The Cell Celebrates Its Anniversary by Winning The Scientist’s Labby Award!

The Cell: An Image Library (www.cellimagelibrary.org) celebrated its one-year anniversary on August 9, 2011, by winning The Scientist's Readers’ Choice Award for favorite website. The Scientist announced the readers’ choice multimedia winners in September, along with the top picks from the judges. The awards—called The Labbies—should not be confused with ASCB’s own beloved Dear Labby columnist.

We would like to thank our members, users, and contributors for a very successful year. The Cell—an open-access, research-focused cell image and video repository—aims to further discovery for cell biologists, computational biologists, geneticists, pathologists, other researchers, educators, students, and the public.

The Library now has over 4,750 research-quality cellular images, videos, and animations. We

Why Attend the 2011 ASCB Annual Meeting?

Deciding to invest your time and money in ASCB Annual Meeting attendance isn’t always easy—time in the lab or preparing classes and grading exams is precious (although one is much more fun than the other!). If your data are ready, you can still submit an abstract for presentation… by October 13, 2011. Best hotel prices are

Update Your Membership Profile—Expand Your Network

The ASCB Member Directory now offers you the chance to share supplementary information (major research interests, experimental approach, model system, teaching activity, funding resources, etc.) with your colleagues. You can expand your network, find collaborators and postdocs, and more. An overwhelming majority of members requested this information in a recent ASCB survey. Help your community and help yourself with this ultimate research networking tool—only from ASCB.

Provide the information by updating your profile. Go to www.ascb.org, click on “Members Only” at the top of the page. Sign in using your ASCB username and password. Click on “Update Your Profile,” then “Supplementary Information.” Select the categories that best describe your work, interests, and teaching. Once you have updated your profile, the searchable supplementary information will appear in the ASCB Member Directory immediately.

—John Meyers, Senior Director, Communications & Marketing
Go wide. Then go deep.

Rarely does the ability to excel at two very different methods come together in one solution.

That rare moment is upon us. At the ASCB Annual Meeting on December 3rd, you’ll witness a breakthrough integration of microscopy width and depth. You’ll see more than the light. You’ll see FEI’s passion for constant innovation revealed in a singular fusion of microscopy capabilities.

It’s the end of the either-or proposition for cellular imaging.

Learning Protocols for Leadership

When starting a new project or applying a new method, scientists usually go to the literature to learn from experienced experts. In some cases they will attend or send their students to one of the excellent methods courses taught, for example, at Cold Spring Harbor (New York), the Marine Biological Laboratory at Woods Hole (Massachusetts), or the European Molecular Biology Laboratory in Heidelberg, Germany. This ensures that the new method is incorporated into the lab’s tool chest and optimally applied as quickly as possible. Why waste time re-inventing the wheel? However, when it comes to nonscientific techniques, which are equally critical for success, including managing a laboratory, motivating others, negotiating startup packages or manuscript revisions, “marketing” your grant applications and manuscripts, strategic planning, project planning, decision-making, etc., we tend to believe that these skills are instinctive.

It’s true that most successful scientists eventually figure out how to run their labs. However, this often requires a long learning curve during which many mistakes are made. Moreover, I’m not convinced that many of these labs are run in an optimal fashion. Sadly, it’s also true that many excellent young scientists have not been successful in developing sustainable research programs, despite their scientific expertise.

In 2007 I learned that the University of San Diego offered a Master’s of Science in Executive Leadership (MSEL) degree program, run in partnership with the Ken Blanchard Company. This latter fact caught my attention because a cell biology department chair I know once told me that he gives every new faculty member in his department a copy of Ken Blanchard’s One Minute Manager as a starting gift. The program, aimed at “transformational leadership,” was focused on the “soft skills” essential for leading individuals, teams, and organizations.

When I mentioned my interest in the program to my colleagues, most were surprised. What could I possibly learn that I didn’t already know, having run a laboratory for almost 20 years and a department for seven? Others were even more skeptical, suggesting that labs can’t be run like businesses; so what could possibly be learned from business school academics and successful business leaders? Ignoring their advice, I enrolled, and two years later received my MSEL degree.

Were the two years of coursework, monthly homework assignments, heavy reading load, and hefty tuition fees worth it? Absolutely yes! Have they changed how I run my laboratory and made it a better, more productive, and more innovative, environment? Absolutely yes! Now, when I talk about the program, my colleagues invariably ask, what were the most important lessons you learned? Well, here are the top three:

1) Appreciate and Leverage Our Differences

Each of us is different. We are extroverts/introverts, detail-oriented/big-picture thinkers, decisive/thoughtful, risk-takers/careful, patient/impatient, impulsive/methodical; all combinations and everything in between. I have learned not only to be aware of these differences, but also to reap the many benefits of differing personalities, approaches, and perspectives. The student or colleague who quietly listens often has an idea that’s as good or better than the one dominating the discussion. Worse, because often the one dominating the discussion was me, I tended to suppress new ideas and differing opinions, reducing the chances for innovation. I’ve improved my ability to listen and actively provide opportunities to hear all points of view.

As individuals, we also have different goals and passions. Some want careers in academic research, others to work in biotech or pharma. Some want to teach, others to write. One of my students went to Washington, DC, to work for a senator and advocate for science. The prerequisites and training objectives for success...
in these different endeavors are not the same.

In well-run businesses (and these are no more frequent than well-run labs), the best employees are considered high performance or high potential. High-performance employees are self-motivated and self-directed. They contribute valuable, sometimes specialized, skill sets to teams. What distinguishes high-potential employees is that they aspire to be CEOs and therefore must become proficient at a broader set of skills to lead diverse teams and move up the organizational hierarchy. Academics, as have businesses, must adapt to the reality that the hierarchy is pyramidal. Thus, we must motivate our students and provide them with opportunities for success both horizontally and vertically. While every PhD student and postdoc has the ability to be a high-performer, not all need or want to be high-potential, at least with regard to academic research. Given this diversity, what are the relevant goals for individual success? Surely they are not the same for everyone.

What about the future? While individuals are contributing specific research skills to a team, can we provide these high-performance individuals with opportunities to obtain other skills needed for success in other careers? I’ve begun to do this in my lab, creating teams of young scientists who are highly motivated and highly productive. The individual team members are each contributing, while advancing along their chosen career paths. Once again, taking advantage of these differences allows my lab to build teams that advance our common scientific objectives more efficiently.

2) Apply Different Leadership Styles to Different Situations

Not only is every trainee different, but trainee competencies and confidence levels, which determine levels of motivation and independence, also vary depending on the task at hand. “Situational Leadership®” is a method developed by the Blanchard Company. It assumes that we invariably pass through four levels of development, albeit at different rates, when approaching a new task. One of four different leadership styles, which vary in their degree of directive vs. supportive behaviors, is best suited to each development level. Briefly, trainees new to a task (Level 1) are typically enthusiastic and thus don’t need encouragement, but they are unskilled. They need a more directive leadership style. The best way to demotivate a young graduate student, or even a new postdoc, is to discuss his or her project in broad strokes and then send the individual on his or her way with no specific instructions (i.e., now is not the time to delegate!). One needs to meet with new lab members frequently (daily) to discuss experimental details and give specific directions and/or to partner them with more senior lab members.

At intermediate stages of development, when young researchers invariably encounter unexpected problems, they will need lab heads to be more supportive and encouraging. Successful leaders (e.g., lab heads, teachers, managers) need to listen more to concerns. It’s at this stage that lab heads and professors can begin to learn from students what their career goals and objectives are, and then to tailor their projects, contributions, and team membership to these specific goals. Young researchers still need lab heads to go over details and to give specific suggestions. However, this should now involve more of a dialogue than a monologue; you’re their coach. Independence is often granted too early and is therefore demotivating. It’s a myth that scientists need to struggle on their own to be successful. Once true competence is acquired, it’s time to challenge that senior student or postdoc with new tasks, like training new lab members and heading teams: now you can delegate writing papers and grants. Importantly, when it comes to writing papers and grants, students and postdocs will again need specific instructions (for example, help in developing an outline) as these are new tasks and they’re back at Level 1.

3) Sharing Protocols for Success

As stated above, most successful scientists eventually figure out how to run their labs. It

The best way to demotivate a young graduate student, or even a new postdoc, is to discuss his or her project in broad strokes and then send the individual on his or her way with no specific instructions (i.e., now is not the time to delegate!).
then becomes instinctive. However, just like riding a bike, while it might become instinctive, you had to learn how to do it, and you probably crashed several times along the way. Not once in my training period did my graduate or postdoctoral advisors explain to me the thought processes they went through to make decisions about which results to pursue, which paths to abandon. We never talked about the strategy behind when and how to assemble a paper, or deciding where to submit. We never discussed innovation or where good ideas come from. While I enjoyed being part of research teams, both as a graduate student and a postdoc, we never talked about shared credit and responsibility, the added value and benefits of teamwork, or the rules that must be followed to build and sustain an effective team. The protocols for all of these essential aspects of success in science are largely unspoken and unwritten. The ASCB is helping to overcome this shortfall with its Women in Cell Biology Career Discussion Tables and Mentoring Roundtables and with its “Discovery/Conversations” session at the Annual Meeting in December. Discovery/Conversations provides an opportunity to hear several young but well-known researchers describe exactly this learning process. Last year’s session, which can be viewed online (www.youtube.com/watch?v=KefOp3HrwHA), featured me and two Nobel laureates discussing our choices and pathways to successful careers.

In contrast, business school academics, especially those who study leadership, have analyzed and described proven methods for running successful businesses. They have created a rich literature, full of practical, applicable information on decision-making, creating learning and innovative environments, building high-performance teams, strategic planning, negotiating, goal-setting, etc. Although the language spoken is typically aimed at the business setting, it is readily translatable to the scientific laboratory. I’ve listed three of my favorite books in this regard below. I would argue that learning these “protocols” is as important to success as any laboratory technique.

I now frequently discuss these protocols with my lab members, individually and at special group meetings on innovation, negotiation, risk assessment and decision-making, strategic planning, and deciding what to work on. I believe these discussions have equipped my lab members with the skills to enhance their success and hence my lab’s success. They certainly have been motivating and empowering.

I encourage those of you who “instinctively” run effective laboratories to think about what’s working and to pass on this experience, more explicitly, to your lab members and your junior colleagues. It’ll save some scraped knees, and everyone will get to where they are going faster.

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

**Recommended Reading**

- *The One Minute Manager* by Ken Blanchard and Spencer Johnson
- *Leadership and the One Minute Manager* by Ken Blanchard, Patricia Zigarmi, and Drea Zigarmi
- *Good to Great* by Jim Collins

[A] rich literature, full of practical, applicable information on decision-making, creating learning and innovative environments, building high-performance teams, strategic planning, negotiating, goal-setting, etc.... is readily translatable to the scientific laboratory.
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Living up to Life
welcome additional submissions. The Cell’s ambitious multi-year goal is to include images and videos of all cell types—including intracellular structures and movies or animations demonstrating functions—from all organisms, microscopy modalities, and disease states. We need your assistance. Please submit images or visit the site and provide feedback. We now have a Guest Book (www.cellimagelibrary.org/pages/guest) to make it easier to provide feedback.

Archive Your Images
The Library gives researchers the opportunity to archive their data for their own use, as well as make that information available to other researchers. Ever wondered what to do with the images that guided your discovery but were not in the published paper(s)? Now you can archive them (www.cellimagelibrary.org/pages/contribute) in The Cell. The U.S. National Science Foundation even requires that grantees have data management plans to provide open access to grant-related images and other data.

The Cell currently accepts over 100 image file types, including proprietary formats from Zeiss, Olympus, Leica, Nikon, and Metamorph. It also accepts common image formats (.tif, .jpg, .png) and movie files (.mov, .avi). A full list of file types accepted is at www.loci.wisc.edu/software/bio-formats. The ASCB encourages you to submit raw data images for The Cell whenever possible. Our experienced annotators will review the submitted work to catalog it for immediate use in the research Library or save for future cataloging.

Explore the Cell
New to the site is an interactive illustration to explore the cell and link the cell components to microscopy images. You can use your mouse to roll over either the cell components in the illustration or the adjacent text to find what you want, then click to search that item. This gives users the opportunity to explore the cell in a more intuitive manner. It also makes the connection between an abstract drawing and real images and videos. Whether you explore The Cell using this new interactive illustration or using our browse function, the most illustrative images will be presented first in results.

Look to the Future
Working with the National Center for Microscopy and Imaging Research (NCMIR, http://ncmir.ucsd.edu), we are establishing new features and ensuring The Cell’s longevity. In the future, each user will have the option of creating a profile to allow selection and saving of images of interest. Users will also be able to define and annotate regions of interest in each image. We are also working with the Cell Centered Database (CCDB, http://ccdb.ucsd.edu/index.shtm) at NCMIR to allow users to search and access CCDB images using The Cell. Other resources will be added to make The Cell a centralized portal for searching multiple databases. We are already working with the Neuroscience Information Framework (NIF, www.neuinfo.org) at the NCMIR to further distribute the images in The Cell.

Under development as well is a simple-to-use, Web-based image upload system. This will allow The Cell’s contributors to submit images without having to download and install the DataRollup program. In the beginning this will be available only for the most common image file formats, but more will be added as needed.

Use The Cell
Using the Library in your teaching or training? Please let us know by email.

The ASCB welcomes feedback and encourages you to visit www.cellimagelibrary.org for more information. Or email David Orloff, Manager, Image Library, at dorloff@ascb.org.

—David Orloff, Manager, Image Library

Note
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New ASCB Member Benefit

Are you planning to publish a book in 2012? If so, let ASCB know! Send the title, publisher, and ISBN information, and, if you wish, a thumbnail (300 dpi) of the cover. We'll include it in the ASCB Newsletter. This publicity is available only to ASCB members. Please send submissions to Thea Clarke at tclarke@ascb.org.

Spotlight on Denver

See you in beautiful Denver in December. Don't forget—Denver has a mild climate, recording 300 days of sunshine a year. The average daily high in December is 47°F (8°C)—warmer than New York, Boston, and Chicago. When we were freezing in Philadelphia last year, it was over 60°F (16°C) in Denver. Special skiing packages are available nearby. Visit www.ascb/meetings. Join us!

Networking opportunities, including Q&A with speakers, NEW networking sessions focused on scientific topics, expanded expert-facilitated Science Discussion Tables, International Research & Training Exchange Fair during the Opening Night Reception, and more...

Career development workshops for all career stages, including advice about nonacademic careers in a Women in Cell Biology Committee Workshop on biotechnology and a Subcommittee on Postdoctoral Training—planned session on Transitioning to a Career Outside of Academic Research, a Graduate School Fair, and special poster sessions with expert feedback for undergraduates and minorities

Assessment-driven programs for educators at K–12, undergraduate, and graduate levels

Workshops, Exhibitor Showcases, and Tutorials demonstrating the latest technology and techniques for your lab

—Joan R. Goldberg

Got Questions?

Labby has answers. ASCB’s popular columnist will select career-related questions for publication and thoughtful response in the ASCB Newsletter. Confidentiality guaranteed if requested. Write us at labby@ascb.org.
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Annual Meeting Schedule By Day

SATURDAY, DEC. 3
Special Interest Subgroups
12:30 pm–5:00 pm

Note: You must be registered for the ASCB Annual Meeting to attend these sessions.

A. 3D Architecture: From Genome to Tissue and Back
Organizers: Nastaran Zahir Kuhn, National Cancer Institute, NIH; and Sean Hanlon, National Cancer Institute, NIH

B. A Mile-High View of Mitotic Assembly
Organizers: Kevin Vaughan, University of Notre Dame; and Edward Hinchcliffe, Hormel Institute, University of Minnesota

C. Building the Cell
Organizer: Wallace Marshall, University of California, San Francisco

D. Clathrin-Independent Endocytosis
Organizers: Ivan Robert Nabi, University of British Columbia, Canada; and Radu V. Stan, Dartmouth Medical School

E. Endocytic Recycling Pathways and Compartments—Many Guises, Many Functions
Organizers: Jennifer Stow, University of Queensland, Australia; and Julie Donaldson, National Heart, Lung, and Blood Institute, NIH

F. Extracellular Matrix Regulation of Programmed Cell Death
Organizers: Jayanta Debnath, University of California, San Francisco; and Mike Overholtzer, Sloan-Kettering Institute

G. Function of Intermediate Filaments: Mechanics and Signal Transduction
Organizers: Karen M. Ridge, Northwestern University; and Harald Herrmann, DFKZ-University of Heidelberg, Germany

H. Genetic and Epigenetic Regulatory Networks in Biology and Pathology
Organizers: Gary Stein, University of Massachusetts Medical School; Jane Lian, University of Massachusetts Medical School; and Masaki Noda, Tokyo Medical and Dental University, Japan

I. Mechanisms for Rapid Cell Migration—Results of the First World Cell Race Will Be Presented
Organizers: Manuel Thery, French Alternative Energies and Atomic Energy Commission (CEA), France; and Ana-Maria Lennon-Dumenil, Institute Curie, France

J. Microtubules in Cell Migration
Organizers: Gregg Gundersen, Columbia University; Gaudenz Danuser, Harvard University; and Torsten Wittmann, University of California, San Francisco

K. Muscle Cytoskeletal Protein Assembly in Normal and Diseased Muscles
Organizers: Joseph W. Sanger, SUNY Upstate Medical University; and Carol Gregorio, University of Arizona College of Medicine

L. Nonconventional Functions of Molecular Motors
Organizer: Virgil Muresan, UMDNJ, New Jersey Medical School

M. Nuclear Envelope Adhesions and the Nucleoskeleton
Organizers: Katherine Wilson, Johns Hopkins School of Medicine; and Yixian Zheng, Carnegie Institution for Science

N. Posttranslational Regulation of the Cytoskeleton
Organizers: Anna Kashina, University of Pennsylvania; and Jeannette Chloë Bulinski, Columbia University

O. Protein Balance and the Regulation of Cell Mass
Organizers: Jon Yewdell, National Institute of Allergy and Infectious Diseases, NIH; and Denys Wheatley, BioMedES, UK

P. Rab and Arf GTPases: Trafficking, Disease, and Therapeutic Targets
Organizers: Angela Wadinger-Ness, University of New Mexico HSC; and Elizabeth Sztul, University of Alabama at Birmingham

Keynote Symposium
6:00 pm
Molecules and Systems: Our Quest for a Physiology of the Cell
Marc Kirschner, Harvard Medical School

Visit the ASCB website at www.ascb.org/meetings/subgroup/subgroup.cfm to view full descriptions, speaker lists, and schedules for each of these exciting Subgroup sessions.
SUNDAY, DEC. 4

Symposia

**Molecular Mechanisms**
8:00 am–9:30 am
Chair: Robert Singer, Albert Einstein College of Medicine
Dicing and Beyond: Regulatory RNA in Humans and Bacteria. Jennifer A. Doudna, University of California, Berkeley/HMMI
Molecular Origami: Chaperone-Assisted Protein Folding and Misfolding in Health and Disease. Judith Frydman, Stanford University

**Function of Multi-Molecular Machines**
10:30 am–12:00 Noon
Chair: Jan Ellenberg, European Molecular Biology Laboratory, Heidelberg, Germany
Single Molecule Microscopy of Macromolecular Machines: The Spliceosome. Melissa Moore, University of Massachusetts Medical School/HMMI
Mechanisms and Regulation of Cullin-RING Ubiquitin Ligation Machines. Raymond Deshaies, California Institute of Technology/HMMI
Spatio-Dynamics of Clathrin-Mediated Endocytosis in Yeast and Mammals. David Drubin, University of California, Berkeley

**Microscopy Workshop**
Quantitative Live Cell Microscopy
2:00 pm–4:00 pm
Presenters: Khuloud Jaqaman, Harvard Medical School, and Jennifer Waters, Harvard Medical School

**Translational Research Session**
Bench to the Patient through Cell Biology: Managing Protein Folding in Human Disease
2:30 pm–4:00 pm
Moderator: William E. Balch, The Scripps Research Institute
Speakers:
Discovery and Development of CFTR Correctors for the Treatment of Cystic Fibrosis. Frederick Van Goor, Vertex Pharmaceuticals
Chemical and Biological Strategies for Ameliorating Neurodegenerative Diseases. Jeffrey Kelly, The Scripps Research Institute
Targeting the Proteasome: A Research Tool Becomes a Powerful Cancer Therapeutic. Alfred Goldberg, Harvard Medical School

Minisymposia

**4:30 pm–6:35 pm**

**Actin Dynamics**

**Cell-Cell and Cell-Matrix Interactions**

**Chemical Biology: Probes and Therapeutics**

**Innovations in Cell Biology Graduate Education**

**Membrane Fission and Fusion**

**Synthetic Cell Biology**

**The Nuclear Periphery**

**Working Group: Learning from Heterogeneity and Stochastic Cell Behavior**

Complete details at www.ascb.org/meetings

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Acknowledgement

The ASCB appreciates the creativity and hard work of the following members who put together an outstanding program for the 2011 ASCB Annual Meeting: Jan Ellenberg (Program Chair), Andrew Belmont, Velia Fowler, Scott Fraser, Benjamin Geiger, Klaus Hahn, Rebecca Heald, Jodi Nunnari, ASCB President Sandra Schmid, Robert Singer, and John Tyson.

MONDAY, DEC. 5

Sympoisa

Cellular Networks and Information Processing
8:00 am–9:30 am
Chair: John Tyson, Virginia Polytechnic Institute and State University
Organizing Genetic Information and Its Processing without Membrane Compartmentalization. Christine Jacobs-Wagner, Yale University/HHMI
Cell Signaling at the Single-Cell Level. Michael Elowitz, California Institute of Technology/HHMI

Self-Organization of Cellular Structures
10:30 am–12:00 pm
Chair: Rebecca Heald, University of California, Berkeley
Self-Organization of Secretory Compartments. Benjamin Glick, University of Chicago
Spatiotemporal Integration of Chemical and Mechanical Signals in Cell Migration. Gaudenz Danuser, Harvard Medical School
Modeling Cytoskeletal Structures with Cytosim. Francois Nedelec, European Molecular Biology Laboratory, Heidelberg, Germany

Minisymposia

4:30 pm–6:35 pm
Bioengineering and Mechanobiology
Co-Chairs: Adam J. Engler, University of California, San Diego; and Celeste Nelson, Princeton University

Cell Polarity
Co-Chairs: Thomas Lecuit, Institut de Biologie du Developpement de Marseille-Luminy (IBDML), France; and Leslee Rose, University of California, Davis

Cellular Functions of Ubiquitin and Ubiquitin-Related Proteins
Co-Chairs: Claudio Joazeiro, The Scripps Research Institute; and Frauke Melchior, ZMBH, University of Heidelberg, DKFZ-ZMBH Alliance, Germany

Chromosome Structure and Epigenetics
Co-Chairs: Sue Biggins, Fred Hutchinson Cancer Research Center; and Job Dekker, University of Massachusetts School of Medicine

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

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

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

Working Group: Using Large Data Sets as Tools to Understand Cell Biology
Co-Chairs: Lani Wu, University of Texas Southwestern Medical Center; and Wolfgang Huber, European Molecular Biology Laboratory, Heidelberg, Germany

TUESDAY, DEC. 6

Sympoisa

Complex Cellular Functions: Linking Networks and Structures
8:00 am–9:30 am
Chair: Andrew Belmont, University of Illinois at Urbana-Champaign
Virtual Movement of a Signaling Network Translated into Real Movement of a Motility Network. William Bement, University of Wisconsin-Madison
Evolution of Epithelial Organization and the Cadherin-Catenin Complex. W. James Nelson, Stanford University

Mechanism of Multicellular Functions
10:30 am–12:00 Noon
Chair: Scott Fraser, California Institute of Technology
The Costs of Control: Strategies and Tradeoffs in Robust Tissue Pattern Formation. Arthur Lander, University of California, Irvine
Shaping the Embryo: Cellular Dynamics in Development. Jennifer A. Zallen, Sloan-Kettering Institute/HHMI
Generating Multicellular Architecture through Collective Migration. Darren Gilmour, European Molecular Biology Laboratory, Heidelberg, Germany

Minisymposia

4:30 pm–6:35 pm
Cell Biology of Micro-Organisms and the Evolution of the Eukaryotic Cell
Co-Chairs: Sean Crosson, The University of Chicago; and Joel B. Dacks, University of Alberta, Canada
Complete details at www.ascb.org/meetings

Cell Migration
Co-Chairs: Diane Barber, University of California, San Francisco; and Alex Mogilner, University of California, Davis

Cellular Mechanism of Disease and Aging
Co-Chairs: Craig Blackstone, National Institute of Neurological Disorders and Stroke, NIH; and Coleen Murphy, Princeton University

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

Intracellular Sorting and Trafficking
Co-Chairs: Federica Brandizzi, Michigan State University; and Rainer Pepperkok, European Molecular Biology Laboratory, Heidelberg, Germany

Mitosis
Co-Chairs: Tarun Kapoor, The Rockefeller University; and Béla Novák, University of Oxford, UK

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

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

WEDNESDAY, DEC. 7

Minisymposia
8:30 am–10:35 am

Cancer Cell Biology
Co-Chairs: Franziska Michor, Dana-Farber Cancer Institute; and Michael Yaffe, Massachusetts Institute of Technology

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

Cell Cycle Dynamics and Checkpoints
Co-Chairs: Frederick Cross, The Rockefeller University; and Slika Hauf, Friedrich Miescher Laboratory of the Max Planck Society, Germany

Cell-Pathogen Interactions (Viruses and Bacteria)
Co-Chairs: Nihal Altan-Bonnet, Rutgers University; and Olivia Steele-Mortimer, Rocky Mountain Laboratories, National Institute of Allergy and Infectious Diseases, NIH

Collective Cell Behavior and Morphogenesis in Development
Co-Chairs: Ryoochiro Kageyama, Kyoto University; and Denise Montell, Johns Hopkins University School of Medicine

Organelle Biogenesis and Autophagy
Co-Chairs: Anne Simonsen, University of Oslo, Norway; and Gia Voeltz, University of Colorado, Boulder

Signal Transduction Networks
Co-Chairs: Philippe Bastiaens, Max Planck Institute of Molecular Physiology, Germany; and Wendell Lim, University of California, San Francisco/HHMI

Working Group: Imaging Cellular Structure across Scales
Co-Chairs: John Briggs, European Molecular Biology Laboratory, Heidelberg, Germany; and Melike Lakadamyali, Institute of Photonic Sciences (ICFO), Spain

Symposium
Design Principles of Cells and Tissues
11:00 am–12:15 pm

Chair: Velia Fowler, The Scripps Research Institute
Inside of the Cell, Meet the Extracellular Universe: Merging Tissue Engineering and Systems Biology. Linda Griffith, Massachusetts Institute of Technology
The Flagellar Length Control System. Wallace Marshall, University of California, San Francisco
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<td>4x4</td>
<td>439 fps</td>
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<tr>
<td>8x8</td>
<td>699 fps</td>
<td>2184 fps</td>
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</tbody>
</table>

* Based on ROI size 128 x 128

Prof Xiaowei Zhuang, Harvard University, commenting on the use of Andor iXon 897 in development of 3D STORM super-resolution approach:

"3D STORM can be used to aid understanding of molecular processes in cells. The approach relies on single molecule detection and short exposure times – we needed a highly sensitive and fast camera to make this possible."

www.andor.com/ixon
Advances in Super-Resolution Microscopy

Breaking the diffraction limit improves the resolution of light-based imaging.

In 1873, Ernst Abbe—a German physicist and co-owner of the Carl Zeiss optics company—described the diffraction limit for conventional light microscopy. In short, this barrier blocks the resolution from dipping below a couple hundred nanometers. Since Abbe’s description, microscopists dreamed of getting around that limit. In the past 15 years or so, scientists have learned to do just that—in some cases, pushing the resolution down as far as 10 nanometers. Diving that deep below the diffraction limit, however, requires advanced approaches, which are becoming continually easier to use.

When pursuing enhanced-resolution microscopy, today’s cell biologist can choose from a variety of techniques. In 2000, for example, the late Mats Gustafsson developed structured illumination microscopy (SIM), which provides about twice the resolution of a conventional light microscope. This technology illuminates a sample with various grids of light, which produce moiré patterns that are captured with a digital camera and computationally converted to two- or three-dimensional images.

Leading microscopy companies—including Applied Precision – A GE Healthcare Company (Issaquah, WA), Nikon Instruments (Melville, NY), and Carl Zeiss MicroImaging (Jena, Germany)—make SIM instruments. For example, Applied Precision’s OMX V4 SI system provides three-dimensional SIM, with 90-nanometer resolution in the x-y plane and 220-nanometer in z. With this microscope, says Paul Goodwin, director of advanced applications at Applied Precision, “You can resolve organelles where biology is happening and do so in a living sample.” Goodwin even describes using this microscope to watch the ends of microtubules moving in real time.

Other techniques dive far deeper below the barrier.

**Assessing the Market**

When asked to describe the market for super-resolution microscopy, Barbara Foster, owner of The Microscopy & Imaging Place (McKinney, TX), says, “This is going to be the next major trend—as big as or bigger than the evolution from conventional light microscopy to confocal microscopy.”

Among the current methods in super-resolution microscopy, one is called photo-activated localization microscopy (PALM) or stochastic optical resolution microscopy (STORM), often simply described as PALM/STORM, and another is stimulated emission depletion microscopy (STED). According to Stefan Hell, director of the department of nanophotonics at the Max Planck Institute for Biophysical Chemistry in Göttingen, Germany, STED “can be used like a normal confocal microscope [and] is by far the most easy-to-operate super-resolution technique.”

The various approaches to super-resolution microscopy provide different benefits and challenges. “If live-cell work is the driving force,” Foster says, “STED is great.” She adds, “Photo-activated approaches are getting very fast and the probes let us watch a wide variety of structures and processes.”

Still, PALM/STORM remains far slower than STED, which can be done in real time.

**Focusing on Photo-Activation**

PALM/STORM relies on activating specific

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**Companies and Institutions Mentioned**

<table>
<thead>
<tr>
<th>Company/Institution</th>
<th>Website Address</th>
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<tbody>
<tr>
<td>Applied Precision</td>
<td><a href="http://www.appliedprecision.com">www.appliedprecision.com</a></td>
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<td>Carl Zeiss MicroImaging</td>
<td><a href="http://www.zeiss.com">www.zeiss.com</a></td>
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<td>CytoViva</td>
<td><a href="http://cytoviva.com">http://cytoviva.com</a></td>
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<td>Leica</td>
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<td>Max Planck Institute for Biophysical Chemistry</td>
<td><a href="http://www.mpibpc.mpg.de/groups/hell">www.mpibpc.mpg.de/groups/hell</a></td>
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<td>Nikon Instruments</td>
<td><a href="http://www.nikoninstruments.com">www.nikoninstruments.com</a></td>
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<tr>
<td>The Microscopy &amp; Imaging Place</td>
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<tr>
<td>Vutara</td>
<td><a href="http://www.vutara.com">www.vutara.com</a></td>
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</table>
subsets of fluorescent molecules and generates a lateral resolution of about 20–50 nanometers. For instance, Nikon offers its N-STORM microscope. According to Allison Forlenza, assistant product and marketing manager, Nikon Instruments: “N-STORM technology reconstructs high resolution–fluorescence images, 2D and 3D, from localization information of fluorophores detected with high accuracy and calculated from multiple exposures.” She adds that the N-STORM provides lateral resolution of 20–30 nanometers and axial resolution of about 50 nanometers.

In addition, Carl Zeiss MicroImaging developed the ELYRA, which works in SIM or PALM modes. In describing the ELYRA, Duncan McMillian, group product marketing manager for biosciences at Carl Zeiss MicroImaging and a 30-year veteran in light microscopy, says, “PALM has some advantages over many of the other localization techniques, because it uses photoswitchable fluorescent proteins, which are much smaller than typical fluorescent molecules attached to an antibody.”

To illustrate the benefit of a smaller marker, McMillian describes a hypothetical situation in which a scientist wants to resolve a structure that repeats every 10 nanometers. “You need fluorescent molecules that are no more than five nanometers apart,” he says, “and that’s impossible if the molecule is bigger than five nanometers.” Conjugating a typical fluorescent molecule with an antibody, for example, creates a marker that is at least 20 nanometers in size.

With the ELYRA, according to McMillian, researchers can zero in on the location of a structure. The accuracy of localization, says McMillian “depends on the number of photons that you detect from it—more photons equal a more precise location.”

**Deeper with Depletion**

In 1994, Hell unveiled his idea for STED microscopy, which he demonstrated in 1999. Very simply put, this imaging technique uses one laser to excite fluorophores at the point of interest and another laser to keep the fluorophores surrounding that point non-fluorescent.

“The strength of STED,” says Hell, “is that you can focus inside a living cell or tissue in 3D and go far beyond the diffraction barrier.” He adds, “You can apply it to any organic dye and to any fluorescence protein.” As an example, Hell says that he and his colleagues used STED to image live Caenorhabditis elegans—the entire organisms—in which the neurons were labeled with green fluorescent protein (GFP).

He also points out that researchers can buy a STED microscope. For example, the Leica (Wetzlar, Germany) TCS STED provides a resolution of 50–70 nanometers. Nonetheless, he adds that his custom STED microscope allows him to work with a higher diversity of dyes. “It is just as with fluorescence excitation: More laser wavelengths facilitate more dyes. In our lab-based STED,” he says, “we can use any dye, because we have STED wavelengths across the whole spectrum.”

**Multiple Modes in One Scope**

Instead of aiming toward one form of super-resolution, Vutara (Salt Lake City, Utah) designed its bi-plane based SR-200 3D Super-Res Microscope to work in various versions of PALM/STORM. In addition, it can deliver two- and three-dimensional images for fixed or live cells.

“We started from a clean plate,” says Stan Kanarowski, Vutara’s chief executive officer. That’s clear from one look at this device, which looks more like a computer printer than a microscope.

This scope provides lateral and axial resolutions of 20 and 50 nanometers, respectively. It can also track up to four colors.

**Ease of Use**

Different versions of enhanced-resolution microscopy require varying levels of skill. “Any high-end system requires some training and hands-on experience before being completely comfortable to the user,” says Forlenza. To help with that, she says, “Our sales team is available to all our customers 24/7 after a sale is made—for however long the customer owns the product.”

In describing the SR-200, Kanarowski says, “We want to make super-resolution easy to use.” Much of that comes from this microscope’s software. “It’s very user-friendly,” Kanarowski says. “You open the software and arrows across the top of the screen guide you through it.” He adds, “If you want to get super techie, there are expert options that you can get into.”

Instead of always pushing toward more-complex approaches, Foster says, “I encourage microscopists to not overlook other techniques—simpler and less expensive ones that will do a lot of the job.” As an example, she mentions Cytoviva (Auburn, AL). “This company offers a $15,000 condenser that drops the limit of resolution to 80 to 90 nanometers, without computation, and it can be used with living cells in real time.” It should be clear, however, that this is not a super-resolution technique.

**The Cellular Impact**

Despite the challenges of switching to super-resolution microscopy, lots of researchers want to use it. “It’s probably fair to say that the majority of people doing high-end microscopy are interested in super-resolution,” McMillan says. In addition, today’s super-resolution microscopy is far easier to use than it was even a few years ago. Consequently, many of tomorrow’s cell biologists will certainly be turning to super resolution.

When asked to describe the value of super-resolution microscopy for cell biologists, Hell says, “I firmly believe that it is transformative.” He adds, “By separating features much closer than 100 nanometers, we can correlate the distribution of receptors with a ligand or see spatial correlations of several receptors. We can take apart a synapse. All of this is almost impossible with any other method.”

Others agree with Hell’s perspective. For example, Forlenza says, “Cell biologists using super-resolution systems can now see things they were never able to before [with] unprecedented clarity.” She adds, “The breakthroughs that can be expected from this are only limited by the imagination of the scientists using the equipment.”

—Mike May and Gary Heebner

**Note**

Mike May (mike@techtyper.com) is a freelance writer and editor for science and technology based in Austin, TX, USA. Gary Heebner (gheebner@cell-associates.com) is a marketing consultant with Cell Associates in St. Louis, MO, USA.
Will It Ever Be Over?

Is it possible to cheer and hold your breath at the same time? For most of the summer of 2011, U.S. human embryonic stem cell researchers and research advocates have celebrated a ruling by U.S. District Court Judge Royce Lamberth dismissing the lawsuit brought by James Sherley and Theresa Deisher. In September, advocates let out a collective gasp when Sherley and Deisher appealed Lamberth’s ruling.

The Meaning of Dickey-Wicker

At its core, the lawsuit challenged the U.S. National Institutes of Health (NIH) Guidelines for Human Stem Cell Research, claiming they violated a provision attached annually to the Departments of Labor, Health & Human Services, and Education Appropriations bill. The provision, known as the Dickey-Wicker Amendment, prohibits the use of federal funds to create human embryos for research purposes. Dickey-Wicker also blocks federal funding for “research in which a human embryo or embryos are destroyed, discarded, or knowingly subjected to risk.”

A central part of the legal debate centered on the phrase “research in which” within the Dickey-Wicker amendment. Plaintiffs Sherley and Deisher argued that the phrase included past actions, including the privately funded derivation of stem cell lines. Judge Lamberth initially agreed with the plaintiffs, but the U.S. Court of Appeals overturned his ruling. In dismissing the case, Lamberth agreed with the higher court.

Is the End in Sight?

Stem cell research supporters have also been holding their collective breath. On September 19, 2011, the plaintiffs filed papers with the U.S. Court of Appeals announcing their intent to appeal Judge Lamberth’s ruling. Rep. Diana DeGette (D-CO) has reintroduced legislation that would codify President Obama’s original Executive Order. At presstime Senator Mark Kirk (R-IL) indicated that he would like to introduce a similar bill in the Senate.

The DeGette bill would not solve any of the “issues” that have been raised during the court case. In addition, it has little or no chance of becoming law. It is highly unlikely that the Republican leadership would bring the bill up on the House floor, and leaders in the Senate have said they do not intend to debate the bill in the Senate. ■

—Kevin M. Wilson

Are ASCB Emails Going Astray?

ASCB regularly sends emails to all members. If you haven’t received one recently, you may need to “whitelist” ASCB in your email system. Contact your system administrator and request that email from @ascb.org be allowed. ■
ASCBC’s Public Policy Committee: Your Voice in Washington

The members and staff of the ASCB Public Policy Committee (PPC) serve as the eyes, ears, and voices of ASCB members in Washington, DC.

The members of the PPC, led by Chair Doug Koshland, have the experience and enthusiasm as advocates for basic biological research. Members are often asked to brief Members of Congress and their staff about cutting-edge science policy issues and sometimes testify before congressional committees as expert witnesses.

PPC members also have strong relationships with the leadership at the U.S. National Institutes of Health (NIH). For example, when the National Institute of General Medical Sciences (NIGMS) was writing its strategic plan for research training, the ASCB was offered the opportunity to comment and make suggestions. Some of the comments made by the PPC are now part of the final strategic plan.

The primary area of concern for the PPC has been to make sure federal funding for both the NIH and the National Science Foundation (NSF) continue at a pace that allows critical biological research to move forward. The PPC also monitors congressional and Administration actions on stem cell research, cloning, indirect costs, alternative medicine, genetically modified foods, and immigration issues.

The day-to-day work of making sure federal policy is supportive of ASCB’s members is left to ASCB Public Policy Director Kevin Wilson. Wilson, who worked in Congress for 15 years as a staff member in both the U.S. House of Representatives and the U.S. Senate, works with Members of Congress and their staff and federal agencies to make sure they understand what issues are important to you.

As Public Policy Director, Wilson monitors legislation in Congress, the debate in congressional committees, and votes in the U.S. House of Representatives and the Senate. He also watches what is being said about the biological community in both the national press and in the science press to see how issues are being communicated and identify if, and when, the ASCB should weigh in.

Wilson is also in contact with his colleagues at other scientific organizations and in other advocacy groups with similar interests to the ASCB. These connections help to build coalitions around common areas of interest. These coalitions, both formal and informal, help advance the interests of the ASCB. The ASCB has co-founded two formal coalitions, the Coalition for Life Sciences (CLS), which advocates for investigator-initiated basic research, and the Coalition for the Advancement of Medical Research (CAMR), which focuses on federal support for all types of human stem cell research.

Science policy makers, including NIH Directors Elias Zerhouni and Francis Collins, National Cancer Institute Director Harold Varmus, and Rep. Rosa DeLauro (D-CT), regularly meet with the CLS Board of Directors to brief them and hear the concerns of the basic research community. Along with access to policymakers, the CLS grassroots efforts saw a sixfold increase in the number of scientist-advocates who wrote to their congressional representatives in 2011.

Since the founding of CAMR in early 2001, ASCB’s Public Policy Directors have always held influential positions on the CAMR Board of Directors. Wilson currently serves as the Vice President of Science. This position has allowed Wilson and members of the PPC to play critical educational roles leading to the development of human embryonic stem cell legislation that has passed Congress twice, and in President Obama’s Executive Order lifting President Bush’s stem cell research policy.

Wilson is involved in informal coalitions that develop around specific issues. These informal groups range from support for NIH funds in the American Recovery and Reinvestment Act of 2009 to a recent effort to involve industry in advocacy for the NIH.

Wilson is also the one who crafts the email messages asking ASCB members to contact their Members of Congress about important policy actions. He also helps organize and lead meetings on Capitol Hill with researchers.

Do you have questions about what is happening in Washington? Do you need some advice on how you can become more involved in science policy advocacy? Call or email Kevin Wilson at 301-347-9308 or kwilson@ascb.org.
Starting a New Lab?

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Living up to Life
Dear Labby,

I have just defended, successfully, my PhD thesis. Well, successful in all but one respect. My project was on insulin-mediated signaling in adipose tissue and resulted in two first-authored publications. My defense went well, but near the end, the external member of the committee—call her EM—said, “OK, we’ve probed your grasp of your work, and we are satisfied. But now I want to go to a different point.” I was a bit scared but waited. She went on: “In neither the introduction section of your thesis nor in your defense presentation is there even a zephyr of historical background.” EM then asked me several questions about previous eras of insulin research, all of which I flunked. She then asked me, and her words are etched in my mind, “Do you feel that a degree that has the name Doctor of Philosophy should be awarded to a student who seems to know nothing at all about the field prior to 1990?”

To say the least, I was dumbfounded. Another committee member then chimed in, saying “Our students do need to know more about the background of their field.” Then he turned to EM and asked, “But are you saying we should consider not passing this student on that sole criterion?” EM replied: “No, but I think it is important enough to have been raised, discussed, and heard by the student.” I then was excused, the committee deliberated a few minutes, and I was called back to learn that I had passed.

—Neo-Doctor of Philosophy

Dear Neo-Doctor of Philosophy,

First, you need not modify the title of your degree—all PhD recipients in the modern era are “neo” ones in the sense that a full grasp of the history of one’s field became impossible a century ago. Second, your thesis defense experience is rather unusual, not because the historical context point was raised but rather because it was brought forward with such force. Your committee’s external member was clearly exercised, but she might have made her point more diplomatically. After all, according to every other criteria, your defense went well. Labby offers the following thoughts.

First, there is a tendency for scientists of every generation to forget how little they knew as students and then, 40 or more years later, for them to suddenly think they knew a lot more than they did at the time. Some senior scientists get very grumpy about how little history their students seem to know. Yet these very same senior scientists might look in the mirror and reflect back some decades. Accordingly, as a professor, Labby has adopted the “one generation” rule. It posits that finishing PhD students should know the key antecedents in their field back at least one generation. For example, a student defending a PhD in neuroscience should know what was done by Hodgkin and Huxley, but not necessarily what Camillo Golgi did. A student in genomics should know about another Hodgkin (Jonathan) and other key players in the 1970s to 1990s, such as DNA synthesizer pioneers Lee Hood, Michael Hunkapiller, Marvin Carruthers, and Robert Letsinger.

In your specific case, the external committee member clearly thought that you omitted historical context to an egregious degree. Labby always looks for a center of compromise. Your inquiry’s timing suggests that you are still making corrections in your thesis—that’s the norm. You should, both for the thesis revision and in your journey as a student, step back in the insulin field. Search in PubMed for Cuatrecasas, P.M., and you will see a key paper decades ago that revealed the hormone could act without entering cells. Then, just for your “non-thesis” erudition, go back to the insulin discovery and search for Bliss, M. (the definitive biographer of Frederick Banting). Look at the Nobel Medical Foundation website for the deliberations, opened to the public in 1973, that led to the 1923 Nobel Prize and the exclusion of Charles Best. And if you are still keen to learn more, beyond revising your thesis, read the extraordinary book Breakthrough: Elizabeth Hughes, the Discovery of Insulin, and the Making of a Medical Miracle (by Thea Cooper and Arthur Ainsberg, St. Martin’s Press, New York, 2010). You may not have appreciated during your thesis work at the bench, setting up immunoprecipitation experiments and running gels, what a long, grand journey the story of insulin has been. You are a part of its modern era and this might have been one of EM’s reasons for challenging you. In any case, your thesis research makes you a part of this noble guild.

Do reflect on this and make suitable revisions of your thesis. You don’t need to go back to Claude Bernard or Aristotle. But you can precipitate EM’s angst with thoughtful ammonium sulfate and come up with a well-intended fraction. And on behalf of all patients and their families, thank you for your work.

—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.
Popular Science Discussion Tables
Back in Denver

Students, postdocs, and PIs won't want to miss these special networking opportunities with senior scientists and peers. Select your interest area, bring your questions, and find these tables in the Career Center Sunday, Dec. 4–Tuesday, Dec. 6, 9:30 am–10:30 am. Come early because tables will fill up quickly.

### Sunday Presenters and Topics

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<th>Topic</th>
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<td>1</td>
<td>Nihal Altan-Bonnet, Rutgers University</td>
<td>Cell–pathogen interface and dynamics; membrane trafficking and cytoskeletal changes (in particular as it relates to host-pathogen interactions); application of cutting-edge imaging technologies to cell–pathogen interactions</td>
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<td>2</td>
<td>Diane Barber, University of California, San Francisco</td>
<td>Cell signaling, cell migration, actin dynamics</td>
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<td>3</td>
<td>David Botstein, Princeton University</td>
<td>Genomics and system-level biology</td>
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<td>Federica Brandizzi, Michigan State University</td>
<td>Membrane trafficking</td>
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<td>5</td>
<td>Joel B. Dacks, University of Alberta, Canada</td>
<td>Evolutionary cell biology (genomics, molecular evolution, membrane trafficking)</td>
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<td>6</td>
<td>Gaudenz Danuser, Harvard Medical School</td>
<td>Cytoskeleton regulation, mechanotransduction, receptor dynamics, endocytosis; live cell imaging, image analysis, mathematical modeling</td>
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<td>Valérie Doye, Institute Jacques Monod, France</td>
<td>Nuclear envelope, nuclear pores: transport, cytoskeleton, and mitosis</td>
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<td>Benjamin Glick, University of Chicago</td>
<td>Organelle biogenesis, membrane trafficking, fluorescent proteins, and microscopy</td>
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<td>Kathleen Green, Northwestern University Medical School</td>
<td>Adhesion and signaling in morphogenesis</td>
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<td>Linda Griffith, Massachusetts Institute of Technology</td>
<td>Tissue engineering (capturing 3D tissue complexity in vitro)</td>
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<td>11</td>
<td>Christine Jacobs-Wagner, Yale University/HHMI</td>
<td>Bacterial cell biology</td>
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<td>Claudio Joazeiro, The Scripps Research Institute</td>
<td>Ubiquitin ligases; protein quality control and neurodegeneration; signaling; development of drugs targeting the ubiquitin system</td>
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<td>Marc Kirschner, Harvard Medical School</td>
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<td>Alex Mere, University of Washington School of Medicine</td>
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<td>Francois Nedelec, European Molecular Biology Laboratory, Heidelberg, Germany</td>
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<td>Peter Satir, Albert Einstein College of Medicine</td>
<td>Cilia</td>
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<td>Jean Schwarzbauer, Princeton University</td>
<td>Integrins, extracellular matrix, and cell adhesion</td>
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<td>Anne Simonsen, University of Oslo, Norway</td>
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<td>Philip Stahl, Washington University School of Medicine</td>
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<td>Ronald Vale, University of California, San Francisco</td>
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<td>Patricia Wadsworth, University of Massachusetts</td>
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<td>23</td>
<td>Jennifer A. Zallen, Sloan-Kettering Institute/HHMI</td>
<td>Cell polarity and tissue morphogenesis</td>
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“This was really a highlight for me at last year’s ASCB meeting!”

—Susan Michaelis, Johns Hopkins School of Medicine
### Monday Presenters and Topics

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<td>Bruce Alberts, University of California, San Francisco</td>
<td>Biochemistry</td>
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<td>Brian Burke, Institute of Medical Biology, Singapore</td>
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<td>Kris DeMali, University of Iowa</td>
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<td>Jennifer A. Doudna, University of California, Berkeley/HHMI</td>
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<td>5</td>
<td>Michael Elowitz, California Institute of Technology/HHMI</td>
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<td>6</td>
<td>Marilyn Farquhar, University of California, San Diego</td>
<td>Interface between EGF receptor and G protein trafficking and signaling</td>
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<td>7</td>
<td>Ursula Goodenough, Washington University in St. Louis</td>
<td>Analysis of lipid-body production in algae as source of biofuel</td>
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<td>8</td>
<td>Jonathon (Joe) Howard, Max Planck Institute of Molecular Cell Biology and Genetics</td>
<td>Cytoskeleton and biophysics</td>
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<tr>
<td>9</td>
<td>Leanne Jones, Salk Institute for Biological Studies</td>
<td>Stem cell biology</td>
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<td>10</td>
<td>Jennifer Lippincott-Schwartz, National Institute of Child Health &amp; Human Development, NIH</td>
<td>Membranes, organelles, cytoskeleton, cytokinesis, development and mitochondria</td>
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<td>Dick McIntosh, University of Colorado</td>
<td>Mitosis and the cytoskeleton; electron microscopy in cell biology</td>
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<td>12</td>
<td>Susan Michaelis, Johns Hopkins University School of Medicine</td>
<td>Yeast cell biology, premature aging disease</td>
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<td>13</td>
<td>Franziska Michor, Dana-Farber Cancer Institute</td>
<td>Hutchinson Gilford Progeria Syndrome (HGPS)</td>
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<td>14</td>
<td>Coleen Murphy, Princeton University</td>
<td>Computational evolutionary biology</td>
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<td>15</td>
<td>Thoru Pederson, University of Massachusetts Medical School</td>
<td>Aging, reproductive aging, learning and memory, <em>Caenorhabditis elegans</em>, and genomics</td>
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<td>16</td>
<td>Birgit Satir, Albert Einstein College of Medicine</td>
<td>Functional organization of the nucleus; gene regulation; RNA processing; microRNAs</td>
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<td>17</td>
<td>Janet Shaw, University of Utah School of Medicine</td>
<td>Trafficking</td>
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<td>Michael Sheetz, Columbia University</td>
<td>Mitochondrial dynamics and human disease</td>
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<td>Olivia Steele-Mortimer, National Institute of Allergy and Infectious Diseases, NIH</td>
<td>Cell biophysics</td>
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<td>Marie Verlhac, CIRB, CNRS/INSERM, Collège de France, France</td>
<td>Microbial pathogenesis/cellular microbiology</td>
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<td>21</td>
<td>Susan Wente, Vanderbilt University Medical Center</td>
<td>Spindle assembly, F-actin spindle positioning</td>
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<td>Zena Werb, University of California, San Francisco</td>
<td>Nucleocytoplasmic transport and mRNA export</td>
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<td>Susan Wick, University of Minnesota</td>
<td>Cellular microenvironment</td>
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"An exciting addition to [the 2010] meeting was the science discussion table format. Eminent researchers sat at tables for an hour at the beginning of each poster session and took questions from relative newcomers to the field. …[E]ach table was crowded with graduate students and postdocs eager to discuss science and seek advice from their fields’ leaders. Two thoughts came to mind as I watched the scene unfold: I wish that there had been these tables when I was a young scientist, and I hope this format becomes a regular feature of the ASCB meeting."

—Joe Gindhart, National Institute of General Medical Sciences, NIH
## Tuesday Presenters and Topics

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“I did it last year and it was fun so I’m ready to do it again.”
Elizabeth Sztul, University of Alabama at Birmingham
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The RAISE Project: Do Women Get Their Fair Share of Scientific Awards and Prizes?

Do women get their fair share of scientific awards and prizes? The search for an answer to that question began in fall 2004 and resulted in the RAISE Project (Recognizing the Achievements of Women in Science, Technology, Engineering, Mathematics, and Medicine; www.RAISEProject.org). At that time I was commuting from Buffalo, NY, to Washington, DC, for a position in the Veterans Health Administration. A friend there invited me to the monthly dinners she had started for a small group of women in science and medicine. One dinner was on the day that the National Medal of Science winners were announced. To our dismay we noted that yet again no women were recipients. Discussion ensued. How were we going to fix this problem? Well, if you aren’t nominated you can’t win. And so began a programmatic effort to increase the recognition of women, specifically by increasing the number of women nominated for scientific awards and prizes.

The Power of Data
Since 2005 the RAISE Project (sponsored by The Society for Women’s Health Research) has grown into a highly interactive database that provides data and information about scientific awards and prizes. Over 1,500 awards have been cataloged, over 36,000 recipients since 1981 identified, and the gender of each recipient determined. Those data made it clear that, just as many of us always thought, women do not get their fair share. Many scientific awards and prizes have never been given to a woman. And among the awards and prizes we studied, the percent of female winners was consistently less than would be expected on the basis of the number of female PhDs or MDs who received their degree in the appropriate time period. But now we had the data and the power to make changes. (See the “Findings” tab at www.raiseproject.org for the actual data.)

Do awards and prizes matter? Absolutely yes! We all need the validation of our work that is provided by awards and prizes. Approval and inner satisfaction count in life. And in academics professional recognition advances careers and may affect promotion and tenure decisions.

Change requires both individual and organizational actions. The first step in both is to recognize the problem. The second step is to accept that there is no overt discrimination. Rather, established organizational structures, implicit bias, and other unconscious factors contribute. Targeted strategies can address both the individual and organizational actions necessary to ensure that women receive the recognition they deserve.

Individual Actions: Nominate Yourself or Another
Individual actions can be directed toward getting oneself nominated, which often feels decidedly alien to women. Or, equally importantly, they can be directed toward nominating another woman.

Here is a seven-step guide if you want to receive an award or nominate a colleague. It is modified from the RAISE Project website.

1. **Use the RAISE website to investigate available awards.**
   Search by discipline, career level, or sponsor.
   - Confirm that you meet the specified requirements such as age, time from dissertation, or membership in the organization.
   - Have confidence. Don’t fail to apply because you don’t think you will win. Many awards actually have fewer nominees than you would expect.

2. **Identify the proper award.**
   - Check previous award winners. Is their work similar to yours or that of your nominee?
Consider personal commitment. Select people who are excited to endorse the candidate's success!

Identify the specific role that the nominators/secondary nominators will play and discuss it with them when you ask them for letters.

6. Submit the award nomination.
   - Follow directions. Simple, but absolutely necessary.
   - Confirm the receipt of the materials.

7. Resubmit the award nomination.
   - Be persistent! Award recipients often have to “wait their turn” on a list.
   - Find out whether or not the nomination will be carried forward. If not, find out what additional information is required.

Organizational Actions

Organizations often have embedded rules, guidelines, processes, and structures that work to the disadvantage of women.

- Addressing these systematically can enhance the likelihood that a woman will receive an award. The RAISE Project has partnered with the Association for Women in Science (AWIS) on a National Science Foundation ADVANCE grant that focuses on scientific disciplinary societies. The AWARDS (Advancing Ways of Awarding Recognition in Disciplinary Societies) Project has identified implicit bias in the award selection process. Visit www.awis.org/awards for the AWARDS webcast series presenting research and recommendations.

- Phoebe Leboy, University of Pennsylvania, is the PI on the AWARDS Project; other grant collaborators include Anne Lincoln, Southern Methodist University, and Janet Bandows Koster and Alice Popejoy, AWIS. Florence Haseltine, Society for Women’s Health Research, is a co-founder of RAISE.

Based on this and other work by the RAISE Project, here are some actions that those of you active in such societies can take.

- Promote transparency. All scientists like data. Let everyone know who wins awards in your organization, who is on the award committee, and how individuals can be involved in the processes of award selections.

- Encourage participation. Encourage the women you know in the organization to actively participate in society activities.

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ASCB Awards

The ASCB promotes diversity in the scientific community and is committed to opening its awards to all eligible scientists. To achieve these goals, ASCB members are encouraged to submit nominations for the following awards, which are presented at the ASCB Annual Meeting. Unless indicated, nominations are due on March 31. For details see www.ascb.org/awards.html.

- Bruce Alberts Award for Excellence in Science Education
- Early Career Life Scientist Award
- E.B. Wilson Medal
- E.E. Just Lecture
- Merton Bernfield Memorial Award (nominations due July 15)
- Norton B. Gilula Award (nominations due July 15)
- Public Service Award
- Women in Cell Biology (WICB) Junior and Senior Awards

—Joan R. Goldberg
Review organizational processes. Examine the organizational policies and procedures to reduce those that lead to gender bias. Examples of such procedures include having former award winners nominate potential awardees. A failure to address cronyism may put women at a disadvantage.

Pay attention to committee composition. It’s not enough to just have a woman on award committees. Our studies in collaboration with Anne Lincoln, a sociologist, have shown that the gender of the committee chair is the most important factor in whether a woman receives an award.

Acknowledge implicit bias. Unconscious bias and stereotyping affect us all. Consider having programs in the society that educate members about bias.

Evaluate gender-restricted (women only) awards. Many organizations have started awards specifically for women. Though it is an honor to get such an award, we all know that in the real world these may not be viewed as highly as gender-neutral awards. Is your society giving women restricted awards rather than the more valued gender-neutral awards?

Lessons Learned

The first lesson learned from the RAISE Project is that we can make change happen. Things are improving. More women are winning awards and fewer awards are now listed in our “never given to a woman” category. But there is still a lot to be done before women win a proportionate share of awards. It takes collective effort to improve, and all of us can be engaged.

The second lesson learned from the success of RAISE is that networking is crucial for women. Without our regular DC dinners, many of us would still be complaining. Now we are actually changing the game. Using personal contacts and connections to learn what is currently available, garner resources, and implement new programs can convert ideas to enterprises. It really is “who you know” that leads to action.

—Stephanie Pincus, Institute of Medicine

Note

Stephanie Pincus is Founding Director of the RAISE Project, an activity of the Society for Women’s Health Research. She is a Scholar-in-Residence at the Institute of Medicine.

The WICB Awards

In its efforts to support the careers of women scientists, the Women in Cell Biology (WICB) Committee recognizes outstanding achievements in cell biology by presenting two Career Recognition Awards at the ASCB Annual Meeting.

The Junior Award is given to a woman in an early stage of her career who is making exceptional scientific contributions to cell biology, is developing a strong independent research program, and exhibits the potential for continuing a high level of scientific endeavor and leadership.

The Senior Award is given to a woman or man in a later career stage whose outstanding scientific achievements are coupled with a long-standing record of support for women in science and by mentorship of both men and women in scientific careers. For more information, visit www.ascb.org/wicbawards.html.

The WICB Committee views its awards to women not as endpoints but as potential stepping stones to other awards. The Committee recognizes that a nominator who follows the guidelines for submitting a nomination for a WICB award has in hand a package he or she can use with minimal rewriting to nominate the candidate for other awards.

Two winners of the Junior Award, Julie Theriot (1994) and Yukiko Yamashita (2009), subsequently received MacArthur Fellowships.

—Sandra Masur, for the Women in Cell Biology Committee
HIGHLIGHTS from MBoC

The Editorial Board of Molecular Biology of the Cell has highlighted the following articles from the September 2011 issues. From among the many fine articles in the journal, the Board selects for these Highlights articles that are of broad interest and significantly advance knowledge or provide new concepts or approaches that extend our understanding.

Zwint-1 is a novel Aurora B substrate required for the assembly of a dynein-binding platform on kinetochores

This study identifies zwint-1 as a novel substrate for AurB during mitosis. Phosphorylation is required for outer kinetochore assembly during prometaphase. However, zwint-1 dephosphorylation is required at metaphase for checkpoint silencing.
Mol. Biol. Cell 22 (18), 3318–3330

Glucose depletion inhibits translation initiation via eIF4A loss and subsequent 48S preinitiation complex accumulation, while the pentose phosphate pathway is coordinately up-regulated

The mechanism and consequences of the translational inhibition caused by glucose depletion in yeast are characterized. eIF4A is lost from the preinitiation complex, and the pentose phosphate pathway is translationally up-regulated, allowing an efficient transition to the new conditions.
Mol. Biol. Cell 22 (18), 3379–3393

A HeLa cell treated with the kinesin-5 inhibitor monastrol to create asters that are enriched with microtubules that extend past the chromosomes toward the cortex. Whereas the plus-end microtubule binding protein EB1 (cyan) is found on all microtubule plus ends, Kif18B (orange) is highly enriched on microtubules near the cortex. See Mol. Biol. Cell 22 (17), 3070–3080. (Image: Amber Yount, James Powers, and Claire Walczak, Indiana University)
Kinesin molecular motor Eg5 functions during polypeptide synthesis
K. M. Bartoli, J. Jakovljevic, J. L. Woolford, Jr., and W. S. Saunders

The microtubule motor Eg5 is well known for its functions during mitosis. It is shown that during interphase, Eg5 associates with ribosomes and is required for efficient protein synthesis.

Mol. Biol. Cell 22 (18), 3420–3430

The fission yeast pleckstrin homology domain protein Spo7 is essential for initiation of forespore membrane assembly and spore morphogenesis
M. Nakamura-Kubo, A. Hirata, C. Shimoza, and T. Nakamura

Assembly of the forespore membrane (FSM) initiates at the spindle pole body (SPB), and the leading edge of the FSM is a critical factor in the proper shaping of the FSM. We report a novel SPB component, Spo7. Our study suggests that Spo7 coordinates formation of the leading edge and initiation of FSM assembly, thereby accomplishing accurate FSM formation.

Mol. Biol. Cell 22 (18), 3442–3455

Membrane aberrancy and unfolded proteins activate the endoplasmic reticulum stress sensor Ire1 in different ways
T. Promlek, Y. Ishiwata-Kimata, M. Shido, M. Sakuramoto, K. Kohno, and Y. Kimata

In contrast to the classical model, in which unfolded proteins accumulated in the endoplasmic reticulum trigger the unfolded-protein response (UPR), we show that membrane aberrancy also evokes this protective cellular event. This finding may explain UPR activation under various physiological conditions.

Mol. Biol. Cell 22 (18), 3520–3532
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Denver’s dining scene has gained a national reputation, and is home to some of the country’s finest new chef-owned restaurants
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(Toronto Globe and Mail)

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Top 10 Place To Visit
by Lonely Planet (2011)
ASCB Course in Tanzania Takes Up Theme of “One Health”

Teaching molecular and cell biology techniques that underpin infectious disease research, surveillance, and intervention strategies was the goal of a recent ASCB course in Africa. Synergies in human and livestock disease research were a major focus as well. The training workshop for African scientists took place in August at Sokoine University of Agriculture (SUA) in Morogoro, Tanzania. Its title: “One Health: Understanding Human and Veterinary Diseases from Molecular Cell Biology to Successful Interventions.” This course was supported by a grant from Carnegie Corporation of New York to the ASCB, with additional support from the Jenner Foundation. ASCB member Keith Gull (University of Oxford, UK) and Paul Gwakisa (SUA; currently at the Nelson Mandela African Institute of Science and Technology, Arusha, Tanzania) designed the workshop to teach young African scientists. International faculty from the University of Oxford (UK), the Institute for Animal Health (IAH) at Pirbright (UK), SCYNEXIS (USA), the Southern African Centre for Infectious Disease Surveillance (SACIDS), and SUA participated. The students were 24 early-career researchers from eight African countries (Burkina-Faso, Egypt, Ethiopia, Kenya, Tanzania, Uganda, South Africa, Zambia). They were selected from 270 applicants.

From Basic Concepts to the Biology of Disease

The week was organized as a series of lectures, group discussions, and case studies. Simon Spiro and Richard Wheeler (Oxford) introduced basic concepts in cell biology and immunology. These themes were expanded in lectures by Gwakisa, Gerald Misinzo (SUA), Claudius Luziga (SUA), Christopher Kasanga (SUA), and Eva Gluenz (Oxford). They discussed specific diseases and the biology of the viruses, bacteria, and protozoan parasites that caused them. Esron Karimuribo (SUA) talked about the realities of field data collection in rural Africa, and showed the transformative impact of new mobile technologies on disease surveillance.

Case Histories in Disease-Related Research

The major part of the week was dedicated to four longer case studies, which gave students first-hand accounts of how theory and methods are applied in practice. First, Bakela Nare (from the U.S. drug discovery and development company SCYNEXIS) took the students on a tour through the drug discovery process. He vividly illustrated each stage in the long path from a chemical to a drug. Nare used as an example a new compound (SCYX-7158) against Human African Trypanosomiasis (HAT) currently under development at SCYNEXIS; he showed how an antiparasitic compound that looked promising in the lab was subjected to a rigorous series of defined tests. He emphasized that both scientific and economic criteria must be satisfied to progress to the next stage.

The second case study was molecular diagnostics and surveillance of Foot and Mouth Disease (FMD). Don King (IAH) gave an overview of diagnostic tools, emphasizing the critical importance of molecular analysis. Using examples from the 2001 and 2007 outbreaks of FMD in the UK, he showed the power of sequence analysis in outbreak investigation. Students then analyzed FMD phylogenetic trees based on real data to practice data interpretation. They also explored Web-based tools for design of diagnostics. For some, this was a first attempt at sequence retrieval and primer design. There was clear feedback that these were areas of particular interest.

Sarah Gilbert (Oxford) focused on vaccines, discussing the current status of vaccine development for malaria and other diseases where this proves challenging. The students worked in small groups to “design” a vaccine against Rift Valley Fever (RVF). This required application of many of the concepts raised in

Students debated whether human tuberculosis could ever be eradicated.
lectures, from virus biology and the differences between T cell vs. antibody-mediated immune response to trial design and the economics of vaccine production. Each group rose to the challenge and presented its solutions to the whole class.

In the final case study John Anderson (IAH) told the remarkable story of how the devastating cattle disease Rinderpest was eradicated, effectively bringing together the main themes of the workshop. Rinderpest is only the second disease in history to be completely eradicated. Anderson highlighted as key factors in this success the development of appropriate diagnostic assays, technology transfer, and training of local scientists. Could other diseases be eradicated too? The students were asked to consider HAT, RVF, FMD, and tuberculosis (TB). After scoring these diseases against eight biological characteristics considered important in the eradication of smallpox and Rinderpest, each group concluded that the prospect of eradicating them was slim. It was, however, a valuable exercise in looking at the “bigger picture.” This resonated with the students’ desire to engage in research with a perceptible impact on Africa’s disease burden. In conversation, many students focused on the lack of modern equipment in their laboratories, which they feel leaves them at a disadvantage in the global competition with scientists from the “North.” Here was a powerful illustration how cutting-edge technology is not always required to succeed; dedicated individuals working together toward a common goal, using what John Anderson called “appropriate” technology, can have a major impact.

Career Advice, Informal Discussion

In addition to the scientific sessions, we provided one-on-one advice on writing CVs and research proposals. Athena Markides (UK) concluded the career advice focus with examples of well-crafted application letters. Lively discussions during those sessions indicated that the students appreciated this mentorship, which will continue by email exchange.

Tea breaks and lunch times offered plenty of time for informal discussions. We even learned about an unconventional approach to diagnostics: We attended a training session for giant African pouched rats (www.apopo.org) that detect TB in clinical samples by smell! This rounded off a stimulating workshop. The workshop left students and faculty alike with new knowledge, friendships, and the feeling that, as scientists, we have a chance to make a real difference in the world.

—Eva Gluenz, on behalf of the ASCB Tanzania teaching team
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To the Editor:
In an otherwise good President’s Column in the ASCB Newsletter (“Talent Management in Academic Research,” 2011) President Sandra Schmid touches on, but does not really confront, the issue that there may be too few academic job openings for the number of research-trained PhDs we are currently training in the biomedical sciences.

To confront the issue that there seem to be a lot of talented people with PhDs in the sciences without jobs, one has to consider the possibility that we are training too many PhD biomedical scientists for the available positions. This is not to say that we should curtail the production of students with a knowledge of science, but certainly all do not require a research degree, i.e., a PhD.

To tell a graduate or postdoctoral student in the biomedical sciences that there are job possibilities other than a research career, after they have spent years of hard work as graduate and postdoctoral students with low salaries working toward a research degree, would seem to be a waste of talent and training. The solution would seem to be to train fewer PhDs.

This would alleviate the intense competition for academic, industrial, and other bioscience-related positions, and if the person does get a position, the intense competition for grants for young people starting their first academic jobs will be reduced.

In the 45 years that I have been a member of research/teaching academia, I have watched the size of my colleagues’ labs steadily grow to the point where it is quite common for a PI to have 12–16 students (graduate and postdoctoral); a good number of labs have 20 or more students. This was made possible by the availability of multiple research grants for each lab. This, in turn, required increasing numbers of graduate and postdoctoral students to keep the grants running. At the same time, the number of PhD-producing departments was also increasing. This was true especially in medical schools, where departments formerly involved in clinical medicine now started producing PhDs as well. My own opinion is that a single PI cannot mentor more than 10–12 students very well; six to eight students is probably an ideal number. Indeed, it has been my observation at my own institution that the smaller labs are generally the ones producing the most high-impact papers. Not more papers, mind you, but more important papers. Our two Nobel laureate biomedical scientists at my own institution have always had rather small labs.

Turning out fewer PhDs will necessarily mean smaller labs, less competition for jobs and grants, and the shrinking of the scientific establishment. I would predict this downsizing for any organization, industrial or educational, in a very tight economy. The Carnegie Institution for Science, Department of Embryology, in Baltimore has had a limit on the number of students per lab PI, and students, PIs, and the institution do not appear to be suffering for it.

Many scientists will not like the idea of a limit on the number of students they can have in their labs. As some have said to me, “No one should be able to tell me how or in what ‘style’ I should run my lab; this is my own business.” But when tax-generated grant funds are limited, and many young scientists are going unfunded, it becomes the business of all scientists to address PhD production per lab and community resources used.

University administrators will not like a plan to reduce PhD production because the overhead from government research grants helps run a lot of things on their campuses. Moreover, a smaller scientific establishment on campus will mean less overhead. But if they want to maintain the status quo of biomedical sciences on campus, they will have to dip into their endowments. That’s something administrators do not like doing, but some are doing so. I predict that this shrinkage of the scientific establishment in the U.S. will eventually happen, like it or not, as the competition for grants continues to increase and funds for government grants remain constant or shrink.

Finally, although our young PhDs focus rather tightly on their own research areas, I find that most of them are quite broadly trained. They are capable of doing many things not directly related to their scientific research training. And many of them already have broadened their outlook regarding jobs. But there are many like them competing for these jobs, whether in academia or K–12 education or industry. Those jobs are becoming few and far between.

—Joel Rosenbaum, Yale University

President’s reply: Thank you for your thoughtful comments. Whether or not we’re training too many PhDs is a complex issue. In a society where even our political leaders are questioning the
validity of research on global warming and the “theory” of evolution, it’s hard to argue that we have too many scientifically trained citizens. The unemployment rate for PhDs is also well below the U.S. average. If more PhDs ran for Congress, assumed leadership roles in corporate America, and worked in policy centers, the world might be a better place. Still, our PhD students should be thinking very broadly about career paths.

And we need to help them realize these different, equally valuable pursuits. For example, the length of time spent and list of scientific accomplishments needed for graduation might vary depending on the career path.

That being said, I agree that smaller labs are often more productive labs (i.e., output/costs). And institutions would get as much overhead from 10 labs with one to two grants each, as they do from five labs with three to four grants each. Moreover, if these smaller labs worked on related problems, opportunities for synergy might also be realized. Clearly, we need to have these discussions and to take action to ensure a sustainable future for scientific researchers and our young scientists.

—Sandra Schmid, ASCB President

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You should now be regularly receiving our email update, *ASCB Pathways*—alerting you to the latest ASCB happenings and 2011 Annual Meeting updates. If you aren’t seeing the e-newsletter in your inbox, please check your spam filter, and/or contact your system administrator to whitelist *ascb.org*. Based on member input, *ASCB Pathways* will move to monthly publication in October.

ASCB Ambassadors Wanted

How has the ASCB helped your career? Is the ASCB Annual Meeting where you made your first presentation... or your most important one? Was it where you found a critical postdoc opportunity or collaborator? Learned valuable lessons about time management or negotiating your start-up package? Found out about your current position or explored a new career track? Now you can share your experience and the ASCB’s resources with others at your institution or company. Here’s how…

By serving as an ASCB Ambassador, you’ll be able to give back to others in the cell biology community... with a very small time commitment:

- Learn about ASCB deadlines you won’t want to miss—such as for awards, abstracts, discounted meeting registration—and share them.
- Expand your networking locally by hosting an informal gathering to help junior colleagues prepare for ASCB Annual Meeting presentations.
- Lead colleagues toward the helpful *Career Advice for Life Scientists* collections.
- Share news about ASCB member discounts on lab products, books, journal subscriptions, and insurance; ASCB Annual Meeting childcare and travel awards; summer career development workshops; and more.

With our forwarded materials and links to the ASCB website and social media vehicles, you’ll be able to answer questions easily and quickly, often with a click of the mouse. And we can guarantee you gratitude from our community. Whether you choose to post flyers and add your name as a local contact, host meetings, or forward emails, the level of commitment is up to you. And we’ll help you answer questions for others at your institution, company, or in your city, region, or country.

Learn how easy and gratifying it is to help others as an ASCB Ambassador. Contact us for more information.

—Katherine Hempel, Membership Manager


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


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

National Science Foundation (NSF) Innovation Corps Program. This program will award $50,000 to 100 teams each year to enable scientists and engineers to turn their discoveries into startup companies. Over the course of six months, the teams will be mentored by entrepreneurs and venture capitalists, and additional training will come from the Stanford Technology Ventures Program at Stanford University. The program is a public–private partnership between NSF, the Deshpande Foundation, and the Kauffman Foundation. [www.nsf.gov/news/special_reports/i-corps/index.jsp](http://www.nsf.gov/news/special_reports/i-corps/index.jsp).

New Innovator Award Program. The National Institutes of Health Director’s New Innovator (DP2) Award Program supports a small number of early-stage investigators of exceptional creativity who propose bold and highly innovative new research approaches that have the potential to produce a major impact on broad, important problems in biomedical and behavioral research. Applications due: October 14, 2011. [www.grants.nih.gov/grants/guide/rfa-files/RFA-RM-11-005.html](http://www.grants.nih.gov/grants/guide/rfa-files/RFA-RM-11-005.html).

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

Pioneer Award Program. The National Institutes of Health Director’s Pioneer Award Program supports individual scientists of exceptional creativity who propose pioneering and possibly transforming approaches to addressing major biomedical or behavioral challenges that have the potential to produce an unusually high impact on a broad area of biomedical or behavioral research. Applications due: October 7, 2011. [www.grants.nih.gov/grants/guide/rfa-files/RFA-RM-11-004.html](http://www.grants.nih.gov/grants/guide/rfa-files/RFA-RM-11-004.html).
SHIFT Awards: Small Businesses Helping Investigators to Fuel the Translation of Scientific Discoveries (SBIR: R43/R44). These National Institutes of Health awards are intended to foster research that is translational in nature and to transform academic scientific discoveries into commercial products and services. They require that an investigator who is primarily employed by a U.S. research institution at the time of application transition to a small business concern (SBC) and be primarily employed (more than 50% time) by the SBC by or at the time of the award. Expiration: January 8, 2013. http://grants.nih.gov/grants/guide/pa-files/PA-10-122.html#SectionIV3A.

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

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

Support of NIGMS Program Project Grants (P01). The National Institute of General Medical Sciences encourages innovative, interactive program project grant applications from institutions.organizations that propose to conduct research that aims to solve a significant biological problem through a collaborative approach involving outstanding scientists who might not otherwise collaborate. Expiration: September 8, 2014. http://grants.nih.gov/grants/guide/pa-files/PAR-10-266.html.

Looking for a Few Good People!
Interested in international affairs? ASCB’s International Affairs Committee (IAC) is looking for new members to help serve ASCB’s international members and enhance their engagement in the Society. Three-year terms begin January 1, 2012. For more information about IAC, visit: www.ascb.org/IAC-Initiatives.html. Email your full contact information and your area of interest to IAC@ascb.org by November 1. Email IAC’s Staff Liaison Cheryl Lehr at clehr@ascb.org with any questions. Give back to your community!

Looking for a Few Good Women and Men!
Interested in helping develop the careers of cell biologists? ASCB’s Women in Cell Biology (WICB) Committee is looking for new members. Why not volunteer to help provide useful information and innovative and creative solutions to develop careers and to overcome barriers for women and men. Get engaged, and give back to your community! Three-year terms begin January 1, 2012. For more information about WICB, visit www.ascb.org/WICB.html. Email your full contact information and your WICB area of interest to wicb@ascb.org by November 1. Email WICB’s staff liaison Cheryl Lehr at clehr@ascb.org with any questions.

ASCB seeks to balance committees by geographic origin, institutional affiliation, etc. So if at first you don’t succeed, please don’t give up. ASCB values its volunteers!
MEMBERS in the News

Franz-Ulrich Hartl, of the Max Planck Institute of Biochemistry, an ASCB member since 2004, and Arthur Horwich, of Yale University School of Medicine, an ASCB member since 1991, are co-winners of the 2011 Albert Lasker Basic Medical Research Award. (Hartl photo credit: Axel Griesch /Copyright: Max Planck Institute of Biochemistry)

2011 Half-Century Fund Donors

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

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Rita Miller

*As of September 27, 2011

MEETINGS Calendar

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

**August 18–22, 2012. Berlin, Germany**
The 30th World Congress of Biomedical Laboratory Science.

ASCB Annual Meetings

December 3–7, 2011. Denver
December 15–19, 2012. San Francisco
December 14–18, 2013. New Orleans
December 6–10, 2014. Philadelphia
December 12–16, 2015. San Diego

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Image courtesy of Exploratorium Microscope Imaging Station

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www.asbmb.org/meeting2012

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