ASCB Recognizes New Nobel Prize Recipients

Don't miss the celebration on Tuesday, December 16, 2008, when ASCB presents its most prestigious award, the E.B. Wilson Medal, to 2008 Nobel Laureates and longtime ASCB members Martin Chalfie and Roger Y. Tsien. The recipients of the 2008 Nobel Prize in Chemistry were recognized for the development of genetically insertable fluorescent proteins. Chalfie, of Columbia University, and Tsien, of the University of California, San Diego/HHMI, will be honored in Sweden with Osamu Shimomura of the Marine Biological Laboratory. The Nobel ceremony will take place less than a week before the Wilson medal presentation.

Working with a green fluorescent protein discovered by Shimomura in a Pacific coast jellyfish, *Aquaria victoria*, Chalfie was able to tag six individual cells in *Caenorhabditis elegans*. Under ultraviolet light, the labeled cells glowed bright green. This enabled scientists to follow protein movement in a living animal for the first time.

Tsien refined the “green fluorescent

ASCB founder, past president, and longtime member George E. Palade passed away quietly at home on October 8, 2008, at the age of 95, after a long illness. Palade received his M.D. from the School of Medicine of the University of Bucharest, Romania. He was a member of the faculty of that school until 1945, when he came to the U.S. for postdoctoral studies.

Palade joined Albert Claude at the Rockefeller Institute for Medical Research in 1946 and was appointed Assistant Professor at the Rockefeller in 1948. He progressed from Assistant Professor to full Professor and head of the Laboratory of Cell Biology until 1973, when he moved to Yale as Professor to establish the Section of Cell Biology.

He wrote that his move to Yale was driven by “… my belief that the time had come for fruitful interactions between the new discipline of Cell Biology and the traditional fields of interest of medical schools, namely Pathology and Clinical Medicine.” Palade held the Sterling Professorship of Cell Biology from 1975 to 1983 when the Section, upon his retirement as Chair, became the Department of Cell Biology. That same year he was named Senior Research Scientist, Professor Emeritus of Cell Biology, and Special Advisor to the Dean.

In 1990, Palade moved from Yale to the University of California, San Diego (UCSD). Once again he welcomed a new challenge and began an entirely new career as Professor of Medicine in Residence and Dean for Scientific Affairs in the School of Medicine. He started...
How to ameliorate the crisis in U.S. funding for biomedical research? That question was addressed recently by a blue-ribbon committee convened by the American Academy of Arts and Sciences. At a June press briefing, the Academy—an independent policy research center and society—released a white paper that spotlights the current problems and points to some possible solutions. ARISE: Advancing Research in Science and Engineering was produced by the Academy’s Committee on Alternative Models for the Federal Funding of Science. The Committee, chaired by Howard Hughes Medical Institute Director Thomas Cech, included many ASCB members. Among them was Randy Schekman, an ASCB Past President, who authored the piece below for the ASCB Newsletter.

The ASCB endorsed the paper and its recommendations, and highlighted the report upon its release with a link on the ASCB website. I encourage you to share the findings and recommendations with officials at your institutions as well as with your elected officials. There are excellent recommendations for each group—and research funders—in the report. The sustainability of our research enterprise is at stake, and we must speak up.

—Bob Goldman

The ASCB plays a prominent role in mobilizing the cell biology community in support of basic biomedical science. Indeed, the doubling of the National Institutes of Health (NIH) budget between 1998 and 2003 can in some measure be credited to the efforts of the members and leaders of the Society who took the time to inform members of Congress about the great health-related opportunities in basic medical research.

Unfortunately, for the first time in over a generation, the NIH has suffered flat-line funding and a cut in inflation-adjusted budgets for several years in succession. Pay lines have tightened, with particular damage to beginning investigators and innovative science. The situation is made worse by funding decisions that favor safe senior and established investigators over early-career scientists. At the NIH, the average age for first-time grant recipients has increased to 42, and the success rate for first proposals has dropped from 30% to 19%. While more funding is always welcome, it cannot guarantee innovation unless money is directed to those who have bold ideas. Certain fundamental problems with the review process hinder the recognition of unproven talent and unusual ideas.

Support Has Dwindled

A recent study commissioned by the American Academy of Arts and Sciences (ARISE: www.amacad.org/arisefolder/default.aspx) provides evidence of dwindling support for early-career biomedical scientists. Among the most alarming facts related to NIH-sponsored research:

- For 45 years, between 1962 and 2006, the share of the primary NIH research grants to individuals (R01 and R01-equivalent grants) awarded to first-time investigators has declined steadily from about 40% to less than 25%.

- While the absolute number of first-time investigators transiently increased with the doubling of the NIH budget (1998–2003), the proportion of R01-equivalent grants awarded to new investigators declined since 1980 and remained essentially flat throughout the doubling.

- As the NIH budget doubled, the number of investigators receiving their first R01-equivalent grant grew steadily from a pre-doubling level of 1,336 in 1997 to 1,680 in 2004, an increase of 25.7%. In the three years following completion of the doubling, the number of first-time investigators retreated to 1,354, erasing almost the entire gain.
The funding rate\(^3\) for new investigators lags that of established investigators who have previously received NIH funding. In 2007 the overall funding rate for all applicants of R01-equivalent awards was 23.6%. For new investigators the funding rate was 18.5%; for established investigators the funding rate was 26.1\.\(^4\)

The number of times new investigators must submit proposals before receiving funding is increasing. In 1980, 86% of new investigators received their grant on their first submission, in 1990 58%, and in 2000 59% did so.\(^5\)

Less than one-third of new investigators receive their first grant on their first attempt. In 2007, for new investigators who received R01-equivalent grants, 28% of the awards were to first submissions, 41% were to first amendment submissions, and 31% were to second amendment submissions.\(^6\)

Enhancing Interaction, Outreach

The ARISE report highlights several interesting and nonobvious remedies to the problem of funding high-risk, high-reward research. One proposal is to enhance the interaction between staff in the funding agencies and frontline investigators in emerging disciplines. In past years, program officers from the federal agencies participated actively in small research meetings, such as Gordon Conferences, where the newest unpublished and promising results are shared. Funding restrictions and a lack of reinforcement in the program officer career path curtailed such contact. Such disinvestment is unwise. A small allocation of travel funds and encouragement in career advancement would return those responsible for funding decisions back into contact with the best beginning and innovative investigators.

Private funding agencies can help. Selective private sources tend to favor the most highly acclaimed young scholars, some of whom may have more support than they really need. Support tends to focus on individuals at a select few elite institutions. The ARISE report encourages agencies to favor other scholars who may not yet have secured extramural funding.

A Role for Universities

Universities also have a role to play. Research buildings are erected as in a “field of dreams,” with the expectation that investigators will take responsibility for core facilities. The ARISE report recommends that institutions fundraise for building endowments to support the creation and staffing of core facilities, rather than relying exclusively on expensive recharges to individual investigators. And even more importantly, universities and research institutes should assume greater responsibility for faculty salaries, particularly where faculty serve teaching and administrative functions that support the institution as well as the research enterprise. Such cost-sharing measures by federal grant recipients would stretch the research dollar to permit more support for beginning investigators.

—Randy Schekman, University of California, Berkeley

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

Footnotes

1R01-equivalent awards include R37 grants.
3Funding rate is defined as the number of awards divided by the number of submitted proposals.
4Data provided by NIH.
5Data provided by NIH.
6Data provided by NIH.
Search for Editor-in-Chief, 
Molecular Biology of the Cell

The ASCB welcomes nominations (including self-nominations) for the position of Editor-in-Chief of *Molecular Biology of the Cell (MBC)*.

*MBC* publishes studies presenting conceptual advances of broad interest and significance within all areas of cell biology, genetics, and developmental biology. The Editor-in-Chief advocates the interests of both contributors and readers by ensuring that *MBC* offers fair, prompt, and thorough review, responsible editorial adjudication, and thoughtful suggestions for revision and clarification.

A prospective Editor-in-Chief should have demonstrated success in research in one of the fields encompassed by the journal and should possess:

- A broad, general knowledge of cell biology
- A commitment to the goals and scope of *MBC*
- The ability to engage outstanding scientists as contributors, reviewers, and Editorial Board members
- A willingness to provide the journal with sustained, often daily attention

The Editor-in-Chief will:

- Oversee the peer-review process
- Oversee selection and presentation of papers for *InCytes from MBC*
- Oversee selection of the *MBC* Paper of the Year
- Report semiannually to the ASCB Council about the state of the journal and possible new initiatives
- Recruit Editorial Board members
- Assist the ASCB Council to set policy about issues including author conduct, copyright, page charges, publication frequency, and financial goals for the journal
- Conduct a meeting of the *MBC* Editorial Board at the ASCB Annual Meeting

The new Editor-in-Chief will be appointed to a five-year term formally beginning in January 2010. Involvement in the journal, however, should begin in mid- to late-2009, to handle papers to be published in the 2010 volume. The ASCB Council has approved a stipend of $12,000 per year for this position.

Nominations will be reviewed by a search committee appointed by ASCB President Bob Goldman and chaired by ASCB Past President Randy Schekman.

A nomination should include a summary of the candidate's career and research interests. If self-nominating, the candidate should include a statement about his or her approach to editing *MBC*. Nominations should be sent to the *MBC* Editor-in-Chief Search Committee, c/o ASCB Publications Director, 8120 Woodmont Avenue, Suite 750, Bethesda, MD 20814, USA. Nominations can also be forwarded by email to mleader@ascb.org.

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**Nobel, continued from page 1**

protein” (GFP), extending its color palette. With this development scientists could follow the interactions of differently labeled proteins within the same cell. As every cell biologist knows well, GFP and its multicolored descendents are as essential to modern cell biology as microscopes, model organisms, and glassware.

Chalfie, who has been a member of the ASCB since 1980, served as a member of the Editorial Board of the Society’s journal, *Molecular Biology of the Cell (MBC)*, in 2003–2005. Tsien joined the ASCB in 1987 and was on the *MBC* Editorial Board from 1992–96. In 2003, Tsien gave the Keith Porter Lecture at the ASCB Annual Meeting.

Mark your calendar for the ASCB Annual Meeting E.B. Wilson Medal presentation to our newest Nobel Laureates, Chalfie and Tsien, in San Francisco. If you haven’t registered for the meeting yet, please visit www.ascb.org/meetings, and do so now. Then secure your hotel room through the ASCB Housing Bureau, also at www.ascb.org/meetings, while well-priced rooms are still available. See you in San Francisco!

—John Fleischman
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Brian Matsumoto, Ph.D.
Neuroscience Research Institute & Department of Biology
University of California, Santa Barbara

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Palade's scientific contributions, which spanned nearly 50 years, led to a fundamental understanding of the structure and function of cells and defined the new field of cell biology. They opened novel areas of research which countless scientists in diverse fields now explore. Reminiscing about the early days at the Rockefeller when the field of cell biology was conceived, Palade wrote, “After so many years, it is difficult to recapture in words the atmosphere of intense activity, remarkable achievements, great excitement, and unlimited optimism that prevailed in the laboratory, which otherwise looked like an unattractive dungeon sunk in the third basement of one of the old buildings of the Rockefeller Institute.”

“The new field had virtually no tradition; everybody working in it came from some other province in natural sciences. Added to all this excitement was a pervading free spirit—often irreverent but always helpful, because it acted as an antidote against imagined grandeur. Keith Porter was responsible for a good part of that spirit....” Fortunately, that spirit still exists in our field.

Palade, along with Porter and others at the Rockefeller, was a founder of the American Society for Cell Biology in 1961, when 840 members gathered at its first meeting in Chicago. The ASCB has grown to a membership of approximately 10,000, indicative of current activity in this field. Palade was president of the ASCB in 1976. He was active in establishing the Journal of Cell Biology in 1955 (originally the Journal of Biochemical and Biophysical Cytology) as well as the Annual Reviews of Cell Biology in 1985. Palade was also influential as a member of the Advisory Panel to the Director of the National Institutes of Health in ensuring that support for the basic sciences was recognized.

Making Dreams Reality
The importance of basic science in human pathophysiology was indicated in his acceptance speech for the Nobel Prize in 1974: “Cell biology finally makes possible a century-old dream: that of analysis of diseases at the cellular level, the first step toward their final control.” Scientists in all fields will immediately recognize the importance of his contributions to medicine, a reflection of his training as an M.D., which enabled him to view his science in the larger context of human disease.

Palade was elected to membership in the National Academy of Sciences, the Institute of Medicine, and the American Academy of Arts and Sciences. In 1974, Palade received the Nobel Prize in Physiology or Medicine (shared with Albert Claude and Christian DeDuve). He was also a recipient of the National Medal of Science, USA, in 1986, the Albert Lasker Award, the Gairdner Special Award, and many other honors. In announcing the 1974 Prize, the Nobel Committee said of Palade: “He added important methodological improvements both to differential centrifugation and to electron microscopy. In particular, he became instrumental in combing two techniques in order to obtain biologically basic information.”

He was best known for his pioneering work in elucidating the pathway for synthesis and vectorial transport of proteins along the secretory pathway (Nobel Prize Lecture, “Intracellular Aspects of the Process of Protein Secretion,” Science 189:347–358, 1975). This is exemplified in a classic electron micrograph (see left) taken by Palade from “A Small Particulate Component of the Cytoplasm”, J. Biophys. and Biochem. Cytol., 1:59–68, 1955. There he first described the association of what were subsequently determined to be ribosomes with membranes. He and Porter later named this structure the endoplasmic reticulum. Together they and the group at the Rockefeller developed techniques for fixation and thin sectioning of cells, for fractionating cells by centrifugation, and for studying the fractions by electron microscopy and biochemistry—the essence of cell biology.

Leaving Both Legacy and Loss
Palade will be remembered and honored at Yale, the Rockefeller, and UCSD, where he has had a profound influence much beyond
Palade... was a founder of the American Society for Cell Biology in 1961, when 840 members gathered at its first meeting in Chicago.

As David Sabatini, one of his early graduate students at the Rockefeller, wrote in 2004, “Palade’s personal attributes make him one of the most admired and beloved figures in today’s scientific scene. Palade not only has a powerful intellect that allows him quickly to cut to the essence of a scientific problem and propose for it a feasible solution, but is also a man of great human qualities—warm and sensitive, polite and gracious.” Our loss is profound.

In lieu of flowers the family requests that gifts be made to the George E. Palade Lectureship Fund at UCSD. Checks may be made payable to the UC San Diego Foundation with the notation of “George Palade Lectureship” and mailed to UC San Diego, c/o Lynda Hearney, 9500 Gilman Drive, Mail Code 0853, La Jolla, CA 92038, USA.

—James Jamieson

Cell Biology Textbooks Donated in Africa

Left to right: American Embassy Zanzibar Affairs Officer David Scott presented new biochemistry, molecular cell biology, and immunology textbooks to Professor Ali Seif Mshimba, Vice-Chancellor of The State University of Zanzibar (SUZA). The first quality science textbooks were donated by the ASCB to support the study of advanced science in Tanzania. Also present to receive the texts were Zakia Abubakar, Director of the Department of Sciences, and Abdallah Ismail, Registrar, of SUZA. (Photo courtesy of the American Embassy)

San Francisco Reservations Tonight!

Reservations Tonight! can help with booking reservations for restaurants, theater/sports events, and local attractions, as well as obtaining shopping information, maps, discount coupons, and giveaway brochures for San Francisco.

Location: South Lobby Registration, Moscone Center

Hours: Saturday, December 13–Tuesday, December 16, 10:00 am–6:00 pm

Advance reservations may be made online at www.reservationstonight.com or by calling or faxing toll-free in the U.S. (800) 392-3463. International attendees should call (707) 795-4885.
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U.S. Senate Defeats $56.2 Billion Economic Stimulus Bill

Bill included $1.2 Billion for NIH

Members of the U.S. Senate took a break from efforts to bail out Wall Street to vote on a $56.2 billion economic stimulus plan that included $1.2 billion in additional funds for the National Institutes of Health (NIH). Unfortunately, the bill fell eight votes shy of passage.

Along with $1.2 billion for the NIH, the bill included $46 million for the Centers for Disease Control and $150 million for the U.S. Department of Energy’s Office of Science.

Most of the bill included provisions to address many of the economic problems currently facing the U.S., including rising unemployment, high food costs, increasing energy prices, and job creation.

Opposition to the bill by Senate Republicans required that the bill pass with 60 votes, the number of votes needed to stop a filibuster in the Senate.

The House of Representatives passed its own version of an economic stimulus bill without any money for the NIH or other federal science programs. President Bush had said that he would veto either stimulus bill.

To find out how individual Senators voted, visit http://www.senate.gov/legislative/LIS/roll_call_lists/roll_call_vote_cfm.cfm?congress=110&session=2&vote=00206.

— Kevin M. Wilson

Congress Procrastinates Again

NIH Grant Recipients Will See Reductions

As predicted, Congress has completed its work for the year without passing a FY09 federal budget. Instead, it has passed a Continuing Resolution (CR) that will continue to fund federal government operations at FY08 levels until March 6, 2009. President Bush had told Congress that he would veto any spending bill larger than the amount he requested in the budget proposal he submitted to Congress in January 2009. Instead of fighting with the President, Congressional leaders decided to wait to work with the next president.

The National Institutes of Health (NIH) has announced that until then it will issue non-competing research grant awards at levels below the Notice of Awards. In response to passage of the CR, the NIH has announced that it will fund non-competing research grant awards at 90% or below previously committed levels. The NIH hopes that when Congress passes the FY09 budget, it will be able to make up for the shortfalls.

— Kevin M. Wilson
Breast Cancer Research Bill Becomes Law

Encouraging research into the relationship between the environment and breast cancer has long been the goal of Rep. Nita Lowey (D-NY). She has been trying since 1999 to pass legislation that would guide federally funded research examining the links between breast cancer and the environment. This year, 287 members of the House joined her as cosponsors of H.R. 1157, the “Breast Cancer and Environmental Research Act of 2008.” The bill was passed by voice votes in both the House of Representatives and the Senate. President Bush has also signed the bill into law.

H.R. 1157 creates an interagency committee to:
- Coordinate information on existing breast cancer research
- Make recommendations on ways to improve the research
- Advise the National Institutes of Health (NIH) and other federal agencies on how to solicit collaborative, multidisciplinary research, including environmental and genomic research
- Expand the number of research proposals that involve collaboration between two or more national research institutes or centers.

The Lowey bill also instructs the committee to make recommendations about ways to improve the NIH research portfolio, improve public participation in decisions concerning breast cancer research, and expand research partnerships between publicly and privately funded researchers.

The interagency committee will consist of the Director of the Centers for Disease Control, the NIH Director, appropriate NIH Institute directors, a representative of the National Cancer Institute Board of Scientific Advisors, various other federal agency heads, scientists, physicians, and members of the public.

The bill authorizes $40 million a year for four years for the program. However, it does not actually provide the additional money. Without additional funds, the program will have to be paid for by existing NIH funds.

—Kevin M. Wilson

CLS Congressional Biomedical Research Caucus Held

Left to right: The Coalition for the Life Sciences (CLS) Congressional Biomedical Research Caucus speaker Peter Pronovost of Johns Hopkins University School of Medicine listened to a question posed by an audience member after his briefing on “Checklists and Their Impact on Medical Care.” Congressional Biomedical Research Caucus Co-Chair Rep. Rush Holt (D-NJ) addressed the audience following Pronovost’s presentation.
Giving a Great Job Talk

In general, know the length of time allotted for a talk and ensure that adequate time is allowed for questions at the end. This provides a good opportunity to impress the audience on how knowledgeable a candidate is. Make no assumptions on the availability of appropriate audiovisual equipment and have a back-up plan for equipment malfunction or a late start. Asking the administrators beforehand to clarify the talk’s format, scope, and audience is perfectly appropriate as well.

1. Know the Audience

In research-intensive institutions, scientists from all backgrounds may be present, and therefore the introduction must be broad enough to accommodate their level of knowledge. It is imperative to appeal to both the search committee members and the general audience because candidate selection may be affected by the “buzz” generated among the attendees. In contrast, a job talk given at a teaching university emphasizes teaching skills and the ability to engage the students. Finally, the audience in industry settings may include businesspeople and laypersons, so extra effort must be made to provide enough explanatory and background materials. Because both experts and outsiders may be present, it is important to tailor a talk that speaks appropriately to the audience.

2. Know the Rules

Depending on whether a candidate has been asked to give a formal science or teaching talk and/or a more informal chalk talk, each preparation is different. Although most understand the requirements for a science talk, fewer people are familiar with teaching and chalk talks. For a teaching job talk, a topic is often preselected and it is imperative to ask what types of people the audience will consist of: entering undergraduates, seniors, or graduate students. For a teaching job talk, a topic is often preselected and it is imperative to ask what types of people the audience will consist of: entering undergraduates, seniors, or graduate students. In contrast, a chalk talk is typically a Q&A session with a smaller group of people. Here, it is important to outline immediately the research proposal to channel the types of questions asked.

3. Understand What Is Being Evaluated

Although good science is being evaluated at all times, the most important evaluation to be made is of the candidate. The audience would judge him or her on ability to be a team player, “fit” in the new environment, teaching abilities, and leadership and management potential. Highlight these attributes by giving credit to students, colleagues, and collaborators who contributed. In addition to evaluating these attributes, the search committee further evaluates a candidate’s research proposal, grantsmanship, fundability, and the repertoire of skills and techniques during a chalk talk. In contrast, teaching institutions may place a higher priority on a candidate’s ability to connect with students. Industry might emphasize the versatility and adaptation skills of a candidate because new hires typically follow new lines of research.

4. Tell a Story

Reconstruct the experimental history so that it is more conducive to a flowing storyline. Although memorization should be kept to a minimum, memorize the transition points and the first few slides to jump-start the talk. Begin with an introduction that would captivate the audience within the first two minutes of a talk. Provide enough background and say why the research is important.

Throughout the talk, hit the high points and exclude small, insignificant experimental details that digress. Rather than delving into too much detail regarding how the research was conducted, explain why a model, experiment,
and a particular line of research were followed to illustrate critical thinking abilities.

Repeat key points to ensure that the audience gets the message before moving on. Last, tailor the end of the talk to the institution or company; for example, highlight skills and techniques rather than discussing future research plans as one might for an industry job talk.

5. Have Clean Data Slides
Slides should be readable from a distance. Have a declarative title for each slide to refocus the audience who just tuned in. Curtail use of colors and animation that distract. If possible, minimize extra words or substitute words with pictures so that the audience listens rather than reads the slides. Avoid including extraneous information; however, if doing so is unavoidable, use arrows and other tools to highlight the parts where attention is needed.

6. Be Engaging and Personable
Make a good first impression by dressing appropriately and using good body language and movement. Minimize habits that distract. Step away from the podium and face the audience at all times. Make eye contact frequently with the audience. Finally, genuinely welcome questions at the end of the talk.

7. Start Early and Practice, Practice, Practice
Polish the talk by practicing in front of colleagues who can give constructive criticisms for every aspect of your talk. Practice in front of those who are outside your field to ensure that the presentation is clear and understandable. Talk with mentors who have served on search committees. Discuss job talk strategies with mentors and career counselors.

Finally, the best way to understand how to give a job talk effectively is by watching others. So attend as many job talks as possible to learn more. By observing others, and armed with the rules set forth here, a candidate is sure to impress and engage both the audience and the search committee.

—Jennifer Chua, Subcommittee on Postdoctoral Training

Adapted from a workshop seminar given by Sharon Milgram, Director of the Office of Intramural Training and Education, National Institutes of Health, Bethesda, MD
Stress-activated Genomic Expression Changes Serve a Preparative Role for Impending Stress in Yeast
David B. Berry and Audrey P. Gasch

Cells respond to environmental stress by altering expression of hundreds to thousands of genes. These expression changes are widely interpreted as necessary to survive the stressor that provokes them. Here the authors show in yeast that gene expression changes triggered by a single dose of stress are not required to survive that stimulus. Neither transcription nor translation is necessary for basal stress tolerance. Instead, stress-dependent expression changes are critical for acquired stress resistance, where cells exposed to mild stress become resistant to severe stress. This requires both the “general stress” transcription factors Msn2p and/or Msn4p and protein synthesis during mild stress treatment. Interestingly, Msn2p and Msn4p provide distinct contributions to gene induction and acquired stress resistance and also regulate different genes under different conditions, arguing against a general stress function. Thus, acquired stress resistance cannot be explained by a simple general stress response in yeast.

In Vitro Budding of Intralumenal Vesicles into Late Endosomes Is Regulated by Alix and Tsg101
Thomas Falguières, Pierre-Philippe Luyet, Christin Bissig, Cameron C. Scott, Marie-Claire Velluz, and Jean Gruenberg

Endosomes along the degradation pathway accumulate membranes in their lumen and thus exhibit a characteristic multivesicular appearance. These intraluminal membranes typically incorporate downregulated signaling receptors destined for degradation, but the mechanisms that control their formation remain poorly characterized. Here, the authors describe a novel quantitative biochemical assay that reconstitutes the formation of these intraluminal vesicles within late endosomes in vitro. They show that this process is time-, temperature-, pH-, and energy-dependent, and requires cytosolic factors and endosome membrane components. The compartment supporting the budding process is accessible to endocytosed bulk tracers and internalized EGF receptor, which is sorted into the intraluminal vesicles. Finally, the authors demonstrate that the interacting proteins Alix and Tsg101 (an ESCRT-I component) function as negative and positive regulators of this process, respectively. More generally, this new in vitro approach is a critically needed tool to unravel the mechanisms allowing the formation of multivesicular endosomes.

An α-Helical Extension of the ELMO1 Pleckstrin Homology Domain Mediates Direct Interaction to DOCK180 and Is Critical in Rac Signaling
David Komander, Manishha Patel, Mélanie Laurin, Nadine Fradet, Ariane Pelletier, David Barford, and Jean-François Côté

DOCK180, a Rac-specific guanosine exchange factor (GEF), functions together with ELMO to promote Rac-dependent cell migration and phagocytosis. However, the precise role of ELMO in Rac activation remains controversial. Here the authors present the crystal structure of the ELMO1 PH domain and demonstrate biochemically that it is incapable of binding lipids but is predominantly responsible for interaction with DOCK180. The structure further reveals a conserved atypical α-helical extension, mutation of which abrogates DOCK180 binding. The interaction interface on DOCK180 was also mapped, and mutations identified that inhibit ELMO1 binding. Using such mutants, the authors found that the formation of a DOCK180/ELMO complex was not obligatory for efficient Rac1 GTP loading. Surprisingly, despite normal Rac1 activation, an ELMO1 mutant deficient in binding to DOCK180 was incapable of promoting cell migration. These results suggest that ELMO1 contributes to Rac signalling not by direct activation of the DOCK180 GEF but rather by orchestrating upstream or downstream events.

Microtubule-mediated Src Tyrosine Kinase Trafficking in Neuronal Growth Cones
Bingbing Wu, Boris Decourt, Muhammad A. Zabidi, Levi T. Wuethrich, William H. Kim, Zhigang Zhou, Keira MacIsaac, and Daniel M. Suter

Src tyrosine kinases have essential functions in many cell biological processes including cell motility, growth cone guidance, cell adhesion, and endocytosis. Thus, it is surprising that little spatio-temporal information is available on Src localization, trafficking, activation, and actions, particularly in the growth cone. The authors have taken advantage of the high-resolution Aplysia growth cone system and molecular tools for Aplysia’s Src tyrosine kinases, Src1 and Src2, to carry out the first live-cell imaging study of Src dynamics in growth cones. Immunolocalization, Src-EGFP imaging, and biochemical data reveal plasma membrane and microtubule association of Src as well as microtubule-dependent retrograde transport of Src endocytosed in the growth cone periphery. Microtubule depletion studies confirm their role in maintaining a steady-state level of active Src in the growth cone plasma membrane. Finally, endocytosis of activated Src is reduced, thus allowing the plasma membrane-associate pool to control the size of growth cone filopodia and lamellipodia.
Dear Labby,

I’m a fourth year postdoc and have been growing increasingly upset about how my PI has been criticizing me at lab meetings. I am always open to constructive advice. However, in recent months, she has made statements like, “If you just knew how to conduct the simplest experiment maybe you would be getting somewhere.” I am the only one (in a lab of one other postdoc, three technicians, and a graduate student) whom she has singled out like this. Yet all of us have ups and downs in experiments.

My results disagree with my PI’s main concept (about how maternal dietary protein deficiency may impact gene expression patterns in fetal mice). She has a whopper National Institutes of Health grant to study this idea. I decided to try a control experiment that hadn’t been done, namely to use a low-protein diet that was isocaloric (i.e., the missing protein calories were replaced with a mixture of carbohydrate and fat.) This low-protein diet elicited no changes in fetal gene expression, indicating that the key factor is not protein but caloric intake. I told her about these results and she said “Obviously, something is wrong in the experiment.” But she didn’t point to anything in particular. When I presented these results at a lab meeting a few weeks earlier, she dressed me down. This happened again in informal lab discussions with her, in front of others, in the last two months.

I trust my own results and can understand that if they disagree with my PI’s pet hypothesis there could be problems. At best, I would think she would have an open mind. Or maybe she could mentor me if there is a key flaw in my experiments. But for her to berate and humiliate me repeatedly in front of our whole lab has been most distressful. I joined this lab thinking it was the right one, but will be leaving soon. Should I do something to notify officials about this?

—Berated and Bewildered

Dear Berated and Bewildered,

Establishing a career in science presents many mountains to climb, but what you have encountered should not happen. The fact that you were singled out is compatible with the notion that your results, not you, were the cause. This doesn’t sound like a disagreement over some nuanced aspect of your data in lab meetings, but instead a reaction of your PI to results that challenge the laboratory’s gestalt. Transitions in a lab’s major hypothesis or conceptual core typically occur gradually, in successive waves of contradictory results. They often involve the experiments of more than one lab member. It is likely that your PI has viewed you as somewhat of a rogue, whereas your decision to test the caloric hypothesis was eminently reasonable. (That this had not been checked out in the lab’s prior work is frankly astonishing.)

Is there any other possible interpretation for your results? Have you had the opportunity to replicate the finding? This bears on the degree to which you may want to push this matter as you prepare to leave for your new position.

You could write a memo to the department chair and/or appropriate administration officials expressing your concern. But you would want to phrase this in accord with the cogency of your findings—perhaps along the lines of “in my closing months in the lab, I obtained two independent sets of results that contradict the notion that…” While the facts, as Labby reads them, do not point to scientific misconduct on the part of the PI, they do sound like a gathering storm. It would therefore be prudent to get this on record, whether expressed as a “concern,” “possibly different mechanism,” or with whatever phrasing is warranted.

—Labby

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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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eXcite Life... visit Leica Microsystems at booth #1300, take a five-minute demonstration of the Leica TCS SP5 X, and enter a drawing to win a Leica C-LUX 2, 7.2 megapixel digital camera!
With fascinating data and inspirational personal stories, a recent meeting held by the National Academies examined women’s careers in science, technology, engineering, and medicine (STEM). The National Academies Committee on Women in Science, Engineering, and Medicine organized the September 18–19, 2008, meeting in Washington, DC, to spotlight obstacles and solutions to smooth career transitions in these fields. A variety of compelling career challenges—many faced by both women and men—are longstanding. Many strategies to address them aren’t new either. However, some lessons were apparent and worth examining.

**Understanding the Data**

An overview of a National Science Foundation (NSF)-funded study, five years in the making, assessing gender differences in academic careers was presented by Claude Canizares. The population studied included tenure-track and tenured faculty at research-intensive institutions. Six disciplines, including biology, were targeted in the 1,800 faculty at 89 institutions studied. By examining hiring, promotion, tenure, and resources (including lab space and start-up funds), the investigators sought to understand where institutions tried to intervene and where they were successful.

The bottom line according to Canizares: “I believe we’ve made the academic research career unattractive to men and women and particularly for minorities.” The age at first assistant professor position has climbed from 34 in 1980 to 38 in 2006, he noted. In addition, the age of receiving one’s first NIH R01 grant, as widely noted, is now 43, vs. 37 in 1980.

Kathleen Christensen of the Alfred P. Sloan Foundation cited a recent study at the University of California system finding that women were significantly less likely to want to pursue academic careers than men before starting graduate work: 35% vs. 45%. The gap persisted after they started graduate school (27% vs. 36%). Women apply for fewer academic positions, submit fewer grants, and express a greater desire for career flexibility, she noted. “What we have is a structural mismatch,” according to Christensen. “What’s needed is... career flexibility... a way of structurally realigning the career path.”

**Now for the Good News**

Recognizing that there was a problem, nine research university presidents began meeting annually in 2001, at the urging of the Massachusetts Institute of Technology, reported Joan Girgus of Princeton University. The university presidents agreed to:

- Analyze the salaries and proportion of other university resources provided to women faculty
- Work toward a faculty reflective of the diversity of the students
- Share initiatives undertaken to achieve objectives
- About three years ago the presidents’ focus shifted to the work and family life “juggle,” Girgus explained. And the focus expanded from faculty to include postdocs and graduate students. What’s needed? An institutionally supported mix of programs and services characterized by variety and flexibility, Girgus said. Given the need to relocate for many opportunities, partner placement assistance is important. (Girgus has written about the “two-body” program for the ASCB Newsletter. See www.ascb.org/files/0510wicb.pdf.)

At Princeton, the mix includes programs for graduate students (GS) and postdocs (P):
- Maternity leave (GS, P)
- Automatic one additional term of financial support for the primary caretaker of each child (GS)
- Workload relief for the primary caretaker (an additional term of financial support for the primary caretaker of each child for GS)
- Back-up care program (GS, P)
In addition, Princeton and other institutions provide for faculty an automatic one-year extension of the tenure clock for each child.

**Encouraging Cultural Change**

To recognize the institutions that seek to transform their culture and policies to provide more support to women, the Alfred P. Sloan Foundation initiated the Alfred P. Sloan Awards for Faculty Career Flexibility. The awards consider policies such as extended time to tenure (including modified duties and tenure clock stoppage, “on and off ramps” through leave policies, delayed entry—to foster late career starts, and phased retirement). The Sloan awards addressed these issues in a first round of foundation awards targeted at research-intensive institutions. The second round focused on master’s granting institutions. The third and current round addresses liberal arts institutions (www.acener.edu/AM/Template.cfm?Section=sloan_awards).

The awards look at cultural and programmatic changes. Assessments evaluate the engagement of leadership, the training of chairs, communications, transparency, and use of funds. To further foster change, each entrant receives benchmarking reports to make clear how comparable institutions address similar problems. Carrying $200,000 to $250,000 each, the awards aim to accelerate efforts as well as recognize leadership and innovation in career flexibility programs.

**Inspirational Stories Shared**

A diverse group of women speakers described their career paths and spotlighted their transitions: from postdoc to assistant professor, from assistant professor to associate and full professor, into upper administration, and to industry. All the speakers acknowledged the importance of mentors and colleagues, willingness to make geographic and institutional moves, and making choices in building their own career paths.

A participant noted that grants and fellowships can assist with these transitions. For example, the National Institutes of Health has a variety of portable awards to fund individuals at the end of postdoctoral fellowships. These include K, or career development, awards, including the New Investigators Program Pathway to Independence Award (K99/ R00). This award is portable to junior faculty positions.

Nontraditional pathways and interdisciplinary fields can offer special rewards. Stacey Gabriel of the Broad Institute described how she rejected pursuing a postdoc in favor of a staff position. She now runs large-scale multidisciplinary teams in genetics and genomics. Collaboration is a hallmark, and consensus-building rather than competition is critical to her success, Gabriel observed. She also found flexibility and recognition in her career. In fact, it may present a new model, critical for large projects to succeed, and an alternative to the two-class system (of faculty and not faculty).

**ASCB Minorities Affairs Committee**

Vice-Chair Lydia Villa-Komaroff and several other speakers described their two-way paths from, between, and to academic and industry positions. Villa-Komaroff also pointed to the critical role played by mentors and champions.

For students and postdocs looking ahead, Susan Wessler of the University of Georgia argued that being a professor “is a great job if you want to be a mom.” Why? She named flexible hours, good pay, the ability to take long vacations to “cool” places, a diverse career (research, teaching, administration, writing), and fairly reasonable colleagues. She recommended “making smart choices about partners,” and advised asking:

- Is this someone who is supportive of your career?
- Is he or she prepared to contribute equally to parenting if you have children?
- In terms of choosing where to live and work, Wessler also advised comparing possible jobs in terms of the availability of:
  - Affordable housing
  - Affordable childcare
  - Minimal commute
  - A family-friendly department/workplace

**Next Steps**

The meeting included invited oral testimony by professional societies—including that by ASCB Council member and WICB member Sandra Masur—offering new directions and highlighting society programs. Masur addressed how the skills of midlife women scientists who have successfully juggled career and family may be overlooked in recruitment for dean and director positions. She called for a new model for identifying candidates for management training.

Many society representatives cited their own programs—including the many ASCB WICB...
Want to Discuss Career and Life Issues Online?

A moderated blog, established by the Women in Cell Biology (WICB) Committee offers you an opportunity to discuss career, family, and other “life” issues. You’ll find the blog at www.ascb.org. Click on “Committees,” “Women in Cell Biology,” “WICB Blog.” To join the conversation, simply click on “create an account” at the top right of the page. Then respond to an ongoing thread or start your own. If you have questions, feel free to contact moderator Deepti Pradhan (deepti.pradhan@yale.edu). Looking forward to your participation!

Teaching Cell Biology in Sub-Saharan Africa: Opportunities and How to Seize Them

Saturday, December 13, 2008
Time: 3:00–3:30 pm
San Francisco Marriott Nob Hill A–D

Attend this special event at the ASCB Annual Meeting, sponsored by the International Affairs Committee. Hear from experienced cell biologists who have taught workshops in Africa. They will discuss opportunities to teach there that are funded by the Carnegie Foundation of New York and other foundations. Learn how you can contribute to the effort. Get your questions answered.

Moderator: Richard McIntosh, University of Colorado

Panelists:
Bruce Alberts, University of California, San Francisco
Patrick Duffy, Seattle Biomedical Research Institute
Keith Gull, Oxford University
Mahasin Osman, Cornell University
David Roos, University of Pennsylvania

ASCB Annual Meeting Poster Printing Service

Don’t want to travel to the ASCB with your poster? Upload your file to a local San Francisco printer (DPI) and pick up your poster at the Moscone Center. The cost is a flat rate of $75 per poster.

To upload your files for printing, go to: www.ftp.dpi-sf.com.
Login: ASCB2008
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Payment (credit card only) is due at the time of poster pickup at the DPI Booth at the Poster Supply Counter in Hall B of the Moscone Center. Attendees may arrange poster printing onsite for pickup later in the week. Please note, DPI needs at least three days to fill an order.

Direct questions about this service to: Sanjay Sakhuja, DPI, 645 Mariposa Street, San Francisco, CA 94107, USA.

programs at the ASCB Annual Meeting and the Career Advice for Life Scientists (www.ascb.org, click on “ASCB Merchandise”) series (with a new collection in process). I urged that:

professional societies should work together in program
development rather than waste time “reinventing the wheel.”

A shared space for data from evaluated programs that work
in providing career flexibility, mentorship, etc., should be
developed.

What works in smoothing career transitions should be better
disseminated as well.

One resource now available is provided by the NSF Advance
(Increasing the Participation and Advancement of Women in
Academic Science and Engineering Careers) program grantees.
A portal to their individual websites, which include survey
instruments and evaluations, can be found at www.nsf.gov/
crssprogm/advance/itwebsites.jsp.

While the road ahead may be rocky, institutional support may
be increasing. The bottom line: Seek the support you need, from
peers, mentors, institutions, and professional societies…and don’t
give up your goals!

―Joan R. Goldberg

1National Research Council (forthcoming 2009). Report of
the Committee on Gender Differences in Careers of Science,
Engineering and Mathematics Faculty. National Academy Press.
The sugar chains of cells—known collectively as glycans—play a variety of impressive, critical, and often surprising roles in biological systems. Glycobiology is the study of the roles of glycans in the growth and development, function, and survival of an organism. Glyco-related processes, described in vivid detail in the text, have become increasingly significant in many areas of basic research as well as biomedicine and biotechnology.

This new edition of *Essentials of Glycobiology* covers the general principles and describes the structure and biosynthesis, diversity, and function of glycans and their relevance to both normal physiologic processes and human disease. Several new chapters present significant advances that have occurred since the publication of the first edition. Three sections of note describe organismal diversity, advances in our understanding of disease states and related therapeutic applications, and the genomic view of glycobiology. “Glycomics,” analogous to genomics and proteomics, is the systematic study of all glycan structures of a given cell type or organism and paves the way for a more thorough understanding of the functions of these ubiquitous molecules.

The first edition of *Essentials of Glycobiology* represented also a notable experiment in publishing, as it became one of the first electronic textbooks. And, now, in recognition of its wide audience and the changing ways in which researchers and students learn and access information, the new edition of *Essentials* will be made available online simultaneously with the print edition. This novel experiment is the result of the collaborative efforts of the Cold Spring Harbor Laboratory Press, the National Center for Biotechnology Information, and the editors of the book. Written and edited by glycobiologists with experience in teaching and in research, this volume will be an invaluable resource, both for students and for established investigators in fields such as developmental biology, cell biology, neuroscience, immunology, and biochemistry who require a complete yet concise introduction to this burgeoning field.

Published in October 2008, 784 pp., illus., glossary, study guide, index

Hardcover $158 ISBN 978-087969770-9

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Advance praise for the Second Edition:

“The basic principles of glycobiology are clearly articulated in this volume, and the roles of complex carbohydrates in disease are an important read for all biomedical scientists.”
—Peter Agre, M.D., Nobel Laureate in Chemistry, 2003

“*Essentials of Glycobiology* is a major resource for understanding these post-translational biochemical reactions that affect the function and fate of proteins produced by the genes that are profoundly changed by their added sugars.”
—Baruch S. Blumberg, Nobel Laureate in Medicine, 1976

“The second edition of *Essentials of Glycobiology*, superbly printed and illustrated, develops in simple and absolutely precise terms the complicated intricacies of glycobiology. I would have killed to get this encyclopedic treatise 40 years ago when I was working my way through this field.”
—Edmond H. Fischer, Nobel Laureate in Medicine, 1992

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Cell Biology in Singapore: A Small but Fierce Contender

Over the last few years, Singapore has attracted cell and developmental biologists from leading institutions worldwide, including the National Institutes of Health, the European Molecular Biology Laboratory, Curie Institute, and Kyoto University. The latest addition to this growing list is Paul Matsudaira from Massachusetts Institute of Technology (MIT). You might be tempted to ask why. What makes Singapore so attractive?

Short History

Modern cell biology was established in Singapore with the formation of the Institutes of Molecular and Cell Biology (IMCB) in 1987 and of Molecular Agrobiology (IMA) in 1994. The initial success stories, including the discovery of PAK-kinases as key effectors of Cdc42 by Ed Manser and Louis Lim and the unraveling of mechanisms regulating asymmetric cell division in *Drosophila* by Bill Chia, had several lasting effects. They showed young investigators that it was possible to work in “exotic” Singapore and yet establish an internationally successful research career. These stories also helped encourage the government of Singapore to invest over $2 billion in biomedical science research and training. The Agency for Science, Technology, and Research was established to spearhead the biomedical drive. The IMCB and IMA were merged, and IMCB became part of the larger A*STAR initiative. An independent research institute, the Temasek Life Sciences Laboratory (TLL), was established by the government’s investment company. IMCB and TLL both have cell biology at the heart of their research programs. Together with additional A*STAR institutes, they complement the growing cell biology community within the two major Singapore universities to create a vibrant hub for cell biology in Singapore.

In the early years, a few adventuresome young scientists moved to Singapore to establish their independent careers. With the 2000 expansion of its budget for research and training in biomedical sciences, Singapore wanted to attract more established scientists to help continue the forward trend. Some established scientists were hired as “part-timers,” maintaining their positions and labs in their home countries in parallel with Singapore-based labs. This approach helped rapidly increase the cell biology community. The community is now significant, and the attractiveness of living and working in Singapore is obvious to many. Thus, most recently recruited scientists (including senior and eminent scientists) have chosen to settle their labs in Singapore full-time. Singapore continues to attract high-caliber young scientists, thereby generating a lively community, with a mixture of younger and established cell biologists.

Cell Biology Now

In what do the research institutes and university departments specialize? TLL (www.tll.org.sg) is home to a strong group of cell biologists working with a variety of model organisms, such as yeast and fungi, *Drosophila*, Zebrafish, and *Arabidopsis*. The cell biologists investigate mechanisms of cell division and polarization, cell migration, membrane biogenesis, molecular pathogenesis, metabolism, and epigenetics. Research at the IMCB (www.imcb.a-star.edu.sg) focuses on cell signaling, cell division, cell adhesion, membrane biology, and disease mechanisms. In contrast, the Genome Institute of Singapore (www.gis.a-star.edu.sg) and Institute of Medical Biology (www.imb.a-star.edu.sg) focus largely on stem cell biology, molecular pathogenesis, and developmental cell biology, with a translational angle. Significant cell biology research programs are also found in the school of biological sciences at the Nanyang Technological University (www.sbs.ntu.edu.sg) and in the Department of Biological Sciences at the National University of Singapore (www.
The Department of Biological Sciences will be Paul Matsudaira’s new home base, when he begins as Department Chair at the start of 2009.

One key attraction for young investigators starting independent careers is the strong support for research in Singapore. The combination of “hard money,” secure basic support offered by many institutes, and the opportunity for additional competitive research funds has broad appeal. The government of Singapore recently established the National Research Foundation (NRF) to provide funding for biomedical sciences, including cell biology. It provides very attractive fellowships for first-time independent investigators, fellowships comparable to those provided by Howard Hughes Medical Institute in the U.S. The NRF also helps fund large-scale collaborative projects, such as established joint programs with the Massachusetts Institute of Technology. Additional programs with established research organizations in the U.S. and Europe are in the pipeline. The Research Centers of Excellence, co-sponsored by the NRF and the Singapore Ministry of Education, allow eminent investigators to seed the formation of large programs that can employ as many as 200 scientists.

Outside the lab? Singapore is an extremely attractive place to live and work for both Asians and non-Asians. For many Asians, Singapore is culturally and physically “close to home,” while still being very international. Non-Asians get to experience a different culture—or rather a mélange of cultures. Singapore is a vibrant and modern city, yet surprisingly green and livable. It is also a travel hub and surrounded by interesting countries to visit. Finally, English is the language of science and administration and is spoken by everyone, making the country very accessible.

Challenges for Cell Biology

Singapore and the research institutes here are still relatively new. This brings a freshness and dynamism that those of us based here find very attractive. Singapore also comes with challenges. The problem of being accepted by students and postdocs as a serious training alternative for research careers is still nontrivial. For many years students have been inculcated with the idea that serious research careers begin with training in the West. It can be as hard for Asian students to resist the lure of established institutions in the U.S. and Europe as it is for non-Asians to make the leap. Yet things are changing, and it is clear that Singapore is a place of great opportunity. Singapore may be small, but the country and the scientists there are dedicated to making the lion-city (Singa-pura) a fierce contender on the international cell biology scene.

—Mohan K. Balasubramanian and Pernille Rørth, Temasek Life Sciences Laboratory and Department of Biological Sciences, National University of Singapore

Increased Support for Transformative Research

The National Institutes of Health (NIH) has allocated $25 million in new R01s to support transformative research. This new funding opportunity was announced last month by the NIH Office of Portfolio Analysis and Strategic Initiatives (OPASI). The Transformative R01 Program will support investigator-initiated research that proposes to disrupt currently existing paradigms or create new ones where none exist. An editorial board review model will be implemented. Applications from any field within NIH’s overall mission are welcome.

To learn more about the new program, specifically in terms of building complex, three-dimensional tissue models to address diverse basic and applied biological questions, visit the archived webcast brainstorming session held in October (http://nihroadmap.nih.gov/T-R01/meeting102408). For more information about the grant opportunity, visit http://grants.nih.gov/grants/guide/rfa-files/RFA-RM-08-029.html.

The earliest that applications may be submitted is December 29, 2008; the application due date is January 29, 2009.
BEN Promotes Student-centered Learning through the Use of Digital Resources

As a biology educator and member of the ASCB, I read with interest the August issue of the ASCB Newsletter, which focused on biology education and digital resources. Biology educators are increasingly turning to online resources to refine and develop teaching materials and methodologies. Two efforts that facilitate this are the BEN (BioSciEdNet) Collaborative and the BEN Scholars program.

In 1999, the American Association for the Advancement of Science and 11 other professional societies, including the ASCB, established BEN through a grant from the National Science Foundation. Today, as the biological pathway of the National Science Digital Library, the BEN portal provides over 11,000 peer-reviewed, active learning resources in more than 75 biological fields. The resources include digital images, animations, lab activities, lesson plans, assessment tools, data sets, journal articles, and more. About 90% of the resources are free, and all of them are fully searchable by subject, resource type, etc. Instructors at all levels (from elementary to graduate and medical schools) can easily submit their classroom-tested materials online for peer review.

The BEN Scholars program is a faculty professional development program begun in 2006. As one of 20 2008 BEN Scholars, I attended the BEN Institute held July 9–12 in Washington, DC. This selective national program has substantially enriched my experience with digital libraries and the myriad array of resources for teaching and learning they provide. At the BEN Institute, scholars received intensive training in how to use and contribute to the BEN portal and enthusiastically shared “best practices” for student-centered active learning. Each BEN Scholar will contribute at least one digital learning resource to the Collaborative and is expected to serve as a reviewer for digital resource submissions. Throughout the two-year program, each cohort of BEN Scholars will keep in touch through the listserv and a collaborative wiki.

If you are a biology faculty member teaching at the college level, are interested in learning more about how to use digital libraries, and have demonstrated leadership abilities in enhancing biology education, please consider applying to the 2009 BEN Scholars program, to be announced by December at www.biosciednet.org. Meanwhile, even if you are not officially a BEN Scholar, you can still be a user and a contributor.

I urge all ASCB members to participate in this U.S.-wide initiative, and I am happy to share my experiences with you. Please contact me at rpu@kean.edu or rongsun.pu@gmail.com if you would like more information.

—Rongsun Pu, Kean University

Did You Know...?

- If you’re looking for a new position, or have a job to offer, the ASCB Career Center will be available for you during the ASCB Annual Meeting in San Francisco, December 13–17.

- There is no cost for any attendee registered as either a scientific registrant or an exhibitor to use the Center. Just bring your job listings or CV with you to the meeting!

- Employers may post job descriptions, interview schedules, and contact information in a 32” x 44” space.

- Job seekers may leave CVs, reprints of articles, requests for interviews, and other materials for recruiters.

- ASCB’s online Job Board will be accessible.

For further information on the Career Center and the ASCB online Job Board, go to www.ascb.org, click on “Careers.”
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Please Don’t Be a “No-Show”

If you cancel your plans to attend the 2008 ASCB Annual Meeting, please remember to cancel your meeting registration and hotel reservation as quickly as possible. The ASCB strives to obtain the largest number of hotel rooms near the Moscone Center at the lowest possible rate for attendees. Hotels are reluctant to commit large room blocks and offer lower rates if the Society has a high number of “no-shows” (attendees with reservations who do not show up and do not cancel reservations).

If a reservation is canceled properly, it allows another ASCB attendee the chance to book the room.

To cancel your hotel reservation properly, please go to www.ascb.org/meetings/index.cfm?ID=18.

MEMBERS in the News

Seth J. Field, of the University of California, San Diego, an ASCB member since 2004; Zemer Gitail, of Princeton University, who first became an ASCB member in 2004; Sanjay Kumar, of the University of California, Berkeley, who first became an ASCB member in 1999; and Amy J. Wagers, of the Joslin Diabetes Center and Harvard University, an ASCB member since 2006, were among the 31 recipients of the 2008 NIH Director’s New Innovator Awards.

Peter Novick, an ASCB member since 1994, has been named the first George Palade Endowed Chair in the Department of Neurosciences at the University of California, San Diego School of Medicine.

Sandra Murray, of the University of Pittsburgh, an ASCB member since 1981, took top research honors at Science 2008, an event designed to showcase academic strengths in science, engineering, medicine, and computation. Her research was entitled “Utilization of Nanocrystals for Analysis of Endoexocytosis.”

MEMBER Gifts

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

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Kenneth M. Yamada
Yu Yamaguchi

Visit the Students Corner and Postdoc Square

Feel lost at the ASCB Annual Meeting? Want to mingle with fellow students and postdocs? Come to the Students Corner and the Postdoc Square, both located in the left corner at the back of the Exhibit Hall (enter from Hall B).

Look for specially marked tables where graduate students and postdocs can meet, mingle, talk about work, share ideas, socialize, and plan outings! From 11:00 am – 2:00 pm you can purchase beverages, snacks, and lunches nearby. Why not stop by? You can make plans to meet others through ASCB’s Facebook group, by visiting www.ascb.org and joining the group.
Virus Causes Hogwarts!

Ministry of Magic
Translational ROADMAP!

Muggle Genome Sequenced!

Harry Drosophila AND THE DEATHLY KNOCKOUT

SEE THE WINNERS AT THE
American Society for Cell Biology
48th Annual Meeting
December 13–17, 2008
San Francisco, CA

News media, contact:
jfleischman@asco.org

An Educational Parody

NASA Research Opportunity. The National Aeronautics and Space Administration has released NNH08ZDA009O, entitled “Stand Alone Missions of Opportunity Notice” (SALMON), which solicits investigations that address the science objectives of the Science Mission Directorate’s astrobiology, lunar science, and planetary science programs and the Exploration Science Mission Directorate’s fundamental space biology program. SALMON comprises several independent proposal opportunities. http://nspires.nasaprs.com.

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

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

NIGMS Stem Cell Grants. The National Institute of General Medical Sciences has just funded three new research programs aimed at uncovering the basic biology of human embryonic stem cells. Research teams will receive a total of about $27 million over five years. www.nigms.nih.gov/News/Results/20080804.htm.

NIH OPASI Transformative R01 Program. The NIH Office of Portfolio Analysis and Strategic Initiatives, which houses the NIH Director’s Roadmap for Medical Research, has announced a new Transformative R01 Program in support of investigator-initiated research that proposes to disrupt currently existing paradigms or create new ones where none exist. Application receipt date: January 29, 2009. http://nihroadmap.nih.gov/T-R01.


NIH Administrative Supplements for Induced Pluripotent Stem Cell Research. The National Institute of General Medical Sciences, National Institute of Arthritis and Musculoskeletal and Skin Diseases, and National Eye Institute announce the availability of one-year administrative revisions (also referred to as supplements) for funded grantees to encourage research into the derivation, characterization, and/or utilization of induced pluripotent stem cells (iPS) from non-embryonic sources. This opportunity replaces NOT-NS-08-013, NIH Administrative Revisions for Human Pluripotent Stem Cell (hPSC) Research Using Non-Embryonic Sources, which was announced January 17, 2008. Formal requests must be received on or before April 1, 2009.

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

RISE (Research Internships in Science and Engineering) and RISE Professional Programs. The German Academic Exchange Service (DAAD) offers scholarships to American and Canadian students to work on cutting-edge research projects at top research institutions (e.g., Max-Planck-Institutes) and universities in Germany. 2009 deadlines: Ph.D. students, November 30, 2008; undergraduates, January 31, 2009. www.daad.de/RISE.

SCORE Awards. The 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. Multiple deadlines through May 18, 2010. 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/PAR-06-490.html#PartI.

Woodrow Wilson Fellowship. The Woodrow Wilson Indiana Teaching Fellowship, a new program to recruit talented college graduates and midcareer professionals to teaching in science, technology, engineering, and math, is accepting applications. Review fellowship terms at www.woodrow.org/INteach. Applications are due December 15, 2008.
November 30–December 3, The Netherlands

December 7–10, San Diego, CA

January 24–28, 2009, Miami Beach, FL

January 27–28, 2009, NIH Campus, Bethesda, MD

February 28–March 4, 2009, Boston, MA

March 4–8, 2009, Chicago, IL

March 7–11, 2009, Charleston, SC

March 17–22, 2009, Pacific Grove, CA

May 3–7, 2009, Fort Lauderdale, FL

June 14–18, 2009, Zürich, Switzerland

July 4–9, 2009, Prague, Czech Republic

July 19–24, 2009, New London, NH


September 5–8, 2009, Visegrád, Hungary

September 21–23, 2009, Kyoto, Japan