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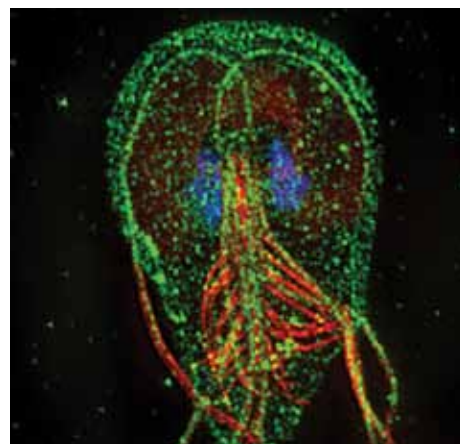
WICB Column

Evolutionary Cell Biology: Looking at Cells through Darwin's Lens

Have you ever spoken about your research with a mathematician or a physicist? Ten years ago, the number of cell biologists who could answer yes to that question was very small. However, the impact of physical and mathematical perspectives and approaches on cell biology is now being felt throughout the field. Evidence for this includes the Thread on The Intersection of Cell Biology and the Physical Sciences at the 2012 ASCB Annual Meeting and newly announced U.S. National Science Foundation (NSF) funding opportunities for multidisciplinary physical, chemical, mathematical, and computational approaches to the study of cellular functions.¹

We would like you to consider some new questions: Have you ever spoken about your research with an evolutionary biologist? What impact could an evolutionary perspective have on your studies? What impact could you have on the work of an evolutionary biologist? We believe that cell biologists and evolutionary biologists can help each other achieve new insights, just as cell biologists, mathematicians, and physicists have done.

Evolutionary Cell Biology, continued on p. 7



Ultrahigh-resolution immunofluorescence image of a *Giardia intestinalis* trophozoite stained for actin (green), tubulin (red), and DNA (DAPI, blue). This member of perhaps the earliest-diverging eukaryotic lineage contains the most divergent eukaryotic actin yet identified and lacks all canonical actin-binding proteins (ABPs). There may be ancestral and conserved roles for actin in core cellular processes that are independent of canonical ABPs. The image is courtesy of Zac Cande and Alex Paredez and was originally published in Paredez et al. (2011) *Proc Natl Acad Sci USA* 108, 6151–6156.

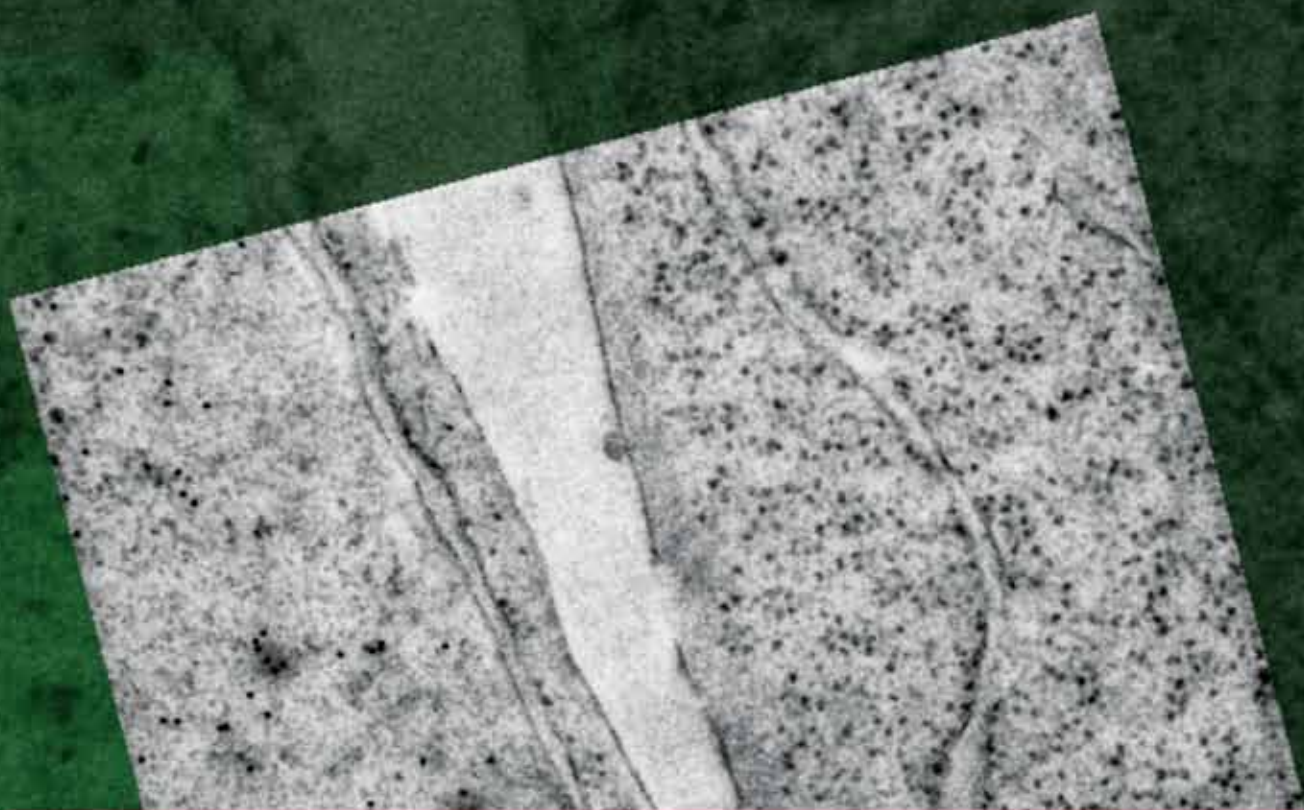
All Those Ads and Nothing Changes?

Six billion dollars can buy lots of stuff, but in the 2012 U.S. election all it bought was stagnation. With President Obama having been reelected and the House of Representatives and Senate remaining under the control of the Republicans and the Democrats, respectively, the balance of power stays the same.

But even though the U.S. electorate didn't make any changes to the government that will guarantee a different approach to the problems facing the nation, most immediately sequestration, some changes in Congress may affect programs and policies of interest to ASCB members. In that regard the most notable results of the 2012 election are changes in the membership of House and Senate committees with jurisdiction over federal science programs.

Election, continued on p. 9

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The Value of Asking Questions

"It is easier to judge the mind of a man by his questions rather than his answers."

—*Pierre-Marc-Gaston, duc de Lévis (1764–1830)*

"I get it; science is just like spelling. You just have to memorize it and it doesn't make any sense."

—*Anonymous U.S. Elementary School Student*

The juxtaposition of these quotes illustrates a serious shortcoming of K–12 science education.

The foundation of science is to ask questions about the natural world and then seek answers. If a student sees learning spelling and science as similar types of experiences, then we are failing to communicate the fundamental reason of why science exists as a discipline and what it has to offer.

The student's quote, sadly, reflects our approach to teaching science: Learn the facts and don't deviate from that script. However, before organizing scientific data into "facts," science begins by asking questions as a form of intellectual exploration. Young children understand this intuitively as they explore and try to make sense of their surroundings. They are full of questions. Questions percolate from the cortex to the mouth of a child and are spawned by true curiosity rather than a desire to impress. But over the course of their education, students and adults ask fewer questions and more passively accept facts as "the way things are." I have witnessed this trend in my own experiences in school classrooms. To some extent, it is part of the "hardwiring" that occurs as we grow up. However, I would like to think that it is not an inevitable outcome of the educational pipeline. Thus, it is worthwhile to ask whether we could be doing more to promote questioning as a fundamental tool for science education and in the practice of professional science.



Ron Vale

[I]t is worthwhile to ask whether we could be doing more to promote questioning as a fundamental tool for science education and in the practice of professional science.

The Art of Asking a Good Question

You can't expect to wake up one morning and run a marathon without training. Similarly, asking good questions is a skill that requires practice, training, and mentoring. If a child (or adult) is placed in an environment that does not encourage active questioning, then that skill will not become an active habit of mind.

The purpose and practice of active questioning has its roots in ancient philosophic traditions. Socrates is well known for using questioning to probe the validity of assumptions, analyze the logic of an argument, and explore the unknown. Questions were a means to educate his students by drawing out their understanding of a subject and then leading them to discover a set of logical conclusions instead of lecturing them on what is right or wrong and what is true or false. Socratic questioning is still advocated as a powerful contemporary teaching method.¹

Questioning is a core principle of Eastern philosophies as well. In the Prashna-Upanishad, one of the earliest of the Upanishads texts that serve as a foundation of Hinduism, pupils pose six great questions to a wise teacher ("prashna" means question in Sanskrit). The Buddha also encouraged questioning by his disciples, and a fundamental role of questioning is still embraced in the practices of modern Buddhism. I recently had the pleasure of visiting Dharamsala, India, where I watched Tibetan Buddhist monks debate—a daily practice that involves one monk continually questioning another monk for an hour, often on esoteric points of Buddhist thought. The impressive aspect of this practice is how the monks use this method of questioning/answering to hone their skills in logic and to probe complex questions. The questioning involves great mental concentration and intense exchange, punctuated by episodes of laughter

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[T]he art of questioning is a practice that scientists, philosophers, and educators share; here is where these disciplines might learn from one another and explore and exploit each other's practices and ideas.

Questioning may seem like a good educational approach, so why is it not a more common practice in science education?

and joy. Interestingly, the use of questioning for intellectual exploration and teaching evolved independently in Socratic and Buddhist schools of thought, and both developed this skill through a high degree of discipline and practice.

Philosophy and science grew up together and were inseparably intertwined; logical argument and inductive thinking were ways of exploring/explaining the natural world. There were few “facts” to memorize, and the framework of using experimentation/data gathering to formulate scientific theories gained hold only in the middle of the second millennium. Since that point, science and philosophy have grown steadily apart in subject areas and methodologies. It would be rare to find a scientist and philosopher exchanging ideas with one another at a meeting. However, the art of questioning is a practice that scientists, philosophers, and educators share; here is where these disciplines might learn from one another and explore and exploit each other's practices and ideas.

Posing a Question as a Basis of Independent Learning and Inquiry

Most educators agree that teaching science should involve more inquiry-based learning and less fact-based memorization. Many educators are now developing experimental modules that engage students in the practice of scientific inquiry and are trying to export these experimental modules and ideas to many schools (for example, see the Web resource from the National Science Foundation²).

Pursued properly, a good question can constitute an excellent vehicle to start a process of inquiry. Investigating an answer to a question need not require a laboratory, special equipment, or money. The goal of asking and answering a question is not necessarily to probe a completely untouched area of science (which is unrealistic for K–12). Rather, it should be a personal quest to resolve a curiosity and grapple with trying to understand the answer. Researching a question has become more accessible than ever with the Internet, which, if used judiciously, can be a means to find and integrate pieces of information. Furthermore, researching one question often results in a further round of questions that dig deeper into a phenomenon.

Let's consider some examples of questions. Alan Alda (the famous actor/director/writer who is now on the advisory board of the Center

for Communicating Science at Stony Brook University) posed a challenge in *Science* of answering the question, “What is a flame?”³ This challenge was based on his own experience as an 11-year-old asking his teacher this same question and receiving the disappointing, few-syllabic answer, “It's oxidation.” Last spring, Alda received more than 800 answers to that question from scientists, and the answers were judged by 6,000 11-year-olds.⁴

This example illustrates that a lot of thought is required to understand and explain “simple” questions about our everyday experiences. “Why is the sky blue?” can be used to learn an enormous amount about light and the atmosphere. Even the question, “What is light?” is enough to set off an endless string of subsequent questions. “It is both a wave and a particle.” What does this nonintuitive answer mean? What evidence supports its behavior as a wave? Why do we say that it is a particle? And for more advanced students, “How can single photons aimed at a pair of slits create interference patterns on the other side, as though they passed through both slits simultaneously?” By posing questions, one appreciates that science is not all about filling in the correct bubble with a #2 pencil. Some mysteries lack good answers or have partial answers with fuzzy boundaries. That might frustrate a subset of teachers and students who want clear-cut answers. But it can make science cooler and better prepare students to think about evidence and to navigate in a complex world that does not always have precise answers.

Questioning can be used to promote independent learning in a school setting in a variety of ways. The key ingredients are that students should have some freedom to choose a question in which they are interested, have an opportunity to research the answer on their own, and then have an opportunity to teach others (peers and the teacher) what they learned.

I witnessed one especially successful example of spontaneous, curiosity-driven questioning in the Katta, a volunteer science discussion group for college students led by Milind Watve, then at Garware College, Pune, India.⁵ A “katta” in Marathi (the regional Indian language) means a place where people can meet, talk, and exchange ideas. In Watve's Katta, students drive the discussion. Many questions arise and quickly fall. However, in some instances, students begin to swarm around a question, wanting to know

more. This experience often ignites a student, or a group of students, to investigate the question more deeply on their own and then present what they discovered at a later Katta. Sometimes the group of students decides to investigate the question in a scientific manner, using tools of a laboratory, math, field studies, and so on, as appropriate. And in several cases, those investigations went all the way to publications in well-known journals.

Watve's role is as a catalyst, providing a safe environment where students can feel free to ask a question without worrying about whether it is good, bad, intelligent, or crazy. Usually, no one in the room (including Watve) is an expert in the subject. But he encourages students to pursue the question regardless, encouraging them to take ownership of the question and think in new ways that possibly may not have occurred to scientists in the field.

Barriers to Accepting Questioning as a Basis of Teaching

Questioning may seem like a good educational approach, so why is it not a more common practice in science education? Several cultural factors present barriers. First is the perception that the teacher is an almighty vessel of knowledge who imparts information to students. In that formulation, a difficult question with no immediate answer or an uncertain answer can be threatening to a teacher and disappointing to a student. However, that view is unfair to teachers. Teachers also need to be students, practicing being lifelong learners—an objective that so many schools are projecting to their students. A teacher should feel completely comfortable saying, “I do not know the answer to that question, but let me look it up—or let’s look it up together.” Many questions do not have quick, easy answers and thus become seeds for investigation. Students also should be able to teach their peers when they look up an answer to a question. In this model, teachers and students become partners in their mutual education.

A second impediment to using questioning as an educational tool is that questions are unpredictable by their nature. One cannot know what students are going to ask in a particular year. It can be hard to plan around such uncertainty. With state-mandated curricula, there is little, if any, time to deviate from the script. The ability to ask a question, research the

answer, and present it to the class requires some degree of flexibility in the weekly lesson plan. Most teachers, particularly in state-run schools, do not have that luxury.

A third impediment to using questioning is that it is not a trivial skill to learn. I already discussed that ancient Greeks and contemporary Buddhists practice this skill for many years. Similarly, teacher training would be required to implement such ideas in a classroom.

Questioning as a Skill for Professional Scientists

A grant often receives a poor score not because the proposed experiments are themselves poorly conceived but rather because the questions being asked are not interesting or not clearly articulated. It is easy to fall into this trap, because specific aims are often written in terms of achieving a specific technical goal rather than from the standpoint of framing and answering a compelling question. Readers of this column no doubt have listened to lackluster seminars that are swimming in data but lack a captivating question to motivate the data collection. Thus, identifying a good question and being able to articulate it well is a key skill in becoming a successful scientist.

I wish to end my last President's Column by thanking the ASCB members for their support, the office staff for their devotion to the goals of this Society, and my scientific friends and colleagues on the Executive Committee, Council, and Committees who helped to make 2012 a productive, fun, and engaging year.

Do you have a question? Write to me at president@ascb.org. I may not have an immediate answer, but perhaps we can research it further together! ■

Footnotes and Reference

¹www.criticalthinking.org/pages/the-role-of-socratic-questioning-in-thinking-teaching-learning/522.

²www.gk12.org/resources/stem-activities-and-resources-for-k-12-teachers-and-students.

³Alda A (2012). The flame challenge. *Science* 335, 1019.

⁴www.centerforcommunicatingscience.org/the-flame-challenge-2.

⁵www.indiabioscience.org/node/24.

[I]dentifying a good question and being able to articulate it well is a key skill in becoming a successful scientist.



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Candidates must register with the BE search website at <http://be-fac-search.mit.edu>, and must submit application materials electronically to this website. Candidate applications should include a description of professional interests and goals in both teaching and research. Each application should include a curriculum vitae and the names and addresses of three or more references who will provide recommendation letters. References should submit their letters directly to MIT at the <http://be-fac-search.mit.edu> website. Applications received by 1 December 2012 will be given priority.

Questions may be directed to: Prof. Douglas Lauffenburger, Head, Department of Biological Engineering, MIT 16-343, Cambridge, MA 02139, lauffen@mit.edu

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WOMEN in Cell Biology

Evolutionary Cell Biology, continued from p. 1

Defining a New Field

Although cell biology studies that incorporate evolutionary approaches are not new, the two disciplines remain distinct and there is really no well-defined field of evolutionary cell biology. With the goal of changing this situation, however, groups of cell biologists, evolutionary biologists, theoretical physicists, mathematicians, experimental biophysicists, and bioinformaticians have come together in recent years to explore cell biological and cell biophysical problems from an evolutionary perspective.

One meeting on the subject was the Workshop on Evolutionary Cell Biology, an NSF-sponsored event held in Virginia on May 29–June 1, 2012.² It brought together a diverse international group of 24 scientists, but not for the purpose of talking about their own work. Instead they worked together to define the discipline of evolutionary cell biology and map the path for unifying and moving this emerging field forward. Working in small groups the participants addressed a wide range of topics—suggested in an online survey by a group of more than 60 interested scientists—to identify the most important outstanding questions, and to begin charting a comprehensive plan to address them. A few of the questions identified include:

- How have physical constraints influenced the evolution of cells?
- What are the molecular mechanisms leading to the origins of cell biological features?
- What have been the major challenges to cells, and how do they impact evolutionary cell biology?
- How have nonadaptive mechanisms of evolution such as genetic drift influenced cellular life?
- How can knowledge of evolutionary history and mechanisms be used to provide insight into how cells work now?



Shelley Sazer



Holly Goodson

A copy of the report, which includes notes and videos from the workshop sessions, lists of discussion topics and participants, and detailed scientific and educational plans, can be found at the workshop website, which also provides a listing of upcoming events and a discussion forum for the evolutionary cell biology community.²

The workshop participants agreed that a large scale, systematic, community-organized and -executed effort is necessary to bring the field of evolutionary cell biology to its full potential. To enable scientists to answer fundamental questions such as how cells work and how the diversity of cellular structures and pathways arose, the participants proposed an ambitious initiative termed the Atlas of the Biology of Cells (ABC).

The Atlas of the Biology of Cells

The ABC is based on the principles that studying diverse cell lineages will tell us what evolution produced and studying variation within species will tell us how evolution proceeds.

The goal of the ABC is to move beyond descriptive comparative cell biology to a systematic study of cellular diversity within and between species, the evolutionary mechanisms that produced this diversity, the basic principles of cellular organization that can be deduced from this study, and the fundamental physical and chemical principles that constrain and shape the evolution of living systems. To accomplish this goal, we need to expand our repertoire of experimental organisms.

Upon hearing about the ABC, one might ask, don't we already have enough organisms to study? The problem is that the current set of model organisms that are amenable to cell biological investigation and also have sequenced genomes is small, and these cultured organisms represent neither the phylogenetic breadth nor the population diversity critical for evolutionary studies. For these reasons, the community needs to develop new experimentally tractable model organisms from throughout the tree of life



**Have you
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[The Atlas of the Biology of Cells] is based on the principles that studying diverse cell lineages will tell us what evolution produced and studying variation within species will tell us how evolution proceeds.

[R]esearchers can apply the evolutionary perspective to gain insight into cell biological problems based on analysis of the tremendous amount of information already available in public databases.

(including prokaryotes) to adequately sample cell biological and genomic diversity. Then the community can use this information to correlate genotype with phenotype within and between species with the goal of forming the foundation for predicting phenotype from genotype. Building the ABC will be a long-term project that will require substantial, sustained financial support, but if it comes to fruition it will have impact throughout biology.

Other Gatherings

Another meeting pertaining to cellular evolution was Evolutionary Perspectives on Mechanisms of Cellular Organization, a 2010 program in which physicists and others spent several months in residence at The Kavli Institute for Theoretical Physics (KITP) in Santa Barbara.³ There they explored a wide range of cell biological problems with experimentalists, each of whom spent one to two weeks on site. The long-range scientific focus of this program was on using an evolutionary framework to integrate physical, biophysical, and cell biological information into a unified mechanistic description of the spatial and temporal organization of cells. The program brought scientists from different fields together in a setting that promoted cross-disciplinary discussion and education, stimulated the formulation of questions about cellular organization and collaborative approaches to answer them, and resulted in participants from all disciplines thinking about their work from a different perspective.

A program on Cooperation and the Evolution of Multicellularity will take place at KITP in January 2013.⁴

Another recent meeting on evolutionary cell biology, the Program on Evolutionary Origins of Compartmentalized Cells, was sponsored by the International Centre for Theoretical Sciences and was held at the National Centre for Biological Sciences in Bangalore, India, in February 2012.⁵ It focused on cellular compartmentation while also emphasizing the need for cell biologists and evolutionary biologists to educate one another, and more importantly to educate the next generation of scientists, to think about their work from a different perspective. The unique format for this meeting was designed to accomplish all of

these goals. It included extensive cell biology and evolutionary tutorials that directly complemented the scientific talks, the participation of a large number of graduate students, and plenty of time for informal discussions. Working in small groups, students prepared scientific proposals on relevant topics with input from the speakers, and then defended them to the group.

Applying the Evolutionary Perspective

Even as we await the development of the ABC, researchers can apply the evolutionary perspective to gain insight into cell biological problems based on analysis of the tremendous amount of information already available in public databases. For example, phylogenetic approaches can be used to predict the function of uncharacterized proteins, harness information on sequence constraint within a protein family to determine protein structure–function relationships, and identify members of protein complexes by examining patterns of correlated protein loss. In this context, it should also be noted that “origin, evolution, and function of cells, organelles, and microcompartments” is now a priority area for the NSF.¹

Whether or not you have ever spoken to an evolutionary biologist about your cell biology work, you will have an opportunity to meet evolutionary biologists and evolutionary cell biologists and to hear about their cross-disciplinary studies at the Evolutionary Cell Biology Special Interest Group (session K) on December 15, 2012, at the ASCB Annual Meeting. We look forward to seeing you there—but if that’s not possible check the Evolutionary Cell Biology website, where we will be posting a summary.² ■

—Shelley Sazer, Baylor College of Medicine, and
Holly Goodson, University of Notre Dame

Footnotes

¹www.nsf.gov/funding/pgm_summ.jsp?pims_id=504861&org=MCB&from=home.

²www.evolutionarycellbiology.org.

³www.kitp.ucsb.edu/activities/dbdetails?acro=evocell10.

⁴www.kitp.ucsb.edu/activities/dbdetails?acro=multicell13.

⁵www.icts.res.in/archive/program/talks_tab/288.

⁶<http://ascb.org/meetings/files/subgroups/SatSpecialInterestSubgroups2012.pdf>.

Election, continued from p. 1

Senator Richard Shelby (R-AL) is expected to become the senior Republican of the powerful Senate Appropriations Committee. He currently serves as the lead Republican on the Senate Labor, Health & Human Services, and Education Appropriations Subcommittee, which is directly responsible for funding the U.S. National Institutes of Health (NIH). In his position on the subcommittee, Shelby has shown himself to be a strong but pragmatic supporter of the NIH.

In the House, the leadership of the House Appropriations Subcommittee on Labor, Health & Human Services, and Education will change hands. Representative Denny Rehberg (R-MT), the present chair, ran unsuccessfully for the Senate. It is possible that the new chair of this subcommittee will play a major role in continuing efforts by House Republicans to cut funding for the Affordable Care Act, often referred to as ObamaCare. In the past, Republicans have played the game of increasing funds for the NIH by reducing funding for the Affordable Care Act.

The House Science, Space, and Technology Committee will see many changes. Retirements and defeats are likely to mean that at least 25% of the panel will be new next year. Despite its name, the committee has limited jurisdiction. Although it oversees the National Science Foundation, the National Aeronautics and Space Administration, the Office of Science at the Department of Energy, and other smaller agencies, the Science, Space, and Technology Committee does not have control over spending for research.

It is likely that the current makeup of the Congress will prevent any congressional action to overturn the Obama administration's policy permitting research on human embryonic stem cells. However, that policy is still being challenged in the courts. After losing in the Court of Appeals in August 2012, the plaintiffs recently asked the U.S. Supreme Court to hear their case. If the Court agrees to hear the case, it will not review the science but will focus on arcane legal issues associated with the implementation of the policy. ■

—Kevin M. Wilson

ASCB Advocacy Week a Success!

You don't have to come to Washington, DC, to be a science policy advocate. ASCB members across the United States proved that point during the ASCB's first science policy advocacy week, We Are Research.

During the first week of October, ASCB members and others in labs all over the United States participated in the We Are Research campaign. In some cases, it was the first time they had been involved in science advocacy.

Labs in 10 states posted photos of lab members as part of an effort to put a face on science. These photos show just how varied the scientific community is and have been viewed more than 3,400 times.

Several participants made two-minute videos explaining their science. One of the most popular was a video by Becky Adams from Susan Wentz's lab at Vanderbilt University Medical Center that explained how a cell is like a kitchen. The Facebook posting of the video was viewed over 4,000 times.

Some advocates sent letters to their representatives explaining the importance of federally funded basic research.

ASCB member Brian Storrie arranged to have his member of Congress, Rep. Tim Griffin, tour his lab. In Colorado, ASCB member Mark Winey organized two separate visits to Colorado State University by Rep. Jared Polis. Later this month, ASCB Public Policy Committee member Connie Lee will talk to the postdoc association at the Vanderbilt School of Medicine about why it is important for scientists to become involved in science advocacy.

Did you participate in the advocacy program in your hometown? Share your experiences by contacting Kevin Wilson at kwilson@ascb.org

To see the lab pictures, go to www.flickr.com/photos/weareresearch. The videos are at www.youtube.com/user/ASCBWeAreResearch. ■

—Kevin M. Wilson



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After making little or no progress on a federal budget for FY13 as the start of the fiscal year neared, Congress decided to put budget decisions off until March 2013 by passing a six-month Continuing Resolution (CR).

Shortly before members of Congress left town to campaign for the November election, the partisan planets aligned to allow Democrats and Republicans to agree on the need for, and content of, a CR that will fund the operations of

the federal government for half of the next fiscal year.

Republicans initially wanted to use the CR to continue to reduce federal spending. They ultimately agreed to fund government operations at the slightly higher level sought by the Democrats, betting that the November election results would increase Republican ranks and make it easier to make additional cuts next year. ■

—Kevin M. Wilson

Volunteer to Review CVs

We are looking for more volunteers to help review cover letters, CVs, and resumes online for young ASCB scientists. In addition, we will offer onsite CV review at the 2012 Annual Meeting. If you can help with either the onsite or online initiative, please contact Thea Clarke at tclarke@ascb.org. ■

First International Teacher–Scientist Partnership Conference

The Science & Health Education Partnership at University of California, San Francisco, and the American Association for the Advancement of Science (AAAS) are pleased to announce the first International Teacher–Scientist Partnership Conference. The conference, funded by the National Science Foundation (Grant DUE-1247936), will be held February 13–14, 2013, in Boston, MA, just before the annual AAAS meeting.

This conference is designed for anyone involved or interested in teacher–scientist partnerships, such as teachers, scientists, engineers, partnership program coordinators/specialists, administrators, and evaluators. The program will include sessions of interest to both new and experienced stakeholders in the field and will include a mix of keynote speakers, panel sessions, workshops, and networking time. Conference topics will include: partnership models, getting started in partnerships, recruitment, evaluation, dissemination, and more. Join others from around the world for two days of discussions, workshops, and presentations as we build community and share expertise in this rapidly growing field.

Join us for a poster session at AAAS on Friday, February 15, and share your work in the teacher–scientist field with AAAS attendees. This session is an opportunity to inform a broad range of science, technology, engineering, and mathematics professionals about the merits and benefits of teacher–scientist partnerships. Poster submissions are due Monday, January 21, 2013. Please see: www.cvent.com/d/dcq3d2.

More conference information will be available soon; check <http://www.ucsf.edu/sep> for updates. ■

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LOCAL Meetings

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

The next deadline to apply for funds is February 1, 2013. Applicants must be or become members of the ASCB. For more information visit www.ascb.org and click on "Meetings," then "Local Meetings."

Cell Biology at the Frontier of Collaborative Effort



Attendees at the retreat included faculty, graduate students, and postdoctoral scholars.

On October 5, 2012, the University of New Mexico Health Sciences Center in Albuquerque hosted Cell Biology at the Frontier of Collaborative Effort: A Retreat for Postdoctoral Fellows Focusing on Career Development and Scientific Example. Approximately 60 local faculty, postdoctoral scholars, and graduate and undergraduate students gathered to network and focus on career development.

Guest speakers included Renato Aguilera from the University of Texas at El Paso (UTEP) and Pedro Arce from Tennessee Tech University. They spoke on their research perspectives, insights into teaching, and furthering the advancement of underrepresented minorities and women in science, technology, engineering, and mathematics (STEM) disciplines and leadership roles.



Retreat speaker Renato Aguilera with Brian Gray, a postdoctoral scholar in the University of New Mexico Academic Science Education and Research Training program.

Aguilera described his career path—a journey following unexpected research directions. He ultimately became a successful UTEP researcher and director of the first cell culture and high-throughput core facility at the Border Biomedical Research Center in El Paso. Arce then gave an interactive presentation about using active learning and rethinking the teaching of STEM subject areas in classrooms. Both talks were well received.

The meeting afforded a great deal of interaction among faculty members, students, and postdocs. Attendees could network over breakfast and lunch, and posters were available for viewing throughout the day. Later in the afternoon, undergraduate and postbaccalaureate students as well as postdoctoral fellows met informally with Aguilera to discuss research, teaching, graduate studies, and career paths. The retreat also created opportunities to coordinate future smaller meetings centered around topics discussed either in informal sessions or during networking, in such areas as science education, teaching experiences, research, and leadership. ■

—Olivia George and Gloriana Trujillo, University of New Mexico Health Sciences Center

Appalachian Regional Cell Conference



Attendees at ARCC 2012



Vinay Pathak delivered the keynote address at ARCC 2012.

Students in the Cell Biology Training Program at West Virginia University, and faculty advisor Bill Wonderlin, held the inaugural meeting of the Appalachian Regional Cell Conference (ARCC) in Charleston, WV, on October 12, 2012. ASCB and the Office of Research and Graduate Education, West Virginia University Health Sciences Center, funded this one-day local meeting. Seventy-three participants came from Marshall University, Ohio University, the University of Kentucky, and West Virginia University. From abstracts submitted before the conference, student organizers (Danielle Shepherd and Steven Markwell, West Virginia University; Allison Wolf and Johannes Fahrman, Marshall University; Yanrong Qian and Maria Muccioli, Ohio University; and Alena Smith and Megan Phillips, University of Kentucky) selected one student from each university to give an oral presentation. These talks encompassed diverse topics, including phosphatase PHLPP in pancreatic cancer, cardiolipin in mitochondria during diabetic cardiomyopathy, cNOS in UVB-induced NF- κ B activity, and how omega-3 fatty acids play a sensitization role for chemotherapy treatment in B-cell chronic lymphocytic leukemia.

The keynote speaker, Vinay Pathak from the National Cancer Institute, spoke on the discovery and de-discovery of xenotropic murine leukemia virus-related virus (XMRV). The day concluded with an energetic poster session, in which 40 students and four faculty/staff presented posters not only to other attendees but also to a panel of judges composed of faculty and students from the represented universities. Finally, a debriefing session addressed how the meeting went, ideas for future directions, and suggestions to improve this meeting for next year. Awards were given for the following categories:

- Best Oral Presentation—Johannes Fahrman, Marshall University
- Best Overall Poster Presentation—Rounak Nande, Marshall University

- Runner-Up for Best Poster Presentation—Ellen Lubbers, Ohio University
- Best in Group Poster Presentations—(1) Kristeena Ray, Marshall University; (2) Abigail Myers, West Virginia University; (3) Sarah Mathis, Marshall University; (4) Zachary Hartman, West Virginia University; and (5) Yanrong Qian, Ohio University

Maria Muccioli and Amrita Basu from Ohio University won a raffle drawing for one-year ASCB memberships.

ARCC 2012 created an atmosphere where graduate and postdoctoral students in the Ohio Valley/mid-Appalachian region could interact and exchange ideas about science. Because students organized and conducted this meeting, the setting was professional, yet relaxed, to promote interaction between students who may not otherwise have met. One of the many outstanding ideas from the debriefing session was to continue having smaller, informal ARCC gatherings at national conferences—for example, the ASCB and Experimental Biology meetings.

At ARCC 2012, students and faculty established professional networking connections and discovered common research interests, thereby creating opportunities for future collaborations and sharing of resources. At future ARCC meetings, we hope to involve more undergraduate researchers, as well as incorporate talks and panel discussions from industry representatives, such as pharmaceutical companies, or other independent or government research laboratories. Ohio University will take the lead in planning the second annual ARCC, tentatively scheduled for October 2013.

I would like to thank my co-organizers from the other institutions and Michael Schaller and Bill Wonderlin for providing insight for this article. ■

—Danielle Shepherd, West Virginia University

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ANNOUNCING

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By Michael R. Green, *Howard Hughes Medical Institute, University of Massachusetts Medical School* and Joseph Sambrook, *Peter MacCallum Cancer Institute, Melbourne, Australia*

Molecular Cloning: A Laboratory Manual has always been the one indispensable molecular biology laboratory manual for protocols and techniques. The fourth edition of this classic manual preserves the detail and clarity of previous editions as well as the theoretical and historical underpinnings of the techniques presented. Ten original core chapters reflect developments and innovation in standard techniques and introduce new cutting-edge protocols. Twelve entirely new chapters are devoted to the most exciting current research strategies, including epigenetic analysis, RNA interference, genome sequencing, and bioinformatics. This manual is essential for both the inexperienced and the advanced user.

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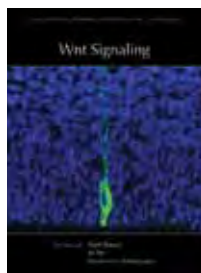
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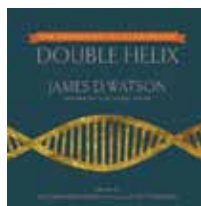


WNT SIGNALING

Written and edited by experts in the field, this collection from *Cold Spring Harbor Perspectives in Biology* covers all aspects of canonical Wnt signaling, as well as β -catenin-independent Wnt signaling and cross-talk with other pathways. The contributors examine the numerous Wnt ligands; their production, secretion, and interactions with components of the extracellular environment; and details of the downstream signaling pathways that mediate the effects of Wnt proteins on cells. The roles of Wnt signaling in stem cell self-renewal, cell polarity, body-axis specification, wound healing, and other aspects of normal development and physiology are also covered.

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THE ANNOTATED AND ILLUSTRATED DOUBLE HELIX

By James D. Watson, *Cold Spring Harbor Laboratory*; Alexander Gann, *Cold Spring Harbor Laboratory*; Jan Witkowski, *Cold Spring Harbor Laboratory*

The structure of DNA deduced by James Watson and Francis Crick in 1953 was one of the most significant scientific discoveries of the 20th century. Fifteen years later, Watson wrote *The Double Helix*, his classic account of the discovery. It was something new, a description of science in action written not as a formal autobiography or a measured history, but in the voice of a brash, ambitious young man who knew the big question in biology and wanted the answer.

In this edition, Watson's text is unchanged, but Alex Gann and Jan Witkowski have added over three hundred annotations on the events and characters portrayed, with facsimile letters and contemporary photographs, many previously unpublished. Their sources include newly discovered correspondence from Crick, the papers of Franklin, Pauling, and Wilkins, and they include a chapter dropped from the original edition.

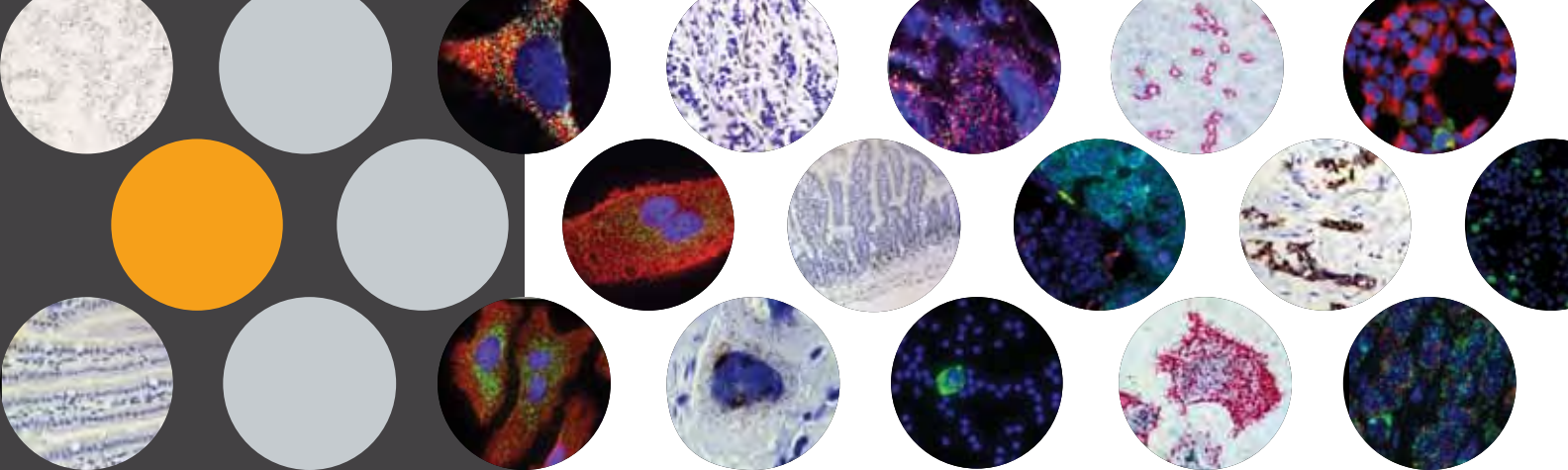
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SPOTLIGHT on ASCB Committees

Spotlight on ASCB Committees is a regular feature in the ASCB Newsletter. Each article highlights the goals and objectives of one of the ASCB's committees and describes the programs it supports, how it interacts with other committees, the challenges it faces, and how one can become a member.

The Women in Cell Biology Committee

What are the goals and objectives of the Women in Cell Biology (WICB) Committee?

One of its goals when WICB was started in the early 1970s was to achieve more equitable representation for women as participants within ASCB, including more accurate representation within the ASCB leadership and as speakers. Today the number of women leaders and speakers within ASCB suggests that WICB's initial goal has largely been achieved. However, the Committee is still working toward its goals of helping women cell biologists successfully juggle career and family, find mentors, and achieve gender equity in job placement and leadership positions. WICB sponsors many activities throughout the year, and especially at the ASCB Annual Meeting, to give cell biologists—both women and men—tools with which to meet these challenges. These fulfill the part of the WICB mandate to support the human side of being a cell biologist.

What programs does WICB sponsor and support?

WICB's year-round programs include:

- A monthly column in the *ASCB Newsletter* that offers mentorship and effective career advice.¹ WICB also wrote and published *Life Sciences Research and Teaching: Strategies for a Successful Job Hunt* and compiled published WICB columns in three volumes of *Career Advice for Life Scientists*.²
- The WICB Speaker Referral Service, which helps meeting organizers identify superb, tested women cell biologists as speakers and awardees³
- The WICB Photo Montage of real cell biologists who have managed to have children and still do great science and therefore can inspire our members to take on this challenge⁴
- The WICB Network, an alliance of members who wish to support, learn about, and participate in WICB activities and initiatives

WICB events at the ASCB Annual Meeting include:

- Career Discussion and Mentoring Roundtables, which allow participants to meet for informal discussions. Conversations are moderated by individuals who have experience in specific professional areas or with particular issues.
- Saturday Workshop or Panel Presentation, which provides practical tools or offers expert career advice in areas such as dealing with difficult people and situations, acquiring leadership training, negotiating conflicts, and building one's career
- WICB Career Recognition Awards, including the Junior Award, the Senior Award (which will become the Lifetime Achievement Award in 2013), and, beginning in 2013, the Sustained Excellence in Research Award, which will be given to a woman at mid-career. Twenty-eight scientists have received awards from WICB since 1986.⁵
- Mentoring Theater, in which eminent scientists use humor to deal with complex problems that confront cell biologists, including promoting themselves effectively, developing self esteem, dealing with funding problems, publishing, negotiating for a job, and coping with feeling overwhelmed
- Childcare Awards, which give grant support to ASCB members and enable scientists (women or men) with dependent children to attend the ASCB Annual Meeting by offsetting the cost of childcare. Currently supported by a grant from Nature Publishing Group to ASCB, these awards are administered by WICB.

How does WICB work with other ASCB committees and programs?

WICB works with the Minorities Affairs Committee (MAC) on advocating diversity and with MAC and the Education Committee (EdComm) to offer mentoring programs.

For example, EdComm and WICB recently initiated an Internet-based service to help young ASCB members in drafting a cover letter, CV, resume, or statement on teaching philosophy or other documents for the next step in their careers.⁶

What are some of the challenges faced by WICB?

Although women are approaching parity in earning PhD and MD degrees, studies of their underrepresentation in academia, as PIs in funded science, and in leadership positions have led to the conclusion that gender schemas work against women and diminish their success. We are also acutely aware that women are underrepresented as speakers in many major scientific conferences (other than the ASCB Annual Meeting) and on boards of biotech companies. Clearly we have a long way to go, and we are eager to be agents of change.

How does one become a member of WICB?

WICB is a remarkable group of dedicated women and men—principled, humanistic, resourceful, and good humored. If you would like to join WICB or become a WICB Associate and help with WICB's various Annual Meeting and year-round activities, suggest new initiatives and provide feedback, or join the WICB Network, contact Cheryl Lehr at clehr@ascb.org. ■

— Sandra K. Masur, Chair, Women in Cell Biology Committee

Footnotes

¹www.ascb.org/wicbnewsletter.html

²<http://ascb.org/publications.html>

³www.ascb.org/WICBSpeakerref.html

⁴<http://ascb.org/wicb/photos.html>

⁵www.ascb.org/wicbawards.html

⁶www.ascb.org/ResumeReview/CareerAssistance.cfm

Donate to ASCB

Please consider making a year-end contribution to the ASCB. There is a "Donate" button on the homepage at www.ascb.org. Such donations are tax-deductible in the United States. Donations can be allocated to a specific area, and can be donated in honor of someone specific if you wish. Thank you for supporting your Society! Questions? Email ascbinfo@ascb.org. ■

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

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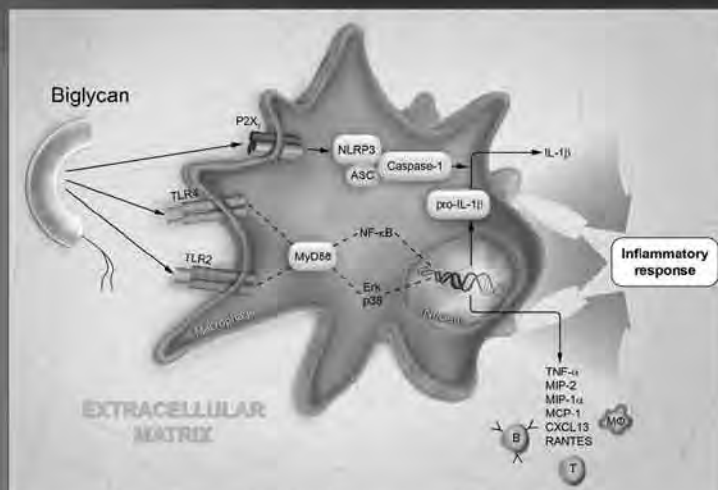
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Got Questions?

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. ■

Interesting Uses of The Cell: An Image Library-CCDB

The Cell: An Image Library-CCDB (www.cellimagelibrary.org) continues to evolve. Some interesting new or anticipated uses for images in The Cell include the following:

- Recently, BitesizeBio published the first in a series of articles about using The Cell, titled “The Cell: An Image Library-CCDB—Tutorial Part 1,” in its Microscopy & Imaging channel. This article explains the benefits of setting up and using a free account at The Cell and can be found at <http://microscopy.bitesizebio.com/articles/the-cell-an-image-library-ccdb-tutorial-part-1>.
- A brief article, “Omero: A Solution and Model for Managing Data-Images,” at the Science Image Integrity website, <http://scienceimageintegrity.org>, discusses The Cell's use of Omero for data management and the need for best-practice guidelines for archiving original images as well as the need for standards for metadata.
- A new article, “Evolutionary Formation of the Central Nervous System of the Chordata and Its Relations with the System of Adaptive Immunity, Part 1 (Comparative Biology and Terminology),” by V.S. Kohanov, uses an image from The Cell. This article is in Russian and can be found at www.sworld.com.ua/konfer28/124.pdf.
- *Science* retweeted a tweet that *The Scientist* made about one of the images in The Cell that won an Honorable Mention in the 2010 Olympus BioScapes Digital Imaging Competition.

You too can tweet images right from the detailed image page by using the buttons just below the licensing information. These buttons also allow you to share images on Facebook, LinkedIn, StumbleUpon, and other social networks. Help The Cell by selecting and sharing just one image to one of your networks.

The Cell's Facebook page now has more than 6,400 “likes.” Want to join us? Simply go to www.facebook.com/CellImageLibrary and click “Like.”

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Please help us spread the word and share with your colleagues what a great resource The Cell: An Image Library-CCDB is.

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

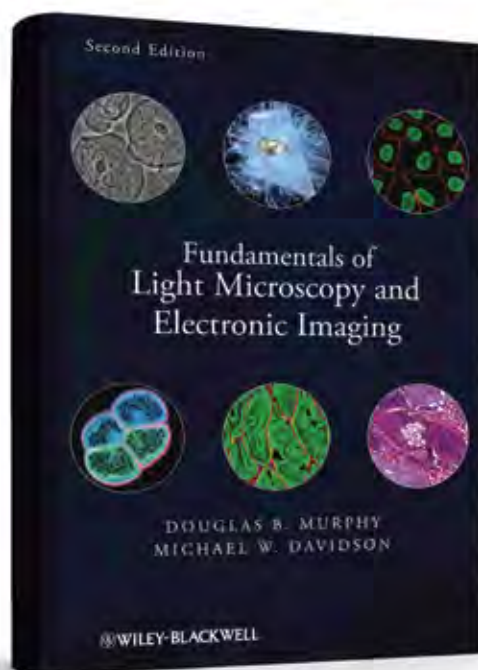
—David Orloff



Scanning electron micrograph of the apical surface of the neuromast organ of the lateral line system in a 17-day-old zebrafish. The hair bundles at the top of each sensory cell emerge through a pore in the skin. Movement of the surrounding water deflects the hair bundle, stimulating the hair cell. Fish (and aquatic amphibian larvae) use such information to detect the presence of other fish and avoid predators. All vertebrate inner ear structures that detect sound vibrations are similar to the hair cells of neuromast organs. www.cellimagelibrary.org/images/38992

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

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Douglas B. Murphy, Michael W. Davidson

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ASCB's first-ever, all video "elevator speech" contest comes to the 2012 Annual Meeting in San Francisco. The elevator door closes and you've got a trapped audience—a U.S. Senator, your dean, or your sister-in-law. Go for it! Sell your science before the door opens!

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THE AMERICAN SOCIETY
FOR CELL BIOLOGY
The science of life, the life of science.

The Editorial Board of *Molecular Biology of the Cell* has highlighted the following articles from the November 2012 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.

Hect E3 ubiquitin ligase Tom1 controls Dia2 degradation during the cell cycle

D.-H. Kim and D. M. Koepp

This study identifies the degradation pathway for the F-box protein Dia2, which plays an important role in maintaining genomic integrity. The Hect domain E3 ligase Tom1 recognizes a stretch of positively charged residues in Dia2, leading to Dia2 degradation by the ubiquitin proteasome system. Failure to degrade Dia2 disrupts cell cycle dynamics.

Mol. Biol. Cell 23 (21), 4203–4211

One-step purification of assembly-competent tubulin from diverse eukaryotic sources

P. O. Widlund, M. Podolski, S. Reber, J. Alper, M. Storch, A. A. Hyman, J. Howard, and D. N. Drechsel

A method is presented that allows rapid and efficient purification of native, active tubulin from a variety of species and tissue sources by affinity chromatography. It eliminates the need to use heterologous systems for the study of microtubule-associated proteins and motor proteins, which has been a major issue in microtubule-related research.

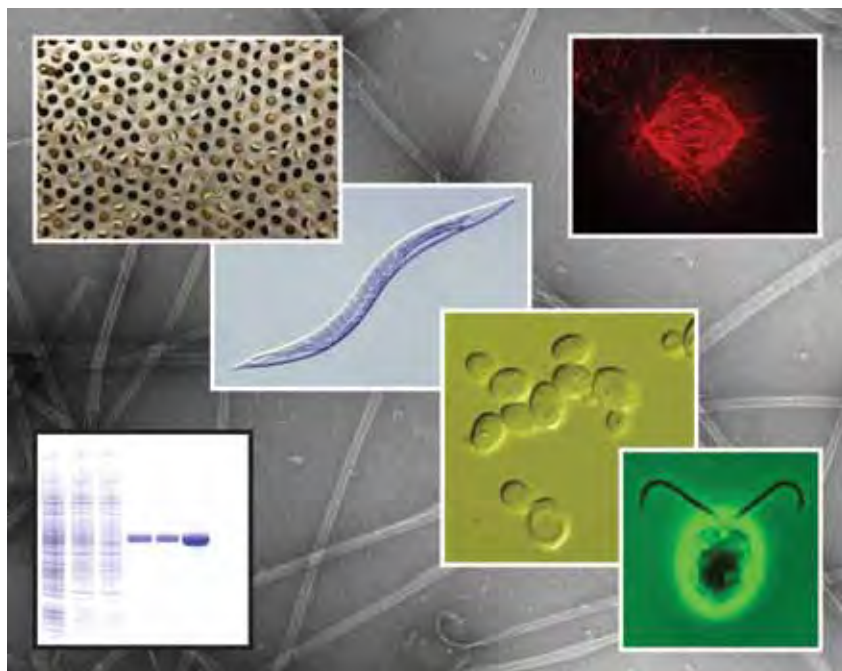
Mol. Biol. Cell 23 (22), 4393–4401

MyRIP interaction with MyoVa on secretory granules is controlled by the cAMP-PKA pathway

F. Brozzi, S. Lajus, F. Diraison, S. Rajatileka, K. Hayward, R. Regazzi, E. Molnár, and A. Váradi

Myosin- and Rab-interacting protein is not a classic receptor for MyoVa on large, dense-core secretory granules (SGs), but it aids in PKA-dependent phosphorylation of MyoVa-associated proteins on SGs in endocrine and neuroendocrine cells.

Mol. Biol. Cell 23 (22), 4444–4455 ■



A new protocol allows rapid and efficient purification of native, active tubulin from diverse species and tissue sources by affinity chromatography. Shown, diagonally from upper left, are *Xenopus laevis* eggs, *Caenorhabditis elegans*, *Saccharomyces cerevisiae*, and *Chlamydomonas reinhardtii*. A human mitotic spindle is shown at upper right. A Coomassie Blue-stained SDS-PAGE gel of purified *Spodoptera frugiperda* tubulin is shown at lower left. The background image is an electron micrograph of negatively stained *S. frugiperda* microtubules. See *Mol. Biol. Cell* 23, 4393–4401. (Image by Per O. Widlund with contributions from Alexander W. Bird, Mark Leaver, and Veikko Geyer, Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany)

The November 1, 2012, issue of *MBoC* celebrates the journal's first 20 years as the ASCB's science journal and focuses on the 2012 ASCB Annual Meeting. It includes essays by six recipients of 2012 ASCB Awards. In addition, a selection of Perspectives addresses the two Thread topics that are woven through this year's Annual Meeting: Cell Biology and Medicine and The Intersection of Cell Biology and the Physical Sciences. An additional Perspective by Tom Pollard traces the history of ASCB's political advocacy. ■

The HUNT is ON!

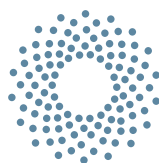
Get the **ASCB APP** and play the
SCAVENGER HUNT PHOTO CONTEST
Win an iPad, iPod Mini, or iPod Nano

It's simple to play. The challenges involve taking photos around Moscone Center and then uploading them. Complete 12-25 challenges: enter a drawing to win an **iPod Nano**; complete 26-37 challenges: enter a drawing to win an **iPod Mini**; complete all 38 challenges: enter a drawing to **win an iPad**. There are three prizes to give away at each challenge level, so your chances of winning are good!

The first booth you visited

The Career Center
A company representative
at your favorite
exhibit booth
Roundtable
Cell and Tissue
Keynote
speakers
An ASCB staff member
You and a friend at the
meeting
Elevator
speech
contest

...You get the picture.



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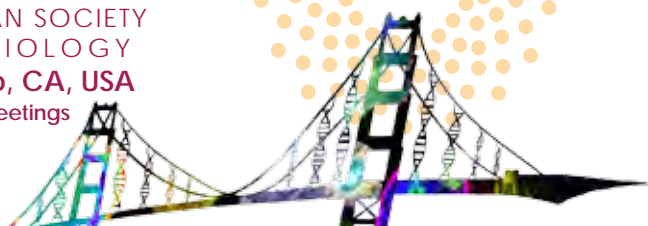
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2012 ANNUAL MEETING

THE AMERICAN SOCIETY
FOR CELL BIOLOGY

San Francisco, CA, USA

www.ascb.org/meetings



December 15–19, 2012 | Ron Vale, President | Tony Hyman, Program Chair

Annual Meeting Schedule By Day

M Cell Biology and
Medicine

P Intersection of
Cell Biology and
the Physical
Sciences

SATURDAY, DEC. 15 Special Interest Subgroups

12:30 pm–5:00 pm

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

M P **A. A Physical and Mechanical Perspective to
Understanding the Emergence and Progression
of Cancer**
Organizers: Sean Hanlon, National Cancer Institute/
NIH; and Nastaran Kuhn, National Cancer Institute/NIH

M P **B. Aneuploidy: Causes and Consequences**
Organizer: Daniela Cimini, Virginia Tech

M **C. Axonal Transport: Mechanisms of Regulating
Cargo Transport in Neuronal Development,
Maintenance, and Disease**
Organizers: Erika Holzbaur, University of Pennsylvania;
and Sandya P. Koushika, Tata Institute of Fundamental
Research, Mumbai, India

**D. Beyond Border Control: Nuclear Pores, the
Nuclear Envelope, and the Rest of the Cell**
Organizers: Mary Dasso, National Institute of Child
Health and Human Development, NIH; and Yuh Min
Chook, University of Texas Southwestern Medical
Center at Dallas

P **E. Building the Cell**
Organizer: Wallace Marshall, University of California,
San Francisco

M P **F. Connexins, Innexins, and Pannexins: Roles
for Gap Junctions and Intercellular Channels in
Cell Signaling**
Organizers: Viviana Berthoud, University of Chicago;
and Michael Koval, Emory University

P **G. Counting Molecules in Cells: Insights into
Structures and Mechanisms**
Organizers: Vladimir Sirotkin, SUNY Upstate Medical
University; and Jian-Qiu Wu, The Ohio State University

P **H. Cytoskeletal Dynamics and Their Role in
Cellular Form and Function**
Organizers: Adriana Dawes, The Ohio State University;
and Arpita Upadhyaya, University of Maryland,
College Park

I. Endocytosis and Signal Transduction
Organizers: Guangpu Li, University of Oklahoma
Health Sciences Center; and Sandra Schmid,
University of Texas Southwestern Medical Center at
Dallas

M P **J. Entry, Exit, and Movement of Proteins within the
Cilium: The Transition Zone (TZ) and Ciliary Tip**
Organizers: Joel Rosenbaum, Yale University; Jeremy
Reiter, University of California, San Francisco; and
Maxence Nachury, Stanford University

K. Evolutionary Cell Biology
Organizer: Ursula Goodenough, Washington University
in St. Louis

M **L. Exosome and Microvesicles**
Organizers: Stephen Gould, Johns Hopkins University;
and Doug Taylor, University of Louisville

P **M. Frontiers in Cytokinesis**
Organizers: Julie Canman, Columbia University; and
Amy Maddox, University of Montreal

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

M P **O. The Cellular and Molecular Basis of Metastatic
Disease**
Organizers: Laura Machesky, The Beatson Institute for
Cancer Research, UK; and Mark McNiven, Mayo Clinic

P **Interdisciplinary Session**
12:30 pm–5:00 pm
**Open Problems in Biology Requiring the Physical
Sciences**

Visit www.ascb.org/meetings
to view full
descriptions,
speaker lists,
and schedules
for each
subgroup
session. Just
click on
“Program,”
then “Scientific
Program.”



Keynote Symposium

6:00 pm

Steven Chu,
U.S. Secretary of
Energy

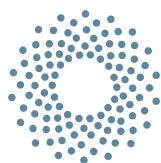


**How the Physical
Sciences Are
Changing Cell
Biology and
Biomedical
Sciences**

Arthur D. Levinson,
Chairman of
Genentech, Inc., and
Apple, Inc.



**The Science and
Culture Behind
Successful Cancer
Therapeutic
Development**



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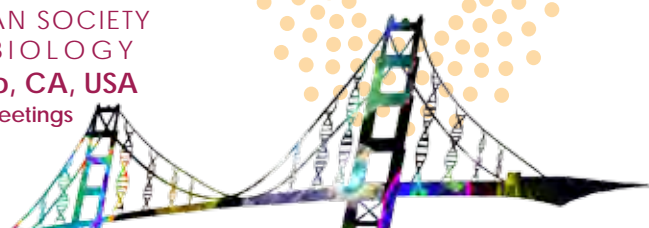
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SUNDAY, DEC. 16

Symposium

8:00 am–9:30 am

M **P** Cell Fate Decisions

Hans Clevers, Hubrecht Institute, The Netherlands
Tariq Enver, UCL Cancer Institute, University College,
London, UK

Frontier Symposium

10:30 am–12:00 Noon

M Cell Biology and Medicine

Susan Lindquist, Whitehead Institute for Biomedical Research
and Massachusetts Institute of Technology/HHMI
Anne O'Garra, MRC National Institute for Medical Research,
Mill Hill, London, UK
Joseph Schlessinger, Yale University School of Medicine

M Panel Discussion

4:30 pm–6:35 pm

**Sense and Reproducibility: The Problem
of Translating Academic Discovery to
Drug Discovery**

Minisymposia

4:30 pm–6:35 pm

M Cancer Cell Biology

Cristina Lo Celso, Imperial College London, UK
Jeffrey Settleman, Genentech, Inc.

M **P** Cell Mechanics and Intermediate Filaments

Harald Herrmann, German Cancer Research Center,
Heidelberg, Germany
Sarah Köster, Georg-August-University Göttingen, Germany

M Cell Migration and Motility

Marianne Bronner, California Institute of Technology
John Condeelis, Albert Einstein College of Medicine

Integrated Research and Teaching and Its Benefits to Faculty and Students

David Botstein, Princeton University
Karen Kalumuck, Exploratorium

P Molecular Motors

Vladimir Gelfand, Northwestern University Feinberg School of
Medicine
Kathleen Trybus, University of Vermont, Burlington

P Regulation/Organization of the Genome

Daniela Rhodes, Nanyang Technological University,
Singapore, and MRC Laboratory of Molecular Biology
Cambridge, UK
David Sherratt, University of Oxford, UK

P Signal Transduction/Signaling Networks

Fumiyo Ikeda, Institute of Molecular Biotechnology, Austria
Galit Lahav, Harvard Medical School

M Stem Cells and Induced Pluripotency

Margaret Fuller, Stanford University School of Medicine
Marius Wernig, Stanford University School of Medicine

M Cell Biology and
Medicine

P Intersection of
Cell Biology and
the Physical
Sciences

MONDAY, DEC. 17

Symposium

8:00 am–9:30 am

M New Model Systems for Cell Biology

Lawrence S.B. Goldstein, University of California, San Diego,
School of Medicine
Nicole King, University of California, Berkeley
Alejandro Sánchez Alvarado, Stowers Institute/HHMI

Frontier Symposium

10:30 am–12:00 Noon

P Applying Physics, Engineering, Computation to Cell Biology

William Bialek, Princeton University
Margaret Gardel, University of Chicago
Rob Phillips, California Institute of Technology

Minisymposia

4:30 pm–6:35 pm

Autophagy, Self Renewal, and Cell Death

Ana Maria Cuervo, Albert Einstein College of Medicine
Feroz Papa, University of California, San Francisco

M Cell Biology of Neurodegeneration

Don Cleveland, University of California, San Diego
Morgan Sheng, Genentech, Inc.

P Cell Division

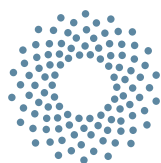
Daniel Gerlich, Institute of Molecular Biotechnology of the
Austrian Academy of Sciences, Austria
Gohta Goshima, Nagoya University, Japan

M **P** Cell-Cell and Cell-Matrix Interactions

Joan Brugge, Harvard Medical School
Viola Vogel, ETH Zurich, Switzerland

Remember!

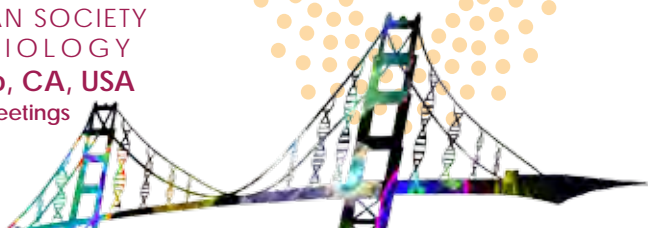
You don't have to present a poster to attend/register
for the meeting. ■



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M Cell Biology and
Medicine

P Intersection of
Cell Biology and
the Physical
Sciences

Intracellular Sorting and Trafficking

Wanjin Hong, Institute of Molecular and Cell Biology,
Singapore
Anne Spang, Biozentrum, University of Basel, Switzerland

P **Microtubule Organization and
Dynamics**

Elizabeth C. Engle, Children's Hospital Boston/Harvard
Medical School/HHMI
Luke Rice, University of Texas Southwestern Medical Center

M **P** **Physical and Computational Tools for
Cell Biology**

Adam Cohen, Harvard University
Jan Liphardt, University of California, Berkeley

P **Working Group: From Histograms to
Animations: Effective Visualization
Makes Complex Data Clear**

Janet Iwasa, Harvard Medical School
Graham Johnson, University of California, San Francisco

TUESDAY, DEC. 18 Symposium

8:00 am–9:30 am

M **Prokaryotic Communities**

Bonnie Bassler, Princeton University/HHMI
Lora Hooper, University of Texas Southwestern Medical Center
at Dallas/HHMI
Dianne K. Newman, California Institute of Technology/HHMI

Frontier Symposium

10:30 am–12:00 Noon

Synthetic Biology

Jay D. Keasling, University of California, Berkeley, and
Lawrence Berkeley National Laboratory
Wendall Lim, University of California, San Francisco/HHMI
Laurie Zoloth, Northwestern University Feinberg School of
Medicine and Weinberg College of Arts and Sciences

Minisymposia

4:30 pm–6:35 pm

M **Cell Biology of Regeneration**

Rachel Roberts-Galbraith, University of Illinois, Urbana-
Champaign
Curtis Thorne, University of Texas Southwestern Medical Center
at Dallas

Cell Biology of the Neuron

Wieland B. Huttner, Max Planck Institute of Molecular Cell
Biology and Genetics, Germany
Fumio Matsuzaki, RIKEN Center for Developmental Biology,
Kobe, Japan

P **Cell Polarity**

Yves Barral, ETH Zurich, Switzerland
Stephan Grill, Max Planck Institute of Molecular Cell Biology
and Genetics, Dresden, Germany

M **Cellular Stress, Protein Folding, and
Disease**

Nancy M. Bonini, University of Pennsylvania/HHMI
Andy Dillin, Salk Institute for Biological Studies/HHMI

P **Micro- and Coding RNA**

Cliff Brangwynne, Princeton University
Tracy Johnson, University of California, San Diego

M **Molecular Basis of Infectious Disease**

Norma Andrews, University of Maryland, College Park
Pascale Cossart, Institut Pasteur, France

P **Organelle Structure and Vesicle
Formation**

Elizabeth Conibear, University of British Columbia, Canada
Richard A. Kahn, Emory University School of Medicine

M **Working Group: New Technologies in
Proteomics**

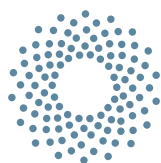
Pieter Dorrestein, University of California, San Diego

International Research & Training Exchange Fair

Want to learn about research and training in other countries? Want to meet cell biologists from around the world while enjoying the Opening Reception? Then come join us at the International Affairs Committee International Research & Training Exchange Fair, Saturday, December 15, 2012, 8:00–9:30 pm in Moscone Center Hall E.

WICB Awards Presentation and Mentoring Theater

Come join us for the Women in Cell Biology (WICB) Committee-sponsored Awards Presentation and Mentoring Theater, on Sunday, December 16, at 2:30 pm. After WICB Junior and Senior Awards are presented to Sophie Martin and Marianne Bronner, respectively, watch the fun as Sandy Schmid, Randy Schekman, and others take to the stage on the topic "Mentoring: Things You Weren't Taught in Grad School." Don't miss the skits, the laughs, and the opportunity to ask questions!



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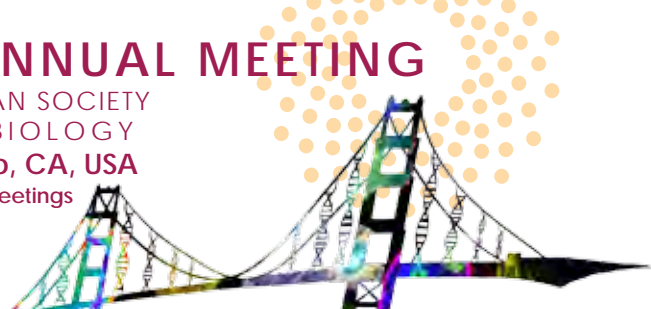
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WEDNESDAY, DEC. 19

Minisymposia

8:30 am–10:35 am

P

Actin Organization and Dynamics

Enrique M. De La Cruz, Yale University

Ann Miller, University of Michigan, Ann Arbor

P

Cell Growth and Cell Cycle Control

Sue Jaspersen, Stowers Institute for Medical Research

Jan Skotheim, Stanford University

P

Development and Morphogenesis

Carl-Philipp Heisenberg, Institute of Science and Technology
Austria, Austria

Ichiro Nishii, Temasek Life Sciences Laboratory, Singapore

M

P

Membrane Organization and Lipid Dynamics

Vytas A. Bankaitis, Texas A&M Health Science Center

Margarida Barroso, Albany Medical College

P

Nuclear Structure and Function

Kerry Bloom, University of North Carolina, Chapel Hill

Anne Villeneuve, Stanford University School of Medicine

P

Prokaryotic Cell Biology

Michael Thanbichler, Max Planck Institute for Terrestrial
Microbiology

Ethan Garner, Harvard Medical School

P

Working Group: New Technologies in Imaging

Catherine Galbraith, National Institute of Child Health and
Human Development/NIH

Eva Nogales, University of California, Berkeley/HHMI

M

Working Group: New Technologies in Molecular Biology/Genetics

L. Stirling Churchman, Harvard Medical School

A. Francis Stewart, BioInnovationsZentrum, TU Dresden,
Germany

M

Cell Biology and
Medicine

P

Intersection of
Cell Biology and
the Physical
Sciences

Symposium

11:00 am–12:00 Noon

Chromatin Dynamics

Barbara Meyer, University of California, Berkeley/HHMI

Kim Nasmyth, University of Oxford, UK

Search the app store for the
ASCB Annual Meeting app!



Congratulations to Michelle Mattson,
University of California, Irvine, who
won the drawing for a free registration
to the meeting for completing the
2011 Annual Meeting survey!

New This Year! Keynote and Art Exhibit Open to the Public

If you know people in the San Francisco Bay Area who would be interested in attending the Keynote Symposium, they can register online at www.ascb.org/meetings. ■

Acknowledgement

The ASCB appreciates the creativity and hard work of the following members who put together an outstanding program for the 2012 ASCB Annual Meeting: Tony Hyman (Chair), Ron Vale (Co-Chair), Christine Jacobs-Wagner, Juergen Knoblich, Ira Mellman, Samantha Reck-Peterson, Peter Sorger, Elizabeth Sztul, Julie Theriot, Fiona Watt, and Ginger Zakian. ■

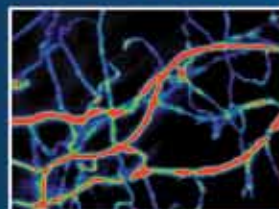
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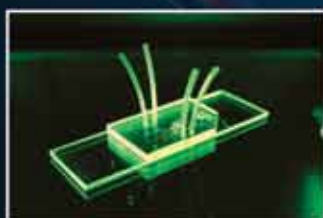


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Case Study

	Candidate A	Candidate B
Well Plate Static Assay		
SynVivo Dynamic Assay		
Actual in vivo Response		

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GRANTS & OPPORTUNITIES

A list of current grant and other opportunities can be found at www.ascb.org/GandO.html. The following items were added since the last issue of the *Newsletter*:

Eppendorf Young Investigator Award 2013. This prize acknowledges outstanding contributions to biomedical research in Europe based on methods of molecular biology, including novel analytical concepts. Researchers working in Europe and younger than 35 years are invited to apply. Application deadline: January 15, 2013. www.eppendorf.com/award.

National Science Foundation Division of Integrative Organismal Systems Updated Solicitation for Core Programs (NSF 13-506). The core programs covered under this solicitation support research aimed at understanding why organisms are structured the way they are and function as they do. Areas of inquiry include, but are not limited to, developmental biology and the evolution of developmental processes; nervous system development, structure, and function; physiological processes; and functional morphology. Deadline for preliminary proposals: January 18, 2013. www.nsf.gov/div/index.jsp?div=IOS.

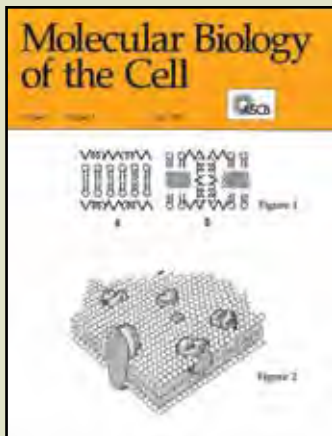
National Science Foundation Division of Molecular and Cellular Biosciences (MCB): Investigator-Initiated Research Projects. The MCB supports quantitative, predictive, and theory-driven fundamental research and related activities designed to promote understanding of complex living systems at the molecular, subcellular, and cellular levels. MCB is soliciting proposals for hypothesis-driven and discovery research and related activities in four core clusters: molecular biophysics, cellular dynamics and function, genetic mechanisms, and systems and synthetic biology. Application deadlines: January 30, 2013; November 15, 2013. www.nsf.gov/pubs/2013/nsf13510/nsf13510.htm. ■

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An MBoC 20th Anniversary Favorite

In celebration of the first 20 years of Molecular Biology of the Cell (MBoC), members of the Editorial Board, members of the ASCB Council, and others comment on their favorite MBoC papers from the past two decades.

Here Thomas D. Fox, Cornell University, comments on:



Nunnari J, Marshall WF, Straight A, Murray A, Sedat JW, Walter P (1997). Mitochondrial transmission during mating in *Saccharomyces cerevisiae* is determined by mitochondrial fusion and fission and the intramitochondrial segregation of mitochondrial DNA. *Mol. Biol. Cell* 8:1233–1242

Because there is true equality of the sexes in *Saccharomyces cerevisiae*, the inheritance of its mtDNA after zygote formation is more complex than mtDNA inheritance in most larger eukaryotes. Early genetic studies showed that mitochondria fuse after mating, and their mtDNAs recombine. In this paper, Nunnari *et al.* brought these phenomena, and more, into clear focus by studying labeled mitochondrial proteins and mtDNA microscopically in real time. The authors saw mitochondrial proteins mix rapidly after mating, while mtDNA movement was restricted, suggesting mtDNA is anchored to and guided by cellular components outside the organelles. They observed fission and fusion, and obtained stereo pictures of the dynamic tubular network that effectively constitutes a single mitochondrial compartment. In retrospect, the paper marks the transition between studies based primarily on the non-Mendelian genetics of mtDNA, and current studies integrating mitochondrial behavior into our overall views of dynamic cellular phenomena.

This and other MBoC 20th Anniversary Favorites have appeared in the journal throughout 2012. ■

Postdocs/Grad Students

Do you want to

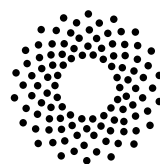
Organize a One-Day Local Meeting?

**ASCB Financial
Support Available**

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

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

Next Deadline for Applications:
February 1, 2013



THE AMERICAN SOCIETY
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Stefano Bertuzzi

It was the best of results. And then, a day later, it was the worst. Stefano Bertuzzi, the new Executive Director of the ASCB, was looking back on his postdoc days in the neurobiology lab of Greg Lemke at the Salk Institute in La Jolla, CA, remembering a formative moment in his scientific life. Bertuzzi has always been an early riser, and with a dawn flight to Washington, DC, for a big developmental biology meeting, he thought nothing of rolling out at 4:00 am to stop by the lab and check on his clones. His wife, Elena Bisagni, was used to his routine, although she'd once complained that when she married a molecular biologist, she hadn't realized that he kept fireman's hours, rising at all hours to answer freezer alarms. This morning, Bertuzzi was off to check the recombinant stem cell clones that he hoped would reveal the function of a novel homeodomain gene he had discovered a few months earlier. Until Bertuzzi held the developed X-ray to the light, he wouldn't know whether the recombinant was there at a high enough frequency to give him good chances of generating a mouse model for the disrupted new gene. On this morning, the X-ray was a beauty. Bertuzzi let himself into the darkened office of his PI and taped the X-ray to Lemke's computer screen with an exuberant note, quoting from Puccini's *Turandot*, "Before dawn, I will win!" Today after so many years in the United States, Bertuzzi's native Italian metaphors have morphed into American baseball metaphors. Describing that promising morning, Bertuzzi is precise: "Bases loaded. No outs."

A day later, Bertuzzi felt like he'd hit into a triple play. He was at his meeting by then, sitting back, a little jet-lagged, for the plenary address by Peter Gruss, a Max Planck Institute director then (and president of the Max

"Peter's about to wrap up his talk," Bertuzzi recalls, "when suddenly he says, 'And we have found a new gene which we think represents a whole new homeodomain class.' And he shows the amino acids. I knew the sequence of my homeodomain by heart, and it was exactly the same. It was the worst three seconds of my life."



Stefano Bertuzzi

Planck Society today). "Peter's about to wrap up his talk," Bertuzzi recalls, "when suddenly he says, 'And we have found a new gene which we think represents a whole new homeodomain class.' And he shows the amino acids. I knew the sequence of my homeodomain by heart, and it was exactly the same. It was the worst three seconds of my life." Gruss showed the expression pattern of the gene. It was identical to Bertuzzi's. Gruss then described a null phenotype affecting development of the optic disk, nerve, and stalk. "My vision blurred, and for a few minutes I could not see the screen anymore," says Bertuzzi.

He staggered back to his room. Some time later,

Bertuzzi roused himself to track down Lemke at a conference in Athens, Greece. Many hotel desk messages and a fax later, Lemke came to the phone. Bertuzzi remembers pouring out his tale of disaster. "I didn't give him a chance to talk until finally Greg said, 'Stefano, calm down. This is not an opera.'"

Greg Lemke doesn't remember the opera reference, but the Athens phone call is still

vivid. Any scientist would be distressed to see unpublished work scooped in public on someone else's slides, says Lemke. "All I remember emphasizing to Stefano was that this was only the first step in the process, and the next step would be a more important story. And this turned out to be true."

You never know where the science is going. Back in La Jolla, Bertuzzi recovered his poise and threw himself into exploring the gene that the Gruss lab had named Vax. Bertuzzi generated his own Vax-knockout mouse and analyzed the Vax protein's role in axonal guidance. Every working day, Bertuzzi expected "his" story to turn up in a major journal, compliments of the Gruss lab. Yet nothing appeared. When Bertuzzi was ready to submit, Lemke contacted Gruss, learning that the Gruss lab had only just finished their paper. The two labs submitted back-to-back Vax papers for joint publication. Soon after, the Gruss lab changed directions, says Lemke, and it fell to his lab and the one Bertuzzi established in Italy to complete the downstream analysis of the Vax gene family.

The Vax Story

The Vax story is still unfolding, says Lemke. The Vax1-knockout mouse that Bertuzzi developed is now used to model craniofacial defects, pinpointing genetic predispositions for cleft palate. In humans, newly discovered mutations in Vax-family genes have been linked to canonical Wnt signaling in development.

You never know where your story is going in science. It took Bertuzzi from the small northern Italian city of Piacenza, where he grew up, to the big Italian city of Milan, where he began graduate school. It took him to America for his thesis experiments at the National Institutes of Health (NIH). His postdoc took him to Southern California. His Vax gene papers led to a start-up offer from the new Dulbecco Telethon Institute in Milan. Science brought him back to NIH in 2005 as a staff scientist in the National Institute of Neural Disorders and Stroke (NINDS). A year later came a new twist. Bertuzzi moved from the bench to the policy shop in Building One's Office of the NIH Director. In 2011, Bertuzzi moved across the NIH campus as director of the Office of Science Policy, Planning, and Communications at the National Institute of Mental Health (NIMH). And now the story has turned yet again with Bertuzzi's move to ASCB.

Yet those who know Bertuzzi from the lab or from NIH policy shops don't seem all that startled. Lemke says, "I wasn't completely

surprised. Stefano has always had strong interests in how the scientific enterprise is organized and managed in different countries. With his experience at the bench and from running his own lab, Bertuzzi has the background. He knows a lot about science, and he certainly knows a lot of cell biology."

Lana Skirboll, now at Sanofi, was policy director in the Office of the NIH Director when Bertuzzi first arrived. Skirboll thinks running ASCB may be right up his alley because it will mix what Bertuzzi already knows about science and science policy with what he doesn't know about nonprofits like ASCB. "Stefano is always curious, always ready to learn something new," says Skirboll. "Once he's learned it, he's incredibly good at putting things together in new ways. That's what makes him a great scientist, and now I think it's what drew him to the Society."

Says Skirboll, "The perfect job for Stefano, if it existed in the U.S., would be as a scientific diplomat." Bertuzzi understands the culture of science, has the skills to engage nonscientists in discussion, and has enormous energy, which may be perfect for ASCB. "But you'll have to run to keep up with him," Skirboll adds.

A Classical Education

Keeping up with Bertuzzi has never been easy. His father, Dante Bertuzzi, who never finished high school, and his mother, Maria Pia Lodigiani, a high school teacher, sent Stefano to the *liceo classico* in Piacenza, where Latin and Greek were always regarded as the steely core of a quality education. But it was at the *liceo* that Bertuzzi turned from dead languages to dead animals. He credits his science *professoressa*, Giusepina Silva, who ignored her minority status as a biology teacher in a classical high school to teach whatever attracted her curiosity. This included fruit fly genetics. She wrote to the University of Pavia for *Drosophila* samples, and Bertuzzi still remembers the package, covered in dozens of stamps, with the stoppered glass fly tubes inside. They set up a breeding program and tried to replicate Thomas Hunt Morgan's eye color experiments. "This was unheard of in any school in Italy at the time, let alone a *liceo classico*," says Bertuzzi. "She totally lit the fire for me. We were centrifuging leaves to extract chlorophyll. We would go along the street gathering grass and culturing paramecia from the drainage water. This speaks to the power of education and what a person could do for someone like myself who had a mild interest in science but was certainly not set on a career in it."

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At 18, a burning desire and a coherent career plan are not always compatible, so Bertuzzi was persuaded to study something “practical”—agricultural science at the Piacenza campus of the Catholic University of the Sacred Heart, in Milan. The curriculum grounded him in basics, including microbiology, light microscopy, and anatomical dissection. That led to the cat incident. He was driving home late one night after seeing his girlfriend (and present wife—they have been together since they were 16) when, as he puts it, “I ran over a cat. Or rather I should say that the cat ran into my car while I was driving because when I stopped to see what had happened, the cat didn’t have a single broken anything. But he was dead. So I took him home and put him in a plastic bag, intending to dissect him the next day.” Being “a brainless teen,” Bertuzzi forgot about the cat. “One day my mom opened the freezer and together with the tortellini and all the other good things, she found the cat. She thought it was some kind of threat, and I had to convince her that it was me.”

From dead cats to live cells, Bertuzzi’s interests now turned toward molecular biology and a new doctoral program at the Catholic University’s central facility in Milan. He soon outran the program’s capabilities when he showed his advisor, Vittorio Bottazzi, a copy of *Nature* with Richard Palmiter’s paper on transgenic animals.¹ This is what I want to do, Bertuzzi declared. Bottazzi was candid. No one in Italy then was doing transgenics, and though there might be transgenic labs elsewhere in Europe, Bertuzzi’s best bet would be the United States. His best option turned out to be Heiner Westphal’s genetics lab at the National Institute of Child Health and Human Development, where Bertuzzi arrived in 1992, newly wed and trying to live on an Italian fellowship of 15 million lira (about \$7,000).

From day one, Bertuzzi loved America and NIH. He loved the scientists, the facilities, and the well-stocked supply closets. “I was like a kid in the candy shop,” he recalls. He loved going to the lab at 3:00 am, walking past the lights of other night owls. When he was accepted for the Salk postdoc, Bertuzzi and Bisagni rented the smallest Penske truck and packed their meager furniture and Bertuzzi’s back issues of *Cell* to set out on an unforgettable westward trek. In La Jolla, Bertuzzi took up surfing, storing his board in a Salk stairwell. Bisagni also flourished, entering a doctoral program in econometrics at the University of California, San Diego (UCSD).

When the Dulbecco Telethon appointment surfaced, they were torn. The institute represented a fresh start for basic research in Italy, but Bisagni was apprehensive about her career prospects, even in Italy’s financial capital, Milan. But they went. The institute and Bertuzzi’s lab were soon “going gangbusters,” but his wife’s worst fears were realized, he says. “We forgot two things. First, Elena has two X chromosomes, and second, her field was finance, which in Italy is totally male dominated.” Bisagni ended up at the European Central Bank in Frankfurt, commuting by air every week. One Monday morning, Bertuzzi dropped her off at the airport, drove to work, and was sitting in his office when a colleague leaned in to report that a fatal runway collision had occurred.

Bisagni’s plane turned out to be the last to take off safely, but they read the omens. America once again seemed the more promising land, especially when a former UCSD economics professor headhunted Bisagni for an economic forecasting firm on Washington’s well-connected K Street. Now Bertuzzi became the commuter, flying over the Atlantic to a one-week-a-month virtual sabbatical at NINDS. In 2004, with their first baby, Davide, on his way, Bertuzzi made the hard call, resigning his tenured Telethon post and closing his lab. The prospect was now that of setting up a lab in the United States, securing funding, and finding students. Bertuzzi says, “I really felt that I had already seen that movie.” Then in conversations with Lynn Hudson, a bench scientist who was moving to the Office of the Director to do science policy analysis, Bertuzzi caught the scent of something intriguing. Science policy was “love at first sight,” Bertuzzi recalls. “I never missed the lab for one second. I was embarrassed by my reaction. I felt disloyal.”

Policy Shop Talk

Most outsiders don’t understand what NIH means by science policy, explains Tom Insel, the NIMH director now in mourning as Bertuzzi’s former boss. “At NIH when we talk about someone who is in a policy office, it’s usually someone who is responding to all the demands for information from Congress, the White House, and the public,” says Insel. That’s important, but Bertuzzi showed Insel a different approach. It came in a “job talk” that Bertuzzi gave the NIMH search committee. As Insel remembers it, Bertuzzi began with a slide of a waterfall. That’s the flood of information requests that pour down on NIH policy shops, Bertuzzi told them. Insel says, “Stefano said that

Bertuzzi is probably the only Nationals season ticket holder whose previous season tickets were for La Scala, Milan’s legendary grand opera house.

his concept of policy is that it should not be 90% of the job but 50%, and then he showed a slide of a fountain. “This is what we need to do: We need to be creating information so we can be proactive and innovative.”

Bertuzzi sees a proactive future for ASCB. His metaphor for the scientific enterprise is an ecological system, with the universities, Congress, patient advocacy groups, and the pharmaceutical industry all filling niches. Only scientific societies like ASCB are in a position to worry about the health of a specific field in the ecosystem. “Professional societies are the best poised of all these groups to shape the field they operate in, by pushing toward the big questions, by highlighting gaps in knowledge and new opportunities, and by putting forward innovative ideas. For ASCB, it is about cell biology and basic science. We have to safeguard this complex ecosystem, especially during tight budgetary times, by demonstrating to funding agencies, Congress, industry, and all other stakeholders just how central cell biology is to the larger scientific enterprise,” says Bertuzzi.

Bertuzzi, Bisagni, and their two children live in a house in Chevy Chase, MD, right on the District of Columbia line. Davide, now eight years old, is in the second grade. His three-year-old sister, Celeste, who just started preschool, was adopted at birth from the “exotic location of Washington, DC,” says her father. Bertuzzi always regretted being an only child but also explains that “Elena and I wanted to adopt an American child because

we are adopted ourselves. This country adopted us and we have done very well here, so this is just one way we can give back.”

Another American adoption is Bertuzzi’s passion for baseball and the Washington Nationals, for which he blames Davide entirely. “My son is a complete baseball addict. He dreams baseball and he drew me into this and then my wife. He is contagious.” The Bertuzzis have it bad. “After attending the Nationals’ catastrophic defeat by the Cardinals in the playoffs,” he recalls, “the four of us could not utter a word in the car on the way back home. We felt we were returning from a funeral service.” Bertuzzi is probably the only Nationals season ticket holder whose previous season tickets were for La Scala, Milan’s legendary grand opera house.

While the Nats go into winter hibernation, Bertuzzi will open his new season as Executive Director at the ASCB Annual Meeting in San Francisco this December. Bases loaded.

No outs. ■

—John Fleischman

Reference

¹ Palmiter RD, Brinster RL, Hammer RE, Trumbauer ME, Rosenfeld MG, Birnberg NC, Evans RM. (1982). Dramatic growth of mice that develop from eggs microinjected with metallothionein-growth hormone fusion genes. *Nature* 300, 611–615.

Did You Know...?

- You have free access to ASCB’s quarterly online journal *CBE—Life Sciences Education (LSE)*. It publishes peer-reviewed articles on life sciences education research and evidence-based practice at the K–12, undergraduate, and graduate levels.
- The *LSE* Editorial Board believes that biology learning encompasses diverse fields, including math, chemistry, physics, engineering, and computer science, as well as the interdisciplinary intersections of biology with these fields.
- One goal of the journal is to encourage teachers and instructors to view teaching and learning the way scientists view their research, as an intellectual undertaking that is informed by systematic collection, analysis, and interpretation of data related to student learning.
- The 2012 Winter issue is now online. Check out the table of contents on page 21 of this issue of the *Newsletter* or at www.lifescied.org/content/11/4.toc. ■

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MEETINGS Calendar

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

January 10–12, 2013. Albuquerque, NM

Understanding Cell Behavior through Single Cell and Single Molecule Biology. <http://stmc.health.unm.edu/understanding-cell-behavior-through-single-cell-and-single-molecule-biology/index.html>.

June 5–7, 2013. Barcelona, Spain

Second Workshop on Educational Approaches for Integrating Bioinformatics into Computer and Life Science (at the International Conference on Computational Science). www.iccs-meeting.org/iccs2013.

ASCB Annual Meetings

December 15–19, 2012. San Francisco

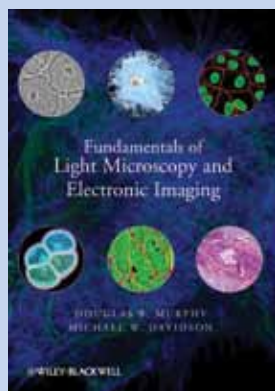
December 14–18, 2013. New Orleans

December 6–10, 2014. Philadelphia

December 12–16, 2015. San Diego

December 3–7, 2016. San Francisco

BOOKS by Members



Fundamentals of Light Microscopy and Electronic Imaging, by Doug Murphy and Michael Davidson, published by John Wiley & Sons, ISBN 978-0-471-69214-0

ASCB Member Comments

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

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University Oversight of Faculty Consulting

Dear Labby,

Can you offer advice about a university's oversight of outside consulting by its faculty? I am a surgeon but also have a joint appointment in our cell biology department, and a colleague there who is a member of ASCB encouraged me to write to you. I want to do a study for a surgical device company and I am negotiating my consulting agreement. Most of the issues have been resolved, but my institution wants 60 days to review any manuscript from the study whereas the company is insisting on only 30. This strikes me as a minor issue, but my institution is digging in its heels. I was ranting about this in the hallway the other day, and this led my colleague to encourage me to calm down and seek your advice. Is this not a trivial issue?

—Consultant

Dear Consultant,

It is not a trivial issue, although it should not compromise getting an agreement between you and the company. The first thing to be said is that your institution is not a legal party to your consulting agreement. However, your institution can legally require that you enter into this agreement only under terms that are consistent with the policies of the institution. Often this is accomplished by the institution requiring that a rider be incorporated into the agreement that sets forth certain terms. For example, your institution can require that if you make an invention while consulting for the company, the company and your institution will seek to determine the relative roles of the three parties (you, your institution, and the company) in the inventive act. These riders guarantee no rights to any party but simply assert that the parties agree to discuss the claimed invention. Through such riders are also set forth other terms such as the right to review manuscripts reporting company-sponsored research, which is what you have asked about.

Bear in mind that pressure from the company to publish rapidly might be linked to its stock position (or to an initial stock offering if the company is not already publicly traded). Your institution may be seeking 60 days because it envisions that several people may need to look at the manuscript, such as members of an oversight committee, a research integrity officer, or other officials whose schedules may compromise a 30-day turnaround. Finalizing these deals rarely, if ever, hinges on the timeline of manuscript review, so you may want to hang with your institution on holding out for 60 days.

I have one last piece of advice should this consulting arrangement be signed and the manuscript-review clause triggered. (It may not be, because much company-sponsored research is not published and this too is something you need to bear in mind going into this.) After you read the final submitted version of a manuscript (and you should demand to see the actual proofs), be sure to read the published version to be certain that nothing was changed or added by the company after you saw the proofs. This is your final verification that the process has met the standards of the profession of science, viz. seeking and reporting the truth. ■

—Labby

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—Thea Clarke

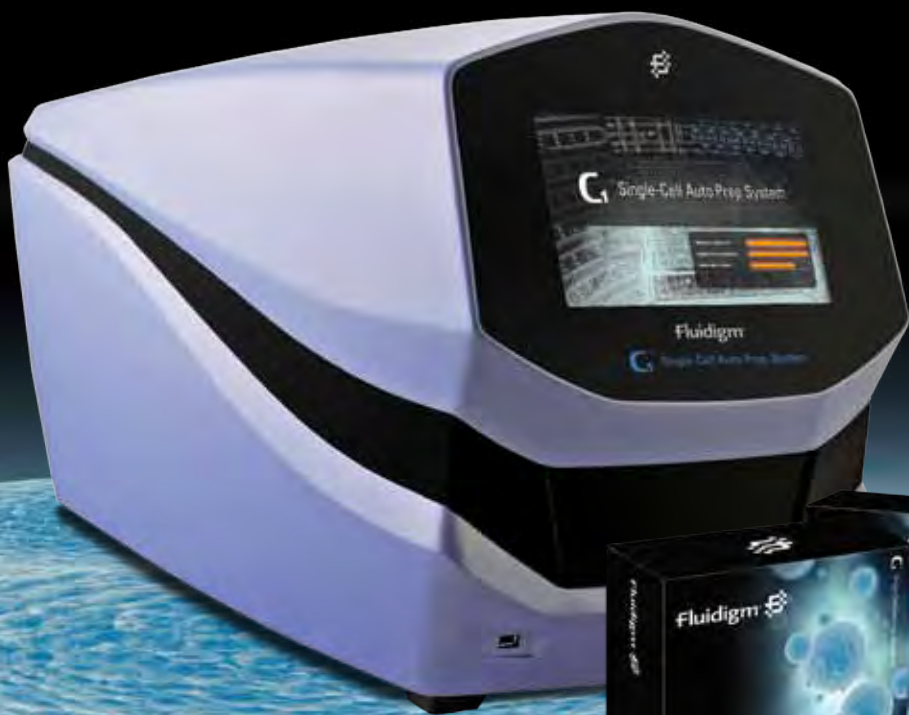
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