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Giving plant science an international voice.



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**Plant Biology 2013 Major Symposia**  
Five major symposia featured.



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**ASPB Members Elected AAAS Fellows**  
Thirty-four members of ASPB were elected to the 2012 class of AAAS Fellows Science Public Service Award.

# ASPB News



THE NEWSLETTER OF THE AMERICAN SOCIETY OF PLANT BIOLOGISTS

## President's Letter

### Plant Biology Researchers Face Their Own Fiscal Cliff

BY PEGGY G. LEMAUX  
ASPB President, University of California, Berkeley

**Y**ou would have had to be hidden under a barrel for the past few months not to have heard about the federal government possibly falling off the fiscal cliff (see the Policy Update on page 25). But those of us plant biologists looking for grant or fellowship money have the feeling that we are constantly trying to keep our research and laboratories from falling over their own fiscal cliffs! Who among us has not spent weeks, and sometimes months, struggling over a grant proposal that lays out a compelling approach to an important basic or applied challenge—only to have it fail?

#### What can we do about it?

We all know that funding rates for grants from federal agencies are low—much lower than they were in the 1980s and 1990s. What can we do about it? One of the problems for academic scientists trying to have an impact on national funding is that we don't have a large lobbying effort, like many in the corporate sector. And we often are

not of one voice, with each subdiscipline of scientific research fighting to protect its own turf. But professional biological research organizations, and plant biology research organizations as well, banded together recently to make our case for increased, or at least stable, funding. For example, ASPB joined with the Tri-Societies (American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America), and brought in the Plant Breeding Society, to garner more than 1,300 member signatures to urge Congress to stop the devastating cuts to federal science funding. ASPB was also a signatory on similar letters, initiated by AAAS and the Agriculture and Food Research Initiative (AFRI) Coalition, cautioning Congress to work to find long-term solutions to our nation's fiscal difficulties without jeopardizing agricultural research programs, a situation that would have significant long-term consequences.

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#### If your plans for this new year include any of the following:

- Present your research at a key scientific meeting
- Attend a conference that highlights your research
- Meet colleagues for collaboration and networking
- Participate in workshops and sessions to further your career
- Broaden your knowledge on the latest developments in plant biology
- Get to know more about your professional society
- Spend some time in a great historic location....

#### Then mark your calendar to attend Plant Biology 2013!

Turn to page 9 for information on the location, the program, and how to submit an abstract.

**2013**  
**Plant Biology**  
July 20–24  
Providence, Rhode Island

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ASPB staff are dedicated to serving our members.  
We welcome your questions and feedback.

For quick response, e-mail us at [info@aspb.org](mailto:info@aspb.org)  
or visit our FAQ at [www.aspb.org/faq](http://www.aspb.org/faq).

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|                                                |                                                          |
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Copy deadline is the 5th day of the preceding even-numbered month (for example, December 5 for January/February publication).

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PRESIDENT'S LETTER  
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### Aren't diminishing funds for plant and agriculture research the norm worldwide?

We live in a country where, for the most part, individuals pay less than 10% of their income on food, compared to, for example, 35% of income in India and 45% in Kenya (Data from World Bank, 2009; USDA, 2009, cited in <http://www.gatesfoundation.org/annual-letter/2012/Pages/home-en.aspx>). You walk into U.S. grocery stores or go to farmers' markets and it is hard to imagine that we have a problem producing enough food. But that bounty did not happen by chance. It came from decades of investment in research to improve agricultural production, as well as the fundamental research that underpins those improvements. Recently public investment in such research has waned, and many of us are concerned about the wisdom of encouraging our students to pursue careers in plant biology.

I would argue that our global food production system is being challenged and that an effective way to address these challenges is to foster innovation in basic and applied agricultural research. By 2050, it is estimated that global agricultural demand will increase by 70% to 100% because of population growth, energy demands, and higher incomes shifting food preferences in developing countries (USDA Economic Research Service; <http://www.ers.usda.gov/publications/eb-economic-brief/eb17.aspx>).

Can we continue on our course of limited investments in plant and agricultural research?



*Sonny Ramaswamy, current director of NIFA, and ASPB President Peggy Lemaux at the National Institute of Food and Agriculture.*

Yes, we can, but meeting the demands of the next few decades will require raising productivity by an amount equivalent to increases in demand—by some estimates an 80% increase by 2050. The rate of growth of U.S. agricultural productivity has averaged about 1.5% over the past 50 years. Simulations by the USDA Economic Research Service, however, suggest that if U.S. public agricultural research and development (R&D) spending remains constant until 2050, the annual rate of productivity growth will fall to under 0.75%—far below what is needed. The corollary to this is that we will not meet the 80% increase needed without bringing more land, labor, capital, materials, and other resources into production.

Is this pause in investing in plant and agricultural research a worldwide phenomenon? No. Let's take a look, as an example, at investments in agriculture via the new tools of genetic engineering

(comment on FAO Biotechnology Forum, 2012 (<http://tinyurl.com/b3ogvqs>)). In 2008, the Chinese government invested in a US\$3.5 billion R&D initiative to fund research on genetically engineered plants to spur commercialization. In 2012, Russia adopted the "Comprehensive Program for Development of Biotechnology in the Russian Federation through 2020" and committed an investment twice that of the Chinese, at US\$6.7 billion, to develop engineered crops. It also established a similar budget for developing products through biotechnology in the food, animal, and forest industries. In another effort in Brazil, EMBRAPA doubled its annual R&D budget for agriculture from US\$478 million in 2006 to US\$1.1 billion in 2010 and 2011, much of it devoted to the use of engineering to improve crops for Brazil and developing countries. The commercial release of Golden Yellow Mosaic Virus Resistant Phaseolus beans

in 2011 was a big step forward by EMBRAPA to demonstrate the robustness of their public-sector R&D efforts. In India the current total of public- and private-sector investments in crop biotechnology is about US\$500 million per year, focusing on developing improved food, feed, and fiber crops.

According to *Arabian Business*, June 2012, Saudi Arabia's government committed to a US\$600 million food and agriculture fund to invest in projects that promote a steady food supply (<http://www.arabianbusiness.com/-600m-saudi-based-food-agriculture-fund-launched-461853.html>). So, other countries are making investments to improve and increase food, feed, and fiber products.

### Why should U.S. legislators listen to our pleas now?

With increasing global populations and climate change, the challenges to provide adequate food, feed, fiber, and fuel are staggering. Recently such challenges have begun to sneak into the public conscience. A recent CNN report, "The Future of Farming and Food Prices" (<http://edition.cnn.com/video/#/video/business/2012/12/05/intv-wbt-farming-future-sullenger.cnn?iref=allsearch>), raised the issues of the challenges presented by population growth, altered food consumption patterns in developing countries, and climate change. For example, in this past year extreme weather patterns worldwide—for instance, drought in the United States and too much water in the United Kingdom—led to lower yields and poorer quality grains—consequences that affect

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# The Global Plant Council: Giving Plant Science an International Voice

BY RUSSELL JONES

University of California, Berkeley, ASPB Representative to the Global Plant Council

Until recently, plant scientists have lacked a single organization that allows them to speak effectively and forcefully with one voice on issues related to the central role that plants play in emerging global challenges. ASPB is a very effective advocate for the plant sciences in the United States and is frequently invited to Congress and to policy- and grant-making bodies to speak on its members' behalf. Although the Society has a strong international presence and has an International Committee, it is rarely invited to advise international agencies such as the United Nations' Food and Agriculture Organization. Climate change scientists, on the other hand, have formed a very effective international body, the Intergovernmental Panel on Climate Change (IPCC), <http://www.ipcc.ch/index.htm>, which reviews and assesses information relevant to an understanding of climate change. The goal of IPCC is to "provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts." IPCC does not carry out research; rather, it evaluates scientific and technical information and informs policy makers and the public. The fledgling Global Plant Council (GPC) aims to exert similar influence on the same audiences to persuade them

of the importance of plant science research in averting a calamitous future for humankind.

Ensuring that we have sufficient food to feed 9 billion people is a stellar example of the kind of challenge that needs to be addressed by an international body of plant scientists that speaks with one voice. Policies based on a sound analysis of research on food distribution and food and feed production are sorely needed. The United Nations and the Food and Agriculture Organization have both called upon the United States to reduce the use of corn for biofuel production because of the impact on the price of this commodity. At the same time, food and feed production has been greatly impacted by drought in 2012, and in the United States, this drought persisted through the year's end. Plant scientists can provide policy makers and funding agencies with objective advice on investments in basic research that relate to these emerging problems, but our views are seldom collectively voiced or sought. GPC offers an excellent vehicle to inform policy makers worldwide on these critical issues.

GPC had its genesis during the annual meeting of ASPB in Honolulu in 2009, when members representing 16 professional societies signed a letter of intent to support the organization. Mel Oliver (University of Missouri) is

credited with the vision of forming GPC, an organization that "bring(s) plant scientists together to work synergistically toward solving the pressing problems facing humankind and that speaks with a strong voice from a plant science perspective to inform the global debate on those problems." The challenges that were identified by GPC in Honolulu were framed under the general title of *Plant Research to Save the Planet* and focused on the effective use of knowledge and resources to solve the challenges of world hunger and human health and well-being; climate change, sustainability, and environmental protection; and energy and biomaterials.

The first official meeting of GPC was held in Montreal, in 2010 in conjunction with the annual ASPB meeting, held jointly that year with the Canadian Society of Plant Biologists. It was moved that GPC be established as a nonprofit organization, and this was formally completed by its registration in Switzerland in 2012. The Montreal meeting of GPC established bylaws, an executive committee with five representatives from affiliated societies, and a mechanism to levy dues to support the cost of operations.

The more substantive activity at the Montreal meeting was the formulation of a mission statement for GPC by working groups charged with developing position papers on eight specific

issues. The working groups were to "summarize existing knowledge/work (State of the Art), generate a plant science perspective to the problem, articulate what plant science can do to address the problem, and identify solutions that can be driven by the plant community." The resulting position papers were developed further in Qingdao in 2011, and a more detailed description of these can be found at <http://www.springerlink.com/index/8p1248np61566g07.pdf>.

The recent meeting in Jeju, South Korea, represented an important milestone in GPC's growth as an international body. A slate of candidates was nominated for election by the 29 societies now affiliated with the council, commitments were made to enhance the budget to the current total of \$100,000, and, most importantly, a decision was made to appoint a full-time executive director. For GPC to be effective, it must enhance its membership and budget, and this can only be done with at least one permanent, professional staff member.

Moving forward, GPC must now broaden its membership. The 29 learned societies affiliated with GPC have strong representation from the experimental aspects of plant science and agriculture, but there is a need to include ecolo-

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# 2012–2013 Awards Committees

Following is a list of the membership of the ASPB awards committees for 2012–2013 as announced by President Peggy G. Lemaux.

## ASPB–Pioneer Hi-Bred Graduate Student Fellowship

Patricia S. Springer (13), *chair*  
A. Mark Cigan (13)  
Patrick S. Schnable (13)  
Robert E. Sharp (13)  
Elizabeth Vierling (13)

## Adolph E. Gude, Jr. Award

Ralph Quatrano (13)  
*chair, past winner*  
Patrick Masson (13)  
Julia Bailey-Serres (16)  
Barbara J. Baker (16)  
Stan Roux (16)

## Charles Albert Shull Award

Ray Zielinski (14), *chair*  
Elizabeth Ainsworth (13)  
*past winner*  
Sam Zeeman (13)  
Gail Mclean (14)

## Charles F. Kettering Award

Anthony H. C. Huang (14), *chair*  
Sabeeha Merchant (12), *past winner*  
Marcos Buckeridge (16)  
Don Ort (16)

## Charles Reid Barnes Life Membership Award

John Boyer (13), *chair*  
Andrew Hanson (13), *past winner*  
Ken Keegstra (13)  
Ruth Grene (14)  
Michael Thomashow (14)

## Corresponding Membership Award

Gerald Edwards (15), *chair*  
Shiv B. Tiwari (13)  
Karen Koch (15)  
Gynheung An (16)  
Leon Kochian (16)

## Dennis R. Hoagland Award

Jan E. Leach (12), *chair*  
Jorge Dubcovsky (12)  
*past winner*  
C. Robin Buell (15)  
Kendal D. Hirschi (15)  
Elizabeth E. Hood (15)

## Early Career Award

Katherine Osteryoung (14), *chair*  
Michael Nodine (13), *past winner*  
Siobhan M. Brady (13)  
Martin Spalding (14)

## Eric E. Conn Young Investigator Award

Bijay Singh (15), *chair*  
Judy Callis (13)  
Eve Wurtele (13)  
Rob Last (15)

## Excellence in Education Award

Amy M. Clore (15), *chair*  
Peggy Lemaux (13), *past winner*  
Sharman D. O'Neill (13)  
T. Kaye Peterman (13)

## Fellow of ASPB Award

Bonnie Bartel (14), *chair*  
Stan Roux (13)  
Ram Dixit (14)  
Alice Cheung (15)

## Lawrence Bogorad Award for Excellence in Plant Biology Research

Jen Sheen (14), *chair*  
Nam-hai Chua (12), *past winner*  
Elizabeth A. Ainsworth (12)  
Daniel P. Schachtman (14)  
Maureen Hanson (16)

## Martin Gibbs Medal

Neelima Sinha (13), *chair*  
Steve Kay (13), *past winner*  
Steven C. Huber (13)  
Gerald Berkowitz (17)  
Alice Cheung (17)

## Robert Rabson Award

Candace Haigler (16), *chair*  
Thomas Sharkey (14)  
Michael Sussman (14)  
Kanwarpal Dhugga (16)  
Sharlene Weatherwax (16)

## Stephen Hales Prize

Sarah Hake (13), *chair*  
Ian Sussex (13), *past winner*  
Rick Vierstra (13)  
Rich Jorgensen (17)

## Summer Undergraduate Research Fellowship

Ken Helm (13), *co-chair*  
Robert Grebenok (14), *co-chair*  
Joseph Jez (14)  
Burkhard Schulz (14)

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## GLOBAL PLANT COUNCIL *continued from page 4*

gists, systematists, and climate change experts. GPC must also advertise itself broadly to the scientific community, and in this respect, it has been quite successful thanks to Mel Oliver. Mel

successfully submitted a proposal for a GPC-sponsored symposium at the annual meeting of the AAAS in Vancouver in 2012 <http://aaas.confex.com/aaas/2013/webprogram/Session5986.html>. A second proposal for a GPC-sponsored symposium at the 2013 AAAS meeting in

Boston was also approved (<http://aaas.confex.com/aaas/2012/webprogram/Session4503.html>), indicating that the council is attracting the attention of our colleagues in the science community at large.

Can plant biologists influence international policy making as it

affects our discipline, and especially the directions that basic research should take? We can and we must. But we need a mechanism to provide governments, NGOs, and the public with objective analysis and assessment of research. GPC is an international body that has the potential to do this. ■

# A Message from Mike Blatt, Editor of *Plant Physiology*

## Plans for the Journal in 2013 and Beyond

Dear ASPB Members:

It is both an honor and a humbling prospect to take on the role of editor-in-chief of *Plant Physiology* at this time. As you may have noted in my first editorial in *Plant Physiology*, I am deeply conscious of the tremendous strides the journal has made over the past decade. My hat is off, especially to Don Ort, who has achieved so much with the journal under his leadership these past seven years. The simple fact that *Plant Physiology* has seen a steady rise in its impact and recognition throughout this period is testimony enough of achievement. Many established scientific publications have gone the other way in the face of increasing pressures of open access, the burgeoning market in scientific publications, and the rapidly changing landscape of online availability. Let me state clearly now, I am determined to see standards continue to rise against the backdrop of these pressures. At the same time, I am intent on preserving the unique service that *Plant Physiology* provides for the research community across the breadth of the plant sciences, fostering publication of the most innovative and far-reaching science that provides new and fundamental insights into the origins, development, and function of plants.

This is no time for complacency. Like Alice in Lewis Carroll's classic, we must keep running just to stand still. I was drawn to the position of editor-in-chief in large

part because of the challenges that we all will face in communicating basic research in the coming years. In my view, it is imperative that we ensure this avenue for the research community, especially in the face of the rapidly changing landscape of academic publishing. To these ends, I will be introducing a number of new initiatives that I am convinced will help advance the journal and secure its position over the next few years. With the January issue, an immediate and obvious change is the new subdivision of Research Areas. These more generic subdivisions reflect the mature, less proscriptive, and increasingly diverse nature of research across the plant sciences today. I am confident that they will encourage the most far-reaching studies that, ever more often today, bridge traditional disciplinary and technical boundaries. Let me make it absolutely clear now, these new Research Areas do not presage a realignment of the journal's subject matter or breadth. It is true that several "niche" topics are no longer highlighted within the list. Even so, *Plant Physiology* will continue to actively encourage submissions that add fundamentally to our understanding, for example, in the areas of plant-fungal symbiosis and plant-pathogen interactions, plant hormone physiology and development, and genomics. Consider the former Research Area of "Plants Interacting with Other Organisms." Many of these submissions will fall



Mike Blatt

naturally within "Signaling and Response" or "Biochemistry and Metabolism." Others may find a home within "Ecophysiology and Sustainability." Electronic cross-referencing ensures that no topical focus will be lost within the journal. The introduction of "Synthetic Biology" recognizes this very new, and rapidly growing, area of research. We will continue also to encourage submissions under Breakthrough Technologies that set out novel approaches, tools, and resources to enable and accelerate scientific progress. These may include new analytic or biochemical methods, bioinformatic tools, datasets, algorithms, or software, as well as genome sequences, genomic analyses, or databases of exceptional importance and relevant to new or established model species.

I look forward to introducing other changes to *Plant Physiology*, including new commentary and review formats, later this year.

As of now, *Plant Physiology* will accept submissions under the new category of Research Reports. The Reports offer a vehicle for publishing shorter contributions that are timely and highly topical, often with a narrower focus than might be expected of a full-length article. Research Reports will be peer-reviewed and, like full-length papers, are expected either to present original, fundamental, and timely insights into plant biology, or to set out novel and useful approaches, tools, or resources that enable scientific progress. As examples, Reports might introduce a novel approach to field-testing an established hypothesis about how plants sense changes in ambient relative humidity, or demonstrate a new molecular screen that yields results challenging current thinking about protein kinase targeting. Most important, the editors and I are convinced that the Report format will serve the community by accelerating communication and discussion, especially in the most rapidly advancing areas of research, by providing for focused publications with an impact and penetration than would not be possible otherwise.

Let me bring your attention right now to one other big change for *Plant Physiology*. Starting in January, we now publish online fully enhanced for use with Utopia. I bring Utopia with me as I move from my previous edito-

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# A Message from Keiko Torii, Editor of *The Arabidopsis Book*

It has been more than a decade since *The Arabidopsis Book* (TAB) was launched under the direction of Chris Somerville and Elliot Meyerowitz as comprehensive information about *Arabidopsis thaliana*. Arabidopsis research has now matured and established its position as the “model system” for basic plant science.

Since then, the new research area of epigenetics has flourished, completely changing our view on regulation of gene expression, chromosome stability, and genome evolution. Advancement of powerful next-generation sequencing technology and bioinformatic analysis tools has been integral to genome-level understanding



Keiko Torii

of plant evolution and adaptive variations. Technological advances in live imaging revealed dynamics of plant organelles and cells

underpinning plant development and environmental responses. The importance of plant science has been increasingly recognized for agriculture, energy feedstock, and climate change studies.

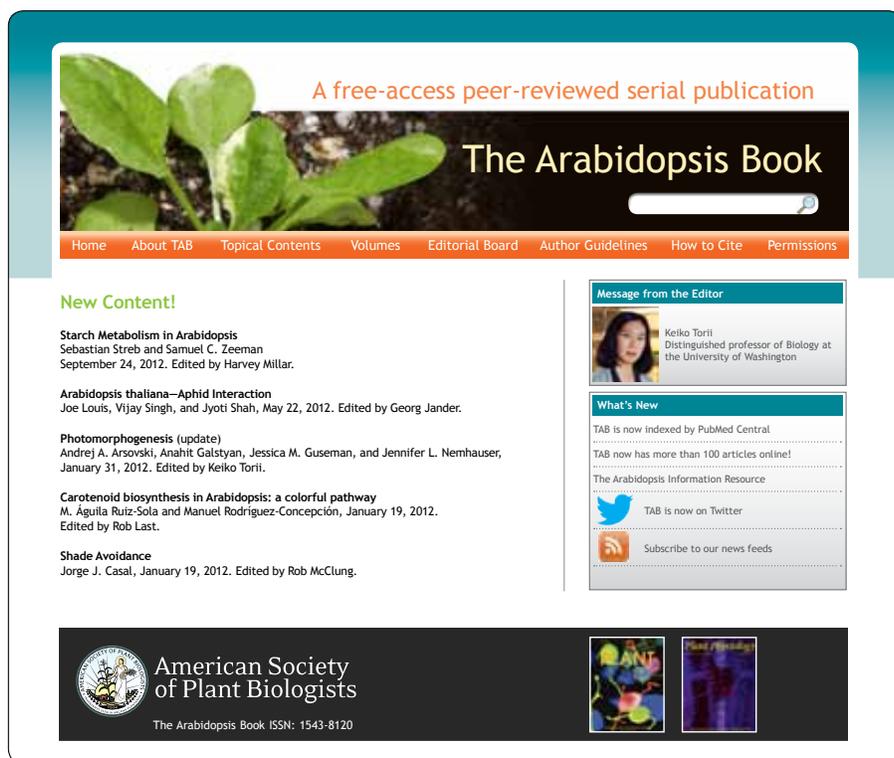
The objective of TAB is to provide scholarly and authoritative overviews of the state of knowledge about Arabidopsis for the plant biology community. As a free-access serial publication, TAB contributes to a wide range of audiences, including young researchers and students, all around the world. Each review article is written by the scientists who actively lead each research discipline and then peer-reviewed and carefully edited by our edito-

rial board members. The high quality and scientific rigor of each article, and the fact that each paper is freely and widely accessible from the moment of publication, characterize the uniqueness of TAB as a forum for plant biologists.

Thanks to the dedication of our former editor-in-chief, Rob Last, TAB now extensively covers topics in plant metabolites and biochemical pathways. To strengthen newly emerged and rapidly advancing research disciplines, Luca Comai and Ryan Lister recently joined the TAB editorial board. TAB is now positioned to expand into epigenetics, genomics/epigenomics, chromosomal biology, and natural variation while updating and expanding on existing topics such as development, environmental response, cell and organelle biology, and physiology. Taking advantage of web-only publishing, TAB encourages authors to update and revise existing review articles as research disciplines advance with new knowledge. In 2013, we plan to update our present articles and revamp our online functionality for even better discoverability and accessibility.

It is our goal for TAB to serve the plant biology research community at the same level as our ASPB sister journals, *The Plant Cell* and *Plant Physiology*. We welcome your comments, suggestions, and active participation! Visit TAB at <http://www.thearabidopsisbook.org>. ■

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*The Arabidopsis Book*  
ktorii@u.washington.edu



The screenshot shows the homepage of The Arabidopsis Book website. At the top, there is a banner with a green plant and the text "A free-access peer-reviewed serial publication" and "The Arabidopsis Book". Below the banner is a navigation menu with links: Home, About TAB, Topical Contents, Volumes, Editorial Board, Author Guidelines, How to Cite, and Permissions. The main content area is divided into two columns. The left column is titled "New Content!" and lists several articles with their authors and editors. The right column is titled "Message from the Editor" and features a small portrait of Keiko Torii, followed by "What's New" which includes information about indexing, article count, and social media links.

**New Content!**

**Starch Metabolism in Arabidopsis**  
Sebastian Streb and Samuel C. Zeeman  
September 24, 2012. Edited by Harvey Millar.

**Arabidopsis thaliana–Aphid Interaction**  
Joe Louis, Vijay Singh, and Jyoti Shah, May 22, 2012. Edited by Georg Jander.

**Photomorphogenesis (update)**  
Andrej A. Arsovski, Anahit Galstyan, Jessica M. Guseman, and Jennifer L. Nemhauser,  
January 31, 2012. Edited by Keiko Torii.

**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.

**Message from the Editor**  
Keiko Torii  
Distinguished professor of Biology at the University of Washington

**What's New**  
TAB is now indexed by Pubmed Central  
TAB now has more than 100 articles online!  
The Arabidopsis Information Resource  
TAB is now on Twitter  
Subscribe to our news feeds

American Society of Plant Biologists  
The Arabidopsis Book ISSN: 1543-8120

**PRESIDENT'S LETTER**  
*continued from page 3*

not only the producing countries but also other countries that depend on their exports. Several recent studies and reports indicate that growth in agricultural productivity is strongly associated with the adoption of new technologies. Public investment in agricultural R&D is a major source of new agricultural technologies that raise yields and also increase investments in important related activities, such as extension, education, infrastructure, and private R&D.

The President's Council of Advisors on Science and Technology (PCAST), an advisory group of leading scientists and engineers, directly advise the president on, among other

issues, things agricultural. On December 7, 2012, PCAST released a report ([http://www.csrees.usda.gov/newsroom/news/2012news/12072\\_PCAST.html](http://www.csrees.usda.gov/newsroom/news/2012news/12072_PCAST.html)). In this report, the recommendation was for the United States to increase its agricultural research investment. This includes a \$700 million per year increase for research aimed at areas in which ASPB members contribute—not inconsistent with investments in other less developed countries. The report calls for more competitive research grants and a network of public-private agricultural institutes to address pending challenges by refocusing and rebalancing the federal investment in agricultural research.

The priorities that came out of the Plant Summit in January will help coalesce “marketing messages” for plant biology research into some important key goals for the community that can be used to “sell” these kinds of increased funding efforts to the public and to government legislators. (Input on this effort is welcomed; see <http://plantsummit.wordpress.com/>.)

But increasing productivity is not the only solution needed for food sufficiency, as raised in a recent *Parade* magazine article (Dec. 2, 2012; <http://www.parade.com/news/2012/12/02-giving-issue-howard-buffett-hunger-in-america.html>) on Howard Buffet, son of millionaire philanthropist Warren Buffet, and his Feeding

America Foundation. As Mr. Buffet points out, in the United States we do produce enough food to feed our population, but many people either don't have access to these resources or can't afford them. It is difficult to comprehend that in the United States an “estimated \$3 billion in food [is] wasted because farmers can't find the labor to harvest it or it doesn't look perfect enough for store shelves.” So, this also challenges us, as plant scientists, to be involved not only in the science of food production, but also to take an active role in addressing the societal issues that need to be confronted so that we can meet the challenges of tomorrow's table worldwide. ■

**MIKE BLATT**  
*continued from page 6*

rial role with the *Biochemical Journal*, and I am convinced that Utopia will prove immensely attractive both for authors and readers of *Plant Physiology*. (*The Plant Cell* has also begun appearing online as a Utopia-ready publication.) Within the next few months, all articles dating back to 1998 in both journals will be marked up so that readers will benefit from Utopia-enhanced access when reading any of these articles as well. These innovations will position both journals for the next-generation online formats and ease the transition to online-only publication. What is Utopia?

Like the Adobe software, it is a PDF reader, but unlike its Adobe counterpart, Utopia links industry-standard PDF files directly to the Internet. For example, Utopia allows the user to select any text in any PDF file and, with a single click, call up Internet links that provide definitions, related publications, and source material. Utopia also links to a number of scientific databases and utilities that will shortly include various genomic, proteomic, and structural databases; search engines; and resources that many readers of *Plant Physiology* use regularly. With enhanced files, Utopia becomes seamlessly interactive online. For example, it allows the user to convert subsets of tabu-

lated data into graphical representations and vice versa *within* the PDF document itself. Of course, all files marked up for Utopia will still be readable with Adobe or any other PDF reader, but without the interactivity. In short, Utopia offers an entirely new dimension to online journal reading and usage. I encourage you to view the demonstration video, download the software (both available at <http://getutopia.com/>), and try it. Do feedback your comments and suggestions to me. I promise to give all serious suggestions serious attention.

Let me close by noting that the composition of the new editorial board reflects the commitment of *Plant Physiology* to the research

community across the breadth of the plant sciences. Each of the editors listed on the masthead has equal authority in deciding what we publish. In short, authors can be sure that their submissions will be handled by an editor both knowledgeable in and sympathetic to their topic of inquiry. Readers can be sure that what we publish sets the very highest scientific standards with the most innovative research into the origins, development, and function of plants. ■

MIKE BLATT  
Editor-in-Chief, *Plant Physiology*  
[eic-plantphys@glasgow.ac.uk](mailto:eic-plantphys@glasgow.ac.uk)

# Plant Biology <sup>2013</sup>

JULY 20-24 PROVIDENCE, RHODE ISLAND

RHODEISLAND2013.ASPB.ORG



## Rhode Island 101

### Facts About the State and Its Creative Capital, Providence, Home of the 2013 Meeting!

Beginning with this issue of the *ASPB News* and every issue up until the meeting, we will offer some historical facts, little-known statistics, and highlights of what to do if you have only a few hours of free time when in Providence.

Rhode Island, the Ocean State, is known for its miles of beautiful coastline and pristine natural resources. Ranked as one of the Top 10 Greenest States by *Forbes* magazine, Rhode Island's hospitality and tourism industry is on the forefront of preserving those resources. Rhode Island has an interesting and somewhat checkered past, but let's start with its capital—Providence.

#### History

Providence was founded in 1636 by renegade preacher Roger Williams, who was forced to flee Massachusetts because of religious persecution. Williams purchased land from the Narragansett Indians and started a new settlement with a policy of religious and political freedom.

Easily accessible by water, Providence became a major New World seaport. During the American Revolutionary War, Providence's craftspeople and merchants supplied goods to the Continental and French armies. Ever the entrepreneurs, Providence businesses were financing expeditions to the Mediterranean, Middle East, and Far East by 1781. With trade booming, the city grew and flourished.

Today, Providence boasts a flourishing cultural and academic community. The Tony Award-winning Trinity Repertory Company and the Providence Performing Arts Center are not only historic landmarks, but also feature Broadway musicals, children's performances, popular seasonal ballets, opera, plays, and musical concerts. Students and alumni of Brown University, Providence College, and Rhode Island College bring vitality to the city's intellectual life. The famous Rhode Island School of Design lends the city a hipster cool, with many young artists coming to study and staying to begin their careers. The world's largest culinary educator, Johnson & Wales University, has had a tremendous impact on Providence's much-lauded restaurant scene.

Despite its history and accomplishments, the city remains unpretentious and affordable. Even if you have only a few hours to spare, you will find great food, beautiful nature, and some fantastic museums and parks.

Reprinted from [www.goprovidence.com](http://www.goprovidence.com)

### Six Reasons to Attend Plant Biology 2013

1. World-class symposia and minisymposia speakers
2. Expanded posters, networking, career development, and education programs
3. Wireless throughout the convention center
4. Improved mobile app for your smart phone and tablet
5. Discounted on-site child care
6. An evening party at Providence's famous Waterplace!

For a peek at some things to do while in Providence, visit <http://www.goprovidence.com/>

# Five Major Symposia Featured in 2013

## Opening and Awards Symposium

### Speakers

**Lisa Ainsworth**, Charles Albert Shull Awardee, University of Illinois

**Ian Sussex**, Stephen Hales Prize Awardee, Yale University

**Robert Zeigler**, Leadership in Science Public Service Awardee, International Rice Research Institute

## Symposium I

### Plant Genomes: Evolution and Adaptation

As sessile organisms, plants must adapt to their changing surroundings. Revolutionary changes in sequencing technology have begun to allow functional and evolutionary genomic analysis of plant genomes at an unprecedented scale. Talks in this symposium will focus on how plant genomes have adapted to both natural and anthropogenic environments, from variation in climate and herbivory to selection under domestication. Such analyses will advance our understanding of the connection between genotype and phenotype, identify functional variants of use in plant breeding and improvement, and allow us to better predict how natural populations will respond to disturbance and climate change.

### Organizer

**Jeffrey Ross-Ibarra**, University of California, Davis

### Speakers

**Bin Han**, National Center for Gene Research, Chinese Academy of Sciences  
*A Comprehensive Map of Rice Genome Variation and Domestication*

**Thomas Mitchell-Olds**, Duke University

*Selection on the Genes That Control Complex Traits*

**Jeffrey Ross-Ibarra**, University of California, Davis

*Genomics of Highland Adaptation in Maize and Teosinte*

**Johanna Schmitt**, University of California, Davis

*Mapping Adaptation to Climate in Arabidopsis thaliana*

**DID YOU KNOW** that Secretary-elect Karen Koch has attended the ASPB annual meeting for the past 37 years, beginning with the 1976 meeting in New Orleans? As to why you should attend the next annual meeting in Providence, Rhode Island, Karen says, “What better place to form broad-based connections with the best plant scientists in the United States and beyond? Where else would one get such breadth and integration across so much of plant biology? These are really, really good meetings. And they’re fun on every front.”

## Symposium II

### Environmental Control of Plant Development

The sessile lifestyle of plants requires that they adapt to both rapid and longer-term changes in their environment. Temperature, light quantity and quality, time of day, nutrient status, and water availability all have a major impact on plant growth. In many cases, responses to the environment are mediated by the plant hormones. Recent research has begun to describe the complex networks that link the environment to hormone signaling pathways and downstream growth responses. The lectures in this symposium will highlight these exciting advances.

### Organizers

Joanne Chory and Mark Estelle, University of California, San Diego

### Speakers

**Joanne Chory**, University of California, San Diego

**Mark Estelle**, University of California, San Diego

**Keara Franklin**, Bristol University

**Zhiyong Wang**, Carnegie Institution for Science

**Christian Fankhauser**, University of Lausanne

## Symposium III

### Microbe–Plant and Plant–Insect Interactions

Lectures in this symposium will describe recent advances in plant–pathogen and plant–insect interactions. Plants recognize pathogen attack through two major modes—recognition of molecules characteristic of microbes, called Microbe-Associated Molecular Patterns (MAMPs), and recognition of specific pathogen proteins, called effectors, that pathogens deploy to interfere with activation of host defenses. Following pathogen recognition, a complex signaling network operates to activate immune responses. The first three lectures will focus on aspects of the host immune signaling system and on pathogen effectors that disrupt it. The last lecture will describe host defense against herbivorous insects, in which small molecule metabolites produced by the host play important roles.

### Organizer

**Jane Glazebrook**, University of Minnesota

### Speakers

**Jane Glazebrook**, University of Minnesota

*Roles of a Family of Calmodulin-Binding Proteins in Plant Immune Signaling*

**Jane Parker**, Max-Planck Institute for Plant Breeding Research

*Versatility and Robustness of Disease Resistance Pathways*

**Mary Beth Mudgett**, Stanford University

*Xanthomonas Effectors Arsenal: Weapons Targeting the Plant Immune System*

**Georg Jander**, Boyce Thompson Institute

*A Genetic and Biochemical Basis for Natural Variation in Maize Aphid Resistance*

# Plant Biology <sup>2013</sup>

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## Symposium IV

### Plants and Climate Change

Lectures in this symposium will outline change in the context of effects on plants, especially the major food crops. Focus will center on three of the major challenges: adapting to rising carbon dioxide, high temperature, and drought. For the first time in half a century, growth in consumption of primary food stuffs (grains, pulses, and root crops) is outpacing growth in production of these crops. The rate of increase in rice production has slowed, and that of wheat has stagnated, as the technologies of the Green Revolution meet their biological limits. Production could drop even lower in response to global atmospheric change at a time when the UN-FAO estimates that the world will need 70% more production by 2050. Understanding the impacts of global atmospheric change and how to adapt to it is becoming increasingly urgent. This is especially so, given the long lead time needed to move from discovery to market with our major crops.

#### Organizer

**Steve Long**, University of Illinois

#### Speakers

**Steve Long**, University of Illinois

*Food Security, Global Change, and Adapting to Rising Carbon Dioxide*

**David Lobell**, Stanford University

*Food Production and Food Security Under Global Change: What Do the Data Show?*

**Klaus-Dieter Scharf**, Center for Membrane Proteomics, Goethe University Frankfurt am Main

*Prospects for Improving Tolerance of Key Plant Processes to Increasing Incidence of High Temperature Stress*

**Andrew Leakey**, Institute for Genomic Biology, University of Illinois  
*Should the Paradigm of Reduced Plant Drought Stress at Elevated CO<sub>2</sub> Be Hung Out to Dry?*

**Josette Masle**, College of Medicine, Australian National University, Canberra  
*Molecular and Genetic Opportunities for Achieving Improved Water Use Efficiency*

## Volunteering at Plant Biology 2013

If you would like to spend a few hours helping with registration and other activities, just let us know. It is a fun way to meet colleagues and friends while at the meeting. Just send an e-mail to [info@aspb.org](mailto:info@aspb.org), subject line: Volunteer at 2013. All volunteers get the new meeting T-shirt!

## Symposium V

### President's Symposium—International Agriculture

Lectures in this symposium will embrace the richness of plants and plant biology and their importance in facing the challenges of the future. Without plants, of course, there would be no human existence on this planet. But, perhaps underappreciated, is the importance of the diversity of plant life in providing for our human needs—in the past, and more importantly, for the future. This series of lectures will explore that diversity, its importance for all living things, and how it can be studied and exploited to ensure the existence of future inhabitants—both in the developed and developing worlds. These efforts will require utilizing the entire breadth of plant life and academic disciplines available to plant biologists for optimizing our chances to meet future challenges.

#### Organizer

**Peggy Lemaux**, University of California, Berkeley

#### Speakers

**Cary Fowler**, University of Illinois

**Phil Pardy**, University of Minnesota

**David Bergvinson**, Gates Foundation

**Jonathan Lynch**, Pennsylvania State University

## Child Care at Plant Biology 2013

On-site child care services will be provided in Providence. Child care services are supported in part by the Eli Romanoff Fund, as administered by the Women in Plant Biology Committee; however, there is an additional hourly fee that is the responsibility of the parent or guardian.

This year's child care services will be provided by Newport Nannies, a locally owned, licensed, and bonded company. ASPB provides rooms at the convention center that are suitable for children and infants. The company ASPB selects is one that is used at conventions by other organizations similar to ASPB.

When making your plans to attend Plant Biology 2013, please review our child-friendly accommodations at <http://my.aspb.org/2013childcare/> or contact Shoshana Kronfeld at [shoshana@aspb.org](mailto:shoshana@aspb.org). Providence is a very family-friendly city with an excellent children's museum and a renowned park and zoo. For more details on what you and your family can do in Providence, check out <http://www.goprovidence.com/visitors/family-travel/what-to-do/>.

# 2013 Plant Biology

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RHODEISLAND2013.ASPB.ORG

## Abstract Categories

Abiotic Stress—General/Integrated  
Abiotic Stress—Light  
Abiotic Stress—Salt/Metals/Nutrients  
Abiotic Stress—Temperature  
Abiotic Stress—Water  
Applied Plant Biology/Biotechnology/  
Molecular Breeding  
Biochemistry and Metabolism  
Biofuels  
Cell Biology  
Development  
Ecophysiology and Whole Plant Physiology  
Education and Outreach  
Epigenetics  
Gene Regulation and Molecular Biology  
Genetics, Genomics, and Molecular  
Evolution  
Hormone Biology  
Model Systems, Synthetic Biology, and  
Technological Advances  
Photosynthesis  
Plants and Climate Change  
Plants and Human Health  
Plants Interacting with Other Organisms  
RNA Biology  
Signal Transduction  
Systems and Computational Biology and  
Bioinformatics



## Call for Abstracts

**Submission Open Now**  
<http://aspb.org/abstracts>

ASPB invites the submission of abstracts that report new scientific research developments in the areas listed on the left side of this page. Abstracts are welcome from scientists and students in all sectors, including academia, industry, government, and education.

All abstracts submitted for consideration for a minisymposium talk are reviewed by the Program Committee and will make up the scientific program for 28 to 30 minisymposia. Complete abstracts will be online ONLY.

**Abstract submission is separate from annual meeting registration. Please register for the annual meeting at the conclusion of your abstract submission.**

### Submission Deadlines

#### March 2

Regular abstracts (consideration for minisymposium talk)

#### June 1

Regular abstracts (poster only, for inclusion on memory stick)

#### June 15

Late abstracts (poster only)

**Abstracts must be submitted via the web at <http://aspb.org/abstracts>**

# Thirty-four ASPB Members Elected AAAS Fellows

BY KATHY R. MUNKVOLD, PhD  
 ASPB Associate Director of Public Affairs

**T**hirty-four members of ASPB were elected to the 2012 class of AAAS Fellows. Each year, the AAAS Council elects fellows based on their contributions to science and technology in the areas of research; teaching; technology; services to professional societies; administration in academe, industry, and government; and communicating and interpreting science to the public. Fellows are defined as AAAS members “whose

efforts on behalf of the advancement of science or its applications are scientifically or socially distinguished.”

New fellows will be honored with a certificate and a blue and gold rosette to symbolize their distinguished achievements at the AAAS Annual Meeting Fellows Forum, February 16, in Boston, Massachusetts.

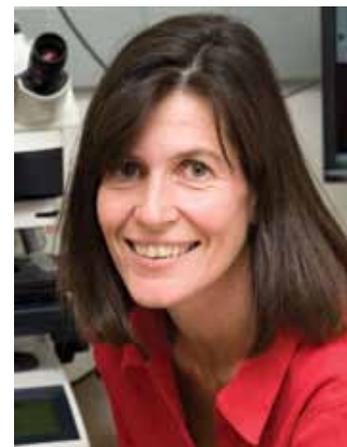
Congratulations to the following ASPB members:

## Section on Agriculture, Food, and Renewable Resources



**John James Finer**  
*Ohio State University*

For distinguished contributions in the development of new and insightful approaches for increasing the efficiencies of gene transfer and expression analyses in crop plants



**Maria J. Harrison**  
*Boyce Thompson Institute for Plant Research; Cornell University*

For distinguished contributions to our understanding of the molecular and cellular basis of development, signal transduction, and phosphate acquisition in symbioses between plants and mycorrhizal fungi



**Richard M. Bostock**  
*University of California, Davis*

For distinguished contributions to basic research in plant–microbe interactions, especially the role of lipid-based signaling and exemplary leadership in the National Plant Diagnostic Network



**Edward S. Buckler**  
*USDA–ARS; Cornell University*

For pioneering genetic approaches that allow researchers to identify the individual genes controlling complex traits in plants, which will greatly facilitate crop improvement for yield and nutritional value



**Avtar Krishan Handa**  
*Purdue University*

For distinguished contributions to the field of postharvest biology, particularly for discovering fundamental knowledge to develop fruit crops with enhanced shelf life, phytonutrients, and yield



**Karen E. Koch**  
*University of Florida*

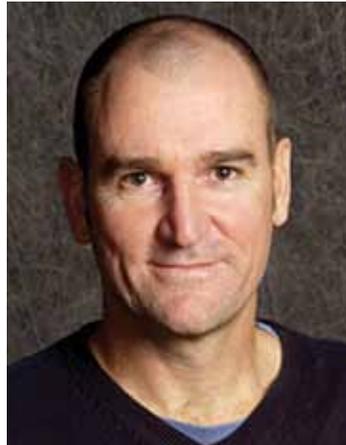
For pioneering research in sugar metabolism that led to a highly influential “feast and famine” framework for understanding sugar signaling in plants

*continued on page 14*

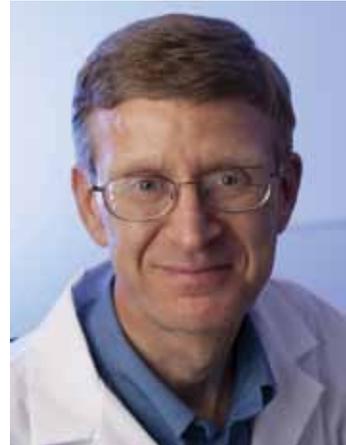
**Section on Agriculture, Food, and Renewable Resources** (continued from page 13)



**Cathie Martin**  
*John Innes Centre, United Kingdom*  
 For distinguished contributions to plant biology in the field of molecular genetics and to scientific discourse as editor-in-chief of *The Plant Cell*



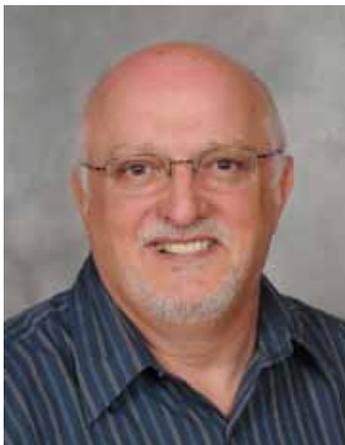
**Michael Karl Udvardi**  
*Samuel Roberts Noble Foundation*  
 For distinguished contributions to the field of legume biology and genomics, particularly for elucidating biochemical features of the Rhizobium–legume symbiosis



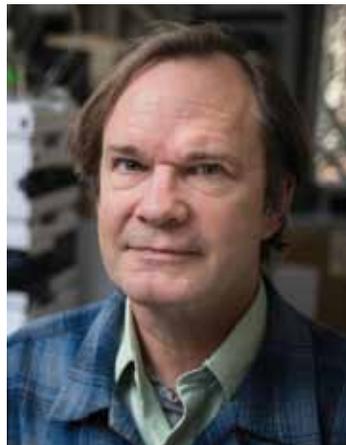
**Paul G. Ahlquist**  
*University of Wisconsin–Madison; Howard Hughes Medical Institute (HHMI); Morgridge Institute for Research*  
 For significant contributions to the areas of molecular virology, viral evolution, and pathogenesis



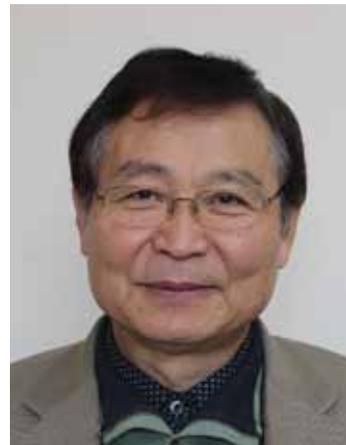
**Susan H. Brawley**  
*University of Maine*  
 For innovative and interdisciplinary approaches in elucidating critical factors in rocky seaweed distribution and for inspiring and training students at all levels



**Melvin J. Oliver**  
*USDA–ARS; University of Missouri–Columbia*  
 For distinguished contributions to plant stress biology, particularly for elucidating mechanisms of desiccation tolerance as well as promoting plant sciences both nationally and internationally



**Jonathan D. Walton**  
*Michigan State University*  
 For distinguished contributions to understanding the molecular basis of plant–fungal interactions, particularly toxin synthesis by fungi and their role in causing disease in plants



**Gynheung An**  
*Kyung Hee University, South Korea*  
 For distinguished contributions in plant transformation systems, rice functional genomics studies, and rice flowering mechanisms



**Thomas P. Brutnell**  
*Donald Danforth Plant Science Center*  
 For distinguished contributions to our understanding of C4 photosynthesis, light signaling in the grasses, and the development of genomic resources for the community

**Section on Biological Sciences**

Section on Biological Sciences (continued)



**Nicholas C. Carpita**  
*Purdue University*

For distinguished contributions to plant biology, particularly structure and biosynthesis of cell walls, gene discovery, and improvement of grasses as lignocellulosic bio-energy crops



**Xing Wang Deng**  
*Yale University*

For distinguished contributions to photobiology and outstanding service to ASPB, the international Arabidopsis research community, and as editor of *The Plant Cell*



**Jonathan Gershenzon**  
*Max Planck Institute for Chemical Ecology, Germany*

For distinguished contributions to knowledge of chemical ecology, in particular the composition, ecological roles, and evolution of plant defense compounds



**Georg Jander**  
*Boyce Thompson Institute for Plant Research; Cornell University*

For distinguished contributions to the study of plant resistance to herbivores, especially aphids, and to the study of plant amino acid metabolism



**Luca Comai**  
*University of California, Davis*

For distinguished contributions to research on the biological mechanisms underlying polyploidy and hybridization in general; technology development for functional genomics; specifically for generating and identifying mutations in plants; and pioneering development of the TILLING technology



**Joseph R. Ecker**  
*Salk Institute for Biological Studies; HHMI-Gordon and Betty Moore Foundation (GMBF)*

For distinguished contributions to the fields of genomics/epigenomics of plant and human cells, particularly for the development of new tools that enable genome-wide analyses



**Beverley R. Green**  
*University of British Columbia, Canada*

For distinguished contributions to the field of photosynthesis, particularly the biochemistry of light-harvesting complexes and molecular evolution of the chloroplast



**Alan M. Jones**  
*University of North Carolina at Chapel Hill*

For distinguished contributions to our understanding of signal transduction in plant cells, specifically cell proliferation and programmed cell death, and for service to the community

continued on page 16

Section on Biological Sciences (continued from page 15)



**Daniel F. Klessig**  
*Boyce Thompson Institute for Plant Research; Cornell University*

For distinguished contributions to the field of plant immunity, especially the critical roles played by the salicylic acid and nitric oxide mediated pathways



**Sheng Luan**  
*University of California, Berkeley*

For distinguished contributions to the field of plant cell signaling and for distinguished service to the plant biology community as founding editor-in-chief of *Molecular Plant*



**Joseph P. Noel**  
*Salk Institute for Biological Studies; HHMI*

For distinguished contributions to the understanding of plant metabolism, especially the evolution, biochemistry, and structures underlying the biosynthesis of specialized metabolites including polyketides and terpenes



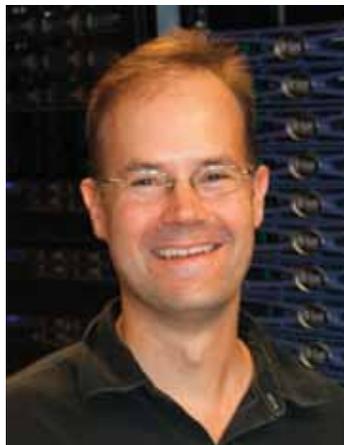
**Danny J. Schnell**  
*University of Massachusetts Amherst*

For distinguished contributions to the field of biological sciences, particularly for evolution and mechanisms of chloroplast protein transport, and for service to the plant science community



**Elena M. Kramer**  
*Harvard University*

For distinguished contributions to the field of the plant developmental evolution, particularly regarding the diversification of floral parts and the ecological significance of pollinator interactions



**Blake C. Meyers**  
*University of Delaware*

For distinguished contributions to the fields of bioinformatics and plant functional genomics, especially in the area of small RNA biology, in model and crop plants



**Eran Pichersky**  
*University of Michigan*

For distinguished contributions to the field of plant biochemistry, particularly to the biosynthesis and evolutionary biology of terpenes and other plant volatiles and flavor components



**Jane Silverthorne**  
*National Science Foundation*

For exceptional contributions enabling advancement of the next generation of biological scientists through support of innovative research and education

Section on Biological Sciences (continued)



**Keiko U. Torii**  
*University of Washington; HHMI-GMBF*

For distinguished contributions to our understanding of plant development, specifically the molecular-genetic basis of cell-cell communication, specifying organ shape, and stomatal patterning and differentiation



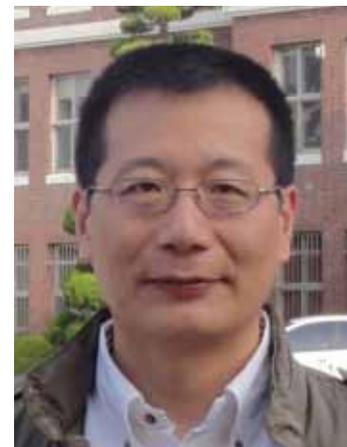
**Geoffrey O. Wasteneys**  
*University of British Columbia, Canada*

For distinguished contributions to the field of plant cell biology, particularly for innovative integration of microscopy with molecular genetics to model cytoskeletal organization



**Ruth Welti**  
*Kansas State University*

For distinguished contributions to the field of lipid biochemistry, particularly in mass spectrometry-based lipid analysis as director of the Kansas Lipidomics Research Center



**Shuqun Zhang**  
*University of Missouri-Columbia*

For distinguished contributions to plant signal transduction research, particularly toward understanding the roles of mitogen-activated protein kinases in plant development, stress, and defense

The entire list of 2012 AAAS fellows can be found on the AAAS website: [http://www.aaas.org/news/releases/2012/1130fellows\\_2012.shtml](http://www.aaas.org/news/releases/2012/1130fellows_2012.shtml). ■

# Got Meetings?

Advertise your upcoming conference or event in the *ASPB News* or in the ASPB monthly "Member Chatter" email to reach the entire ASPB membership and beyond. For costs and production details, visit [http://my.aspb.org/rate\\_card](http://my.aspb.org/rate_card). Contact Robyn Engelson at [rengelson@faseb.org](mailto:rengelson@faseb.org) for more information.

REMEMBER! You can post information about your meeting at no charge on ASPB's Community Calendar at [http://my.aspb.org/events/event\\_list.asp](http://my.aspb.org/events/event_list.asp). For additional questions on the Community Calendar, e-mail [info@aspb.org](mailto:info@aspb.org).

## Gates Foundation Bets Big on Plant Biology Research

Following Bill Gates's focus on agriculture in his 2012 annual letter (<http://tinyurl.com/bobyh6t>), the Bill and Melinda Gates Foundation (BMGF) recently announced several funding initiatives supporting plant biology research to benefit food security. ASPB members Steve Long and Don Ort received \$25 million over five years to increase the photosynthetic efficiency of staple crops, including rice and cassava. According to Steve, the project, titled *RIPE—Realizing Increased Photosynthetic Efficiency*, “represents a huge effort to determine and apply the mechanisms of photosynthesis that can contribute to the challenge of this century: food security for all.” RIPE is a multidisciplinary project combining computer modeling

with basic photosynthesis research and practical engineering to identify targets for improved photosynthetic efficiency. Don adds, “Business-as-usual crop development in the face of accelerating agricultural demand and the challenges of rapid global change will not get the job done.”

In a separate funding program, 10 ASPB members have been awarded Grand Challenges Explorations grants from BMGF. The grants, awarded twice a year, provide \$100,000 in support to explore innovative, early-stage projects to anyone from any discipline—from student to professor and including both academic and industry scientists. Grants awarded to ASPB members focused on transformative and durable methods for controlling weeds, pests, and pathogens on smallholder

farms in developing regions of the world. Projects that are successful may receive up to an additional \$1 million in support. ASPB member awardees and their grant titles include

- **Aymeric Goyer**, Oregon State University, and **Pamela Ronald**, University of California, Davis: A New Strategy for Resistant and More Nutritious Rice
- **Amitava Mitra**, University of Nebraska, Lincoln: A Strategy for Control of Plant Virus Diseases
- **Savithamma Dinesh-Kumar**, University of California, Davis: Engineered TALE Nucleases for Broad-Spectrum Resistance Against Cassava-Infecting Geminiviruses
- **Shunyuan Xiao**, University of Maryland, College Park:

Engineering Missile Defense in Crop Plants

- **Beat Keller**, University of Zurich: Improvement of Disease Resistance in Rice and Sorghum
- **Gregorio Hueros**, Universidad de Alcala, Spain: The Transfer Cells of the Maize Seed, an Anti-Fungal Barrier
- **Wolf Frommer**, Carnegie Institution for Science, **Bing Yang**, Iowa State University, and **Frank White**, Kansas State University: Transformative Strategy for Controlling Rice Blight

Additional information about specific grant proposals can be accessed at <http://bit.ly/V4u5NG>.

Kudos to BMGF for supporting plant biology research, and congratulations to all the awardees! ■

## Thirty-seven Years and Counting



Secretary-elect Karen Koch has attended the ASPB annual meeting for the past 37 years, beginning with the 1976 meeting in New Orleans. Karen looks back fondly on that first meeting, recounting, “People were either interested in my work or they faked it. The experience was totally energizing!” In particular, Karen enjoys meetings “where people really get to know one another and see the exciting, spirited

humans behind the science that is being shared.”

The Society is deeply rooted in the personal exchange that occurs at scientific meetings. The first meeting in Washington, D.C., was attended by 41 dues-paying members and held on December 29, 1924, to January 3, 1925. That's right: ASPB's first members chose to ring in the New Year with their colleagues! Times have changed since that

first meeting, including a dramatic increase in attendance, but the personal exchange of the best plant biology research remains the same.

If there is any question left in your mind as to why you should attend the next annual meeting in Providence, Rhode Island, Karen says, “What better place to form broad-based connections with the best plant scientists in the United States and beyond? Where else would one get such breadth and integration across so much of plant biology? These are really, really good meetings. And they're fun on every front!” ■

## From Around the Web

### Your Guide to Plant Biology News on the Internet

Articles on the science news website, *Science Daily*, recently featured several ASPB members, including Zhangjun Fei, scientist at the Boyce Thompson Institute for Plant Research (BTI), and Jim Giovannoni, scientist at BTI and research molecular biologist at the USDA Agricultural Research Service, for their contributions to the completion of the watermelon genome sequence (<http://bit.ly/Vzyg1D>); Henrik Scheller,

senior scientist at the Lawrence Berkeley National Laboratory, for his lab's work on tailoring plants for more efficient biofuel production (<http://bit.ly/TNzQee>); Rob McClung, professor of biological sciences at Dartmouth College, for his lab's work on the connections between reduced water availability, stomatal opening, and circadian rhythms (<http://bit.ly/TNBEUD>); and Clint Springer, assistant professor of biology at St. Joseph's University,

who discusses the environmental benefits of choosing a real Christmas tree for the holidays (<http://bit.ly/Vj7skf>). ■

Please visit the *Plants in the News* blog post at <http://www.aspb.org/plantsinthenews> for easy access to all the articles highlighted in this column.

"From Around the Web" represents a subset of the plant biology in the news posted on ASPB's *Plants in the News* blog, Facebook page,

and Twitter feed. To stay up-to-date, subscribe to the blog (<http://www.aspb.org/plantsinthenews>), "like" us on Facebook (<http://www.facebook.com/myASPB>), and "follow" us on Twitter (<http://www.twitter.com/ASPB>).

If you or your colleagues have been featured in the news and would like to be included in the next issue of the ASPB News, please contact ASPB's associate director of public affairs, Kathy Munkvold ([kmunkvold@aspb.org](mailto:kmunkvold@aspb.org)).

## Buchanan/Benson Interview Now on YouTube

Bob Buchanan, University of California, Berkeley, conducted an interview last June with Andrew Benson. A video based on the interview has been posted on YouTube together with the transcript. A brief description of the video is given on YouTube (<http://tinyurl.com/aodygg3>).

Andrew Benson worked closely with Melvin Calvin in research leading to the discovery of the photosynthesis carbon cycle. In the interview, he describes how the research was done and also discloses previously unreported details surrounding the work. It is Bob's hope that the film will be useful for teaching.

The video served as the focus of a seminar Bob gave at the Energy Biosciences Institute (EBI) upon its departure from the Calvin Laboratory for a new building. The seminar was the final EBI seminar in the Calvin Laboratory.

The Lawrence Berkeley National Laboratory, where Melvin Calvin held an appointment, has also posted the video on its website (<http://1.usa.gov/TZTd14>). Bob presented the video during recent trips to Sweden, Germany, and Cuba, reporting that it was well received at each of the five places he visited. ■



Bob Buchanan



Andrew Benson

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## UCR Center for Plant Cell Biology Celebrates 10 Years of Growth

When the Center for Plant Cell Biology (CEPCEB) was launched at the University of California, Riverside (UCR), in 2002, it was home to 10 faculty members from three departments on campus. Today, the center's membership has grown to 43 scientists from 13 UCR departments, and its reputation has soared. In December 2012, the university celebrated CEPCEB's first decade in a day-long ceremony that more than 100 researchers attended. A special symposium was also held to recognize CEPCEB's significant achievements and discuss the latest research being conducted in the field of plant cell biology.

Natasha Raikhel, a distinguished professor of plant cell biology and former editor-in-chief of *Plant Physiology*, has served as the director of the center since 2002. During the ceremony, Julia Bailey-Serres, a longtime CEPCEB member and a professor of genetics in the Department of Botany and Plant Sciences, as well as ASPB secretary and Program Committee chair, was named CEPCEB's new director. She succeeded Natasha Raikhel on January 1.

The university recruited Natasha, one of the most highly cited researchers in plant science, to lead the new center and create and manage its state-of-the-art core instrumentation facilities that offer an integrated system of instruments allowing for chemical genomics research on



Natasha Raikhel

plants and the analysis of unprecedented quantities of information yielded from genome and protein sequencing. "People love and enjoy plants but do not often remember how essential plants are for our well-being and health and for a sustainable global environment," said Natasha. "Plants can live without us, but we cannot live without plants! We know a lot at the genetic level about the way plants develop and respond and adapt to environmental conditions. But we know very little about what is happening on a cellular level to proteins in live cells during development or in response to different environmental conditions—knowledge that is critical to addressing the challenges we face with the increasing worldwide demand for food, global warming, and biofuel production."

Under Natasha's leadership, CEPCEB grew from an idea of interdisciplinary collaborative

research to a world-leading center of plant sciences and genome research. It was largely due to her efforts that the center succeeded in hiring excellent scientists to build a strong, cohesive, and integrative research program in plant cell biology, quickly making UCR an internationally recognized center for plant cell biology and plant biology. Within a matter of years, CEPCEB enjoyed a unique niche in the field of plant biology, having effectively integrated computational biology, proteomics, microscopy, and chemical genomics to investigate key questions in plant biology.

"CEPCEB has created a highly collegiate and supportive research environment, such that scientists are nurtured in their ideas and encouraged to be imaginative in their research," said Cathie Martin, a group leader at the John Innes Centre and a professor at the University of East Anglia, as well as chief editor of *The Plant Cell*. "From this comes true innovation and creative energy."

CEPCEB researchers have won numerous awards and honors. At present, the center is home to two members of the National Academy of Sciences (NAS), one of whom (Susan Wessler) is NAS's first appointed woman home secretary; 17 AAAS fellows; one HHMI fellow; two recipients of the ASPB Charles Albert Shull Award; two winners of the ASPB Stephen Hales Prize; three ASPB fellows; and four recipients of the National Science Foundation CAREER Awards.

"Just about every day I see vibrant groups of CEPCEB scientists discussing their discoveries, inquiries, and collaborations in the Genomics Building," Natasha said. "That's when I feel that what I dreamed of achieving when CEPCEB was founded 10 years ago is a reality. It makes me very happy and proud of all our talented and driven scientists and educators." ■

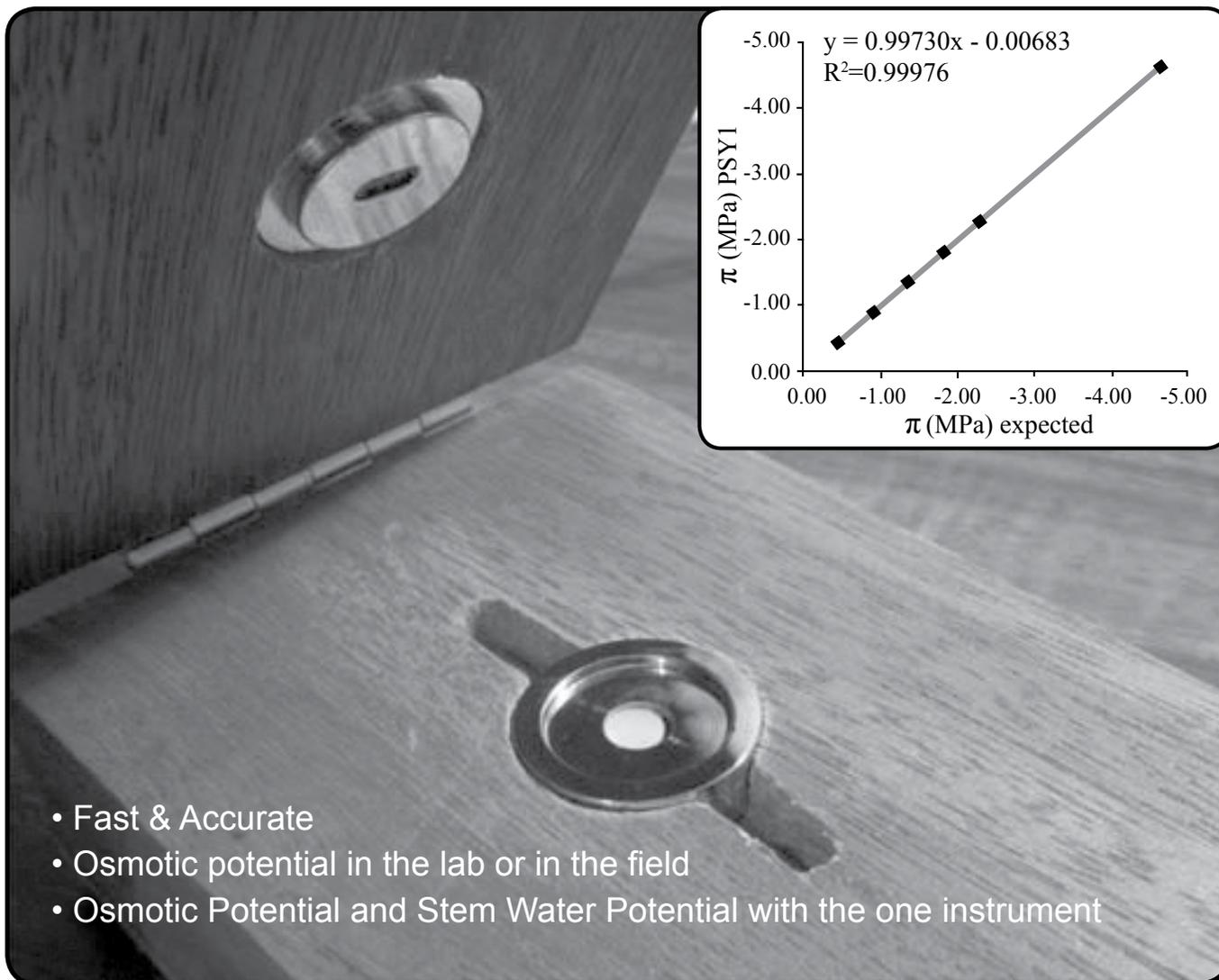
*This story was adapted from an article in UCR Today by Iqbal Pittalwala, originally published on December 10, 2012, at <http://ucrtoday.ucr.edu/10648>.*



Julia Bailey-Serres. PHOTO BY L. DUKA.

# Leaf Osmotic Potential

**PSY1 Stem Psychrometer** for the measurement of osmotic potential in plants



The inset graph displays a linear regression line with the equation  $y = 0.99730x - 0.00683$  and a coefficient of determination  $R^2 = 0.99976$ . The x-axis is labeled  $\pi$  (MPa) expected and the y-axis is labeled  $\pi$  (MPa) PSY1. Both axes range from 0.00 to -5.00.

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As the years churn on, many esteemed members of ASPB have passed the torch to their younger colleagues and stepped out of the limelight to allow others to bask in its glory. Yet, many continue their good works to the benefit of plant biology and the world. Edited by Beth Gantt, University of Maryland, "Where Are They Now?" is part of the *ASPB News* suite of columns focused on the personal and scientific life and insights of ASPB members at all stages of their career. This column offers a look into the current activities of influential members of ASPB who continue to make a positive mark on our Society. We hope you all enjoy this addition to your newsletter.

Please feel free to submit your own article to "Luminaries," "Member Corner," or "Where Are They Now?" For details please contact me, David Horvath, Membership Committee chair, at david.horvath@ars.usda.gov. As always, we are open to suggestions for articles or features of interest to readers of the *ASPB News*. Enjoy!

## Joe H. Cherry

Professor Emeritus, Auburn University, Alabama

When I started graduate school at the University of Illinois, Dick Hageman and John Hanson were my major mentors. They encouraged me to take as many courses in chemistry and biochemistry as would fit my schedule. They also encouraged me to do as much research as I could. This resulted in 11 publications in four years while studying for the MS and PhD degrees. Following graduate studies, I spent a year at the USDA laboratory in New Orleans as a biochemist. Subsequently, I spent 27 years at Purdue University and was promoted to full professor in five years. In the early 1960s, in the beginning of my career (I call it the "Golden Years of Biology" under the leadership of President John F. Kennedy), I was blessed with having all my research proposals funded for at least 10 years.

During my early years at Purdue, I was fortunate to have excellent graduate students and postdoctoral associates working in my laboratory who contributed to the publication of one research paper every two months. As a result of research papers from my laboratory, I was happy to have



Joe H. Cherry

the opportunity to travel to many laboratories and conferences in Europe and Japan. Also, I had the opportunity to take a sabbatical leave in Oxford, England; teach biochemistry at Thessaloniki, Greece, on a Fulbright Fellowship; and teach biochemistry in Lucknow, India, supported by UNESCO.

In the mid-1980s, while active as an officer of ASPB, I came to know Pat Richter, who was business manager of the Society at the time and whom I later married. In 1985, I took the position of professor and head of the Department of Botany

and Microbiology at Auburn University. While at Auburn, I started a research program on abiotic stresses (this was the time of heat shock proteins). Over the next few years, I obtained funds from NATO to sponsor three conferences on abiotic stresses in plants. These conferences were held in England, Italy, and Poland, and attended by scientists from 18 countries.

After I retired from Auburn University and became professor emeritus, Pat and I moved to Navarre, Florida. It was a dramatic change after 44 years in research, teaching, and administration at Purdue and Auburn Universities. Even before leaving Purdue, I became aware of a problem in the food/restaurant market. Many people had allergic reactions to French fried potatoes, and as many as 25 died each year. I learned the problem was caused by the use of sodium bisulfite to prevent blackening after preparing potatoes. Polyphenol oxidase is the enzyme that oxidizes phenylalanine and tyrosine to DOPA to cause certain fruits and vegetables to turn brown to black in color. The enzyme is inhibited by a number of anti-

oxidize inhibitors such as ascorbic acid, citric acid, and L-cysteine. With the backing of the Purdue Research Foundation, patents were obtained and ownership was transferred to me. A small company was organized and listed on NASDAQ to commercialize products for cut potatoes as well as other vegetables. This was a fun time that I call "Kitchen Biochemistry." However, after 15 years, the company became dormant.

Also during the latter stage of my career, I had the opportunity to serve on the board of directors of the Organization of Tropical Studies (OTS) for five years. OTS, in partnership with Duke University, offers semester and summer programs for undergraduate students interested in field biology at all three OTS field stations as well as other Costa Rican sites, allowing direct study of a wide range of tropical ecosystems and habitats.

While at Auburn, I became involved in volunteer work at Camp ASCCA, an Easter Seals camp in Alabama for disabled individuals. Camp ASCCA's mission is to help eligible indi-

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### WHERE ARE THEY NOW? *continued from page 23*

viduals with disabilities and/or health impairments achieve equality, dignity, and maximum independence. This is to be accomplished through a safe and quality program of camping, therapeutic recreation, and education in a year-round, barrier-free environment. Its goal is to serve those who can derive maximum benefit from the resident camp experience and provide a healthier, happier, longer, and more productive life for children and adults of all abilities.

Northwest Florida is a beautiful area and offers many activities, including fishing and boating. Many call it Paradise. On several occasions, members of my family have accompanied me on deep-sea fishing trips in the Gulf.

When we moved to Navarre, it became necessary for me to find some activity to keep occupied. I decided to become a real estate associate and, of course, got into the market at the world's worst time.

In 1977, Pat was the business manager of ASPP. Timing is always so important, and as luck would have it, the Gude family of Montgomery County, Maryland, was getting ready to retire the family nursery business. The Society accountant, Richard Tidler, knew Robert Bullard, a lawyer for the Gude family. Contact was made with Gilbert Gude, and the idea of donating a parcel of land consisting of an attractive two-story mansion with extensive grounds, a swimming pool, out buildings, and a barn to ASPP was very appealing to the Gude family, especially since ASPP had a 501(c)3 tax status. Pat



*Pat Cherry*

contacted Bullard on September 23, 1977, expressing the need for a plant science headquarters complex to accommodate ASPP, and through her work with Bullard, she was instrumental in the transfer of the deed and title to ASPP. She also worked with the ASPP officers, the Gude family, and contractors in the final agreement and restoration of the family home to accommodate offices. On September 15, 1980, ASPP was moved to its new headquarters located at 15501 Monona Drive in Rockville.

Over the past 30 years, Pat has managed to stay more than active. She turned a needlework hobby into a full-time business—Fern Ridge Collections. She designs needlework and beadwork and sells wholesale kits to needlework shops across the country and overseas as well.

We enjoy our retirement life but would like to move back to Auburn and perhaps become involved with the university there. ■



*Richard (son), Joe, Graeme (grandson), and Mike (son).*



*Granddaughter (Angela Spahr) and friend.*

# Policy Update

BY KAITLIN CHELL, Lewis-Burke Associates, LLC  
and KATHY R. MUNKVOLD, ASPB Associate Director of Public Affairs

As the 112th Congress has come to a close and the 113th Congress has begun, many pressing issues still are not finally resolved at the time of writing. Given that the election maintained the same leadership roles in the White House and throughout Congress, compromise likely will remain difficult as Democrats retain control of the White House and the Senate and Republicans retain control of the House of Representatives. However, scientific research, in general, enjoys bipartisan support.

## 2012 Elections

After a long and hard-fought campaign, President Barack Obama was sworn in for a second term on January 20. However, his ability to successfully govern in his second term will depend on compromise, which may be complicated given the election results. Democrats increased their majority in the Senate and will control 53 seats along with two Independents who will caucus with them. However, many of the changed seats in the Senate resulted in a move from a more moderate candidate to a more partisan one—potentially resulting in a more difficult environment for compromise. Republicans held on to their majority in the House.

## The Fiscal Cliff and the Farm Bill

Congress brought the country to the brink of the “fiscal cliff,”

passing a negotiated budget agreement after the midnight deadline on New Year’s Eve when taxes were due to increase on most Americans. In addition to the larger issues surrounding individual tax rates, among the provisions in the final agreement were an extension of the 2008 Farm Bill, a two-month delay of the budget sequestration, and extensions of important research and education tax credits and deductions.

While the budget agreement, known as the American Taxpayer Relief Act of 2012 (H.R. 8), addresses the above provisions, it fails to tackle other major fiscal issues, including creating a structure for long-term tax reform or the reform of entitlement and other mandatory programs. Congress also deferred action to increase the limit for government borrowing beyond the current debt limit of about \$16.4 trillion. These issues, along with the expiration of the Continuing Resolution funding the entire federal government through March 27 and other tax issues on the Obama Administration’s agenda will be urgent items for the new Congress, which was sworn into office on January 3.

As part of the fiscal cliff package, Congress voted to extend the 2008 Farm Bill through September 30, 2013, maintaining the current authorization levels for USDA’s entire Research, Education, and Economics Mission Area, which

includes the Agricultural Research Service (ARS) and the National Institute of Food and Agriculture (NIFA).

As previously reported, the Senate passed its version of the Farm Bill in June 2012. Although the House Committee on Agriculture sent its bill to the full House of Representatives for consideration in July, House leadership never provided time for the House to debate the bill. With significant overall savings in each version of the bill (\$23.6 billion in the Senate bill and \$35 billion in the House bill), some in Congress had discussed using the Farm Bill as part of a solution to resolve the “fiscal cliff.” As Congress chose to extend the 2008 bill, it must work to craft a new 2013 Farm Bill this year. The 2013 Farm Bill discussions may be included in larger discussions on entitlement reform as the House and Senate Agriculture Committees will be expected to derive future savings in mandatory spending.

## 113th Congressional Committee Leadership

In late November, the House of Representatives and the Senate determined the chairs and ranking members of the various congressional committees. Republicans self-impose limits on leadership positions on each committee to a six-year term, resulting in several Republican committee leadership changes. However, Democrats do not im-

pose these limits on themselves.

Of interest to plant biology, the House Committee on Agriculture will maintain the same leadership with Rep. Frank Lucas (R-OK) as the chairman and Rep. Collin Peterson (D-MN) as the ranking member. The House Committee on Science, Space, and Technology will see a change of leadership from Chairman Ralph Hall (R-TX), who “termed-out,” to Rep. Lamar Smith (R-TX). Rep. Eddie Bernice Johnson (D-TX) will remain as ranking member. Additionally, the House Committee on Appropriations will maintain Rep. Hal Rogers (R-KY) as its chairman, but the ranking member will change, as Rep. Norm Dicks (R-WA) retired at the end of the 112<sup>th</sup> Congress. Rep. Nita Lowey (D-NY) has replaced Rep. Dicks.

The Senate Committee on Agriculture, Nutrition, and Forestry, like the House Committee, will maintain its current leadership with Senator Debbie Stabenow (D-MI) as the chairwoman; however, Senator Thad Cochran (R-MS) has replaced Senator Pat Roberts (R-KS) as the ranking member. For the Senate Committee on Appropriations, Senator Barbara Mikulski will become the new chairwoman, as the past chairman, Senator Daniel Inouye (D-HI), died in December. Senator Thad Cochran (R-MS) will remain as ranking member.

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**POLICY UPDATE**  
*continued from page 25*

Finally, the Senate Committee on Commerce, Science, and Transportation will maintain Senator Jay Rockefeller (D-WV) as its chair while its ranking member position will change. The current ranking member, Senator Kay Bailey Hutchison (R-TX), retired at the end of the 112th Congress, and Senator John Thune (R-SD) will assume the role.

**ASPB Stands with Broader Community to Defend Budget Against Sequestration**

ASPB partnered with the broader scientific community in several efforts to protect science and

technology research funding from the devastating cuts associated with sequestration in the fall of 2012. Sequestration was one component of the fiscal cliff that directly affected research because it would cut discretionary funding (which encompasses most federally funded research) by approximately 8%. Although Congress reached a fiscal cliff deal, at the time of writing the threat of sequestration still looms.

ASPB has actively advocated against sequestration through several measures. In July 2012, along with nearly 3,000 other organizations, ASPB signed a letter urging Congress to avoid sequestration using a balanced approach to deficit reduction (<http://bit.ly/Xmtl8o>). As Congress

entered the “lame duck” session in November 2012, ASPB also joined forces with the American Society of Agronomy (ASA), Crop Science Society of America (CSSA), Soil Science Society of America (SSSA), and National Association of Plant Breeders (NAPB) in acquiring the signatures of more than 1,350 member scientists and others in the agricultural research community on a letter pressing Congress for a comprehensive and balanced approach to debt reduction. The letter also highlighted the potential harm to the scientific research enterprise—and particularly agricultural research—if sequestration were to transpire (<http://bit.ly/TLU1ct>). ASPB also spearheaded a letter from the AFRI Coalition

(<http://bit.ly/VEIMEG>), which advocates for funding of the Agriculture and Food Research Initiative, to address sequestration and “to find long-term solutions to our nation’s fiscal difficulties without jeopardizing the backbone of this nation’s economy—research and development (R&D).”

As negotiations to avert the fiscal cliff heated up in December 2012, ASPB signed another letter emphasizing the importance of federal support for research and development and the dire consequences of allowing sequestration to occur. AAAS organized this letter, which was delivered to Congress in December (<http://bit.ly/VkWjRE>). ■

## 2013 ASPB Education Foundation Grant Promoting Plant Biology Education and Outreach

**Apply March 1 - June 6, 2013**

**Instructions & Online Application: <http://efg.aspb.org>  
New Maximum Funding: \$50,000 (up from \$30,000 max)**

ASPB members can submit proposals for education and outreach resources (i.e., NOT basic science research projects) that enrich 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 improve the quality and disease- and stress-resistance of crops;
- Discoveries made in plants that have led to improved human health and well-being; or
- Range of careers related to plant biology or available to plant biologists.

A list of project options that meet the Foundation’s goals for the development, implementation, and evaluation of education and outreach resources can be found at <http://efg.aspb.org>.

## Announcing the 2013 ASPB Master Educators!

BY ERIN DOLAN  
University of Georgia

The ASPB Education Committee is pleased to announce the selection of Penny Kianian (North Dakota State University) and Jessica Lucas (Santa Clara University) as the 2013 ASPB Master Educators!

Jessica and Penny were selected based on the strength of their respective plans to participate in focused, substantive, and practical professional development with the aim of authoring undergraduate plant biology instructional materials that are aligned with the recommendations of *Vision and Change* (<http://visionandchange.org/finalreport>) and ASPB's new core concepts in plant biology (<http://www.aspb.org/PlantBioCoreConcepts>).

Major themes of the *Vision and Change* final report from AAAS, NSF, and other stakeholders include teaching core concepts and competencies, focusing on student-centered learning, promoting campus-wide commitments to change, and engaging the biology community in implementation of change. NSF awarded ASPB a grant to host a workshop in 2011 to gather feedback from plant biologists on how to put the *Vision and Change* recommendations into practice. One of the major concerns that emerged from this workshop was the lack of instructional materials in plant biology that align with *Vision and Change* recommendations. To address this concern, the ASPB Education Committee created the ASPB Master Educator program.

The committee was pleased to receive numerous applications in the program's inaugural year from members who were committed to undergraduate plant biology education and had strong plans to develop high-quality plant biology teaching materials.

Penny will develop POGIL instructional materials (process oriented guided inquiry learning; <http://www.pogil.org/>) following her participation in a professional development session at Linfield College, Oregon. During POGIL, which is more common in chem-

istry than biology classrooms, students learn scientific concepts by exploring data or information and responding to questions that guide them toward scientifically defensible explanations. Jessica will develop instructional materials according to the principles of "scientific teaching" following her participation in CCB FEST (the Community College Biology Faculty Enhancement through Scientific Teaching Program; <http://www.sfsusepal.org/programs/ccb-fest/>) through a partnership between De Anza

College and San Francisco State University in California. Scientific teaching, which is at the foundation of the *Vision and Change* recommendations, engages biology faculty in improving their teaching by evaluating their students' learning and using the results of this analysis to revise their teaching. Both Master Educators will present the materials they develop at the 2014 Plant Biology meeting in Portland, Oregon. Join us in congratulating them, and keep an eye out for the fruits of their labors! ■



*I am excited for the opportunity that ASPB's Master Educator program is providing me. I will be participating in CCB FEST, which is a scientific teaching workshop that will be held at San Francisco State University in August 2013. I will build teaching materials that are aligned with the core concepts and proficiencies for plant biology recommended by ASPB and the Vision and Change report.*

—Jessica Lucas



*It is an honor to represent the members of ASPB as a recipient of the 2012 ASPB Master Educator award. It is exciting to embark on the opportunity to learn the process orientated guided inquiry learning (POGIL) approach. This research-based approach is student centered and can be applied in large and small classes and lab courses. I look forward to applying this pedagogy to enhance the teaching of plant biology core concepts.*

—Penny Kianian

# The Chlorophyll Content Meter From Germination Through Maturity



Prickly Pear Cactus



Rice, Wheat, Corn & Food Crops



Turfgrass



A variety of  
Algae on Rocks



Agave



Various  
Aquatic Plants



Fruit



Arabidopsis

- **Fluorescence Ratio Chlorophyll Content**  
- technology for hard to measure samples
- **Widest reliable measuring range**  
- from 41 mg/m<sup>2</sup> up to 675 mg/m<sup>2</sup>
- **High degree of correlation to chemical tests**  
- determination coefficient of r<sup>2</sup>=0.96
- **Single point and 2-30 point averaging**  
- statistical analysis and 2 Gbyte of storage
- **Direct read out of chlorophyll levels & ratios**  
- high resolution color graphics display



Immature  
Rice

# ASPB at the National Association of Biology Teachers Annual Meeting

BY KATIE ENGEN  
ASPB Education Coordinator

ASPB hosted yet another busy outreach booth at the National Association of Biology Teachers (NABT; <http://www.nabt.org>) annual meeting in Dallas, Texas, October 31 through November 2, 2012. Although the conference opened on Halloween, the only scary bit of this outreach experience was a mild frenzy of “mad scientists” rushing into the exhibit hall for free treats and to discover the best tricks for teaching biology.

ASPB had a great team of volunteers in the booth. ASPB Education Committee member Scott Woody (University of Wisconsin) anchored the booth with his Fast Plants sc resources. In fact, one of the biggest drivers of booth traffic was the workshop Scott led on Thursday. Many workshop attendees came to the booth to learn more about Scott’s program. Others came based on word of mouth about the potential impact of the Fast Plants sc model. Teachers were inspired with new ideas for helping students experiment to understand Mendelian and molecular genetics. And everyone loved the free self-compatible seeds Scott gave out!

Brian Ayre and Amanda Wright brought their expertise and enthusiasm from nearby University of North Texas (UNT). Brian met the flood of eager booth participants during a very busy Thursday evening session. Amanda managed the ebb and flow of booth visitors

over a very full Friday. Both Brian and Amanda were instrumental in explaining much of the plant biology and genetics of Scott’s materials, as well as helping booth visitors access the many other resources from ASPB.

Teachers stayed for lengthy discussions on pedagogical concepts and for practical tips for lab setups. They left inspired to work with concepts and resources that they may other-

wise have thought too difficult to use in their classrooms with confidence and accuracy. Several local teachers established the basis for future collaborations with Brian and Amanda as well. One especially eager local teacher sporting a sparkly “Science Rocks!” T-shirt returned to the booth in the final minutes to collect all the display plants for use in her own classroom.

*continued on page 30*



Scott Woody (right) agrees with this plant enthusiast’s T-shirt, which says, “Science Rocks!”

## Upcoming ASPB Outreach Events

Plan ahead! If you work in a host city or will be at one of these conferences already, please contact [katie@aspb.org](mailto:katie@aspb.org) to learn more about volunteering in the ASPB booth:

**AAAS Family Science Days**  
Chicago, Illinois  
February 16–17, 2013

**National Science Teachers Association Annual Meeting**  
San Antonio, Texas  
April 11–14, 2013  
Boston, Massachusetts  
April 3–6, 2014

**Fascination of Plants Day: A Worldwide Initiative**  
May 18, 2013

**National Association of Biology Teachers Annual Meeting**  
Atlanta, Georgia  
November 20–23, 2013

**United States Science and Engineering Festival**  
Washington, D.C.  
April 24–27, 2014

**NABT ANNUAL MEETING**  
*continued from page 29*

Visitors eagerly gathered a spectrum of K–16 resources, which included the coloring and activity book *My Life As A Plant*, a suite of materials for using inquiry to teach the 12 principles of plant biology, and the new initiative where high schools and public libraries can request free online access to ASPB's scientific journals. High school intern Brennah Engen (daughter

of ASPB Education Coordinator Katie Engen) engaged everyone to explain ASPB resources and set them up with free materials. One NABT official was heard to say that he was voting ASPB's the best booth since Brennah's savvy interactions were evidence of the Society's ability to support quality educational outcomes among students.

All in all, it was a big success in the Big D. Thank you, ASPB volunteers! ■



*I had a great time volunteering at the ASPB booth. I enjoyed talking with the teachers and discussing the challenges and joys that come with teaching science to high school students. I found that many of the tools and ideas that ASPB is promoting can be adapted to an undergraduate audience, and I left the experience thinking about ways to incorporate them into my own classes.*

—Amanda Wright (UNT)



*Interest in Scott Woody's resources never wanes.*



*I enjoyed discussing our craft (plants and plant science) with a new audience. We become so accustomed to talking to our undergraduate and graduate students and our colleagues both on campus and at conferences such as the ASPB annual meetings that it is a pleasure and almost a challenge to engage a new audience with different interests and needs. By talking one on one with teachers, I gained new insight into what they require to engage a younger cohort of students in inquiry-based learning. This, in turn, had me thinking of new strategies to increase the effectiveness of my efforts at the university level.*

—Brian Ayre (UNT)

*My overall impression from the conference was that a lot of people came together to have a lot of fun learning a lot about biology. I think this is a good thing. As a bonus, I got a copy of *The Immortal Life of Henrietta Lacks* by Rebecca Skloot and got to see the connection between some of the genetics concepts in our booth and other things.*

—Brennah Engen (High school intern)

## WORKSHOP: Fast Plants sc: A New Generation of Resources for Hands-on Education in Genetics, Evolution, and Genomic Sciences

**Scott Woody** (swoody@wisc.edu)  
University of Wisconsin–Madison

**Demonstration** (75 min.): Genetics for high school and two-year and four-year institutions

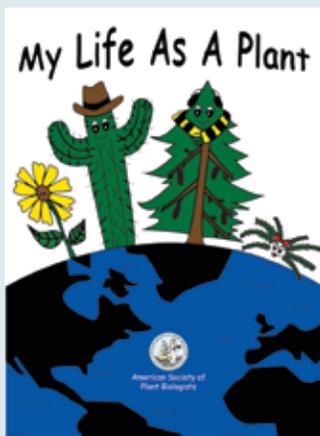
Fast Plants is a novel analog of *Brassica rapa*. Use this collection of mutants and complementary PCR-based resources to link Mendelian and molecular genetics.

## Winning Results *My Life As A Plant* Raffle

Congratulations to Catherine Ambros! Catherine entered the ASPB booth raffle and won 30 copies (a classroom set) of the ASPB coloring and activity book *My Life As A Plant*. Just days before the presidential election, the raffle required visitors to vote for the category of plants they use most each day: food, fibers, or fuels. Teachers appreciated how this straightforward question triggered some deep thinking. They also saw its power to eradicate “plant blindness” among their students. Additionally, many teachers immediately understood how this model of exposing students to consider just one “big question” taps into quality consideration of important themes. Teachers liked how easily this “big question” model can transfer to class warm-ups, clicker questions, and science communication activities.

And the results? Fibers won the day in Dallas. And Catherine won free coloring books to share with her seventh-grade life science class at Somerville Middle School in New Jersey. Coincidentally, Catherine is the current NABT chair of professional development. She made a point of thanking ASPB for its ongoing support of science education and providing a variety of inquiry-based resources to support classroom success. ■

## ASPB's New Coloring Book for the Youngest Scientists!



Now Available on Amazon!

<http://tinyurl.com/AmazonMyLifeAsAPlant>

Free PDF at [www.aspb.org/coloringbook](http://www.aspb.org/coloringbook)



Fascination of  
Plants Day

May 18<sup>th</sup> 2013

## What are YOU doing on May 18, 2013?

Be part of a global movement:  
Second International Fascination of Plants Day  
Help the world appreciate that plants  
are unique organisms

<http://www.plantday12.eu>

Join plant experts and enthusiasts in 40+ countries as they promote to the public basic plant science, agriculture, horticulture and gardening, forestry, plant breeding, plant protection, food and nutrition, environmental conservation, climate change mitigation, smart bioproducts, biodiversity, sustainability, renewable resources, plant science education, and art!

ASPB Education Committee Chair Kathleen Archer is serving as one of three FoPD national coordinators for the United States. What can you do?

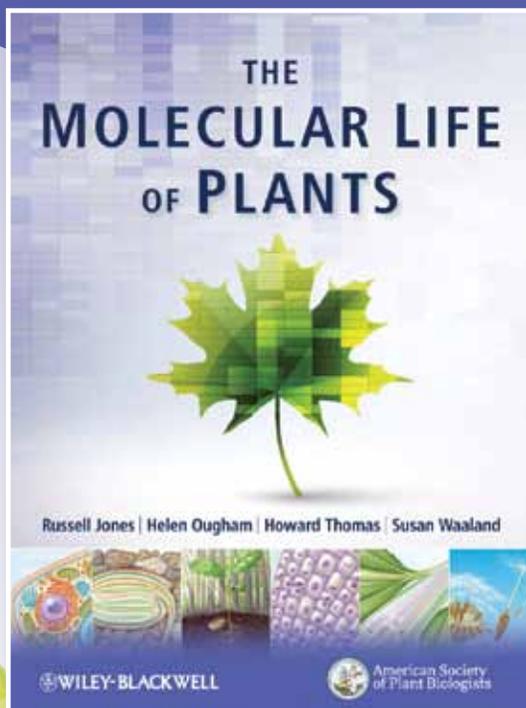
- Plan a way to share with the public cool elements of what you do in the lab or classroom.
- Find ideas, logo art, and more in the FoPD toolkit: <http://www.plantday12.eu/pr-toolbox.htm>.
- Adapt ASPB-sponsored resources available at <http://www.aspb.org/education> for your local event.

Questions? [katie@aspb.org](mailto:katie@aspb.org)

NEW! From ASPB and Wiley-Blackwell

# *The Molecular Life of Plants*

Jones • Ougham • Thomas • Waaland



- *The Molecular Life of Plants* presents students with an innovative, integrated approach to plant science. It looks at the processes and mechanisms that underlie each stage of plant life and describes the intricate network of cellular, molecular, biochemical, and physiological events through which plants make life on land possible.
- Richly illustrated, MLOP follows the life of the plant, starting with the seed, progressing through germination to the seedling and mature plant, and ending with reproduction and senescence.
- MLOP's "seed-to-seed" approach will provide students with a logical framework for acquiring the knowledge needed to fully understand plant growth and development.
- MLOP offers students a comprehensive, integrated introduction to the subject across a variety of disciplines including plant science, biological science, horticulture, and agriculture.
- Available in hard and soft cover as well as electronic formats. The accompanying website will feature downloadable versions of all illustrations.

**Use the discount code "ASPB" at checkout to get the 20% member discount.**

[www.wiley.com/go/aspb](http://www.wiley.com/go/aspb)

# PULSE: Vision & Change Leadership Fellows Workshop I

BY KATIE ENGEN  
ASPB Education Coordinator

*This article is based heavily on a news release from PULSE.*

The Partnership for Undergraduate Life Sciences Education (PULSE) hosted the first Vision & Change (V&C) Leadership Fellows Workshop October 15–18, 2012. This workshop, held at Howard Hughes Medical Institute (HHMI) headquarters, Chevy Chase, Maryland, brought together the 40 V&C leadership fellows who represent community colleges, liberal arts colleges, comprehensive universities, and research universities. Three of the 40 fellows are members of ASPB: Jonathan R. Cumming (West Virginia University), Thomas P. Jack (Dartmouth College), and Nitya P. Jacob (Oxford College of Emory University).

The fellows also have invited ASPB members Erin Dolan (University of Georgia) and Susan Singer (Carleton College) to serve as PULSE advisers. PULSE advisers are trusted and respected mentors from the community who are willing to supply expertise, make introductions, and provide wise counsel. Erin's and Susan's unique qualifications for this position are noted at <http://www.pulsecommunity.org/group/pulse-fellow-mentors>.

During the four-day workshop, the fellows discussed and identified an array of opportunities for and barriers to improving undergraduate life sciences education in the United States through the implementation of the recommendations outlined in

the V&C document (<http://www.visionandchange.org/finalreport>). What they found interesting was that many of the challenges were common to all of their institution types, and they also identified some challenges that are often overlooked as barriers to change (e.g., engaging adjunct faculty and lecturers in V&C initiatives).

What emerged was a staggering “challenge wall” filled with sticky notes that reflected the complexity and enormity of the task ahead. The challenge wall formed the basis of several facilitated activities throughout the workshop, with fellows identifying and prioritizing key projects that were actionable within the first six months with an explicit goal to drive cultural change at the departmental/institutional level.

Four working groups emerged to move PULSE forward within an ambitious time frame of two years. Each group developed a six-month plan of what will be done, why the work should be done, and who is responsible for each part. The four groups are

- 1. Raising the PULSE**—Raise awareness of Vision & Change, celebrate the good work already under way around the country, and inspire other departments to embrace the challenge.
- 2. Taking the PULSE**—Help departments and institutions use existing assessment

evidence and design new tools to evaluate progress in departmental and institutional efforts to implement V&C; ultimately develop certification or accreditation for departments that meet the PULSE goals.

- 3. Faculty Networks**—Build regional and national faculty networks and disseminate a blend of new and existing resources for faculty development.
- 4. V&C Ambassadors**—Recruit and train PULSE members to work as departmental V&C facilitators through departmental visits.

The fellows will also be exploring ways to involve individuals and their institutions more directly.

PULSE vigorously invites the broader community to review the initiative updates posted weekly at <http://PULSEcommunity.org>. Each week ASPB will post these PULSE Points online in the Hot News links (<http://www.aspb.org>).

- **First Friday**—Raising the PULSE
- **Second Friday**—Taking the PULSE (moderated by Thomas Jack of ASPB)
- **Third Friday**—Faculty Networks
- **Fourth Friday**—V&C Ambassadors/Spreading the PULSE (moderated by Nitya Jacob of ASPB)

The 40 fellows want to thank you for your devotion to ensuring that all students have the life sciences education that best prepares them to be engaged citizens and positive change agents in the 21st century. They also thank HHMI, NIH, and NSF for setting a collaborative “PULSE” for this important work!

For more information or to sign up for groups, visit PULSE at <http://www.pulsecommunity.org>. ■

## R. Hilton Biggs

1931–2012

R. Hilton Biggs, 81, of Alachua, Florida, died November 16, 2012. He was born at home in Bear Grass, North Carolina, on May 5, 1931. He received a bachelor's degree in biological science from East Carolina College and master's and PhD degrees from Purdue University in plant physiology, biochemistry, and horticulture. In 1957, the University of Florida hired him as their plant physiologist/biochemist in the Fruit Crops Department. The National Science Foundation sent him for special postgraduate work in medical electronics and chemical toxicology.

Hilton is best known for his research on chemical aids for harvesting citrus fruit, bud dormancy in fruit trees, viruses infecting citrus, adverse



effects of pesticides including the fungicide Benlate, and the effect of environmental pollutants on crops. He was a leader in research on the physiological and biochemical effects of

increased ozone, acid rain (from sulfur dioxide pollution), and ultraviolet light on crop plants. He generated over \$800,000 in grant money for his research, which resulted in more than 150 publications in scientific journals, six books, and monographs. He traveled extensively to present his results in the United States and overseas and to consult with governmental agencies in Washington, D.C., private industry, and the World Health Organization.

Hilton became a full professor (biochemist), served as chair of the Fruit Crops Department, and retired as professor emeritus in 1992. He belonged to 12 different professional and honorary societies and served on committees for many of them. He had been

a member of ASPB since 1955. From the University of Florida chapter he received the Senior Faculty Award of Gamma Sigma Delta. In his spare time he raised cattle, baled hay, and grew blueberries and ornamental and pine trees.

Hilton is survived by his wife of 33 years, Susan V. Kossuth, and their daughter Robin Rentz (Ryan); his first wife, Becky Duncan, and their daughters, Dixie Biggs (Delaine Miller) and Mary Gay (Joe) and their four children—Colin, Charlotte, Emma, and Grace; and five brothers and sisters and their children: Sammy Biggs, Billy Biggs (Lolly), Dennis Biggs (Grace), Molly Stephenson (Harold), and Jean Biggs. ■



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