industry, and elsewhere, to mention just a few of the many topics covered. And the price is right—you can download the PDF files for free or order a print copy for just the cost of shipping.

- Check out the ASCB Online Job Board. Whether you want to fill a position or obtain one, the Job Board is available year-round for you. Looking for a job? Post your resume and sign up for Job Alerts. Have a job opening? ASCB members receive a 50% discount on posting rates.

- Want to get your resume or CV reviewed before you go to the Job Board? Senior ASCB members are available to help you, one-on-one. Sign up for this service today!

- Have you seen the four Career Planning Webinars available online for ASCB members? Just log in with your ASCB username and password to access them anytime.

For more information on these and other career resources available to you, go to www.ascb.org and click on “Career Development.”
A novel Rac1 GAP splice variant relays poly-Ub accumulation signals to mediate Rac1 inactivation
T. Y. Huang, S. Michael, Tao Xu, A. Sarkeshik, J. J. Moresco, J. R. Yates, III, E. Masliah, G. M. Bokoch, and C. DerMardirossian

BGIN is an alternatively spliced Rac1-GAP comprising a unique C-terminal poly-ubiquitin–binding module. Poly-Ub/BGIN interactions enhance BGIN distribution to membranes to limit Rac1 activity and downstream effector function in tissue culture cells and with proteotoxic stress such as neurodegenerative APP proteotoxicity.

**CD81 regulates cell migration through its association with Rac GTPase**

Data presented here provide evidence for a new direct interaction of the GTPase Rac with the C-terminal cytoplasmic domain of tetraspanin CD81. Tetraspanin-enriched, microdomain-dependent compartmentalization is a novel regulatory mechanism of Rac activity turnover, which provides a novel mechanism for regulation of cell motility by tetraspanins.

RNA polymerase II progression through H3K27me3-enriched gene bodies requires JMJD3 histone demethylase
C. Estarás, R. Fueyo, N. Akizu, S. Beltrán, and M. A. Martínez-Balbás

JMJD3 H3K27me3 demethylase plays an important role in the transcriptional response to different signaling pathways; however, the mechanism by which it facilitates transcription is unclear. Genome-wide analysis shows that JMJD3 regulates TGFβ response by promoting RNA polymerase II progression along the gene bodies.

A color-rendered fluorescence image of a *Caenorhabditis elegans* carrying a dominant mutation in the gene encoding MEC-7/β-tubulin. The mutation alters neuronal polarity, transforming a unipolar neuron (with a single neurite) into a bipolar or multipolar one (with two or multiple neurites). In this image, the mechanosensory neuron ALM extends one normal neurite anterior toward the head of the animal (left) and one ectopic neurite posterior toward the tail (right). The mutation also causes defects in the regeneration capacity of the neurites. See *Mol. Biol. Cell* 24, 285–296. (Image: Leonie Kirszenblat, Dee McGrath, and Massimo A. Hilliard, Queensland Brain Institute, The University of Queensland, Brisbane, Australia).
Altered nitric oxide production mediates matrix-specific PAK2 and NF-κB activation by flow

PAK2 mediates shear stress–induced NF-κB activation. Basement membrane proteins limit the proinflammatory response to shear by blocking the interaction of PAK2 with the adaptor protein Nck. This uncoupling response requires protein kinase A–dependent nitric oxide production and subsequent PAK2 phosphorylation on Ser-20 in the Nck-binding domain.

Mol. Biol. Cell 24 (3), 398–408

β-Catenin–dependent lysosomal targeting of internalized tumor necrosis factor-α suppresses caspase-8 activation in apoptosis-resistant colon cancer cells
J. Han, P. Sridevi, M. Ramirez, K. J. Ludwig, and J. Y. J. Wang

Tumor necrosis factor-α (TNF)-induced apoptotic activation of caspase-8 requires internalization of its receptor. This study shows that constitutively activated β-catenin is required to facilitate the lysosomal delivery of internalized TNF, the inhibition of caspase-8 activation, and the suppression of apoptosis in colon cancer cells.


Visualization of the exocyst complex dynamics at the plasma membrane of Arabidopsis thaliana

The exocyst complex localizes to distinct foci at the plasma membrane of Arabidopsis thaliana cells. Their localization at the plasma membrane is insensitive to BFA treatment but is decreased in an exocyst-subunit mutant. In turn, exocyst-subunit mutants show decreased exocytosis.

Mol. Biol. Cell 24 (4), 510–520

Confocal images of colon cancer cells in which tumor necrosis factor-α (TNF, red) and the membrane-embedded sector of the vacuolar ATPase complex (V-ATPase, green) have been labeled. TNF on the surface of chilled cells (left) becomes co-localized with V-ATPase within 60 minutes of the induction of synchronized endocytosis by warming to 37°C (right). This rapid movement of TNF to the lysosomal compartment requires the expression of activated nuclear β-catenin and is associated with resistance to TNF-induced apoptosis in colon cancer cells. See Mol. Biol. Cell 24, 465–473. (Image: Jinbo Han, Moores Cancer Center, University of California San Diego, La Jolla, CA)
A list of current grant and other opportunities can be found at www.ascb.org/GandO.html. The following items were added since the last issue of the Newsletter:

**Differentiation and Integration of Stem Cells (Embryonic and Induced-Pluripotent) into Developing or Damaged Tissues (R01 and R21).** The National Institute of Child Health and Human Development seeks funding applications for research to promote in vivo studies of stem cells in animal models and in humans (if applicable) to better understand how stem cells function within developing or damaged tissues. The areas of emphasis include systematically profiling and cataloging changes at genetic and epigenetic levels that take place in stem cells and their microenvironment. Expiration date: September 8, 2016. R01: http://grants.nih.gov/grants/guide/PA-files/PAR-13-094.html. R21: http://grants.nih.gov/grants/guide/PA-files/PAR-13-095.html.

**High-End Instrumentation Grant Program (S10).** The National Institutes of Health (NIH), Division of Program Coordination, Planning and Strategic Initiatives, Office of Research Infrastructure Programs encourages applications from groups of NIH-supported investigators to purchase a single major item of equipment costing at least $750,000 to be used for biomedical research. The maximum award is $2,000,000. Instruments in this category include, but are not limited to, biomedical imaging systems, NMR spectrometers, mass spectrometers, electron microscopes, and supercomputers. Applications due: September 13, 2013. http://grants.nih.gov/grants/guide/pa-files/PAR-13-101.html.


**Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE).** The National Science Foundation (NSF) INSPIRE awards program encourages investigators to submit bold, exceptional proposals that some may consider to be at a disadvantage in a standard NSF review process. INSPIRE is open to interdisciplinary proposals on any NSF-supported topic. Required letters of intent due: March 29, 2013; application deadlines vary. www.nsf.gov/funding/pgm_summ.jsp?pims_id=504852.

**NIH Summer Research Experience Programs (R25).** The National Institutes of Health (NIH) seeks applications from institutions seeking to provide a high-quality research experience for high school and college students and for science teachers during the summer academic break through the NIH Summer Research Experience Program. Applications due: April 2, 2013; April 2, 2014; April 2, 2015. http://grants.nih.gov/grants/guide/pa-files/PAR-13-104.html.

**Web-based Workshops in Writing Proposals for Educational Research and Development Projects.** The Virtual Faculty Collaborative (American Association for the Advancement of Science, Louisiana State University, and Higher Education Services) is offering a series of interactive Web-based workshops on preparing proposals for undergraduate science education projects such as those supported by the National Science Foundation. Each workshop will be offered multiple times between March 12 and May 1, 2013. http://ehrweb01.aaas.org/stem-iwbw/workshops.


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**ASCB Member Benefit: Publicize Your Book**

Are you publishing a book? If so, let ASCB know! Send the title, publisher, ISBN information, and a thumbnail (300 dpi) of the cover. We'll include it in the *ASCB Newsletter*. This publicity is available only to ASCB members. Please send submissions to Thea Clarke at tclarke@ascb.org.

**ASCB Member Benefit: One-on-One CV Review**

Need some help with a cover letter, CV, resume, statement of teaching philosophy, or other document for the next step in your career? Members of the ASCB are willing to help. Just fill out a short form (www.ascb.org), and we'll put you in touch with a reviewer. Then the two of you can decide which digital collaboration tool to use (email, Google Docs, Skype, Wikispaces, etc.). You must be an ASCB member to take advantage of this service. —Thea Clarke
Perinatal Stem Cells, 2nd Edition
Kyle Cetrulo, Curtis L. Cetrulo, Curtis L. Cetrulo, Jr., Rouzbeh R. Taghizadeh
978-1-1182-0944-8 | Hardcover | 304 pages | March 2013

Perinatal Stem Cells, 2nd Edition builds on the first edition to provide an updated tutorial on perinatal stem cells, including stem cells harvested from the amniotic fluid, placenta, maternal blood supply, umbilical cord and Wharton’s Jelly.

Coverage includes
• underlying biology of pregnancy related stem cell sources
• cell culture and potential therapeutic uses
• an overview of the growing perinatal stem cell industry
• insights on the impact of these stem cells from obstetricians, gynecologists, cardiologists, hematologists, tissue engineers, and cord blood bankers

With contributions from some of the top academic stem cell laboratories in the United States as well as new chapters from international stem cell scientists, Perinatal Stem Cells presents an update on the cutting-edge research in the field while maintaining its signature clinical focus.

Buy in hardcover or ebook format!
www.wiley.com/go/perinatal2e

STEM CELLS, CRANIOFACIAL DEVELOPMENT AND REGENERATION
George T.J. Huang, Irma Thesleff
978-1-1182-7923-6 | Hardcover | 550 pages | April 2013

Stem Cells, Craniofacial Development and Regeneration explores the rapidly expanding field of stem cells and regeneration from the perspective of the dentistry and craniofacial community, and points the way forward in areas of tissue bioengineering and craniofacial stem cell therapies.

Who should read this book?
Dental students, neural crest and craniofacial biology researchers, tissue engineers, craniomaxillofacial surgeons, and developmental biologists at the graduate, postdoctoral or established researcher levels.

Why should you read it?
• Provides a basic introduction to stem cells, with an emphasis on their role in craniofacial development
• Combines aspects of developmental biology with tissue engineering and regenerative medicine concepts
• Includes chapters on the adipose, dental, and muscle stem cells, as well as mechanisms of craniofacial bone development
• Covers tooth, salivary gland, and temporomandibular joint development and regeneration
• Full-color illustrations make the entire text more interesting and accessible

Where can you find out more?
http://www.wiley.com/go/craniofacial
The ASCB 2013 Call for Nominations

Bruce Alberts Award for Excellence in Science Education
Who is Eligible: An individual who has demonstrated innovative and sustained contributions to science education, with particular emphasis on the broad local, regional, and/or national impact of the nominee's activities. Nominators must be ASCB members, but the candidate and support letter authors need not be.

How to Apply: Provide a letter of nomination, a maximum of three letters of support, and a CV.

Awards: The winner is presented a plaque and will give remarks at the Annual Meeting. Expenses to attend the Annual Meeting are paid.

Deadline: April 1 (electronic submission preferred to Thea Clarke at tclarke@ascb.org)

Early Career Life Scientist Award
Who is Eligible: An outstanding scientist who has served as an independent investigator for no more than seven years as of April 1.

How to Apply: Provide a nominating package that includes a CV, brief research statement, nominating letter, and no more than three letters of support (at least one of which must come from outside the nominee's institution). Nominators must be ASCB members.

Awards: The winner is presented a plaque and a monetary prize and will speak in a Minisymposium at the Annual Meeting. Expenses to attend the Annual Meeting are paid.

Deadline: April 1 (electronic submission preferred to Cheryl Lehr at clehr@ascb.org)

E.E. Just Lectureship
Who is Eligible: A minority scientist who has demonstrated outstanding scientific achievement. Nominators must be ASCB members, but the candidate need not be.

How to Apply: Provide a nomination package that includes a CV and a letter describing the nominee's scientific achievement and mentoring support of underrepresented minority students and scientists.

Awards: The winner gives the E.E. Just Lecture at the Annual Meeting and receives a plaque and a medal. Expenses to attend the Annual Meeting are paid.

Deadline: April 1 (electronic submission preferred to Deborah McCall at dmccall@ascb.org)

WICB Career Recognition Awards
Junior Award for Excellence in Research
Who is Eligible: A woman in an early stage of her career (within six years of appointment to an independent position at the time of nomination) who is making exceptional contributions to cell biology, is developing a strong independent research program, and exhibits the potential for continuing at a high level of scientific endeavor and leadership.

How to Apply: Provide a letter of nomination, a CV, and up to three letters of support, including at least one from outside the nominee's institution.

Awards: The winner is presented a plaque and receives a certificate. Expenses to attend the Annual Meeting are paid.

Deadline: July 15 (electronic submission preferred to Cheryl Lehr at clehr@ascb.org)

Sustained Excellence in Research Award
Who is Eligible: A woman at the mid-career level (7–15 years in an independent position) who has demonstrated a track record of exceptional scientific contributions to cell biology and/or has effectively translated cell biology across disciplines, and who exemplifies a high level of scientific endeavor and leadership.

How to Apply: Provide a letter of nomination, a CV, and up to three letters of support, including at least one from outside the nominee's institution.

Awards: The winner is presented a plaque and receives a certificate. Expenses to attend the Annual Meeting are paid.

Deadline: July 15 (electronic submission preferred to Cheryl Lehr at clehr@ascb.org)

Lifetime Achievement Award
Who is Eligible: A woman or man at a later career stage (generally full professor or equivalent) whose outstanding scientific achievements are coupled with a long-standing record of active support for, and outstanding mentorship of, both men and women in scientific careers.

How to Apply: Provide a letter of nomination highlighting scientific achievements and mentoring activities, a CV, and up to five letters of support. At least one letter must come from outside the nominee's institution, and two must be from current or former members of the nominee, describing specifics of the nominee's mentoring history.

Awards: Each winner is presented with an honorarium and a plaque at the Annual Meeting. Expenses to attend the Annual Meeting are paid.

Deadline: April 1 (Send electronic submissions only to Cheryl Lehr at clehr@ascb.org)

Public Service Award
Who is Eligible: An individual who has demonstrated outstanding national leadership in support of biomedical research. Nominators must be ASCB members. The award winner may, but need not, be a scientist.

How to Apply: Provide a letter of nomination with a description of the nominee’s advocacy for, and promotion of, scientific research.

Awards: The winner gives the Public Service Award Lecture at the ASCB Annual Meeting and receives a certificate. Expenses to attend the Annual Meeting are paid.

Deadline: April 1 (electronic submission preferred to Kevin Wilson at kwilson@ascb.org)

E.B. Wilson Medal
Who is Eligible: An individual who has demonstrated significant and far-reaching contributions to cell biology over a lifetime in science. Nominators must be ASCB members, but the candidate need not be.

How to Apply: Provide a letter of nomination, the candidate's CV, and no fewer than three, and no more than five, letters of support.

Awards: The winner of the ASCB's highest honor for science gives the E.B. Wilson Lecture at the Annual Meeting and receives the E.B. Wilson Medal. Expenses to attend the Annual Meeting are paid.

Deadline: April 1 (electronic submission preferred to Cheryl Lehr at clehr@ascb.org)

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

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

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

Deadline: July 15 (electronic submission preferred to Cheryl Lehr at clehr@ascb.org)

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

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

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

Deadline: July 15 (electronic submission preferred to Cheryl Lehr at clehr@ascb.org)
Members in the News

Sue Biggins, of the Fred Hutchinson Cancer Research Center, an ASCB member since 1997, is the recipient of the National Academy of Sciences Award in Molecular Biology.

Jeffrey I. Gordon, of the Center for Genome Sciences and Systems Biology at Washington University in St. Louis, an ASCB member since 1988, is the recipient of the National Academy of Sciences’ Selman A. Waksman Award in Microbiology.

Lucille Shapiro, of the Stanford University School of Medicine, an ASCB member since 1988, was one of the recipients of the 2012 National Medal of Science.

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:

March 15–16, 2013. St Paul, MN

May 14–17, 2013. Hertfordshire, UK

May 29–31, 2013. Barcelona, Spain

June 5, 2013. London, UK

June 15–16, 2013. Cancún, Mexico

June 16–June 20, 2013. Cancún, Mexico

October 16, 2013. Hertfordshire, UK

November 21–23, 2013. Heidelberg, Germany

ASCB Annual Meetings

December 14–18, 2013. New Orleans
December 6–10, 2014. Philadelphia
December 12–16, 2015. San Diego
December 3–7, 2016. San Francisco

In Memoriam

Annemarie Weber
Annemarie Weber, who died at the age of 88 in July 2012, was a pioneer in the field of calcium signaling and actin polymerization in striated muscle. She was a member of ASCB from 1985 to 2002. Weber earned her MD degree from the University of Tübingen, Germany, in 1950. After postdoctoral work at University College, London; University of Maryland; Harvard Medical School; and the University of Tübingen, she was appointed an Associate Member of the Muscular Dystrophy Association Institute for Muscle Disease in New York City. In 1965 Weber was recruited as a Professor of Biochemistry at St. Louis University in St. Louis, MO. In 1972 she joined the Biochemistry Department at the University of Pennsylvania School of Medicine, where she remained until her retirement in 1999. There she was a catalytic founding member of the Pennsylvania Muscle Institute, which was established in 1973. Her pioneering experimental work and extraordinary dedication to teaching earned her many honors.

The ASCB expresses its condolences to her family, friends, and colleagues.

Henry de Forest Webster
Henry de Forest Webster, who died at age 85 in November 2012, was the longtime Chief of the Laboratory of Experimental Neuropathology at the National Institute of Neurological Diseases and Stroke (NINDS) in Bethesda, MD, until his retirement in 1997. He was also a longtime member of the ASCB, which he first joined in 1962. Webster received his MD from Harvard Medical School in 1952 and pursued research as a fellow at the Massachusetts General Hospital and the University of Miami Medical School until he joined NINDS in 1969. He pioneered the study of the fine structure of the nervous system using electron microscopy (EM). Webster’s EM studies of myelination, in particular, greatly advanced understanding of the neuropathology of multiple sclerosis.

The ASCB extends condolences to his family, friends, and colleagues.
1,699 new members were approved by the ASCB Council from June-December 2012.

New ASCB Members
ASCB 2013 Member Gifts

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

**Gold ($1,000 and up)**
- Bruce Alberts
- Huntington Sheldon

**Sustainer (up to $249)**
- Jean Sanger
- Robert Donaldson
- Kathy Schmeidler-Sapiro
- Joost Northcott
- Amy Wasilk
- Elena Liao
- Florin Iordache

**as of Jan 31, 2013**

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ASCB Member Comments

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

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Nine ASCB members were granted Emeritus status at the Fall Council Meeting
In the fall of 2012, nine ASCB members were granted Emeritus status.

- David Baltimore
- David Blair
- Robert Signer
- John Wilson
- Susan Woldendorp
- Scott Waterman
- Angela Wolinsky
- Sharon Zeidman
- David Zoeller
Graduate Students Long for a Place at the (Speaker Dinner) Table

Dear Labby,

I am a fourth-year graduate student, and I am writing about something that puzzles and troubles me and the other students in my lab.

The thing is that our department encourages faculty who host seminar speakers to invite at least one, or preferably two, grad students to the dinner after the talk. (The written departmental policy actually lays this out, and uses the phrase “one or two.”) Other departments at our medical school also include students in seminar visits and the dinners.

Well, despite this policy, the head of our lab has never invited a student to a speaker’s dinner, even though she has hosted seven speakers since I’ve been in the lab. None of us students noticed this pattern until two of us who were actually applying to do postdocs with speakers did not get invitations to the dinners (or even a chance to meet with the speakers during the day).

We were talking about this the other day, feeling frustrated, when someone shouted out, “Ask Labby!” Can you help us handle our concern, especially how to bring it up the chain of command without getting in trouble?

—Wanting Contact

Dear Wanting Contact,

Your query is so heartfelt. That your department has a written policy about this is so cool! But that your lab head has so consistently ignored it is so bad! Why would she do that?

There are a trillion reasons why a visiting seminar speaker wants time with students, including the more casual and intimate dinner time. From the other end, what department worth its salt would not want a couple of students at the table? These dinners can be memorable events in so many ways, and the setting is very different than the standard pizza lunch with a large group of students (one of which Labby enjoyed just a few days ago!).

Consider one vignette. As a senior in college Labby was invited to dinner with a seminar speaker. He was James B. S. Haldane, an extraordinary intellect who had catalyzed a reformation of the field of population genetics. (OK, it wasn’t a cell biology speaker, but the point to be made transcends the discipline.) Labby sat next to him and was scared to death. He told many stories. In one, he said his father (a renowned physiologist) had used him as a guinea pig, having him don a gas mask that was to be tested and sitting him down in a sealed chamber while carbon monoxide was pumped in. No one at the table knew what to say. Labby managed to summon courage and asked, “When did your father let you out? For he obviously did.” The speaker replied: “When I was turning blue but not yet dead.” This dinner exchange didn’t have a bearing on Labby’s subsequent choice of fields, but it is a testament to all that can happen when some students get to dine with a speaker. Some departments allow students to host a few speakers, which is good. But having a few students at each faculty-hosted seminar speaker dinner is also very important.

Ask your lab head if she realizes that students are being excluded from the dinners she hosts. Try to offer constructive reasons for inviting students, such as what it would mean to those who attend the dinners as well as to the collective morale of all the students. Your lab head may not be so much knowingly ignoring students as dinner invitees as loading up the table with others for political reasons. Address your goal without disparaging the circumstances that have led to the situation. It is likely the result will be positive.

—Labby

Got Questions?

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

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

ASCB Financial Support Available

Take advantage of this career advancement opportunity from ASCB. Such meetings will typically involve two or more local research institutions or colleges (within or outside of the USA). Topics can range from basic science to career development, as long as there is clear relevance to the broadly defined field of cell biology.

For more information go to www.ascb.org and click on “Meetings”, then “Local Meetings” or email tclarke@ascb.org.

Next Deadline for Applications: April 1, 2013
Recognize Those Who Have Made a Difference.
Submit an ASCB Award Nomination.

ASCB has a long history of recognizing outstanding scientific and educational achievements. Here’s your chance to participate. Nominate worthy scientists for the awards listed above. The submission deadline for these awards is April 1, 2013.

For nomination requirements go to www.ascb.org and click on “Awards.” Deadline: April 1, 2013