Hogan, Meyerowitz Run for ASCB President

Brigid Hogan of Duke Medical Center and Elliot Meyerowitz of the California Institute of Technology/HHMI are running for ASCB President. The elected candidate will serve on the Society’s Executive Committee as President-Elect in 2008 and as ASCB President in 2009.

Eight candidates will compete for four three-year terms as Councilor. All those elected start service on January 1, 2008.

An email with a link to the Society’s electronic ballot and candidate biographies will be sent to regular, postdoctoral, and emeritus members.

The election closes on June 30. Results will be announced in the July issue of the ASCB Newsletter.

2004 ASCB President Harvey F. Lodish of the Whitehead Institute for Biomedical Research served as Nominating Committee Chair; also serving on the Committee were Gary G. Borisy, Joanne Chory, Anthony P. Mahowald, Suzanne R. Pfeffer, Laura J. Robles, Pamela A. Silver, Masatoshi Takeichi, and Fiona M. Watt.

Candidates for ASCB Council

Elliot Meyerowitz
California Institute of Technology/HHMI

Shapiro to Present Porter Lecture

Lucy Shapiro of Stanford University School of Medicine has been named by ASCB President Bruce M. Alberts to give the 26th Annual Keith R. Porter Lecture. Her lecture, “Spatial and Topological Components of Bacterial Cell Cycle Regulatory Circuitry,” will be presented during the 47th ASCB Annual Meeting in Washington, DC, on December 4.

Each regular, postdoctoral, and emeritus member will be sent a link to the ASCB election site. Since spam filters may prevent some messages from being received, members are encouraged to go to www.ascb.org to vote. Your member number (the same number used to access MBC) will enable you to vote, and ensure that each member votes just once. If you do not receive the link and/or do not know your member number, contact the ASCB at (301) 347-9300 or ascbinfo@ascb.org.
PRESIDENT’S Column

The Real “Science for Society”

Recently, Shirin Ebadi, the Iranian lawyer who won the Nobel Peace Prize in 2003 for her human rights efforts, raised an important question. How, she wondered, can the U.S. be so short-sighted and unwise in its foreign policies when it is so accomplished in its science? This is a disturbing question: Why do we not apply a scientific way of viewing the world to a broader range of human problems? More narrowly, why do we not even apply scientific thinking to the question of how to teach science?

Using the Tools of Science

My 12 years at the National Academy of Sciences convinced me that the future success of our complex human societies depends on using the tools of science much more broadly to create a knowledge base—resembling the one that we have in cell biology—that can be used to guide decision-making in many areas of human endeavor. Thus the National Academies have repeatedly addressed questions such as “How can we make a science out of education?” and “How can we make a science out of sustainable development?” The answer is to embed research and researchers of the highest quality into a wide variety of ongoing efforts to improve the human condition. But thus far we have failed abysmally in such tasks.

There is clear evidence that our approach to teaching science is ineffective. According to the National Science Foundation (NSF), more than five million people in the U.S. work in careers requiring expertise in science and technology, including some 600,000 life and physical scientists. How is it possible for such a science-rich society to produce high school graduates who, in international comparisons, repeatedly rank near the bottom in their understanding of science and mathematics? And how can we explain the fact that, in a survey conducted by the NSF, less than one-fourth of U.S. adults were able to explain in their own words what it means to study something scientifically (NSF, 2006)?

Many scientists would probably answer such questions by putting the blame on others. But in my opinion, an important explanation for these paradoxes is our overly narrow view of the applicability of scientific skills for society. This view causes us to adopt attitudes that severely limit the spread of science and its values beyond our university (and science-based industry) walls.

Making a Science Out of Science Education

As a first step, can we make a science out of science education? As scientists, we are all devoted to collecting and objectively evaluating data to build a powerful knowledge base in our particular discipline, whether it is cell biology, organic chemistry, or astrophysics. But our reliance on data often stops there. Our disinterest in collecting evidence on the learning of students and using it to improve our own college and graduate school teaching is legendary, and it explains the current push from some farsighted colleagues for what they call “scientific teaching” (Handelsman et al., 2004). The ASCB has had a major role in promoting these new efforts through CBE—Life Sciences Education (www.lifescied.org). Led by Editor-in-Chief William B. (Bill) Wood, this pioneering, open-access education journal has recently expanded to cover the entire range of biological sciences, and I encourage everyone to both read it and contribute articles.

Consider the area that I know best, K–12 science education in the U.S. For many decades, we have spent enormous amounts of time and money on all sorts of projects aimed at improving science education in U.S. school districts, including some in San Francisco where
Scientists Are a Resource

There is a large, underutilized resource for spreading science throughout our societies: our scientists. Because of the need to invigorate laboratories with eager young minds, we are producing an excess of Ph.D.s for conventional scientific careers. Many of these outstanding young people deserve and are demanding access to a much broader range of career options as a part of their Ph.D. training. I view this as a great opportunity. Can we begin to build a new type of scientific enterprise, one in which universities focus on seeding large numbers of highly skilled scientists throughout society as future leaders in education research, pre-college teaching, journalism, business, science policy, law, and politics?

We should be ambitious in attempting to demonstrate that our scientific way of viewing the world can have a profound, beneficial impact on a broad range of national and international policies. A future article in this series will suggest some possible strategies by which we might hope to address Ebadi’s challenge.

—Bruce M. Alberts

References


The ASCB 2007 Call for Award Nominations

Norton B. Gilula Memorial Award
Who is Eligible: An outstanding graduate or undergraduate student who has excelled in research
How to Apply: The student or advisor should submit a one-page research statement, a list of publications, if any, the abstract submitted to the current year’s Annual Meeting, and the advisor’s letter of recommendation. Duplicate applications from graduate students may be submitted for the Gilula and Bernfield Memorial Awards.
Awards: The winner is presented a plaque. Expenses to attend the Annual Meeting are paid.
Deadline: August 1

Merton Bernfield Memorial Award
Who is Eligible: An outstanding graduate student or postdoctoral fellow 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 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.
Awards: The winner is presented a plaque and will speak in a Minisymposium at the Annual Meeting and receives financial support to attend the Annual Meeting.
Deadline: August 1

All applications and nominations should be submitted to:
The American Society for Cell Biology
8120 Woodmont Avenue, Suite 750, Bethesda, MD 20814-2762
aschinfo@ascb.org
For names of prior awardees or more information, visit www.ascb.org, or contact the ASCB at (301) 347-9300, or aschinfo@ascb.org.

I am encouraged that we finally seem to have reached a tipping point in the seriousness with which most colleges and universities are addressing the teaching of introductory college science courses.

I have been personally involved. Along the way, we have made many mistakes, from which we should have learned a great deal; instead, failures are generally viewed as embarrassments and swept under the rug. As a result, those working to improve education tend to make the same mistakes over and over again in different contexts.

There is a potential advantage to the highly decentralized education system in the U.S.: It gives rise to a large number of varied approaches toward a common goal. As scientists, we should be eager to treat these as “experiments” from which to collect data to build a sound basis of knowledge on which to base future educational efforts. Only by honest, detailed research that extracts the reasons for the many successes and failures can we hope to build continuously improving systems of education—systems that make continual progress, as we do in science. But very little effort has thus far been devoted to this type of scientifically based research. As a result, our nation’s schools continue to be driven by one simple “magic bullet” solution after another, as new leaders seek a quick fix to ongoing problems.

Can we as scientists change enough to make a difference? Our introductory college courses provide a great, if largely unexploited, opportunity to give our citizens (including our future political leaders) a sound basis for understanding and respecting the nature of science. Moreover, because introductory courses set the standard by which all science teaching at lower levels is judged, we cannot expect to teach inquiry-based science at lower levels if we fail to teach science as inquiry in Biology 1 and other undergraduate courses (Alberts, 2005). I am encouraged that we finally seem to have reached a tipping point in the seriousness with which most colleges and universities are addressing the teaching of introductory college science courses. This proves that professors can indeed change!
MBC and the Economics of Scientific Publishing

Should Molecular Biology of the Cell (MBC) eliminate its print edition and use the cost savings to reduce author charges? The ASCB Council and the MBC Editorial Board have been confronting this question as they assess how the journal can best serve ASCB members and others in the scientific community.

Journal Financing

The question of how much authors should pay to publish their work in MBC is part of the larger issue of how publication of a scientific journal should be financed. Scientific journals are usually sustained financially by some combination of subscription sales, author charges, and advertising revenue. Different publishers have different business models. Some publishers charge high institutional subscription rates and have low author charges or none at all. But high subscription rates may limit access to a journal’s content by the public and by scientists at institutions that cannot afford a subscription. This is especially the case if the journal has a long embargo period before articles are available free.

MBC’s institutional online subscription rate ($578) is low and was increased this year for the first time since 2002. A low subscription rate is in keeping with the Society’s goal of maximizing access to the scientific literature and is consistent with the fact that the journal’s content is free after two months. Institutional subscribers and ASCB members may also purchase a print subscription to MBC, but only 4% of the journal’s income is from print sales, whereas 29% of its income is from online subscriptions (see figure, page 5). Reprint sales, royalties, and other sources of income make a minor contribution to MBC’s revenues. There is no advertising income; the journal is not attractive to advertisers because of its low print run.

Because subscription and other income is not nearly enough to sustain the journal, MBC is also dependent on author page charges and color charges. The average article published in MBC in 2006 was 11.7 pages long and included 2.9 color figures. With the 20% discount on page and color charges now offered to ASCB members, publishing such an article would cost the author $1,829. However, some articles contain many color figures and cost a great deal more to publish, and some authors and Editorial Board members are concerned that it is too expensive to publish in MBC. The journal’s mission to provide an accessible venue for presentation of conceptual advances in cell biology is ill served by such barriers to publication.

Balancing Revenue Sources, Understanding Expenses

Another important consideration in evaluating business models for MBC is the role the journal plays in the overall financial health of the ASCB. About 25% of MBC’s revenue is returned to the Society and helps to support its many non-revenue-generating activities. So it is essential that the journal’s revenues continue to exceed expenses as the ASCB seeks the fairest possible balance among revenue sources.

In seeking an appropriate financial model for the journal, Council and ASCB staff have also scrutinized the costs of publishing MBC. The second-largest category of costs is for print production, including printing, binding, paper, and mailing. Print production accounts for 32% of expenses even though print sales account for only 4% of revenue. Thus print subscriptions do not pay for themselves. Rather, the cost of print is subsidized by other revenue sources, such as color charges. So it is appropriate to ask whether the print edition of the journal is necessary and whether it is worth the expense of producing it.

But why not just increase the print subscription price so that it covers the cost of printing the journal? The problem with that approach is that the substantial, several-fold price increase that would be necessary to cover the cost of print would probably result in a much lower renewal rate for print subscriptions. Yet the cost of printing the journal would not decrease in proportion to a decline in the print run because more than 85% of the cost of printing is the so-called first-copy cost, the expense that is incurred regardless of how many
copies are printed. So still-high costs would have to be borne by a smaller number of print subscribers. Launching such a vicious cycle of increasing prices and declining print runs would be tantamount to discontinuing the print edition.

The Importance of Print Journals
To help assess the importance of the print journal, the ASCB Council formed a special task force in the summer of 2006. Council member Kerry Bloom and Secretary Jean Schwarzbauer served on the task force, which was chaired by one of us (Ward). On behalf of the task force, ASCB staff surveyed MBC authors and Editorial Board members about the importance of print and about factors that authors consider when they decide where to submit their manuscripts.

Among authors who responded to the survey, only 5% said they read the print journal exclusively or read the print journal more often than they read the online version. Sixty-nine percent never read the print version. Thirty-eight percent said they would be more likely to submit their papers to MBC if it eliminated the print version and reduced color charges. And yet 42% thought that it was important or very important to publish their work in a journal that has a print edition. Respondents to the Editorial Board survey gave similar answers. (Complete results of both surveys can be seen at www.ascb.org/files/mbc_survey_results.pdf.)

Why do some authors and editors believe it is important to have a print edition of the journal even though most never read it? Written responses to the survey and subsequent discussions at the 2006 MBC Editorial Board meeting focused on several concerns:

- **Archiving**: How can authors be sure that articles in an online-only journal will always be available?
- **Figure quality**: Can an online journal offer figures of the same resolution as the print journal?
- **Prestige**: Will an online-only journal be perceived as inferior to a print journal?
- **“Browsability”**: Can readers of an online journal casually encounter interesting articles outside their field the way they might while leafing through a print journal?

Addressing Concerns
The ASCB Council, the MBC Editorial Board, and ASCB staff have been looking for ways to address these concerns. Some solutions may be at hand. Archiving of online journals, for example, has been a concern of librarians and publishers for several years, and there are mechanisms in place to preserve online journals. These mechanisms include LOCKSS (www.lockss.org) and Portico (www.portico.org). The LOCKSS (for “lots of copies keep stuff safe”) system, initiated by Stanford University Libraries, provides open-source software that enables librarians to maintain a local copy of an electronic journal. Accuracy and completeness of data are maintained by allowing LOCKSS computers at various institutions to compare data. Portico is a nonprofit organization dedicated to preserving scholarly literature published in electronic form, with particular emphasis on migration of data to new formats as they become available. In addition, the complete contents of MBC are deposited with PubMed Central, where they will still be available even if they are no longer accessible through the ASCB. The ASCB Council will seek to determine whether these mecha-
nisms are appropriate and adequate to ensure that MBC’s content will continue to be available. ASCB staff are also in discussion with HighWire Press, which hosts the online version of MBC, about figure quality and about ways in which the online journal might be enhanced with respect to browsing.

In assessing the importance of the print edition of MBC, it is important to note that the online journal is the journal of record. An article’s publication date is determined by the date of its appearance online in MBC In Press. The online edition of MBC is already a richer and more useful research resource than the print version, because it includes everything that is in the print edition plus supplemental data, videos, and embedded links. Additional enhancements are under consideration.

Interest in the print edition of MBC seems to be waning. Member and institutional print subscriptions have declined 55% and 32%, respectively, since 2002. Indeed, the disappearance of print journals is probably inevitable. Thus it is important that scientist-run journals such as MBC pave the way to ensure that the needs and concerns of working scientists are addressed in this transition. Assuming that the problems discussed above can be resolved, the disappearance of print should be viewed as a positive development rather than a loss, since the online journals that will replace print are a richer, more accessible, and more cost-effective way to present research results.

In the meantime, the Council task force recommended that (1) the burden of color charges be partially ameliorated by providing authors who are ASCB members with a 20% discount on color charges (in addition to the 20% discount on page charges that was already in place), and (2) the loss of revenue be offset by increasing subscription rates and slightly increasing page charges. The ASCB Executive Committee concurred, and those changes are now in effect. Although the task force did not recommend that the print version be abandoned last summer, it did suggest that the issue be revisited periodically. Council will do so at its May 2007 meeting, and we welcome your comments. The goal is to ensure that MBC continues to be an attractive and accessible venue for publication of important science.

—Sandra L. Schmid, MBC Editor-in-Chief
—Gary Ward, ASCB Treasurer
—Mark Leader, ASCB Publications Director
Discover More with the World’s Finest Full-Length Clone Collection

The Mammalian Gene Collection (MGC) is quite simply the best clone collection in the world, brought to you by the greatest minds in genomic research. Generated and sequenced by a consortium of leading NIH funded laboratories, our cDNA resource contains a complete open reading frame (ORF) for every human, mouse, and rat gene represented. The power of discovery is at your fingertips.

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Marc Vidal
Dana-Farber Cancer Institute

Why experiment when you can discover?

focus on discovery.
# The ASCB 47th Annual Meeting

**December 1–5, 2007, Washington Convention Center, Washington, DC**

Bruce M. Alberts, President  ■  R. Dyche Mullins, Program Chair  ■  John Hammer, Local Arrangements Chair

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## Keynote Symposium

**Saturday, December 1**

**New Biologists for the New Biology—6:00 pm**

- William Bialek, Princeton University
- Shirley Ann Jackson, Rensselaer Polytechnic Institute

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## Symposiums

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<td>Kiz Pogliano, University of California, San Diego</td>
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<td>Kai Simons, Max Planck Institute, Dresden</td>
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<td>Architecture of Signaling Systems—10:30 am</td>
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<td>Stem Cell Niches</td>
<td>Leanne Jones, Salk Institute for Biological Studies</td>
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<td>X-ylation and Cell Signaling</td>
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<td>Kim Orsh, University of Texas Southwest Medical Center</td>
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Cell cycle progression through G1 is, in large part, determined by the production of cyclin D, a downstream target of mitogenic signaling. Cyclin D is rate-limiting for the formation of cyclin D–cdk4/6 complexes. Active cdk4/6 and cdk2 in turn phosphorylate E2F transcription regulators and activate transcription of Skp2, an E3 ubiquitin ligase subunit that targets the cdk inhibitors p21\(^{cip1}\) and p27 for degradation. Cyclin A, another E2F-dependent gene, is also induced, and the formation of an active cyclin A–cdk2 complex triggers entry into S phase. Sustained activation of the MAP kinases ERK1/2 was known to be required for cell cycle progression in serum-stimulated quiescent cells, but its exact function in cell cycle signaling was unresolved. Here, using the simple yet elegant approach of temporally adding or washing out U0126, a specific and rapidly reversible ERK1/2 inhibitor, the authors show that the critical ERK signaling period is restricted to 3–6 hours after mitogenic stimulation of quiescent cells. Through a combination of forced expression and siRNA-mediated depletion, the authors further establish that cyclin D is the primary and essential cell cycle target of this mid-G1 ERK signaling.

## Zic3 Is Required for Maintenance of Pluripotency in Embryonic Stem Cells

*Linda Shushan Lim, Yuin-Han Loh, Weiwei Zhang, Yixun Li, Xi Chen, Yinan Wang, Huck-Hui Ng, and Lawrence W. Stanton*

Embryonic stem (ES) cells derived from the inner cell mass of the blastocyst are able to undergo unlimited self-renewal and, after induction, can differentiate into cell types from all three embryonic germ layer lineages, ectoderm, mesoderm, and endoderm. The transcription factors Oct4, Nanog, and Sox2 are master regulators that function to maintain the stem cell phenotypes of self-renewal and pluripotency. Here, the authors identify the zinc finger transcription factor Zic3 as another key transcription regulator required to maintain ES cell proliferation and pluripotency. Zic3 is expressed in undifferentiated, proliferative ES cells but quickly repressed upon differentiation. RNAi-mediated knock-down of Zic3, a known downstream target of Oct4, Nanog, and Sox2, results in increased expression of endodermal lineage markers in both mouse and human ES cells. Interestingly, stable shRNA-mediated suppression of Zic3 in ES cells also results in repression of Nanog. Thus, Zic3 is a fourth critical component of the transcriptional network contributing to ES cell proliferation and pluripotency, and hence to their therapeutic potential.

## Cornichon-like Protein (CNIL) Facilitates Secretion of HB-EGF and Regulates Proper Development of Cranial Nerves

*Hideharu Hoshino, Tsukasa Uchida, Toshiaki Otsuki, Shoko Kawamoto, Kousaku Okubo, Masatoshi Takeichi, and Osamu Chisaka*

Rhombomeres are segmented structures that appear transiently during development of the hindbrain and differentially direct the migration of cranial neural crest cells (NCCs). The EGF receptor family member ErbB4 is selectively expressed in odd-numbered rhombomeres (e.g., r3 and r5) and is involved in generating repulsive signals that prevent NCCs from entering the mesenchyme adjoining r3 and r5, thus establishing a segmented migration pattern. CNIL, a homologue of Drosophila cornichon (cni) and yeast Env14p, function to promote the incorporation of specific cargo molecules into COPII vesicles that bud from the ER. The authors report that CNIL interacts with and enhances secretion of the ErbB4 ligand HB-EGF (heparin-binding EGF-like growth factor). Expression of a dominant-negative, truncated CNIL or siRNA-mediated depletion of CNIL perturbs NCC migration and leads to defective cranial nerve development. Thus, CNIL-regulated secretion of the ErbB4 agonist HB-EGF in r3 and r5 ensures the spatially restricted activation of ErbB4 and establishment of a repulsive barrier that patterns NCC migration.

## Apical EGF Receptor Signaling: Regulation of Stretch-dependent Exocytosis in Bladder Umbrella Cells

*Elena M. Balestreire and Gerard Apodaca*

Umbrella cells form the outermost layer of the uroepithelium that lines the bladder. As the bladder fills, and in response to mechanical stretch stimuli, the apical surface area of umbrella cells increases to maintain a tight barrier. This increase occurs in two phases, a rapid early phase due to exocytosis of subapical intracellular vesicles and a slower late phase, that together result in a ~50% increase in the apical surface area of umbrella cells, as determined by capacitance measurements. Here it is shown that in addition to stretch stimuli, the late phase increase in apical surface area requires activation of the EGF receptor (EGFR) on the apical/mucosal surface and signaling through the MAP kinase ERK1/2 pathway. Sensitivity to cycloheximide and brefeldin A establish that EGFR-dependent increases in surface area require new protein synthesis and transport through the secretory pathway. Interestingly, activation of the EGFR occurs via an autocrine mechanism whereby HB-EGF, synthesized as a transmembrane precursor in umbrella cells, is cleaved on the surface by metalloproteinases to release the EGFR ligand.
Meeting Objectives

- **Better understand** the unique micro-environment at membrane-cytoskeleton interfaces of living cells in processes such as membrane trafficking, cell motility, and host-pathogen interactions.

- **Investigate** the “conversation” between lipids and cytoskeletal proteins, in which local lipid composition and dynamics are influenced by the cytoskeleton, and cytoskeleton activity is influenced by lipids.

- **Stimulate** interactions internationally among investigators using both diverse experimental approaches and representing distinct disciplines.

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**Important Deadlines**
Abstract: Tuesday, May 1
Travel Award: Tuesday, May 1
Registration: Tuesday, June 5

For information, contact:
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8120 Woodmont Avenue, Suite 750
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Tel: (301) 347-9346 • Fax: (301) 347-9310
www.ascb.org
DEAR Labby

Dear Labby,

I’m a third year graduate student, and my professor and I have gotten into a squabble about a “revise vs. submit elsewhere” decision we must make on my first manuscript. It came back from a “prestige” journal with a flat rejection; the editor did not leave the door open for resubmission with new experiments and data. However, I think I actually can respond to the reviewers’ numerous problems with new experiments. It might take me another four to six months. (I am the only author other than my professor, so there are no complexities from other people weighing in.) But my professor is insisting that instead we “drop down a notch” (as she put it) and submit to a lesser journal.

At first I thought I could convince her to let me do the additional work. But after two weeks of wrangling, she dug in her heels. (This is the first disagreement of any kind we have ever had.) Her argument is that there is no guarantee the new experiments I want to do will work, or that they will suffice to ensure publication in the “prestige” journal. On the other hand, this will be my first publication (wherever it appears) so don’t I have the final say?

—Not a Dropdown

Dear Not a Dropdown,

You and your professor are dealing with a decision that can be among the strategically most demanding of any that confront us in research. Not surprisingly, it is accompanied by a high level of anxiety. But your scenario may be more clear-cut than is often the case. First, and as a general principle, your professor has more experience than you have in recognizing how much the “door has been left open” by the first journal. You should recognize and accept that. From your description, the door sounds not only closed, but even locked. And your professor also makes a good point in arguing that there is no guarantee the new experiments will work. More importantly, this additional work may not improve the cogency or expand the overall gravitas of the study sufficiently to gain its acceptance. Finally, while, of course, it is admirable that you want your first paper to appear in the best possible journal, your professor may be under the contravening pressure of demonstrating productivity and completing grant renewals. These are not minor issues, especially now.

Much looms in your characterization of submitting to another journal as a “dropdown.” While there are journals that are distinctly in a third tier, your discussions with your professor have presumably identified a journal that she feels good about. It’s probably one that is just a bit beneath the “beautiful” journals. For example, the ASCB’s journal Molecular Biology of the Cell has a superb reputation that balances an editorial demand for excellence with a fair-minded approach to review by true peers. (Hint!)

What more typically confounds decisions about resubmission is that the “higher” journal has left the door quite open pending a few key experiments or new controls. In such instances the seductive belief that such additional work will win acceptance of the paper comes into conflict with the desire/need to publish soon, especially within a given calendar year or grant submission/review cycle. In your case, the higher journal sounds like it should not be given much weight on this “seduction scale.”

Bear in mind that most successful scientists do not publish their first paper as a student in one of the highest journals. Labby’s first was in Analytical Biochemistry. A cell biology undergraduate published her first paper in a journal like the one you consider a “dropdown.” But her next was in Nature, and she went on to become one of the most successful biological scientists in the world. The fact that as a third-year student you already have submitted a paper, with no other authors other than your professor, bodes very well indeed!

—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.

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Zerhouni Criticizes Bush Stem Cell Policy

During a March Senate hearing on the funding crisis at the National Institutes of Health (NIH), NIH Director Elias Zerhouni sharply criticized the current federal policy regarding federal funding of research with human embryonic stem cells. The policy limits federally funded human embryonic stem cell research to the use of stem cells derived before August 9, 2001.

In response to a question from Sen. Tom Harkin (D-IA), chair of the Senate Labor, Health & Human Services and Education Appropriations Subcommittee, Zerhouni said that he thought that the cell lines available under the current policy “will not be sufficient to do all the research we need to do for the reasons that you mentioned, but the most important one is that these cell lines have exhibited instability from the genetic standpoint and it’s not possible for me to see how we can continue the momentum of science in stem cell research with the cell lines that we have currently at NIH that can be funded.”

Zerhouni continued, “So from my standpoint, it is clear today that American science would be better served and the nation would be better served if we let our scientists have access to more cell lines, so that they can study with the different methods that have emerged since 2001.”

Opponents of embryonic stem cell research in Congress often cite adult stem cell research as a successful alternative to embryonic stem cell research. In response to a question about the role adult stem cells play in research, Zerhouni said, “The presentations about adult stem cells having as much or more potential than embryonic stem cells, in my view, do not hold scientific water, if you will. I think they are overstated. I think we do not know at this point where the breakthroughs will come from. I think scientists who work in adult stem cells themselves will tell you that we need to pursue as vigorously embryonic stem cells. My point of view is that all angles in stem cell research should be pursued.”

Before concluding his questions, Sen. Harkin thanked Dr. Zerhouni for “a very profound and courageous statement.”

To view the entire hearing, including Dr. Zerhouni’s remarks on stem cell research, go to http://appropriations.senate.gov/Media/2007_03_19_Webcast_of_the_March_19_Hearing_on_NIH_Funding.ram.

—Kevin M. Wilson

Brugge Testifies before Congress

Long-time ASCB member Joan Brugge testified at a Senate Labor, Health & Human Services and Education Appropriations Committee hearing on the impact that reduced funding to the National Institutes of Health (NIH) is having on biomedical research.

Brugge told the Committee that recent budget reductions are severely affecting research. She said, “Four years of flat funding have had a devastating impact on the trajectory of cancer research.”

Brugge also told the Committee that budget cuts have had a significant effect on the approval of grant applications. While the overall success rate for grant applications at the National Cancer Institute is 20%, Brugge said that the average success rate for all first-time submissions of new grants is around 10%.

“Four years of flat funding have had a devastating impact on the trajectory of cancer research.”

NIH Director Elias Zerhouni

“[I]t is clear today that American science would be better served and the nation would be better served if we let our scientists have access to more cell lines ...”
During questioning from Sen. Tom Harkin (D-IA), Brugge elaborated that the success rate for first-time submissions to the NCI of new grants from new investigators is around 5% and that it is 17% for new grants from established researchers.

Brugge said “the vast majority of scientists are subjected to a lapse in funding and the negative consequences of this. Not only can a lapse in funding force labs to cut back, let staff go, and redirect efforts to finding alternative funding and resubmission, it creates an environment of insecurity and anxiety that is anathema to the conduct of creative, innovative exploration.”

To view the entire hearing, including Joan Brugge’s testimony, go to http://appropriations.senate.gov/ Media/2007_03_19_Webcast_of_the_March_19_Hearing_on_NIH_Funding.ram.

—Kevin M. Wilson

**JSC Events**

Last month, the Joint Steering Committee for Public Policy (JSC) held a Capitol Hill Day that coincided with a Congressional Biomedical Research Caucus. Twenty-three JSC-member scientists traveled to Washington, DC, and met with Members of Congress or their staff to discuss the importance of U.S. funding for biomedical research.
Pollard to Become Public Policy Committee Chair

ASCB President Bruce M. Alberts has announced the appointment of Thomas D. Pollard of Yale University as Chair of the ASCB Public Policy Committee, effective May 1. He will replace Lawrence S.B. Goldstein, who chaired the Committee for the past three-and-a-half years and was vice chair for three years before becoming chair.

Pollard, an ASCB member since 1970, has served on the Public Policy, Nominating, and WICB Committees; on the MBC Editorial Board; as Chair of the Congressional Liaison Committee; and as ASCB President from 1987–1988.

Goldstein, of the University of California, San Diego/HHMI, has been an ASCB member since 1984. In addition to chairing the Public Policy Committee, he has served as ASCB Secretary, Chair of the Membership Committee, and as a member of the MBC Editorial Board.

The Funding Crisis

How Has It Affected You and Your Research?

Biomedical research champions in Congress are particularly interested in knowing the impact limited budgets are having on their constituents and the American biomedical research enterprise.

Have you been forced to cut back on the number of people in your lab? Have you lost your funding? Has important research been slowed down or halted? Have you been unable to buy critical equipment?

If the funding slowdown has adversely affected you and your research, please take a moment to share your story. Send your account to Kevin Wilson, ASCB Public Policy Director, at kwilson@ascb.org. Your name will not be used without your permission.

The ASCB Public Policy Committee Needs You!

See www.ascb.org/publicpolicy/project50/index.cfm or email kwilson@ascb.org for more information.
Creative Approaches in the Current Funding Environment

Funding for research is not available for all the good science being proposed to federal and private agencies. Most new and renewal applications are not funded the first time around, and resubmissions have become the norm (see “Revising your NIH grant application,” *ASCB Newsletter*, January 2007). Hence anxiety is high about how to continue to maintain the momentum of a research group and provide salaries for research personnel.

There is much debate about the causes for this funding situation, for this funding crisis, actually. This article will focus on what to do in the face of this reality. What are some alternative approaches to funding in the short- and long-term? The suggestions offered have been gleaned from senior scientists as well as from short articles published in a variety of media.

If you are not awarded an anticipated grant, persistence in re-applying, and in applying to multiple sources, is essential. Since persistence is a characteristic of those doing research, this practice will presumably come naturally even in the face of discouraging reviews. Unfortunately, persistence alone will not pay the bills. Websites are available that list grant opportunities, such as the AAAS Grantsnet (http://sciencecareers.sciencemag.org/funding?CFID=422590&CFTOKEN=50081533) and a Stanford University site (http://med.stanford.edu/rmg/funding/). There are also sites by subscription (e.g., http://gtionline.fdncenter.org/). Readers are encouraged to send ASCB information on sites they have found useful in the search for funds; these will be posted on the WICB page of the ASCB website at www.ascb.org).

Preparing for Funding Gaps
Planning ahead is, of course, critical. No longer can previously funded researchers reasonably assume that the next grant application will be funded immediately to provide continuous salary coverage. Indeed, frugality in research spending should start immediately upon receiving a grant award; in this funding climate, it is useful to have monies remaining at the end of the grant period since a no-cost extension request to the funding agency allows use of these unexpended funds across the next few months. Such a request must be made prior to the end of a given funding period.

To bridge a shortfall while applying for funds, start by talking with your grant administrator(s). Occasionally federal agencies can provide such bridging funds, but they must be requested. Some campus departments may be able to support research on a small scale for a short period of time, and a few institutions (usually those with substantial endowments) may have funds earmarked specifically to maintain research groups over a short period. None of these funds are volunteered; a strongly justified request must be made.

Salaries for graduate students and postdoctoral fellows might be covered by fellowship applications to a variety of professional societies and philanthropic organizations (e.g., American Society for Microbiology, American Heart Association, American Cancer Society, etc.). Some of these societies and organizations are listed on the above-cited websites. You should also ask your own professional societies about such funding opportunities. Many of these will be short-term (e.g., 12 months); some will be shorter, covering a summer or travel to a meeting or course. Each request takes time to write, but success may allow continuity for the research group and/or support for a given young professional.

Some institutions require scientists or faculty to obtain a large proportion or all of their salaries from grant funding. Most institutions also allow their personnel to use personal time...
for consulting, a potential salary supplement in a funding shortfall. Investigators who assume institutional administrative positions have their salaries paid from institutional rather than research funding, and research supervision can continue while in such a position. This is not an advertisement to seek an administrative post, albeit institutional leadership can be a positive experience, but rather a possibility to consider. Of course, if the PI has personal resources, these can be brought to bear in the short- or long-term. In earlier centuries, research was supported by the wealthy (e.g., Charles Darwin’s father subsidized his research career at the start), or research was done inexpensively (e.g., Gregor Mendel’s garden). Unfortunately, most cell biology research entails more than growing and counting peas.

Collaboration is also a good strategy. Supply funds can come from collaborations with other research groups, on- or off-campus, whose work is closely related. Sharing equipment and service contracts on equipment with other department members can also free up money for supplies.

Recruiting Undergraduates, Economizing on Supplies
If at an academic institution, another way to keep one’s research on the move during a personnel salary shortfall is to recruit talented undergraduates into your lab. These students are enthusiastic, intelligent, and interested in research experience. They are fun to train, and they often can receive course credit in addition to volunteering in the research effort. The experience, when productive for the undergraduate volunteer as well as for the research group, is a win–win situation that can keep the science progressing.

Frugality was noted earlier as a way to provide carryover funds in a no-cost extension during the grant re-application process. Economizing strategies are very group-dependent, but could be as modest as limiting the number of “kits” purchased or bundling orders with other research groups to enable discounted pricing on such kits. Surprisingly, small but essential laboratory supplies such as gloves, aluminum foil, paper towels, plastic wrap, etc., can often be obtained more cheaply at large outlet stores than at one’s institutional warehouse. Even these “small-fry” economies can add up, and they may become essential if a funding hiatus extends longer than anticipated.

Encouraging Advocacy
Funding for research exploded in the early 1960s with the awareness that American science and technology needed a shot in the arm. Since then, there have been peaks and valleys in the funding graphics. The current situation, with sometimes a 5–10% payline, is discouraging, frightening, and stressful. Taking an active role in turning this around, e.g., via the Congressional Liaison Committee (www.jscpp.org/clc.cfm) or Project 50, is strongly encouraged. In the meantime, being creative and bold about taking strategies to keep the research going might include some of the suggestions here, unorthodox as some of them may seem.

—Caroline Kane for the Women in Cell Biology Committee

Celebrating the Family of Science
One of the best parts about being a cell biologist is the opportunity to visit universities across the country and talk with graduate students and postdoctoral fellows about their experiences. During such visits, members of the Women in Cell Biology (WICB) Committee learned that a large number of younger scientists are feeling a desperate need to see real-life examples of cell biologists who have children and still do great science.

With this goal in mind, we’ve created a photo gallery to celebrate the families of cell biologists and their children (www.ascb.org/wicb/index.html). The WICB-sponsored careers lunch at the ASCB Annual Meeting provides an opportunity, for those interested, to discuss issues of life balance and career choices. The WICB Committee is working hard to try to make it easier for members with children to participate fully in ASCB activities. If you have suggestions, please let us know. Contact Cheryl Lehr at clehr@ascb.org.

—Caroline Kane for the Women in Cell Biology Committee
Christian Sardet says he is old enough to remember cell biology meetings before the invention of the poster. "There were thousands of these little five-minute talks," Sardet recalls with a shudder. "Then came the poster session and it was a revolution." But now a new revolution is needed in the way science is presented, says Sardet, and he doesn’t mean more PowerPoint slides.

Sardet studies the role of calcium pulse signaling at fertilization in controlling the cell cycle and embryonic polarity. He leads the BioMarCell group at the Station Zoologique, Villefranche-sur-Mer, a historic marine research station on the Mediterranean that is supported by the French national research agency, the Centre National de la Recherche Scientifique (CNRS), and administered by the Université Pierre et Marie Curie in Paris. Outside of molecular and cellular embryology, Sardet is best known as a tireless agitator for cell biology to go visual, to go public, and to go online.

In 2001, Sardet started the Cinema of the Cell video contest at the joint European Life Scientist Organization (ELSO) and French cell biology society (SBCF) meeting in Nice and established a site called BioClips to webcast the best films (www.bioclips.com). The selected shorts on BioClips are a mixture of scientific sobriety and whimsy. The 2004 winner, Twisted Sisters, by Alex McDougall and colleagues, features stunning computer-enhanced video of homologous chromosome separation plus a heart-throb soundtrack of an old Jacques Brel torch song, “Ne me quitte pas” (“Don’t Leave Me”). The result is both funny and beautiful.

Somehow, the computer animators got the chromatid ends to wave good-bye tragically. For Marius Explores the Cell, a cartoon about organelles that is squarely aimed at kids, Sardet himself provided the voice track of Marius, a friendly virus inhaled by the sleeping Fabrice. (“He’s human,” says the virus, “and a little complicated.”) Cinema of the Cell will return this September at the 2007 ELSO meeting in Dresden, and Sardet is expecting a new crop of BioClips submissions.

Seeing the Real Thing
Off the Web, Sardet has been making biology films since the mid-1980s. In 2006, with backing from CNRS Image Production, Sardet and Véronique Kleiner made Exploring the Living Cell, a conventional, put-it-in-the-player, 180-minute DVD featuring lab visits with leading researchers including Paul Nurse, Kai Simons, and Eric Karsenti. Reviewing Exploring the Living Cell last June in Nature Cell Biology, Thoro Pederson singled out a novel use for the DVD in wooing donors. Pederson wrote that when addressing lay audiences “for eleemosynary purposes,” words go only so far. “There comes a point when the layperson just has to see the real thing. One can troop a small donor group into the lab, but for larger audiences, some of the segments in this DVD will be terrific,” Pederson continued. In fundraising for “our glorious profession,” according to Pederson, is “where this attractive DVD may have its greatest ultimate value.”

Stanford University’s David Epel says that Sardet’s strong aesthetic sensibilities have always made him stand out in their field. “Christian just revels in beautiful images of science,” says Epel. He remembers a Sardet platform talk on pronuclear movement in ctenophores (comb jellies). The work was great, Epel recalls, and the visuals were stunning. “Christian is captivated by movement within cells. He’s drawn by aesthetics to these beautiful movements in phenomena, but then he goes on to find out fundamental things about what’s going on in early cell division, axis determination, and polarity.”

Epel’s favorite Christian Sardet story comes from Sicily when the two were team-teaching a summer short course there. “Christian and I were walking in the streets of Palermo. There was an ice cream cone upside down on the street, melting and making this little pattern around it. And Christian said, ‘Ah! Street art!’”—proof, Epel believes, that, “Christian is someone who sees art and beauty in the biological world and in the real world.”

Microscopes and Jimi Hendrix
If Christian Sardet is a biologist with the eyes of an artist, he is also a Frenchman who is almost a one-man trans-Atlantic bridge. Sardet was born in Melle, a village in a still-rural region of western France near Poitiers. Sardet grew up fascinated by microscopes and the wonders they revealed in pond water. His fascination with things American came from late-night radio.
“Every night at 10:00 pm, there was this show that had all this fantastic jazz,” Sardet explains. “This was also the beginning of rock ‘n’ roll, and so from the radio I knew about the Beatles and Jimi Hendrix.”

After taking a degree in biochemical engineering in Lyons, Sardet took off for the States in 1968. (“So I missed all that stuff in France,” he says, about “les événements de mai,” the student strikes and government crackdown that marked his university contemporaries at home.) Sardet was bound for Philadelphia, where he found his first U.S. post as a lab technician for George Rothblat at the Wistar Institute. In Philadelphia, Sardet got a second author credit on a paper about cholesterol uptake and a push toward graduate school from Rothblat. Sardet also met his wife-to-be, Dana Rosen, then a Bryn Mawr undergraduate. They married in 1970. She is a filmmaker who has worked on projects in both France and the U.S. Their two sons, Noé, 28, and Nico, 27, who are both computer graphic and multimedia designers, have dual citizenship. Nico lives in San Francisco and Noé is moving to Montreal.

Christian Sardet’s other American connections include his 1972 doctorate in comparative biochemistry from University of California, Berkeley, where he did his thesis with Rosemary Ostwald on cholesterol exchange between plasma lipoproteins and red cells. Sardet was back in California in 1983 for a sabbatical year at Stanford University’s Hopkins Marine Station. After that, Sardet was a summertime regular at the Marine Biological Laboratory in Woods Hole. He also served as a “scientist-in-residence” at the San Francisco Exploratorium when he worked on its interactive imaging installation. And despite all those pre-poster, five-minute talks, Sardet has

A Career at Home

Although his American connections are strong, Sardet made his scientific career in France. Besides his leadership of the CNRS cell biology unit at Villefranche, he was the president of the French cell biology society from 2000 to 2003 and the local organizer for the 2004 and 2005 ELSO/SBCF meetings in Nice. He also serves on a long list of French and European academic advisory committees.

Sardet admits that it took him a while to find his research focus. On his return to France, his first postdoctoral post was with Vittorio Luzzati at the Center for Molecular Genetics, a CNRS facility in the Paris suburb of Gif-sur-Yvette. The emphasis there was on biophysical

Echinoids, Protists, and Tunicates

The 1980s were an exciting time in embryonic physiology as new molecular and imaging tools revealed free calcium as a driving force in embryonic activation, cell cycle control, and differentiation. Much of this work was done in the humblest of marine creatures, including sea urchins, protists, and tunicates, but the excitement doubled with the discovery that the pathways elucidated in lower organisms are highly conserved and have analogs in mammalian embryonic development. In 1985, Sardet became chief of a new CNRS marine cell biology unit at Villefranche that focused on fertilization, the role of calcium in sperm motility and chemotaxis for setting axis polarity and shaping the cell cortex.

Sardet says he was influenced by Lewis Tilney’s visit to Villefranche and his sabbatical work with David Epel and Dan Mazia at the Hopkins Marine Station. He also cites his summer work on ascidian eggs with Lionel

For Marius Explores the Cell, a cartoon about organelles that is squarely aimed at kids, Sardet himself provided the voice track of Marius, a friendly virus inhaled by the sleeping Fabrice.

In Philadelphia, Sardet got a second author credit on a paper about cholesterol uptake and a push toward graduate school from [George] Rothblat.
Jaffe and Annelies Specksnijder at MBL, where they discovered calcium wave pulsing during meiosis. But the man who first converted him to ascidians, according to Sardet, was a Croatian scientist visiting at Villefranche, Marko Zalokar. Ascidians, which are commonly called sea squirts, belong to the most distant evolutionary group that still shares several common chordate characteristics with vertebrates. “In fact, it has been shown recently by Delsuc and Chourrout [Delsuc et al. (2006). Nature 439, 965–968] that they are our most direct invertebrate ancestors,” says Sardet. “Much of what we’ve learned about calcium signaling [in ascidians] has turned out to have direct application in mammals. It is the perfect model for exploring my present interests in how embryonic axes are set up and in the structure and role of the cortex.”

An Extraordinary Resource
Aside from the oceanfront scenery, one great advantage of working in a marine research station is that you can shop around for model organisms. Sardet has worked on a long line of marine creatures from sea urchins to ctenophores to chaetognaths (predatory marine worms) to the abundant planktons along the coast near Villefranche.

Sardet has put his marine location to prime scientific use, says Michael Whitaker, a physiologist at Newcastle University in England who has collaborated with Sardet and has visited the station many times. “Christian has developed an extraordinary biological resource at Villefranche that he’s been using to look at a range of different subtle physiological phenomena related to development in a number of different marine species.” According to Whitaker, “Christian is the most zoological of the physiologists who work on fertilization. He’s the person who has the broadest understanding of the diversity and variety in marine organisms.”

Sardet is also the person with the broadest understanding of the power of images, declares Whitaker, who was in the audience at ELSO for the 2005 session of Cinema of the Cell. An excited crowd packed the large auditorium to overflowing, Whitaker remembers. “The people who’d entered obviously put a lot of effort into their films. It was brilliant.”

—John Fleischman
Scientists are increasingly focusing on the understanding of interactive biological processes, pathways, materials and structures at the nanoscale. Long before “nano” became a commonly used word, FEI was delivering electron microscopy solutions for fundamental research within the scope of cell biology, structural biology and soft matter.

Today, FEI’s transmission electron microscopy (TEM), scanning electron microscopy (SEM) and DualBeam™ electron microscopy instruments combined with automated software continue to deliver the high performance required for 2D and 3D high resolution imaging and reconstruction of cells, viruses, bacteria and biological materials.

**Tecnai™ G² Spirit and Tecnai G² Polara**
Our Spirit images in high contrast and high resolution for the 20-120kV range. The Polara images in high contrast and high resolution in the 300kV range for a variety of samples in their natural state at cryo temperatures. 3D-image acquisition and analysis using tomography and/or cryo-electron tomography ensures application flexibility for work in the cell biology, structural biology, diagnostic and pharmaceutical research communities.

**Nova™ NanoLab and Quanta 3D**
Our range of DualBeam™ focused ion beam (FIB) and scanning electron microscopes combined with automated Slice and View™ gives you the performance you demand to better understand the architecture of whole cells in a three-dimensional network.

**Vitrobot™**
Our Vitrobot, a sample management and preparation solution for readying small cryo samples for structural studies enables automated cryo fixation of transmission electron microscope samples. Ensuring reproducible, high-quality results and a high sample preparation throughput prior to cryo observation in a transmission electron microscope.

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MEMBERS in the News

Michael Brown of the University of Texas Southwestern Medical Center, an ASCB member since 1980, received the Builders of Science Award from Research!America.

Ira Mellman of Yale University, an ASCB member since 1981, has joined Genentech in South San Francisco as Vice President of Research Oncology.

Ilene K. Gipson of Schepens Eye Research Institute, an ASCB member since 1974, will receive the 2007 Association for Research in Vision and Ophthalmology Friedenwald Award for eye research.

Joseph Goldstein of the University of Texas Southwestern Medical Center, an ASCB member since 1980, received the Builders of Science Award from Research!America.

Craig R. Roy of Yale University School of Medicine, an ASCB member since 2000, will receive the Eli Lilly and Company Research Award from the American Society for Microbiology. He will present an award lecture at the ASM meeting in May.

Mitchell L. Sogin of the Marine Biological Laboratory and Brown University, an ASCB member since 1988, will receive the USFCC/J. Roger Porter Award from the American Society for Microbiology. Sogin is being honored for his research in environmental microbial diversity.

Pascale Cossart of the Institut Pasteur, an ASCB member since 1993, will receive the GlaxoSmithKline International Member of the Year Award from the American Society for Microbiology. ASM honors Cossart for her remarkable research in the molecular and cellular bases of bacterial pathogenesis.

Raphael. H. Valdivia of Duke University Medical Center, an ASCB member since 2000, is one of the recipients of the Merck Irving S. Sigal Memorial Award presented by the American Society for Microbiology. Valdivia and Dennis Kim of the Massachusetts Institute of Technology will receive the award at the ASM meeting in May.

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GRANTS & OPPORTUNITIES

NIAID Biodefense Fellowships. The NIH National Institute of Allergy and Infectious Diseases is soliciting applications from biodefense training and development researchers in the areas of prevention, detection, diagnosis, and treatment of diseases caused by potential bioterrorism agents. Grants, fellowships, and career development awards are available. Multiple deadlines. www.niaid.nih.gov/biodefense/research/funding.htm.

NIGMS Grants. The NIH National Institute of General Medical Sciences is accepting applications for funding research in which several interdependent projects offers significant advantages over support of these same projects as individual research. Standard NIH application dates apply. See http://grants.nih.gov/grants/guide/pa-files/PA-07-030.html.

NIH Grants.


NIH Study Sections. Center for Scientific Review has cell biology study sections available for grant applicants. The two study sections will hold their first meetings in June 2007 for applications received in February and March. http://cms.csr.nih.gov/PeerReviewMeetings/CSRIRGDescription/CBIRG/.


SCORE Awards. The NIH National Institute of General Medical Sciences is accepting applications for its Support of Competitive Research (SCORE) developmental awards designed to increase faculty research competitiveness at minority-serving institutions. The program announcement, as well as three other program announcements (PAR-06-491, PAR-06-492, PAR-06-493), can be found at http://grants1.nih.gov/grants/guide/pa-files/PA-06-490.html#Part1.

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

Veronica M. Morandi Da Silva
John R. Pringle
Robert L. Trelstad

MEMBER Gifts

Sabbatical Program in Systems Biology at Harvard Medical School

www.cdpcenter.org/sabbatical

The Cell Decision Process (CDP) Center at MIT and Harvard Medical School is happy to announce the availability of a Visiting Professor position for a 3-9 month sabbatical starting as early as Summer 2007, hosted at the Department of Systems Biology, Harvard Medical School. Funding is available to support or supplement salary, and limited research support is also available. Visiting faculty are encouraged to bring students with them. The goal of the program is to encourage interactions and collaborations between students and faculty at CDP and those at traditionally minority-serving institutions.

To apply, please send your CV, a statement of how your research would benefit from the research environment in the Boston area, and a summary of resource needs, to:

CDP Visiting Professor Program
c/o Fred Berkovitch
Department of Systems Biology
Harvard Medical School, Alpert 536
200 Longwood Ave.
Boston, MA 02115


Our Institute is located at the Cedars-Sinai Medical Center campus and is part of the Depts of Medicine and Molecular and Medical Pharmacology, UCLA. It offers state-of-the-art facilities in an exciting research environment. Applicants should have a Ph.D. and/or an M.D and under 5 years postdoctoral experience. Salary is dependent on education and research experience; range: $36,000-$45,000. E-mail cover letter, curriculum vitae, summary of research experiences, and contact information of three references to Pedro R. Lowenstein, MD, PhD (lowensteinp@cshs.org) or Maria G. Castro, PhD (castromg@cshs.org), Dept of Medicine, Cedars-Sinai Medical Center, 8700 Beverly Blvd., Davis Bldg., Room 5090, Los Angeles, CA 90048.
MEETINGS Calendar

ASCt Annual Meetings

2007
Washington, DC
December 1–5

2008
San Francisco
December 13–17

2009
San Diego
December 5–9

2010
Washington, DC
December 11–15

April 28–May 5. Boston, MA
59th American Academy of Neurology Annual Meeting.

April 29–30. Washington, DC.
Histochemical Society Annual Meeting, jointly with
American Society for Investigative Pathology.
www.mail@histochemicalsociety.org.

May 23–25. Charlottesville, VA
Morphogenesis and Regenerative Medicine Symposium at
the University of Virginia.

June. Cancun, Mexico
2007 Pan-American Society of Developmental Biologists
Congress—A joint meeting between the Latin American
Society for Developmental Biology and the Society for
Developmental Biology.
www.niob.knaw.nl/sddb/meetings.htm.

June 16–20. Naantali, Finland
The 7th International Workshop for Chromosome
Segregation and Aneuploidy.

June 27–30. Dijon, France
ASCt-European Cytoskeleton Forum Summer Meeting.
Dynamic Interplay between Cytoskeletal and Membrane

July 1–6. New London, NH
Colby Sawyer College. Gordon Research Conference
(GRC) entitled “Cell-Cell Fusion.”

July 8–12. Glasgow, UK
Life Sciences 2007, incorporating BioScience2007,
the British Pharmacological Society, the Physiological

July 15–20. Cairns, Queensland, Australia
GLYCO-19—XIX International Symposium on Glycoconjugates.

August 5–8. Boston, MA
Engineering Cell Biology II. www.engconfintl.org/7ak.html.

August 23–26. Vienna, Austria
EMBO workshop in Molecular Medicine, Drug Action and
Chemical Biology in the Post-genomic Era.
http://cwp.embo.org/w07-27/.

September 1–4. Dresden, Germany
European Life Scientist Organization Annual Meeting.

September 17–20. Chicago, IL
47th Interscience Conference on Antimicrobial Agents