

ASPB News



THE NEWSLETTER OF THE AMERICAN SOCIETY OF PLANT BIOLOGISTS

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January/February 2012

Inside This Issue

Mike Blatt, University of Glasgow, has been named the next editor-in-chief of *Plant Physiology*. He will succeed Don Ort in 2013. See story on page 9.

Plant Biology 2012—Join us in Austin!

Workshop in Nairobi Brings Together Scientists from 14 African Countries

Robert Rabson Award Recognizes Contributions by Young Investigators



Steve Huber

President's Letter

Teaching Tools in Plant Biology— They're Not Just for Educators!

The broad mission of ASPB is to encourage and publish research in plant biology and to promote the interests and growth of plant scientists in general. With respect to publishing research, the Society is best known for its two major journals: *Plant Physiology* (<http://www.plantphysiol.org>) and *The Plant*

Cell (<http://www.plantcell.org>). Both are internationally recognized as top-tier plant journals. However, ASPB also publishes and copublishes a number of other products (http://my.aspb.org/?page=P_Index) that are attuned to our overall mission.

The most recent addition to the publications portfolio is *Teaching Tools in Plant Biology* (TTPB),

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Teaching Tools
in Plant Biology™
ideas to grow on

ASPB Awards and Elected Offices

You Know Outstanding Candidates—Resolve to Nominate Them Today!

It's hard to believe, but it's that time of year again. For those of us who make New Year's resolutions, the list undoubtedly will contain items from last year, along with one or two that are new for 2012. If it is not already on your list, I would challenge you to add "explore new opportunities with ASPB" in the coming year. Several possibilities are listed here,

but one of particular note and importance is to participate in the search for candidates for elected leadership positions in the Society. Another is to help identify candidates for the awards that will be given this year at Plant Biology 2012 (http://my.aspb.org/?page=Meetings_PB2012) in Austin, Texas.

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The *ASPB News* is delivered online as well as in print. Members will be alerted by e-mail when a new issue is posted. The *ASPB News* welcomes member feedback. Contact the editor at nancyw@aspb.org.

ASPB Executive Committee & Staff

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Deadline for May/June 2012
ASPB News: April 5, 2012

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Plant Biology 2012

Austin, Texas July 20-24

THE ANNUAL MEETING OF THE AMERICAN SOCIETY OF PLANT BIOLOGISTS

2012 Meeting Highlights

- Major symposia by leading plant biologists
- Minisymposia highlighting research from submitted abstracts in core and new ideas
- Posters featuring research of interest to you and your students
- Talks by ASPB awardees
- Workshops covering new developments in science and technology
- Education and career development sessions

Austin, Live Music Capital of the World[®], to Host Plant Biology 2012

Five New Features for Plant Biology 2012!

1. **Free Wi-Fi:** The Austin Convention Center has complimentary wireless throughout the facility and is one of the most advanced centers in the United States—7,000 computers have been used at the convention center at the same time.
2. **More networking opportunities:** This year's program is designed to facilitate opportunities for more interaction with your peers, including lots of conversation space and a chance to dine with colleagues with similar research interests. Colleagues from the University of Texas will have an information booth to provide you with details about where to find cheap eats and other activities around town.
3. **Career information center and luncheon:** During lunchtime on Saturday, July 21, you'll have the opportunity to post your resume, check out available jobs, chat with leaders in the field, and meet with companies that have current openings—all in the Exhibit Hall.
4. **Abstracts and program information available on your smartphone or tablet:** If you don't want to carry your program book around this year, you will be able to access the information on a smartphone or tablet.
5. **Child care:** Efforts are being made to provide an on-site child care service. However, if this is not possible, attendees will be able to apply for a grant from ASPB to subsidize child care costs.

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PHOTO BY ANDY SCHRADER



Austin
LIVE MUSIC CAPITAL OF THE WORLD[®]





Plant Biology 2012

Austin, Texas July 20-24

THE ANNUAL MEETING OF THE AMERICAN SOCIETY OF PLANT BIOLOGISTS

2012 Major Symposia Topics and Speakers

Martin Gibbs Symposium: Plant Biology Clock

Organizer: Steve Kay, University of California, San Diego

Speakers: Rob McClung, Dartmouth College; Todd Mockler, Danforth Plant Science Center; John Mullet, Texas A&M University

Metabolism

Organizer: Mark Stitt, Max-Planck Institute of Molecular Physiology

Speakers: Kazuli Saito, RIKEN Plant Science Center; Katja Bäerenfelder, ETH Zurich; Lars Nielsen, AIBN University of Queensland

Sensing, Signaling, and Response to Environmental Stress

Organizer: Julia Bailey-Serres, University of California, Riverside

Speakers: Dirk G. Inze, VBI Ghent University; Ronald Pierik, Utrecht University; Ron Mittler, University of North Texas

Translational Plant Biology

Organizers: Roger Beachy, Danforth Plant Science Center and Washington University

Speakers: Daphne Preuss, Chromation, Inc., formally at University of Chicago; Maud Hinchee, ArborGen; Norm Lewis, Washington State University; Yafan Huang, Performance Plants, Inc.

President Symposium: Receptor Kinase Signaling and Post-translational Modifications

Organizer: Steve Huber, University of Illinois at Urbana-Champaign

Speakers: Steve Clouse, North Carolina State University; Cyril Zipfel, The Sainsbury Laboratory; Iris Finkemeier, LMU Munich; Bill Plaxton, Queen's University



© DAN HERRON



Got a Workshop Idea?

The Program Committee welcomes proposals for workshops for the 2012 Plant Biology meeting. The selection of workshops will be based on the anticipated level of interest in the topic and the availability of time in the schedule. ASPB will provide assistance in logistical arrangements (identifying a space and time). However, all costs associated with the workshop are the responsibility of the workshop sponsors. ASPB will assess a reasonable administrative fee to cover staff time devoted to assistance in scheduling the workshop. Parties interested in proposing a workshop should contact Jean Rosenberg at ASPB (jean@aspb.org) to obtain an estimate of costs associated with running a workshop. The Program Committee would appreciate receiving proposals by the end of February. However, events requiring tickets must be finalized earlier, before the end of January, so that ticketing can be added to the registration form. Please note that all workshop organizers are requested to conduct a post-workshop survey to determine the number of attendees and assess the success of the workshop. A template survey will be provided to the organizers if the workshop is approved by the Program Committee.

Proposals received after February 29, 2012, might be considered for the subsequent annual meeting if space is not available. Please submit workshop proposals to the Program Committee at http://my.aspb.org/workshop_proposal.

Why Austin? Seven Things You'll Love!

- 1. Music mania:** Sixth Street, the city's most famous entertainment district, is a short walk (two blocks from the convention center and your hotel). This well-known location is always hopping with live music. After all, Austin is the "Live Music Capital of the World"™!
- 2. All-access Austin:** When you are in Austin, you will have exclusive discounts at local restaurants, retail stores, and live music venues just by showing your badge.
- 3. Austin food carts:** Austin loves food carts and so will you. These street eats are good and save you cash. Austin's moveable feast serves everything from dogs to pho and some very famous cupcakes. You can keep track of them by checking out their location and when they are open, as well as what kind of food they serve, at <http://austinfoodcarts.com>.
- 4. A little batty:** Austin is home to North America's largest urban bat population, with up to 1.5 million Mexican free-tailed bats roosting under the Congress Avenue Bridge from April through November. The bridge is just a short walk from our meeting location.
- 5. Recreation:** You can picnic al fresco on benches on the downtown lakeside or at Zilker Park. You can jog, walk, bike, or just relax and unwind at the Barton Springs Pool, which is open year-round.
- 6. It's green as green can be:** Austin has twice been awarded the EPA's first-place national award for recycling all its yard trimmings and biosolids. The Austin airport was built in part using recycled steel. The Austin Convention Center is powered by renewable energy and will soon become LEED certified.
- 7. Getting there is easy:** The Airports Council International named Austin's airport the "Best Domestic Airport" in the United States. Live music greets you when you arrive, and the airport is easy to navigate. There are 400 domestic and international flights each day at the Austin Bergstrom Airport, but you also can reach the city by train from Chicago. 🌱

Help Your Students Put Down Roots Provide Them with Membership in ASPB!

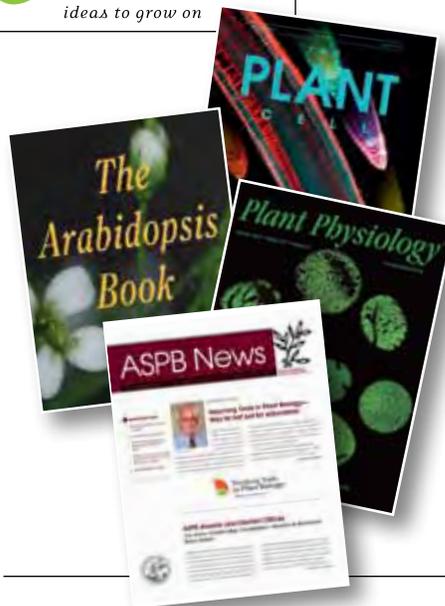
Have you thought about sponsoring your graduate students' ASPB membership? If you submit their membership applications with your membership fee (if you are not already renewed for 2012), you will receive a \$5 discount on the membership fee for each student you sponsor. All you have to do is fill out the forms and send them to us with payment.

Why provide ASPB membership to your students?

Graduate students are the future of plant biology; if we get them involved now, they are more likely to stay involved throughout their career.

Membership offers many benefits to your students

- The online Career Center, which provides students with information about jobs in the field, the member-only ability to post their resume, and links to other career resources
- Online networking tools through the ASPB website
- Free online access to two world-class journals: *The Plant Cell* and *Plant Physiology*



- Reduced registration rates for the annual meeting, where students can gain experience by presenting their work, take workshops that will help them as they become professional scientists, and network with other students and scientists from around the world
- Access to travel grants to support attendance at the annual meeting
- The bimonthly *ASPB News* and monthly *Member Chatter* e-mail, which keep members up-to-date on Society happenings
- Opportunities to volunteer in the Society

Membership is as important to students as it is to professional scientists. In the words of one of ASPB's student ambassadors (<http://my.aspb.org/ambassadors>):

ASPB gives a wonderful opportunity to better understand the different aspects of plant science and cutting-edge technologies through its publications, The Plant Cell and Plant Physiology. It also provides extraordinary support from the plant science community in the form of forums and blogs. [For] a PhD student, it is very important to become aware of the nature of current work in relation to plant science by sharing experiences and information and by networking. For all of these, ASPB is the most suitable platform.

—Prateek Tripathi
South Dakota State University

Give your students roots so that they can grow to become an integral part of the plant biology community. 🌱

Teaching Tools in Plant Biology
continued from page 1

an innovation of *The Plant Cell*. TTPB was developed by Cathie Martin, editor-in-chief of *The Plant Cell*, with Mary Williams, features editor for *The Plant Cell* (and recipient of last year's ASPB Excellence in Education Award), and is supported by ASPB staff members (especially Patti Lockhart and Susan Entwistle). Launched in 2009 (1), TTPB is a collection of university-level teaching materials on specific topics; Tools can be easily accessed through the ASPB website or either of the journal

home pages. Each of the TTPB topics is peer reviewed, many Tools are written in conjunction with experts in the area, and all are updated regularly. As the name implies, one intended use of the Tools is to help busy educators as they develop course objectives and prepare lecture and discussion content.

“My original objective in initiating TTPB was to provide scientists who occasionally taught (like myself) with reliable, up-to-date information on a range of topics in plant biology,” says Cathie Martin. “I wanted to remove that feeling of despair I felt every year in coming to review my lectures, always belatedly, about where to find concise summaries of the most recent advances in the field.”

However, Tools can also be used as a starting point for tutorials and self-paced inquiry-based learning; by graduate students preparing for preliminary examinations; and by researchers at all levels who are moving into new areas and want a broad and up-to-date introduction to unfamiliar topics. “We include a broad overview of the topic alongside more challenging materials so that

each individual or instructor can find the level that best suits his or her needs,” says Mary Williams.

Although the Tools are gaining in popularity and visibility, there are still many ASPB members who are not familiar with this valuable resource, and I hope that at least a portion of that target audience might be reading this article. Accessing TTPB is easy: institutions that subscribe to *Plant Physiology* and *The Plant Cell* have access to the Tools, and individual ASPB members do as well.

Teaching Tools are a professionally created and readily accessible teaching and informational resource for educators, students, and researchers. Beginning with broad topical coverage, each Tool contains a comprehensive PowerPoint slide deck along

with accompanying pedagogical enhancements, including a set of lecture notes and recommended readings. Reflecting ASPB's strong interest in promoting effective pedagogical approaches, many

Tools also provide a teaching guide with a topic overview, discrete learning objectives, and study/exam questions; these guides can be readily adapted for team-based learning strategies. The first Tool produced was “Why Study Plants?” (<http://www.plantcell.org/site/teachingtools/TTPB1.xhtml>), and it is an engaging introductory lesson for general audiences. Subsequent topics include studies on leaf development, small RNAs, epigenetics, each of the major hormones, and plants' interactions with other organisms. “TTPB has become much more than I originally envisaged,” says Cathie Martin.

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— Cathie Martin

“We include a broad overview of the topic alongside more challenging materials so that each individual or instructor can find the level that best suits his or her needs.”

— Mary Williams

“The Tools bring research much closer to the classroom, and I believe that some of the excitement associated with research breakthroughs is conveyed through the descriptions and interpretations of groundbreaking experiments. TTPB will contribute to inspiring more students to adopt plant biology as their major and also recruit more students to take up research in plant biology, especially as they realize the significance of research on plants to the major challenges to society in the 21st century.”

The most recent addition to the collection is “Intimate Alliances: Plants and Their Microsymbionts” (<http://www.plantcell.org/site/teachingtools/TTPB19.xhtml>), which was prepared with Ulrike Mathesius. This comprehensive topic considers symbiotic relationships with bacteria involved in nitrogen fixation and mycorrhizal fungi that facilitate nutrient uptake. Like the other Tools, this topic includes many interesting observations that nonspecialists (like me) probably do not recognize or appreciate. For example, many are familiar with the *Rhizobium* symbiosis, but did you know that *Sesbania rostrata* makes stem nodules as well as root nodules? Thus, the same bacterium uses two modes of infection on the same plant—fascinating! Likewise, many are generally aware that nodulation is autoregulated by the balance between supply and demand for reduced nitrogen, but do you recall that this regulation involves a CLAVATA1-like receptor kinase that acts in the shoot? This information is presented in the context of shoot–root signaling controlling this important process. Finally, although we tend to hear about several model legumes, did you know that there are more than 20,000 legume species? As asked in the concluding “ongoing studies” section of this Tool, what insights might we learn as we begin to explore this diversity? As described by Mary Williams, “Our students are tomorrow's scientists, who need to move from knowledge assimilators to knowledge creators. As teachers, our task is to show them not only what we know, but also what we don't know—the world of discoveries that is waiting for them.”

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Teaching Tools in Plant Biology™

ideas to grow on

“ TTPB has become much more than I originally envisaged. The Tools bring research much closer to the classroom, and I believe that some of the excitement associated with research breakthroughs is conveyed through the descriptions and interpretations of groundbreaking experiments. TTPB will contribute to inspiring more students to adopt plant biology as their major and also recruit more students to take up research in plant biology, especially as they realize the significance of research on plants to the major challenges to society in the 21st century. ”

— Cathie Martin

Mary Williams

Features editor, *The Plant Cell*; honorary fellow, University of Glasgow

I've been teaching plant biology since 1995 and involved with ASPB in its mission to promote interest and enthusiasm for plant biology for 10 years. As a professor, my goal in teaching was to help students recognize that plants are amazing and important, and I was encouraged to always see on my course evaluations the comment “I never knew plants were so interesting!” For me, teaching is largely about finding ways to leverage students' own interests, whether they focus on problem solving, environmental concerns, or human health. In writing the Teaching Tools, I try to include some experimental studies, some applications, and some connections between topics, any one of which might help to engage a subset of students.

My background is broad and includes experimental studies in biochemistry, cell biology, and genetics and more than 25 years as a plant biologist, but of course I need to learn a huge amount about each topic we cover. I find that this works to my advantage, because as a learner I can more easily identify concepts that are challenging for the neophyte, and through my effort to understand material find ways to explain it to others. The project has been greatly enhanced by the contributions of excellent coauthors. The generous efforts of the expert peer reviewers, who prior to publication fix mistakes and point out omissions, are invaluable. (Thank you!)



www.plantcell.org/site/teachingtools/teaching.xhtml

<http://www.facebook.com/pages/Teaching-Tools-in-Plant-Biology/175851565771129>

<http://my.aspb.org/members/group.asp?id=66589>

Cathie Martin

Editor-in-chief of *The Plant Cell*; theme leader at the John Innes Centre, Norwich, UK, and professor at the University of East Anglia

My research interests span from fundamental to applied plant science. I'm particularly interested in cellular specialization in flowers (color and cell shape) and how these traits are used by different plants for pollinator attraction. Recently I've been coordinating research into the relationship between diet and health and how crops can be fortified to improve diets and in developing genetic screens to identify crops that lack toxins that cause nutritional diseases, such as konzo.

I'm the editor-in-chief of *The Plant Cell*, through which I have been promoting new features in scientific publishing, including *Teaching Tools in Plant Biology*, and I'm a coauthor of the undergraduate-level textbook *Plant Biology*, published by Garland Science (2009).



Teaching Tools in Plant Biology
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We touch on this briefly through the 'ongoing studies' section and also structurally. Because Teaching Tools are electronic resources, they work well as portals through which students and instructors can pursue material more deeply, for example, through links to research or review articles. Furthermore, in the Teaching Guides we include open-ended discussion topics to prompt further inquiry and analysis."

Although Teaching Tools were originally targeted toward Research 1 university-level educators, students, and scientists, the Society is beginning to explore whether they may be of use at community colleges, four- and six-year institutions, and even high schools. As the target audience expands, it will be critical to receive comprehensive input in terms of scientific topics while also considering the operational aspects of product development and marketing for and to a global audience. To this end, the Society is establishing an international Scientific Advisory Board to guide development of new topics, and a subgroup of the newly formed Business Development Committee (see <http://aspb.org/newsletter/septoct11/02carpita6.cfm>) will explore the business-related aspects. We are also establishing a "Power User Group" comprising educators who are actively using the Tools in their teaching and who will share their experiences and feedback with us so that we may further improve TTPB. If you are interested in the possibility of becoming a Power User, please contact Mary Williams (mwilliams@aspb.org). If you'd prefer to sim-

ply stay in touch and receive notification of the publication of new Tools, consider join-

“ Our students are tomorrow’s scientists, who need to move from knowledge assimilators to knowledge creators. As teachers, our task is to show them not only what we know, but also what we don’t know—the world of discoveries that is waiting for them. We touch on this briefly through the ‘ongoing studies’ section and also structurally. Because Teaching Tools are electronic resources, they work well as portals through which students and instructors can pursue material more deeply, for example, through links to research or review articles. Furthermore, in the Teaching Guides we include open-ended discussion topics to prompt further inquiry and analysis. ”

— Mary Williams

established in 1924, continues to evolve and expand to provide products that serve its members and the broader interests of plant science. This is the sort of Society of which I am proud to be a member!

ing the more than 140 people who are already part of ASPB's online community group, which is open to anyone with interest in the Tools (<http://my.aspb.org/group/teaching-tools>). Finally, there is a Facebook site for users to interact easily and that also provides links to many useful resources for teaching. Teaching Tools will become an increasingly important resource in the future, and we welcome your feedback and suggestions for improvement.

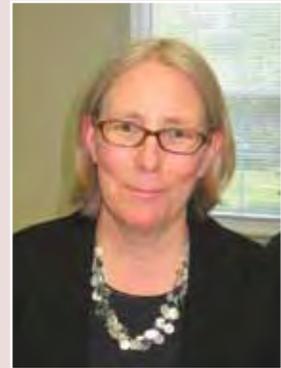
Teaching Tools are not just for instructors, and I encourage everyone to see what they can offer you. The Tools are a good example of how the Society, since it was

Steve Huber
ASPB President
schuber1@life.uiuc.edu

Reference

1. Martin, C. (2009). Introducing a new feature in the *The Plant Cell*: Teaching Tools in Plant Biology. *Plant Cell* 21 (9):2541.

Some of the ASPB Staff Who Help Bring You Teaching Tools



Patti Lockhart
Managing Editor, *The Plant Cell*
and *Plant Physiology*

Patti recently joined ASPB and has spent 18 years in the publishing industry. She enjoys the evolving nature of publishing and likes the fact that the ASPB journals are leaders in this changing world. In her spare time, she enjoys travel and sampling spicy foods from around the world.



Susan Entwistle
Production Manager, *The Plant Cell*

Susan has been with ASPB for seven years and has over 20 years' experience in print and electronic publications management. When not blogging about quilting or other creative pursuits, Susan can be found dreaming about walking warm beaches searching for sea glass.

Plant Physiology Names Michael Blatt as Next Editor

University of Glasgow Plant Biologist Will Succeed Don Ort in January 2013

ASPB has appointed Michael R. Blatt, PhD, FRSE, as the next editor-in-chief of its primary research journal *Plant Physiology*.

Mike is the Regius Professor of Botany and Head of Plant Sciences within the Institute of Molecular, Cell, and Systems Biology at the University of Glasgow. He is a Guggenheim fellow; a fellow of the Royal Society of Edinburgh, Scotland's national academy of sciences; and a fellow of the James Hutton Institute. He holds a dual BSc with honors in biochemistry and botany from the University of Wisconsin–Madison and a PhD in biological sciences from Stanford University. He is currently a deputy chair of the editorial board of the *Biochemical Journal*, an editorial adviser for the *Journal of Experimental Botany*, and a member of the editorial panel for *Frontiers in Plant Traffic and Transport*.

Mike is especially interested in continuing to develop the journal's use of new technologies to ensure that it supports and embraces the way plant scientists work today. "I am convinced that *Plant Physiology* will strengthen its leading position in the field if it is able to take early advantage of the most far-reaching elements of online delivery," he

told the search committee in announcing his interest in the position.

"Mike brings energy and vision to the journal, and we are excited about the opportunities he brings to the journal for growth in new directions," says Sally Mackenzie, chair of the Editor Search Committee and the ASPB Publications Committee. ASPB President Steve Huber also expressed enthusiasm for Mike's selection, noting that "Mike brings strengths that will perpetuate *Plant Physiology* as a leading journal in the plant sciences in the years to come."

Mike will work closely with current chief editor Don Ort over the next year to ensure a smooth transition for the journal. Don, who is plant physiologist and research leader with the Global Change and Photosynthesis Research Unit of the U.S. Department of Agriculture's Agricultural Research Service and Robert Emerson Professor in Plant Biol-



Mike Blatt

ogy and Crop Sciences at the University of Illinois at Urbana–Champaign, has served as editor since 2005.

Plant Physiology is a monthly, international, peer-reviewed journal devoted to the physiology, biochemistry, cellular and molecular biology, genetics, biophysics, and environmental biology of plants. It was founded in 1926 and has risen to become one of the world's most prominent plant biol-

ogy journals, with a five-year impact factor of 7.016. It is the most highly cited plant science journal, garnering nearly 56,000 citations in 2010. Additional information about *Plant Physiology* can be found at its website (<http://www.plantphysiol.org>), Facebook page (<http://www.facebook.com/PlantPhysiology>), and Twitter feed (<http://twitter.com/PlantPhys>). 🌿

ASPB Executive Committee Nominations

Nominations for elected positions are now being accepted on the ASPB website (<http://www.aspb.org/awards/nominate>). The nomination deadline is March 1, 2012.

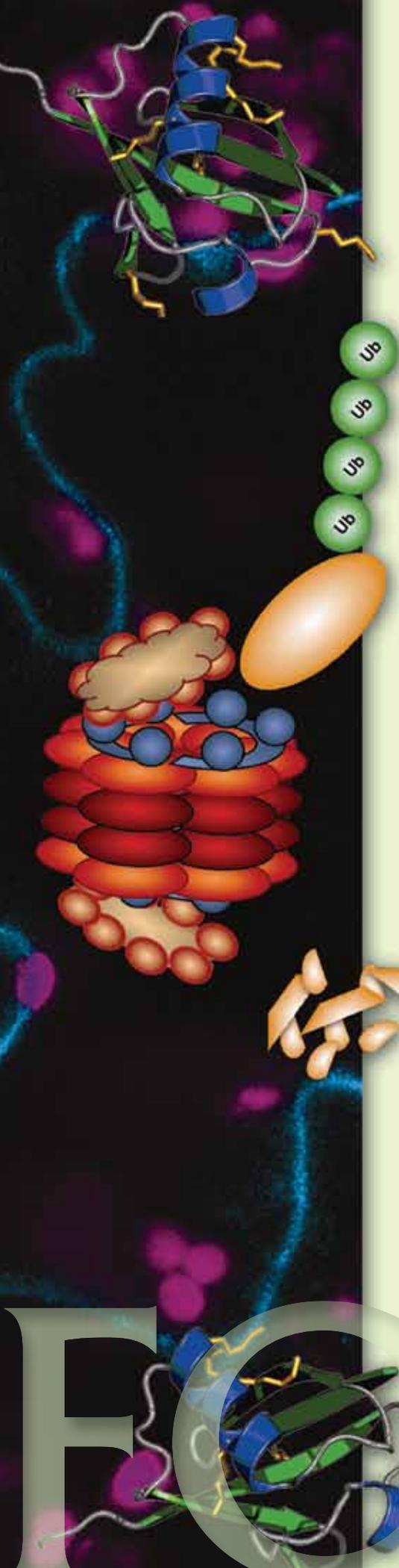
Each nomination matters! The larger the group of nominees submitted, the greater the value and meaningfulness of the ASPB election process.

To nominate someone for the office of president-elect, secretary-elect, or elected member of the Executive Committee, please visit our website (<http://www.aspb.org/excomvoting/nominate>).

Please note: The website will not allow you to submit an online nomination if you have previously opted to nominate by

paper. If this is the case, please look for your paper nomination form to arrive in the mail shortly.

Stay tuned for notices about voting for the individuals nominated for elected positions on the Executive Committee. 🌿



CALL FOR PAPERS

Plant Physiology[®] Focus Issue on Ubiquitin in Plant Biology

Deadline for Submission: May 1, 2012

To submit an article, please go to <http://submit.plantphysiol.org/>.

Plant Physiology is pleased to announce a Focus Issue on Ubiquitin in Plant Biology to be published in September 2012. The issue will be edited by Vitaly Citovsky and Bonnie Bartel. Research article submissions on the roles of ubiquitin or ubiquitin-like modifiers in all aspects of plant biology are welcome, including development and morphogenesis, hormonal and environmental responses, chromatin remodeling and histone modifications, and plant–pathogen interactions. The issue also will include invited updates on areas of recent progress.

Authors interested in contributing should indicate this in the cover letter when submitting papers online at <http://submit.plantphysiol.org>. Please select “Ubiquitin in Plant Biology (September 2012)” from the Focus Issue list in the online submission system. Articles published within 2 years before and after the Focus Issue will be considered for inclusion in an online Focus Collection of articles relevant to the focus topic.

Please contact Vitaly Citovsky (vitaly.citovsky@stonybrook.edu) or Bonnie Bartel (bartel@rice.edu) for additional information.

FOCUS

ASPB International Committee–Sponsored Workshop in Nairobi Brings Together Scientists from 14 African Countries

The world's population will soon pass 7 billion people and is expected to reach more than 9 billion by the year 2050. Today, nearly 1 billion people, primarily in developing countries, are undernourished—a number that will only increase as world population rises. Further compounding this situation, the annual rate of growth in global yields of maize, rice, wheat, and soybean continue to decline, dropping 25%–80% since 1990 compared to the period from 1961 to 1990. Additionally, there are other, more subtle issues associated with food insecurity, particularly in developing countries. More

than 2 billion people in developing countries suffer from micronutrient malnutrition, such as iron, zinc, and vitamin A deficiencies. For these people, plant-based foods are the primary components of their diets, and these food crops are traditionally poor sources of bioavailable micronutrients. It is likely we are approaching a world food crisis that will need to be addressed, in part, by expanded and more efficient investment in agricultural research.

Even though we are the *American Society of Plant Biologists*, the Society is increasingly becoming international in some of its

missions; 40% of ASPB's members are from countries outside the United States. ASPB is starting to think globally and is taking a lead role in collaborating with other plant science societies and institutions to find solutions to global issues that impact the future of our world and humanity, including the world food crisis in developing countries. This effort includes ASPB's leadership role in establishing the Global Plant Council of plant science societies (<http://globalplantcouncil.org>) and leadership in organizing the recent Plant Biology Research Summit. As part of

continued on page 12



Plant Molecular Breeding Workshop Participants, Nairobi, 2011.

Front row (l to r): Eastonce Gwata (South Africa), Victoria Anjichi (Kenya), Richard Akinwale (Nigeria), Theresa Fulton (USA), Dramane Sako (Mali), and Asfaw Adugna (Ethiopia). Back row (l to r): Akande Sikirat Remi (Nigeria), Alex Barekye (Uganda), Hubert Adoukonou Sagbadja (Benin), Dickson Ligeyo (Kenya), Miccah Seth (Tanzania), Soumana Souley (Niger), Festus Massoquoi (Sierra Leone), Leon Kochian (USA), Sharon Mitchell (USA), Lucky Omoigui (Nigeria), Ousmane Boukar (Cameroon), Esther Arunga (Kenya), Paul Asare (Ghana), Barbara Hufnagel (Brazil), and Khaled Khaled (Egypt). Not pictured: Xavier Mhike (Zimbabwe) and Sam Gudu (Kenya).

these global efforts, ASPB recently reorganized and reconstituted its International Committee to focus on the identification and sponsorship of outreach activities linking ASPB and its members and adherents with developing countries, with an initial focus on sub-Saharan Africa. The first of these ASPB International Committee efforts was to organize and conduct a plant molecular breeding workshop that provided training to crop scientists from sub-Saharan Africa to take advantage of recent advances in plant genomics and genetics to use molecular markers and genome data to facilitate plant breeding.

This initial ASPB International Committee cosponsored (with the Consultative Group on International Agricultural Research's [CGIAR's] Generation Challenge Programme; <http://www.generationcp.org>) workshop was titled "New Tools in Molecular Breeding" and was held November 15–18 in Nairobi. The workshop was organized and run by Theresa Fulton and Sharon Mitchell from the Institute of Genomic Diversity at Cornell University. They were assisted by Barbara Hufnagel, a PhD student in ASPB International Committee member Juran-dir Magalhaes's lab at Embrapa Maize and Sorghum, Brazil, and Leon Kochian, chair of the International Committee, who both also lectured at the workshop. Thanks to the African Crop Science Society disseminating information about the workshop in their newsletters, nearly 200 scientists from 23 countries in Africa applied. Participants were selected on the basis of having at least some prior molecular experience (this was not meant to be an introductory course), their capacity to collaborate, and their letter of application, in which they were asked to state how this course would be useful to them.

Eighteen participants were selected from 14 countries (Benin, Cameroon, Egypt, Ethiopia, Ghana, Kenya, Mali, Niger, Nigeria, Sierra Leone, South Africa, Tanzania, Uganda, and Zimbabwe) and included three women scientists. The venue chosen was the BecA hub (BioSciences of eastern and central Af-

rica) in Nairobi. Located together with offices of many of the international CGIAR centers, including the International Maize and Wheat Improvement Center (CIMMYT), the International Institute of Tropical Agriculture (IITA), and the International Livestock Research Institute (ILRI), the hub offers excellent facilities, including a computer lab, for training courses. Workshop mornings were spent in seminars and discussions on topics such as molecular breeding strategies, genetic mapping, and genome-wide association mapping. Afternoons were spent in the computer lab with hands-on practical activities, which included learning free software programs, finding publicly available online resources, and more. Participants also enjoyed a tour of the BecA hub laboratory and greenhouse facilities.

Because the authors of this newsletter article were actively involved in organizing the workshop, our objectivity can be brought into question; nonetheless, we feel the workshop was a tremendous success. The participants were active and engaged. The coursework was very well received, and the evaluations from the workshop participants were positive. The evaluation comments included the following:

"I am indeed very grateful to you and your wonderful team. I have learned so much from you that the memory will last long. My expectation was high when coming, and I was not disappointed. You have enriched my knowledge."

"Thank you for all you did to make this workshop very successful; it really is that kind of support that Africa's national research system needs."

Furthermore, a number of the workshop participants have already contacted us since they returned home to discuss how to integrate what they learned at the workshop into their research programs.

In addition to the International Committee's goal of contributing to the training of African scientists, we certainly also hope that we are encouraging research collaborations between African scientists and those in

developed countries and, as a fringe benefit, increasing African scientist participation in ASPB. Sam Gudu, an ASPB (and International Committee) member in Kenya, was at the workshop and shared with the participants the many benefits of being a member of ASPB. We also have set up an ASPB group page for the course participants that will serve as a place for questions and discussion while also providing additional information about ASPB.

The ASPB International Committee now plans on building on this successful first step through active follow-up with the participants of this workshop and the planning of other similar types of outreach activities with scientists from developing countries. One important goal of these efforts is to promote linkages between scientists from developing countries and ASPB members from the United States and other developed countries, which can eventually give rise to collaborative research projects that benefit both developing and developed nations. 🌱

Leon Kochian
USDA-ARS Cornell University

Theresa Fulton
Cornell University

CORRECTION

In the November/December 2011 issue of the *ASPB News*, the following committee list was incomplete. Printed below is the complete list.

Charles Albert Shull Award

Ralph S. Quatrano, Chair (12)
Sean Cutler, Past Winner (12)
Sam Zeeman (13)
Gail Mclean (14)
Ray Zielinski (14)

The Robert Rabson Award for Contributions in the Field of Bioenergy

We are happy to announce that in 2012, ASPB will present the first Robert Rabson Award, which is to be given for exceptional contributions in the field of bioenergy by a young investigator. This award is made possible thanks to a generous donation that Bob and his wife, Eileen, made to ASPB, and with the added support of the many ASPB friends whose careers



Bob Rabson

Bob fostered. The Rabson Award is a fitting honor to Bob as one who championed research on the central role plants play in capturing solar energy into the largest storage form of carbon on Earth: the plant cell wall.

Bob, a microbiologist, has always been a strong advocate for plant biology. Begin-

ning in his early days with the Atomic Energy Commission, the forerunner to the Department of Energy (DOE), Bob saw the development of a sustained and vibrant community funded by DOE as an essential strategy to drive bioenergy research. Bob provided foundational support to advance bioenergy science through the DOE's Basic Energy Sciences program, which he led for

many years, and his example has inspired the leadership that follows to this day. An exceptional advocate of plant biology as well as a longtime and committed ASPB member, Bob served as the Society's treasurer from 1989 to 1991, as a member of the Board of Trustees, and on the Publications Commit-

tee. Winner of ASPB's Gude Prize in 1986 for his leadership, Bob is also an inaugural ASPB fellow.

The Rabson Award recognizes postdocs and faculty-level early career scientists, whether or not members of the Society, in academic, government, and corporate research institutions who have made excellent contributions in the area of bioenergy research. The award, which is made biennially, is a monetary award that also provides a one-year membership in the Society. As with the other awards that ASPB will be making in 2012, nominations are open now. The nomination process is quick and easy, so please take some time to nominate those who you think may particularly deserve to receive the first Robert Rabson Award. 🌿

ASPB–Pioneer Hi-Bred Graduate Student Fellowship *Nominations Due by Thursday, March 1*

The ASPB–Pioneer Hi-Bred Graduate Student Fellowship, made possible by the generosity of Pioneer Hi-Bred, recognizes and encourages innovative graduate research and innovation in areas of plant biology that relate to important commodity crops, including corn, soybeans, rice, wheat, or canola. One \$22,000 fellowship will be given annually from

2010 through 2013, with an additional \$1,000 awarded for the recipient to attend the ASPB annual meeting in the year of their award. Each nominee must attend a U.S.-accredited college or university and must demonstrate interest in the study of plant biology or a related discipline. Each nominee must be a PhD candidate (have successfully passed their prelimi-

nary examinations), must demonstrate an excellent academic record (have achieved undergraduate and graduate GPAs of 3.5 or greater), and must be a member of ASPB. An individual may receive this fellowship only once.

Applications are now being accepted. Go to <http://www.aspb.org/awards/nominate>. 🌿

ASPB Awards and Elected Offices
continued from page 1

It is imperative that as ASPB members we recognize the strengths and contributions of our fellow members, whether by nominating them for leadership roles or by nominating them for awards that honor their accomplishments. This is important not only for ASPB, but also for the individual members that the Society recognizes in these ways, and I encourage you to participate in the process.

On the leadership side, we will be voting this year for a president-elect, secretary-elect, and an elected member of the Executive Committee. But first, we will need nominees for each of these positions. All ASPB members can contribute by nominating a colleague for each position. The final election ballot will have two candidates for each position—one individual selected on the basis of nominations received from the membership (i.e., you!) and the other selected by the Nominations Committee. For a complete description of the duties of each position, please consult the ASPB Constitution (http://my.aspb.org/?page=G_Constitution). In brief, the president-elect serves a three-year term (the first as president-elect, the second as president, and the final year as past president). Each of these years entails distinct duties and responsibilities. The president, of course, provides leadership to the Society and presides over the Executive Committee and the annual meeting. The secretary functions mainly as chair of the Program Committee, which plans the annual meeting. The Executive Committee maintains the activities of the Society and acts on all matters not reserved to the Society's membership. It is composed of ex-officio members, chairpersons of the standing committees, representatives from each of the regional ASPB sections, and three elected members. Who do you know that would make an excellent candidate for president-elect, secretary-elect, or elected

Executive Committee member?

Importantly, we are also embarking on the annual recognition of individuals who have excelled in research, education, outreach, and service through the numerous awards offered by the Society (http://my.aspb.org/?page=AF_Awards). These are detailed elsewhere in this issue, but in brief, awards to be offered in 2012 for established scientists include the Charles Reid Barnes Life Membership Award, the Stephen Hales Prize, the Charles F. Kettering Award, the Corresponding Membership Award, the Lawrence Bogorad Award, the Dennis Robert Hoagland Award, the Excellence in Education Award, and the Fellow of ASPB Award. Awards for younger investigators include the Robert Rabson Award (for post-docs and faculty-level early career scientists), which is being offered for the first time in 2012; the Charles Albert Shull Award (for those younger than 45 years of age); and the Early Career Award (for those less than

five years post-PhD). New this year for both of the time-sensitive awards is that career breaks will be considered when addressing the specified age limits. Which of your colleagues might be well qualified for one of these awards? Why don't you nominate them this year?

Finally, please note that there are two important opportunities to recognize and encourage excellent students. Graduate students can be nominated for the ASPB–Pioneer Hi-Bred Graduate Student Fellowship, and undergraduate students can apply for the Summer Undergraduate Research Fellowship.

Think about your colleagues and associates who might be appropriate for one of these opportunities, and be sure to submit a nomination. I encourage you to add this to your list of resolutions for 2012.

Steve Huber
ASPB President
schuber1@life.uiuc.edu

	Elected Positions	Awards*
Nominations opened	January 3, 2012	January 3, 2012
Nominations close	March 1, 2012	March 1, 2012
Election begins	April 10, 2012	n/a

* Please note: SURF applications opened on December 1, 2011, and will be accepted through February 24, 2012.

This year I will...

- Eat more vegetables
- Get that grant!
- Explore new opportunities with ASPB, including
 - Join a Community Group (http://my.aspb.org/members/group_select.asp)
 - Nominate colleagues for elected office (<http://www.aspb.org/excomvoting/nominate>)
 - Nominate colleagues for awards (<http://aspb.org/awards/nominate>)
- Volunteer
- Check out Teaching Tools in Plant Biology (<http://www.plantcell.org/site/teachingtools/teaching.xhtml>)
- Send an e-card (<http://www.aspb.org/ecards>)
- Vote in the elections



Members in the News

Jiayang Li, a recipient of ASPB's Corresponding Member Award in 2011 (http://my.aspb.org/?page=AF_Awards#corr), has been appointed president of the Chinese Academy of Agricultural Sciences (CAAS) and vice minister of the Ministry of Agriculture of China. CAAS has more than 10,000 staff members and 39 research institutes located throughout China. Jiayang's research has focused on understanding the molecular mechanisms underlying plant architecture and starch biosynthesis in rice. Jiayang has also been recognized



Jiayang Li

for his outstanding contributions to plant research in the United States, where he was elected as a foreign associate to the National Academy of Sciences in 2011. Prior to his recent appointments to CAAS and the Ministry of Agriculture of China, Jiayang served as vice president of the Chinese Academy of Sciences since 2004.

Gary Tallman received the 2011 Medical Foundation of Oregon Mentor Award for his commitment to mentoring undergraduate students as a professor of biology at Willamette University in Salem, Oregon. During his 33-year tenure as a college professor, Gary has mentored more than 80 undergraduate students, many of whom have gone on to fulfilling careers in science and medicine. At Willamette, Gary engages students in his research program on how plants respond to high temperatures in the context of global climate change. Gary says that an important strategy is to "teach students to think critically and to communicate well. Both of these things are important in science—if you've done all the research but can't present your results clearly, then you won't be able to earn funding for your work or persuade others that your results are significant." Gary is the Taul Watanabe Chair of Science in the Biology Department at Willamette and until recently served as the director of the Office

for Faculty Research and Resources.

Susan Singer was featured as a guest on National Public Radio's *Science Friday* on November 11, 2011 (http://my.aspb.org/members/blog_view.asp?id=700968&post=134147). The topic of the day was "Rethinking How Kids Learn Science," and the conversation focused on the role of informal science education. Susan presented some sobering statistics on graduation success rates of science undergraduates at U.S. universities and colleges, where only about 40% of those entering college as science and engineering majors graduate within five years. When asked about the future outlook for science education, Susan commented, "I think the situation is serious, but I tend to be more optimistic than that. I think there is a growing awareness of this, and I think there's a collective will at all levels of education and an evidence base that's out there about what we can do." A transcript and audio of this segment of



Gary Tallman



Susan Singer



Cathie Martin

Science Friday can be found at <http://n.pr/vZzlaZ>. Susan is the Laurence McKinley Gould Professor of the Natural Sciences at Carleton College in Minnesota and a fellow of AAAS. She received ASPB's Excellence in Teaching Award (since renamed the Excellence in Education Award) in 2004. She currently serves as a member of the board of directors of ASPB's Education Foundation.

Cathie Martin, editor-in-chief of *The Plant Cell*, has

been elected to membership in EMBO (http://my.aspb.org/members/blog_view.asp?id=700968&post=133660), indicating her place among the leading life scientists in Europe. The new EMBO members joined the ranks of 1,500 of the top researchers in Europe and around the world. Cathie was one of 46 life scientists from 14 countries acknowledged for outstanding scientific contributions through this award of a lifelong EMBO membership. Her research is focused on cellular specialization, specifically how flower color and cell shape are used to attract pollinators, and she was the first person to

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Members in the News
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identify the genes that regulate cell shape in plants. Cathie also has an interest in the connection between diet and health and the role of biofortified crops. Cathie is a theme leader at the John Innes Centre and professor at the University of East Anglia in the United Kingdom.

Kathryn VandenBosch has been selected as the new dean of the College of Agricultural and Life Sciences (CAL S) at the University of Wisconsin–Madison. She will assume her new role on March 1,

2012. Kate is currently professor and head of the Department of Plant Biology at the University of Minnesota. She previously chaired the faculty and university senates and served as interim dean for Minnesota's College of Food, Agriculture, and Natural Resources Sciences. Prior to her tenure at the University of Minnesota, she was a faculty member at Texas A&M University for 12 years. Her research focuses on the genetics of plant–microbe interactions and nitrogen fixation in legumes. Kate has contributed to developing resources for the model legume species *Medicago truncatula*, a close relative of alfalfa. She was named a fellow of ASPB in 2009 and has served as both a monitoring and associate editor for *Plant Physiology*, including serving as an editor for several focus issues on legume biology.

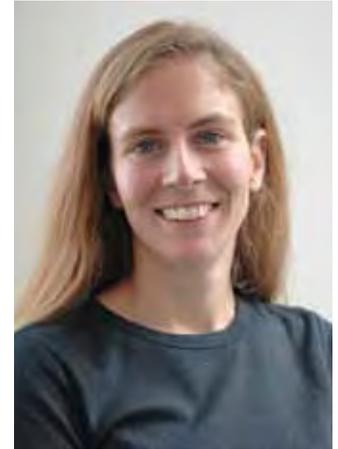
Mark Brodl was recently named associate vice president of Academic Affairs for Budget and Research at Trinity University (http://my.aspb.org/members/blog_view.asp?id=700968&post=135270), where he holds the position of George W. Brackenridge Distinguished Professor of Biology. In his new position, Mark will oversee many of the financial aspects of research at Trinity as well as several lecture series for the university. Mark also serves as the program director for the Howard Hughes Medical Institute Summer Undergraduate Research Program



Kathryn VandenBosch



Mark Brodl



Colleen Doherty

at Trinity. His research is focused on gene expression in plants, especially in response to heat shock. In addition to his service at Trinity University, Mark has served the National Science Foundation as a program director and ASPB as treasurer and a member of the Education Foundation (2000–2009), the Executive Committee (1998–2009), and the Excellence in Teaching Award Committee (1993–2002), which he chaired from 1996 to 2002. He was also named an ASPB fellow in 2010.

Two current postdoctoral members of ASPB have been selected as members of the first class of the U.S. Department of Agriculture, National Institute of Food and Agriculture (NIFA) Fellows (http://my.aspb.org/members/blog_view.asp?id=700968&post=133143). The program is designed to train and develop the nation's next generation of agricultural, forestry, and food scientists.

Colleen Doherty is a postdoc at the University of California, San Diego, in the laboratory of Steve Kay, working on



Matthew Milner

the signaling pathways that lead from the perception of environmental signal to a response. Her project will research how the circadian clock controls regulation of abiotic stress signals, how these signals are integrated into the growth and developmental programming of the rice plant, and how these signals impact yield under stress conditions. Colleen was a graduate student and postdoctoral member of the ASPB Membership Committee and received the

ASPB–Pioneer Hi-Bred Graduate Student Fellowship in 2008.

Matthew Milner is a postdoc at Penn State University in the laboratory of Sally Assmann, working on how eXtra Large G proteins (XLGs) regulate nitrogen uptake and auxin transport in plants. Matthew's project will examine how plant proteins influence the plant's ability to take up nitrogen from the soil in an effort to decrease costly nitrogen inputs by producers. 🌱

Kathy R. Munkvold, PhD
 ASPB Public Affairs Manager
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This column provides just a small sample of the content from ASPB public affairs, including material provided by ASPB's government relations consultants, Lewis-Burke Associates, LLC. Also be sure to check out the ASPB Washington Report and our blogs: Plant Biology Policy, Funding Opportunities, and Plants in the News. Please visit <http://www.aspb.org/publicaffairs> for the most up-to-date news.

NSF Sees Increase in Funding for FY2012 while AFRI, USDA's Competitive Grants Program, Remains Flat

Good news for plant science research funding as the first fiscal year (FY) 2012 appropriations bill (H.R. 2112) was signed into law by the president on November 18, 2011. The so-called minibus bill combines three appropriations bills into one package: the Agriculture, Rural Development, Food and Drug Administration bill; the Commerce, Justice, Science bill; and the Transportation, Housing and Urban Development bill. These bills provide funding for several federal research agencies, including the National Science Foundation (NSF), the National Aeronautics and Space Administration (NASA), the National Institute of Standards and Technology (NIST), the National Oceanic and Atmospheric Administration (NOAA), and the USDA National Institute of Food and Agriculture (NIFA), among others.

NSF saw a modest increase in its overall budget with a total of \$7.033 billion—\$173 million or 2.5% over FY2011 and higher than both the House and Senate marks. Within this amount, Research and Related Activities (R&RA) received \$5.719 billion—\$155 million or 2.8% over FY2011 and higher than both the House and Senate marks.

The FY2012 budget for USDA's competitive grants program, the Agriculture and Food Research Initiative (AFRI), remained flat at \$264.5 million as compared with FY2011. The Agricultural Research Service (ARS) was funded at \$1.095 billion, which is \$38.6 million lower than FY2011.

Increase to Indirect Cost Limits for NIFA-Funded Grants in FY2012 Appropriations Bill

Indirect costs, also known as facilities and administration costs, included in many USDA NIFA-funded grants have previously been limited to at most 22%. The

FY2012 minibus appropriations bill provides language that allows for up to 30% for indirect costs, at least for grants funded in FY2012. Indirect cost rates for most research institutions hover around 50%. This change in policy at USDA represents a major step toward indirect cost rates honored by other science funding agencies.

ASPB Responds to the OSTP's Request for Information on Bioeconomy Blueprint

This past fall, the White House Office of Science and Technology Policy (OSTP) released a request for information (RFI) pertaining to the development of a National Bioeconomy Blueprint. The Bioeconomy Blueprint, first announced when President Obama signed into law the America Invents Act, reflects the administration's focus on commercialization and more applied research to make impacts in grand societal challenges. Specifically, the blueprint represents the administration's efforts to harness the nation's biological research toward solving national problems in energy, food, health, and the environment while creating high-skill jobs. The RFI is intended to generate input from relevant stakeholders on policies and strategies capable of moving the Bioeconomy Blueprint initiative forward.

The National Bioeconomy Blueprint is intended to utilize biological science in service of solving the "Grand Challenges" President Obama has laid out. Therefore, the RFI called for comments addressing the following challenges: research and development, moving life science breakthroughs from lab to market, workforce development, reducing regulatory barriers to the bioeconomy, and public-private partnerships.

ASPB's response to the RFI can be found at <http://bit.ly/t4w7I3>. All responses to the RFI will be posted at <http://www.whitehouse.gov/ostp/bioeconomy>.

Selected Funding Opportunities

- NSF: The Plant Genome Research Program supports whole genome, whole organelle, or whole network-scale plant biology research projects that build on existing genomic resources or develop novel, creative tools to facilitate new experimental approaches or new ways of analyzing genomic data (<http://bit.ly/vCVQLK>).
- NSF: The Grant Opportunities for Academic Liaison with Industry (GOALI) program promotes university-industry partnerships by making project funds or fellowships/traineeships available to support an eclectic mix of industry-university linkages (<http://bit.ly/s49AeE>).
- NSF: The Creative Research Awards for Transformative Interdisciplinary Ventures (CREATIV) Program is a pilot mechanism to support ambitious interdisciplinary projects across the various directorates and divisions at NSF (<http://bit.ly/sEJtmQ>).
- DOD: The Strategic Environmental Research and Development Program funds research and development projects to solve DOD's environmental challenges and looks to develop and apply innovative technologies to meet these challenges and improve military readiness (<http://bit.ly/vV25TL>).
- NIH: The Academic Research Enhancement Awards (AREA) Program marks a special effort by NIH to stimulate research at educational institutions that provide baccalaureate or advanced degrees for a significant number of the nation's research scientists but that have not been major recipients of NIH support (<http://bit.ly/tU4dHX>).

To stay up-to-date on funding opportunities, follow the *Funding Opportunities in Plant Biology* blog at <http://www.aspb.org/fundingblog>; e-mail subscription and RSS feed are available.

Kathy R. Munkvold, PhD
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Teaching Plant Biology to Biology Teachers

ASP Education Committee members and volunteers presented a very special version of the ASP Education and Outreach Booth at the annual professional development conference of the National Association of Biology Teachers (NABT) in Anaheim, California, October 12–15, 2011. NABT provides a rich assortment of experiences, resources, expertise, and programs to teachers and administrators from public and private schools, faculty from colleges and universities, and educational staff from museums and zoos across the United States and around the globe. NABT members teach more than 1 million students each year, and one of its goals is to keep its members up-to-date with trends and developments in the broad field of general biology.

This year's ASP booth featured a demonstration of Fast Plants sc (self-compatible) by Scott Woody, University of Wisconsin–Madison. Scott showed off a self-compatible and extensively inbred analog of the Wisconsin Fast Plants® variety of rapid-cycling *Brassica rapa*. Several well-behaved mutants, such as albino (alb) and abnormal leaf (ale), were featured for the NABT audience. A genome-wide collection of robust and discriminating PCR-based markers is available to allow students and teachers to extend genetic analysis to estimating linkage relationships between molecular and visible markers. This new generation of resources forms an excellent foundation for teachers and students to explore concepts in Mendelian and molecular genetics, evolution, and genomics. Interested teachers can obtain seed stocks, primers, lesson plans, and additional information by e-mailing



All volunteer hands (from l to r): Sofia Robb, Jim Burnette, Mary Ann Cushman, and Scott Woody; John Cushman is not pictured) are on deck as teachers explore the many hands-on activities presented at the booth. Photo by John Cushman.



The booth featured affordable, easily scaled, hands-on activities such as fashioning Lilliputian Garden Necklaces from the mother of thousands plant (*Kalanchoe diademata*; left) and extracting DNA from frozen strawberries to craft DNA necklaces (right). Photo by John Cushman.

Rick Amasino (amasino@biochem.wisc.edu) or Scott Woody (swoody@wisc.edu).

Additional booth volunteers included Sofia Robb, a postdoctoral scholar studying genomics and bioinformatics of transposable elements in rice at the University of California, Riverside; Jim Burnette, an academic co-

ordinator and researcher within the College of Agricultural Sciences at the University of California, Riverside; Mary Ann Cushman, a scientific copy editor at Alum Canyon Editing, LLC; and John Cushman, a professor of biochemistry and molecular biology at the

continued on page 20

13th Annual ASPB Education Booth Competition for Innovative Instruction

Apply Now to Present at Plant Biology 2012

The Education Committee seeks to highlight new and creative techniques, technologies, and strategies developed by ASPB members for teaching and learning plant science in the laboratory, the classroom, and other venues.

Have you developed effective curricula or activities you'd like to share? The Education Committee invites you to present them at the Plant Biology 2012 Education Booth through the Plant Biology Education Booth

Competition for Innovative Instruction.

Each winning project will receive a cash grant of \$500 and full conference registration costs for up to three presenters at Plant Biology 2012 in Austin, Texas. Winners will exhibit their materials and methods to the ASPB membership as part of the Education Booth at the conference. Awardees are expected to staff their exhibit at times when the Education Booth is open.

Teaching Plant Biology continued from page 19

University of Nevada, Reno, and a member of ASPB's Education Committee.

The ASPB booth volunteers led teachers through several hands-on activities, including the creation of Lilliputian Garden Necklaces using the mother of thousands plant (*Kalanchoe diademata*) and extraction of DNA from frozen strawberries to make DNA vial necklaces. The booth also featured a multimedia display titled "Plants Got Rhythm," developed in the

Cushman lab as part of an NSF-funded research program investigating the circadian clock control of Crassulacean acid metabolism; bookmarks and handouts describing the 12 Principles of Plant Biology; and CDs containing inquiry-based laboratories for the 12 Principles developed by former ASPB Education Committee members Jeffrey Coker, Jane Ellis, and Mary Williams. 🌱

John C. Cushman
University of Nevada, Reno
jcushman@unr.edu



Teachers harvested engaging methods for helping their students enter the age of genomics from this Fast Plants sc (self-compatible) display featuring a segregating albino (alb) phenotype prepared by Scott Woody. Photo by John Cushman.

Proposal Requirements

Include a project title. List the name(s) of presenters and their complete contact information, including e-mail address. Proposals, which are limited to four double-spaced pages, must address the following:

1. State a clear rationale for the exercise. What are the anticipated learning outcomes?
2. How are the materials or strategies featured in the exhibit exciting and new? Highlight the use of innovative techniques, pedagogies, instructional materials, or technologies.
3. Provide a clear, detailed summary of how the exhibit will function and how visitors will interact with the exhibit. A diagram or picture would be helpful. Exhibits should take up no more than 8 feet of table space. Final layout will be coordinated with Scott Woody, the booth organizer.
4. Include a specific and complete list of equipment required for the exhibit (e.g., DVD player, monitor, Internet connection, and so on). Indicate what you will provide and what you would like ASPB to provide. We will make every effort to meet your needs, subject to cost and space limitations. (Please note that the list of equipment requested from ASPB cannot be changed after the proposal is submitted.)
5. Submit your exhibit proposal to Education Committee member Scott Woody (swoody@wisc.edu) as an e-mail attachment (Microsoft Word or PDF) no later than March 19, 2012. Winners will be notified by April 13.

This is an ideal opportunity to showcase innovative instructional materials to your plant science colleagues. We hope that you will consider submitting a proposal so that your work can be a part of the exciting exhibits at Plant Biology 2012! 🌱

ASPB Education Committee

Promoting Plant Biology Education and Outreach

2012 Education Foundation Grant Applications Open March 1, 2012

The ASPB Education Foundation (http://my.aspb.org/?page=EF_Index) seeks proposals from ASPB members to support education and outreach activities that advance knowledge and appreciation of plant biology. The Foundation was established in 1995 with the main goal of enhancing public awareness and understanding of the role of plants in all areas of life. To this end, the Foundation supports education and outreach projects (i.e., *not* science research projects) that enrich and promote youth, student, and general public understanding of the

- importance of plants for the sustainable production of medicine, food, fibers, and fuels;
- critical role plants play in sustaining functional ecosystems in changing environments;
- latest developments in plant biotechnologies, including genetic modifications that enhance the disease and stress resistance of crops;
- contributions of discoveries made in plants to discoveries that improve human health and well-being; and
- range of careers related to plant biology or available to plant biologists.

The types of projects that fit the Foundation's goals include but are not limited to

- development and use of instructional materials in K–12 schools, undergraduate courses, science centers and museums, after-school science clubs, and so on;
- professional development about plant biology for educators (e.g., teachers, museum educators, 4-H agents, and so on);
- professional development about education and scientific communication for plant biologists and plant biologists in training;
- development and implementation of educational exhibits or displays in science

museums, science centers, libraries, and other public venues;

- development and dissemination of multimedia educational resources, such as radio or video pieces, websites, apps for electronic devices, and animations; and
- development of and support for education and outreach collaborations between plant biologists and educators.

The Foundation especially seeks projects that will produce resources that can be widely shared and disseminated and programs or relationships that can be sustained over time. Proposals are encouraged from members from both within and outside the United States, and projects may serve communities from any country. Proposals that leverage funds from the ASPB Education Foundation with support from other sources are encouraged, particularly for proposals that request a full \$30,000 budget.

Sources That May Be Helpful in Preparing Successful Proposals

- Project summaries from previously funded projects are available at the Education Foundation section of the ASPB website (http://my.aspb.org/?page=EF_Index).
- Project managers from winning Education Foundation grants can advise future applicants who seek their consultation on developing winning proposals.

Apply for a Grant: 2012 Application Cycle Opens March 1

Proposals must be submitted to the Education Foundation by June 8, 2012. No forms are needed; see below for required format. Send proposals by e-mail to Katie Engen (katie@aspb.org). Attach documents as PDF or Word files. Proposal reviews will begin after the closing date.

Each eight-page grant proposal should include the following:

Cover page:

- project title
- project manager's name
- address, phone, e-mail, and fax
- coinvestigator name(s) and institutional affiliation(s) (if any)

Project description: The project description is limited to five pages, including references, figures, and images. Text should be single spaced, 12-point font, with at least 1-inch margins.

The project description should be divided into six sections:

- 1. Goals and objectives:** For example, what is this education/outreach project trying to achieve? Why is the project important? What previous education/outreach work has been done by the investigator(s) or others that lays the groundwork for the project? In what ways do the project goals and objectives align with the goals of the ASPB Education Foundation?
- 2. Methods and approaches:** For example, how will the project be implemented? Who will be involved? What is/are the target audience(s)? What activities will take place? What is the anticipated timeline for the project? How are the proposed activities aligned with the project's goals and objectives?
- 3. Anticipated outcomes:** For example, what is expected to happen as a result of the project? How many participants will be involved? What should they know, appreciate, or be able to do as a result of participating in the project?
- 4. Evaluation plan:** For example, what evidence will be collected that will be useful for determining whether goals or objectives are achieved? How will project outcomes be documented (e.g., number of target

audience members reached; knowledge or skill gains; changes in interests, attitudes, or intentions; and so on)? Who will be responsible for executing the evaluation plan?

5. **Dissemination plan:** For example, how will project products and outcomes (e.g., instructional materials, professional development materials, exhibits, evaluation results, and so on) be shared with others who may be interested in using them (e.g., in conference posters or presentations, peer-reviewed publications, newsletter articles, and so on)?
6. **References:** Include citations for any books, journal articles, websites, or other resources cited in the project description.

Statement of education/outreach experience and expertise (limited to one page)

- The investigator(s) should describe previous education and outreach experiences and expertise of those involved in the project.

- Statements should include, if appropriate, brief descriptions of previous education and outreach projects, including project outcomes and impacts.
- If appropriate, relevant references that provide evidence for the qualifications of the investigator(s) should be included (e.g., URLs for the investigators' education/outreach websites, publications, and so on). Background on the proposal itself should be contained within the project description.

Itemized budget (limited to one page)

- Budget limit is \$30,000, including salary, benefits, materials, equipment, travel, and other costs.
- Each cost should be justified.

Other guidelines

- The project manager must be a current member of ASPB.
- No indirect costs (overhead) will be covered by the Foundation for project awards.

- No funds may be requested for endowments or granting programs.
- Although projects may be implemented with a small audience for initial development and pilot testing, the Foundation expects that project products and results will impact a broader audience and generally reach beyond a single institution.
- ASPB expects to have the right to the use of projects, materials, and results developed with grant funding.
- Funding is awarded for a period of one year. The Foundation will consider requests for extension of time if received before the award expiration date.
- All recipients agree to advise future applicants who seek their consultation on developing winning proposals.

Awardees will be notified by e-mail. 

ASPB Education Foundation

ASPB Does Not Endorse the Research Works Act

The American Society of Plant Biologists wishes to inform its membership; individuals and institutions subscribing to its two journals, *Plant Physiology* and *The Plant Cell*; and the scholarly community at large that it does not endorse the Research Works Act (RWA; H.R. 3699), which was introduced into the U.S. Congress late last year. If the RWA were to become law, it would essentially repeal the NIH public access mandate, via which articles derived from NIH funding must be publicly released on the PubMed Central website within 12 months of publication, and forbid future implementation of any similar mandates at other agencies.

In large part, ASPB's strong reservations regarding the RWA stem from the fact that

the collaborative and inclusive approach articulated in an existing public law – the America COMPETES Reauthorization Act of 2010 (<http://www.gpo.gov/fdsys/pkg/PLAW-111publ358/html/PLAW-111publ358.htm>) – represents a far more appropriate path forward, one that takes into consideration the needs and wants of all stakeholders, including publishers. The process envisioned in COMPETES is already under way and beginning to bear fruit, and ASPB is privileged to be participating in preliminary conversations regarding U.S. federal agency objectives regarding public access to research. Moreover, ASPB determined many years ago that it would be consistent with both the Society's mission and its business needs to

publicly release the entire content of both journals 12 months after an issue's publication. It has been doing so for over a decade, both via the journals' own websites and on the PubMed Central site. In the meantime, ASPB continues to experiment with and explore novel approaches toward expanding access to its journals' content, including very-low-cost article rental models and a membership-based free access option.

Although unilateral imposition of public release time frames is not an appropriate way to achieve public access, ASPB feels that the tenor, tone, and timing of the RWA are unhelpful and that the bill is unnecessary at this time.

Crispin Taylor
Executive Director



**New
Articles!**

The American Society of Plant Biologists has published *The Arabidopsis Book* (TAB) as a free online compendium since 2002. ASPB is providing funds for the production of TAB as a public service.

Founded by Chris Somerville and Elliot Meyerowitz, TAB now has more than 100 articles online.

The current editorial board is working hard to continue TAB's ongoing expansion:

Rob Last (*editor-in-chief*)
Michigan State University

Caren Chang
University of Maryland

Georg Jander
Boyce Thompson Institute

Dan Kliebenstein
University of California, Davis

Rob McClung
Dartmouth College

Harvey Millar
University of Western Australia

Keiko Torii
University of Washington

Doris Wagner
University of Pennsylvania

The board is overseeing all new content development as well as updates to existing articles to keep TAB the most comprehensive and current work on Arabidopsis.

The Arabidopsis Book Posts New Content!

Carotenoid Biosynthesis in Arabidopsis: A Colorful Pathway

M. Águila Ruiz-Sola and Manuel Rodríguez-Concepción
January 19, 2012. Edited by Rob Last.

Shade Avoidance

Jorge J. Casal
January 19, 2012. Edited by Rob McClung.

The Female Gametophyte

Gary N. Drews and Anna M. G. Koltunow
December 26, 2011. Edited by Keiko Torii.

Salicylic Acid Biosynthesis and Metabolism

D'Maris Amick Dempsey, A. Corina Vlot, Mary C. Wildermuth, and Daniel F. Klessig
December 20, 2011. Edited by Georg Jander.

Molecular Biology, Biochemistry and Cellular Physiology of Cysteine Metabolism in *Arabidopsis thaliana*

Rüdiger Hell and Markus Wirtz
December 16, 2011. Edited by Harvey Millar.

The Phenylpropanoid Pathway in Arabidopsis

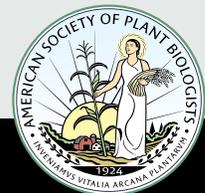
Christopher M. Fraser and Clint Chapple
December 8, 2011. Edited by Harvey Millar.

Plant ABC Transporters

Joohyun Kang, Jiyoung Park, Hyunju Choi, Bo Burla, Tobias Kretzschmar, Youngsook Lee, and Enrico Martinoia
December 6, 2011. Edited by Harvey Millar.

Brassinosteroids (update)

Steven D. Clouse
November 2, 2011. Edited by Caren Chang.



TAB is hosted in partnership with BioOne
(www.bioone.org) in HTML and PDF formats.

SABER at the Ready!

Society for the Advancement of Biology Education Research Prepares to Lead the Charge

The Society for the Advancement of Biology Education Research (SABER; [1]) held its first national meeting in Minneapolis last summer, just before Plant Biology 2011. Biology Education Research (BER) is a growing field focused on building theory and generating evidence with the goal of improving undergraduate biology education. SABER fosters BER and its dissemination and was founded by Mary Pat Wenderoth (University of Washington), Teri Balsler (University of Florida), and Clarissa Dirks (Evergreen State College) with support of an NSF Research Coordination Network–Undergraduate Biology Education grant. SABER brings together biologists working in diverse life science disciplines who share an interest in education research.

About 155 SABER participants gathered in the new University of Minnesota Science Teaching and Student Services building, filled with innovative classrooms that support the use of evidence-based teaching practices. Large round tables and digital displays throughout the classrooms that can be controlled locally or by the instructor foster collaborative learning. The 42 presentations and 50 posters demonstrated that BER is a vibrant, growing field using rigorous approaches to understanding learning and teaching in biology.

Carl Wieman, Nobel laureate in physics, director of the Collaborative Science Education Initiatives at the University of Colorado and the University of British Columbia, and currently the associate director of the White House Office of Science and Technology Policy, delivered the keynote address. Physics education research (2) has a more extensive history than BER and has helped to inform BER. Wieman's broad perspective on undergraduate education research

and his specific work showing the effectiveness of using evidence-based pedagogies in large physics classrooms (3) set the tone for a meeting focused on both evidence-based approaches and collaboration.

Talks and posters covered a wide range of BER topics, from research on how student answers to assessment questions reveal persistent difficulties in their understanding of genetics to assessment of student reasoning about evolution to work on video lab reports (4). Research on moving students along the novice-to-expert continuum and strategies to reconstruct alternative conceptions were also explored. Participants exchanged information on tools and study approaches. Several new collaborations emerged over the course of the meeting.

Scott Freeman's closing talk on Evidence-Based Teaching in Introductory Biology offered compelling evidence that integrating problem solving, data analysis, and other pedagogical approaches that actively engaged students in their learning in a structured way in a large introductory class increased learning and closed the gap between students coming from advantaged and disadvantaged backgrounds (5). His presentation illustrated how the research findings emerging from BER can be used to transform undergraduate education. A broad review and strong case for using BER findings in the classroom has been published by William Wood (6), another participant at the SABER meeting.

If you'd like to learn more about BER, the next SABER meeting is tentatively scheduled for July 12–15, 2012, at the University of Minnesota. BER articles are regularly published in *CBE–Life Sciences Education* (7), an online journal supported by the American Society for Cell Biology and the Howard Hughes Medical Institute. Erin Dolan, chair

of the ASPB Education Committee, is editor-in-chief of *CBE–Life Sciences Education*. In addition, ASPB's journal *Plant Physiology* has been accepting BER articles since the mid-1990s. ASPB annual meetings also offer a forum in which to present BER scholarship, and whether through sessions or the Education Booth, including the Education Booth Competition for Innovative Instruction (http://my.aspb.org/default.asp?page=Meetings_EducBooth), there are many opportunities for ASPB members to learn more about integrating evidence-based approaches into their teaching. SABER complements the work of our Society by providing a venue for plant biology education researchers to connect with education researchers across biology and advance this newer field of research.

Susan R. Singer
Carleton College

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Laura Sheard (1985–2011)

The life science research community at the University of Washington is deeply saddened by the untimely death of Laura Sheard, whose promising life was cut short at the age of 26 by a tragic car accident in Seattle on November 13, 2011. Laura was a vibrant, exceptionally talented, and highly accomplished young woman scientist in the fifth year of her PhD thesis study in the pharmacology graduate program at the University of Washington School of Medicine. She developed a keen interest in plant biology and made invaluable contributions to the study of plant hormone signaling. Her death is a great loss to her family, friends, and colleagues and to the fields of plant and biological sciences.

Laura grew up in Jim Thorpe, Pennsylvania, and graduated summa cum laude from Muhlenberg College with a bachelor of science degree in neuroscience. As part of the RJ Fellows Honors Program, Laura completed an honor's thesis on identifying key domains of the GABA_A receptor for allopregnanolone recognition. From her undergraduate thesis work and summer internship experiences at MIT and Merck, Laura became fascinated with the molecular mechanisms by which living cells and organisms sense and decode diverse environmental cues and cellular signals. Her solid command of chemistry, biology, and neuroscience naturally led her to the wonderland of receptors and ion channels, proteins that enable cells to perceive light, temperature, nutrients, and mechanic forces and to communicate with one another through neurotransmitters and hormones.

In 2007 Laura joined the pharmacology graduate program at the University of Washington. Although her original plan was to



Laura Sheard

continue studying neuroscience, she was soon lured to plant biology, where key components of hormonal signaling pathways started to emerge and define new paradigms of receptor biology. Laura had long been enamored with plants; as a sophomore in college, she performed a field study of medicinal plant use in Las Juntas Abangares, Costa Rica. A walk with her in an herb garden was always a treat to anyone interested in therapeutic and aromatic plants and the molecular principles behind their pharmacological effects. In the Zheng lab at the University of Washington, she found a perfect opportunity to blend her interests in receptor structure and function with basic plant research. In less than two years, Laura designed and performed a series of elegant and multidisciplinary experiments that helped elucidate the coreceptor nature and the structural determinants of the COI1-JAZ ubiquitin ligase-substrate complexes in perceiving the plant hormone jasmonate. Her work further identified an unexpected inositol-pentakisphosphate molecule in the middle of COI1, which plays a critical role in potentiating the coreceptor for hormone binding. Her raw talents in research were manifested throughout her experiments, which were characterized by rigor, precision, and innovation. Her studies soon granted her leading authorship in a research article published in *Nature*.

While working on the jasmonate project, Laura began to read widely on plant biology. With a curious mind and a talent for seeing the big picture, she initiated two additional exciting projects in the lab aimed at revealing the mechanisms of receptor action of two other key plant hormones. Although

Laura could have graduated with her PhD degree in 2011, she insisted on finishing one of the two new projects because she could not stop working on it. Right before the fatal accident, Laura made an unexpected discovery that could be a breakthrough in the field.

Excelling in research, Laura also touched many lives around her with her endearing and vivacious spirit. As an extremely intelligent young woman scientist, she was supremely confident, endlessly energetic, cheerful, and outgoing. She had very broad interests and a wide breadth of knowledge, and she never failed to spark dynamic and engaging conversations with scientists at all levels and of diverse backgrounds. She made every effort to interact closely with the local plant biology labs. She was an active participant in the local *Arabidopsis* group's (SAMPL: Seattle Model Plant Laboratories) seminar series and other events, and she gave an outstanding talk about her research at a SAMPL seminar earlier this year.

Laura was the driving force in initiating and coordinating cross-campus and cross-nation collaborations. Recently, she had been providing her expertise and insight into the biochemistry and structural biology of ligand-receptor interaction in the epidermal patterning, a project of current focus in the Torii lab. Laura and her boyfriend, Kristopher Martin, joined the end-of-year SAMPL get-together on November 13 to celebrate the successful year. She seemed filled with excitement for her future and new interactions with local plant scientists. On her way back to the university to finish her experiments, Laura and Kristopher were fatally rear-ended by a speeding vehicle while stopped at a traffic light. This is an unbearable tragedy.

Laura was not only passionate about science, but also about people. She had a kind, caring, and warm heart and was always perceptive about others and awake to the world. After she joined the Zheng lab, she took every rotation student under her wing and reached out to every other lab member and visiting scientist. With natural leadership skills,

Rafael Pont-Lezica (1940–2011)

Longtime ASPB member Rafael Pont-Lezica, Plant Physiology, Biochemistry and Biotechnology Emeritus Professor at the Université de Toulouse, passed away on September 26, 2011, after losing his fight with cancer. He had studied agronomy at the Universidad Nacional de Cuyo in Argentina and earned a PhD in 1978 at the Université de Gembloux, Belgium.



Rafael Pont-Lezica

Rafael began his scientific career as a research assistant in plant physiology at the Universidad Nacional de Cuyo (1966–1971), where his work centered on plant morphogenesis and secondary metabolism. He then became assistant professor in biology at the Fundación Bariloche in Argentina (1972–1977), where he developed an interest in sugar metabolism, particularly in the synthesis of cellulose precursors and protein glycosylation.

He obtained a Humboldt Stiftung Fellowship in Heinrich Kauss's lab in Kaiserslautern, West Germany (1978–1979). From 1979 to 1988, he was a professor at the Universidad Nacional de Mar del Plata in Argentina, where he cofounded, with Horacio Pontis, the Instituto de Investigaciones Biológicas. His main research topics there were on lectin biosynthesis and protein glycosylation. In the course of his first collaboration with Joe Varner, from Washington University in St.

Louis, Missouri, Rafael focused his attention on the study of the plant cell wall. Consequently, he was invited as a visiting professor at Washington University in St. Louis (1987–1991). A crucial result of this fruitful collaboration was the development of the

technique, which became an alternative to *in situ* hybridization and immunocytochemistry.

In 1992 Rafael obtained a professorship at the Université de Toulouse and set up his own research group. At the Université de Toulouse, he directed the Plant Science Master's Program (1999–2004) and the European Marie Curie Training Program SIGNAL (Plant Signaling and Biotechnology; 2001–2005). Following his retirement in 2009, he became emeritus professor. As such, he kept up intense research activity, interacting with his former team, today called Cell Wall Proteins and Development, in reference to his mentorship. Rafael's main research interest was the identification of *Arabidopsis thaliana* RGD-containing or integrin-like proteins involved in cell wall–plasma membrane contacts. He also began to work on plant cell wall proteomics. He presented the first overview of cell wall proteins and iden-

tified proteins that had never before been described. His most recent contribution was setting up two international research programs, introducing *Brachypodium distachyon* as a model plant for biomass production in our lab: European Knowledge-Based Bio-Economy (KBBE) and Comité Français d'Évaluation de la Coopération Universitaire et Scientifique avec le Brésil (COFECUB). All these developments led to new insights in plant cell wall biology.

Rafael was a member of numerous scientific groups and councils at the local, national, and international levels: the Fundación Bariloche, the Universidad Nacional de Mar del Plata, the Université de Toulouse, the Ecole Doctorale de Biologie in Toulouse, the Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET) in Argentina, among others. Although he developed his career in many different universities and countries, he stayed in touch with colleagues with whom he had worked.

Rafael was an appreciated teacher, always encouraging graduate students, postdocs, and young coworkers in the lab. His sound judgment and numerous personal qualities were valued and called upon by his colleagues and collaborators. As a researcher and a human being, he was enthusiastic and creative, communicating his drive and love of life to those around him.

Elisabeth Jamet

Head of the Plant Science Research Laboratory (LRSV)
Université de Toulouse/CNRS (France)

Laura Sheard
continued from page 26

she put together birthday parties and baby showers for coworkers with her well-planned calendar and organized many fun group activities that helped build and maintain a joyful and healthy lab culture. Outside work, Laura loved the outdoors and enjoyed hiking and fishing in the Washington Cascades. She

was also an avid dancer who walked with incredible poise and grace.

Laura will be remembered as the epitome of next-generation scientists. Members of the research community who were privileged to work with her will remember her infectious laugh, uplifting spirit, and passionate devotion to science.

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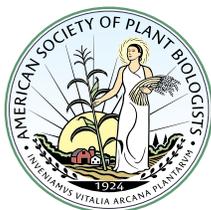
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