As citizens of free countries, we have the privilege of voting on issues of importance to ourselves and to our countries. Although it is not always exercised as fully as one might wish, the right to vote should not be taken for granted. As recently as 1965 in the United States, President Lyndon Johnson signed the Voting Rights Act, which outlawed requiring that qualified voters pass literacy tests to be able to register to vote—a means by which some states had prevented African Americans from exercising their right to vote.

PB2013 offers expanded sessions and events dedicated to your professional development. See page 4.
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The ASPB News is distributed to all ASPB members and is also available online. It is published six times annually in odd-numbered months. Its purposes are to keep membership informed of ASPB activities and to reinforce the value of membership. The ASPB News is edited and produced by ASPB staff from material provided by members and other interested parties.

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

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from voting. Having the right to vote means that all citizens can register their choices about who they want to govern their country, whether they want certain foods labeled, whether they want control over who comes over their country’s borders, whether nuclear energy capabilities should proliferate, and whether taxes should be raised. With that privilege comes a responsibility to understand the issues that we vote on and to turn that responsibility into practice.

ASPB members also have the right and privilege to vote on who will lead our organization and what changes in the governance structure should be made. But this also is a privilege that is often not appreciated and not practiced by many ASPB members. It was quite shocking to me to learn that in the year of my being voted in as president-elect, only 27% of ASPB’s nearly 4,500 national and international members voted. It hardly felt like a mandate! Nonetheless, I have taken on the responsibilities of the office with what I believe is the best interests of all of the Society’s members—whether they voted or not.

The Society is involved in many activities that are very important to the science of plant biology to which we all dedicate our professional lives. An engaged leadership is paramount to the success of these efforts. Of primary importance, of course, are our two premier journals—Plant Physiology and The Plant Cell—and the challenges and opportunities they face in light of moves toward Open Access publishing—an approach adopted by ASPB’s The Arabidopsis Book. Another notable activity is the Society’s involvement in the organization of the Plant Biology Research Summit and the important outcome of that effort. This will be in the form of a compilation of recommended plant science research priorities that are intended to be a “tool” to excite, engage, educate, and, most importantly, impact future budgetary discussions and decisions at the state and federal levels. (Please see page 13 for more details on the Summit.) Another activity is ASPB’s role in convening the first meeting of, and its continued support for, the Global Plant Council, which is attempting to bring together plant science organizations worldwide to increase the impact of plant research and raise awareness of the importance of crop improvement and sustainable agriculture efforts. Our education efforts have focused on K–12, undergraduate, and public-sector venues with, among other member initiatives funded by our Education Foundation, the development of ASPB’s 12 Activities for the 12 Principles of Plant Biology; My Life As A Plant Coloring and Activity Book; Flora Delaterre, Plant Detective, who discovers medicinal plants around the world; and the afterschool curriculum, DNA for Dinner. These efforts counter the criticisms raised in an editorial by Bruce Alberts (Science, December 2012, 338:1396); Alberts was chiding scientific societies to create and validate new web-based curricula that address the critical need for developing inspiring science lessons for America’s schoolchildren.

Closer to the heart of the organization are the very active strategies being formulated to increase basal funding so that ASPB can continue to embark on activities similar to those mentioned above that will strengthen the impacts of plant science research and education. These include developing new strategies to even better serve our membership. This will be accomplished through new services that will help members connect to other plant scientists more easily and effectively, and will provide better tools for younger scientists to build their careers. (More information on these efforts will appear in a future newsletter.) Another approach being explored is the possible formation of a fundraising locus within ASPB that would substantially increase the size of the Society’s reserves as we move toward and beyond our centenary year in 2024.

To take on all of these challenges, we need dedicated, engaged, and enthusiastic leadership. And we need you, as ASPB members, to be involved in the identification and selection of those individuals. Please exercise the privilege you have to vote in this year’s elections. It means a lot to the future of the Society and its impact on the future of plant science and plant science researchers.
Planning Your Career Just Got Easier!

While attending Plant Biology 2013, take advantage of the many sessions on career development we’ve planned for you. Whether you are just beginning your career as a scientist or well along the path, there is something for everyone in the many sessions that will be offered in Providence. Take time to participate in a career roundtable or workshop, or just stop by the Career Center and have your CV reviewed. It’s always helpful to have a fresh perspective no matter where you are in your career. You’ll get expert advice in one-on-one or group sessions.

Career Programs at Plant Biology 2013

**Sunday, July 21**

**Exhibit Hall**
**Noon–1:30 p.m.**
**Career Roundtables**

Topics will include
- Getting a postdoc position
- CV and resume writing
- Writing your teaching philosophy statement
- Choosing to teach at an institution with little or no research
- Interview skills
- Finding a research job in industry

**Noon–1:30 p.m.**
**USDA, DOE, and NSF Grantsmanship Workshop**

This workshop will feature talks on plant-related funding opportunities by program staff from each agency and a panel discussion at the end of all the talks. In addition to the workshop, there will be ample time to meet the program staff at the joint USDA, DOE, and NSF booth to discuss funding opportunities offered by the respective agencies.

**7:45 p.m.–10:00 p.m.**
**Networking to Success: Attaining Diverse Careers in Plant Biology**
Organized and sponsored by the ASPB Women in Plant Biology Committee.

Plant scientists from various walks of life will briefly describe their career trajectories and explain the ways in which their interpersonal networks have helped them achieve their professional objectives. Following their brief presentations, the panelists will engage in informal Q&A with workshop attendees.

**Monday, July 22**

**Exhibit Hall**
**Noon–1:30 p.m.**
**Career Roundtables**

Topics will include
- Getting a postdoc position
- CV and resume writing
- Writing your teaching philosophy statement
- Choosing to teach at an institution with little or no research
- Interview skills
- Finding a research job in industry

**1:30 p.m.–5:30 p.m.**
**Taking It Public: Communicating Your Research to Nonscientific Audiences**

This workshop was developed in 2008 by AAAS for researchers. The class size is limited to 60 individuals and is very interactive. The program is designed to help you present your research in broad forums, whether to the general public, schoolchildren, or policy makers. For more details on the Communicating Science Program, please visit http://communicatingscience.aaas.org/.

**Searching for a postdoc or a job?**
Come to the Career Center and advance your career!

- One-on-one CV review
- “Position available” posting areas
- Message center for applicants and employees
- Access to ASPB Online Job Board
Minisymposia Preview

The following are the minisymposium topics and organizers confirmed as of mid-March.

- **Photosynthesis**  
  Organizer: David Kramer

- **Biochemistry of Lipids**  
  Organizer: Christoph Benning

- **Pollen Biology**  
  Organizer: Mark Johnson

- **Root Biology: Development and Environmental Responses**  
  Organizer: Luis Herrera-Estrella

- **Shoot Biology: Development and Environmental Response**  
  Organizer: Kathy Barton

- **Abiotic Stress: Metabolism**  
  Organizer: Elizabeth Vierling

- **Genomics to Systems and Synthetic Biology**  
  Organizer: Shin Han Shiu

- **Membranes**  
  Organizer: Karin Schumacher

- **Plant–Insect/Nematode Interactions**  
  Organizer: Saskia Hogenhout

- **The Simon Chan Memorial Symposium on Chromosomal Biology**  
  Organizer: Bill Lucas

Registration for Child Care Now Open!

ASPB is pleased to announce that on-site child care will be available at Plant Biology 2013, and we have selected Newport Nannies, LLC, as our official child care provider. Since its inception in 2003, Newport Nannies, LLC, has grown tremendously. The company has a staff of amazingly creative women who are committed to providing the highest-quality care for children of all ages. Each sitter is screened extensively through background checks, reference checks, and interviews. In addition, each sitter is CPR and first-aid certified. Sitters bring a variety of age-appropriate toys, games, arts and crafts, and other activities to every event to keep the children entertained—because they believe that happy kids = happy parents!

Child care at Plant Biology 2013 will be available at a discounted rate of $7 per hour for the first child and an additional $5 per hour for a second child. For more information or to register, please visit the ASPB meeting site and click on “child care registration” (http://tinyurl.com/bfeqjlh).

Workshop

**Visioning the Future of Plant Science**

**Monday, July 22, 2013, 7:45 p.m.–9:30 p.m.**

Even in a climate of limited funding for scientific research in general, agricultural research has received much attention with a number of recent high-level reports—including a call for increased investment from the President’s Council of Advisors on Science and Technology (PCAST) in their Report on Agricultural Preparedness (http://tinyurl.com/bmlwkg9). Complementing the PCAST report, ASPB’s pending report from the Plant Science Research Summit aims to guide the future of plant science research by prioritizing research directions.

This workshop (http://tinyurl.com/avs2px7) will provide a forum for discussion on the future challenges and opportunities for plant science research in light of the recent focus on research relating to agriculture. By participating, you will join a growing number of members helping ASPB amplify its voice as it promotes robust support for plant science research, education, and funding.
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Lee Hadwiger, professor at Washington State University, was featured in a *Capital Press* article for his work on using fungal DNases to elicit plant immunity (http://bit.ly/WZZdhf).

As pollution continues to throw curveballs at our crops, ASPB members Lisa Ainsworth and Andrew Leakey, of the University of Illinois at Urbana-Champaign, aim to generate an ozone-tolerant maize variety with the help of a recently awarded multimillion-dollar NSF grant. Read about it in the *Daily Illini* (http://bit.ly/14R5gCz). Don Ort is quoted in the same article on the possibility of transferring ozone resistance to field varieties of corn.

Genetic engineering of food crops was front and center in the media once again over the past few months. Following the defeat of the genetically modified (GM) foods labeling initiative in California (Proposition 37), long-time anti-GM activist and journalist Mark Lynas apologized for his past activities and hailed genetic engineering as an important tool to help meet the nutritional demands of a growing global population. His lecture to the Oxford Farming Conference can be viewed or read in its entirety at http://bit.ly/UyBbfj.


In a win for genetic engineering advocates, the Philippines has given the green light for distribution of golden rice—genetically modified to produce enhanced levels of vitamin A and expected to combat vitamin A deficiency—to farmers. *The Guardian* article, “After 30 Years, Is a GM Food Breakthrough Finally Here?” (http://bit.ly/XnUpii), features ASPB members Cathie Martin and Jonathan Jones. Cathie is quoted on the subject of excessive regulation, stating, “At institutes like ours, we can prioritize research to bring new consumer health benefits and environmental benefits to market (via GM), as long as the regulatory process is not prohibitively expensive for publicly funded organizations.” Jonathan touches on the safety record of genetically engineered crops: “When I started making GM plants 30 years ago, I did wonder if there might be unknown unknowns. But the evidence now is clear. GM food and crops are as safe as non-GM food and crops.” According to the article, distribution of golden rice is also under consideration in India and other nations.

Lee Hadwiger, professor at Washington State University, was featured in a *Capital Press* article for his work on using fungal DNases to elicit plant immunity (http://bit.ly/WZZdhf).

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Please visit the *Plants in the News* blog post at http://my.aspb.org/blogpost/700968/Plants-in-the-News for easy access to all the articles highlighted in this column.

“From Around the Web” represents a subset of 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 (www.aspb.org/plantsinsyenews), “like” us on Facebook (www.facebook.com/myASPB), and “follow” us on Twitter (www.twitter.com/ASPB).

If you or your colleagues have been featured in the news and would like to be included in an upcoming issue of the *ASPB News*, please contact ASPB’s associate director of public affairs, Kathy Munkvold (kmunkvold@aspb.org).
Leaf Osmotic Potential

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Welcome to the ASPB News “Luminaries” column. Student and postdoc members are invited to submit their ideas for a 500- to 750-word interview they might like to conduct with a prominent scientist. Contact Membership Committee Chair David Horvath at david.horvath@ars.usda.gov, who will help you develop some questions to frame your story. If we publish your interview, you will receive a $50 Amazon gift card.

Stefan Hortensteiner
Professor, University of Zurich, Switzerland

BY PRATEEK TRIPATHI, ASPB Student Ambassador, South Dakota State University

PT: What got you interested in plant biology in general, and what influences directed you to your specific area of research?

SH: Professor Enrico Martinoia (University of Zurich, Switzerland), a great mentor and scientist, influenced both my general interest in plant biology and the direction of specific research on chlorophyll breakdown.

PT: Who influenced your scientific thinking early in your career, and how?

SH: Again, Enrico and a few other professors, such as Nick Amrhein (ETH Zurich), Philippe Matile (University of Zurich), and Howard Thomas (Aberystwyth University, Wales) with whom I worked, were decisive for me in several ways. The most important thing I learned was that success cannot always be planned, but often is simple coincidence and luck. Of course, it requires being critical and careful and open-eyed, but also streamlined.

What do you think are good career moves for young scientists, and why?

SH: If by “good” you mean the most successful for getting a good job in the future, you should do the standard program: PhD and postdocs in the most renowned labs you can think of, preferably going abroad to demonstrate migration ability and internationality, as well as publishing extensively. But, as already mentioned, success is not always planned, so also take into consideration your gut feeling when choosing topic or group.

If you were able to repeat your years as a graduate student or early years as a postgraduate student, would you do anything differently and why?

SH: I would change nothing, because I had the luck to always being surrounded by motivating colleagues and inspiring bosses.

PT: What journals do you regularly follow and why?

SH: I follow most plant journals and important multidisciplinary journals, such as Nature, Science, PNAS, and JBC, and receive their etocs by e-mail. I do this, of course, to be up-to-date within my direct area of research, but also to see what else is going on in plant research. An important tool for me is the Cited Reference Search tool of the Web of Science, which allows me to screen papers that cite my own work.

PT: What scientific discoveries over the past couple of years have influenced your research directions, and why or how?

SH: I am generally interested in chloroplast metabolism; therefore, most new information regarding chloroplast function is of interest to me. Chloroplast proteomic studies of different groups that give important insights into the protein content of chloroplasts are important for my research. Likewise, platforms like Genevestigator or the resources at TAIR influence my work because of the ability to retrieve information on genes/proteins that could be interesting for my own research.

PT: What do you think is the next big thing in plant biology, and why?

SH: That is difficult to say. To be honest, I don’t dare make any predictions.

PT: What do you think will be the next big thing in your specific area of study, and why?

SH: The biochemistry of chlorophyll breakdown in leaves is largely solved. Interesting fields to investigate are fruit ripening or regulatory aspects of the pathway, but as the future is not predictable, I again don’t dare predict any “next big thing.”

PT: As an employer, what are the five key qualities you look for in a potential team member?

SH: The five qualities I look for are technical skills, education, social abilities, language skills, and independence of working.

PT: What advice would you give to a student interested in plant biology today?

SH: Be open-minded and choose a topic that you find most interesting. Read the Annual Reviews continued on page 10
**LUMINARIES**  
*continued from page 9*

in *Plant Biology* chapters of distinguished plant biologists (the first chapter in each volume) that describe their scientific life and career. This is highly inspiring.

PT: What experience or training do you think it is most important to have?

SH: Try to get an in-depth knowledge of plant metabolism and development. Bioinformatics and technical skills are important.

PT: What is the single most important factor for a successful career in plant biology?

SH: Curiosity!

PT: What advice would you give to educators to encourage young people to explore science and plant biology?

SH: Be excited yourself about what you teach to students, but don’t consider your own research area the most important one.

PT: How do you see the future of basic plant science as part of a policy-making body?

SH: This is a wide field! I think policy issues in relation to plant science are very important in different areas, such as green biotechnology, invasive plants, or biofuel. Understanding plant-related policy work will become more and more important, and education as a plant biologist should include courses going into this direction.

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**ASPB Needs You! Join the ASPB Ambassador Program Today!**

BY DAVID HORVATH  
ASPB Membership Committee Chair  
North Dakota State University

The ASPB ambassador program was envisioned by Dr. Mel Oliver and established almost seven years ago. This program had the goal of identifying graduate student and postdocs who are members of ASPB and are interested in serving the Society by extolling the benefits of being an ASPB member to their fellow graduate students, postdocs, and other plant scientists. Although this program has been slow in growing, the benefits to the Society have been substantial. Last year, Prateek Tripathi, a graduate student ambassador at South Dakota State University, earned a free trip to ASPB’s annual meeting in Austin by getting 14 of his fellow graduate students to join the Society. ASPB ambassadors served a vital role at that annual meeting, posting video blogs and comments from the meeting so that those ASPB members who were unable to attend could still enjoy some presentations and other events from the conference. (Incidentally, those videos and comments are still available for viewing at http://tinyurl.com/cu7nnc.) They also have served the Society by providing a valuable resource for information on how ASPB can better serve our early career scientists.

However, we currently have just 17 ASPB ambassadors. Ideally, we would like to have one or two ambassadors at every major research institution in the United States. If you would like to serve the Society as an ASPB ambassador, I would encourage you to join. Likewise, if you know someone who would make a great ASPB ambassador, please encourage them to join. The process is easy: Just go to http://tinyurl.com/ac9hrt6 and fill out the form. Additional information can be found at http://tinyurl.com/a45s4fp. Please don’t miss this opportunity to gain a voice in our Society and to serve the plant biology community.

Thanks!■
Policy Update

BY KAITLIN CHELL
Lewis-Burke Associates, LLC

The 113th Congress is in full swing as it tries to deal with the nation’s debt and deficit. At the time of writing, sequestration—across-the-board cuts in federal spending—officially went into effect on March 1, 2013. Sequestration was created in August 2011 with the passage of the Budget Control Act, which mandated that Congress enact a series of spending-reduction goals between $1.2 trillion and $1.5 trillion over 10 years. If Congress could not meet this target via a deal brokered by the famed “Supercommittee,” then sequestration would take effect. Some of the goals were met; however, a comprehensive package was not agreed on and sequestration is now in place. For the remainder of fiscal year (FY) 2013 (through September 30), approximately $85 billion in across-the-board spending cuts will occur to defense and non-defense spending, including plant science research funding. If Congress does not act to reverse sequestration at some point, $1.2 trillion in debt reduction is expected between now and 2021.

While not all federal agencies have released detailed information on how they will individually deal with sequestration, the National Science Foundation has done so (http://www.nsf.gov/pubs/2013/in133/in133.pdf?WT.mc_id=USNSF_80), as has the National Institutes of Health (http://grants.nih.gov/grants/guide/notice-files/NOT-OD-13-043.html).

PCAST Releases Report on Agricultural Sciences

Last December, the President’s Council of Advisors on Science and Technology (PCAST) released a report recommending that the federal government create a new “innovation ecosystem” for agricultural research to meet the challenges of increasing food production, providing nutritious food, and promoting global food security. The “Report to the President on Agricultural Preparedness and the Agriculture Research Enterprise” (http://tinyurl.com/bmlwk9g) makes a series of recommendations to redirect and significantly increase the nation’s investment in agricultural and food sciences.

Specifically, PCAST calls for a rebalancing of the USDA research portfolio between intramural research largely carried out through the Agricultural Research Service (ARS) and extramural research carried out through the National Institute of Food and Agriculture’s (NIFAs) competitive Agriculture and Food Research Initiative (AFRI) program. The report notes that funding provided to land-grant institutions through formula grants and other allocated funding too often does not support research. PCAST recommends that the Obama administration increase the funding devoted to competitive research and rebalancing the USDA research portfolio to focus on the challenge areas it identifies, all of which are well connected to plant science. PCAST further recommends the federal government double the NSF’s funding in this area by providing an additional $130 million per year for an estimated $250 million annual investment. As with the recommendation for additional USDA funding, NSF would have to embrace this recommendation and accommodate the additional funding within its research program, which would then be subject to congressional approval.

DOE Head Resigns, NSF Director Steps Down, USDA Head Stays

On February 1, Secretary of Energy Steven Chu announced his resignation. Chu’s legacy likely will be remembered as one that pushed forward renewable energy technologies while maintaining support for the DOE’s Office of Science, despite enduring some criticism surrounding the Solyndra incident. Dr. Ernest J. Moniz, the Cecil and Ida Green Professor of Physics and Engineering Systems at the Massachusetts Institute of Technology, is expected to replace Steven Chu as Secretary of Energy. Following on the heels of Chu’s resignation, NSF Director Subra Suresh announced February 5 that he will be leaving his post at the end of March to become the president of Carnegie Mellon University. His successor has not been named. Meanwhile, Secretary of Agriculture Tom Vilsack has signaled he will remain during President Obama’s second term.

John Boyer Speaks at ASPB-Cosponsored Drought Briefing on Capitol Hill

ASPB and the American Meteorological Society cosponsored a briefing on Capitol Hill titled “From the Root Up: Understanding the 2012 Drought.” The House Committee on Science, Space, and Technology hosted the briefing, which discussed both the impacts to crops from the 2012...
drought as well as the meteorological and climate conditions that led to the drought. The briefing was well attended, with more than 60 congressional staff and stakeholders present. ASPB invited John Boyer, the E. I. du Pont Professor of Biochemistry and Biophysics Emeritus at the University of Delaware, member of the National Academy of Sciences, and recipient of both the Charles Albert Shull and Charles Reid Barnes Life Membership awards from ASPB, to speak about how plants respond to drought and the advances in crop drought tolerance. John noted that this year’s drought in the Midwest was initially expected to cause losses in our food supply. However, this was partially averted thanks to plant biology research that has led to the incorporation of drought-tolerant traits in modern crops. In response to a question from the audience, he noted that despite these advances, food prices still rose this year because of an increasing demand for animal protein in other parts of the world and, consequently, an increased demand for grain for animal feed.

The American Meteorological Society invited John Nielsen-Gammon, regents professor at Texas A&M University and Texas State Climatologist, as well as Roger Pulwarty, director of the National Integrated Drought Information System at the National Oceanic and Atmospheric Administration. Dr. Nielsen-Gammon discussed how climatic conditions make certain parts of the world, including the Midwest, more susceptible to drought, and Dr. Pulwarty spoke about the ways in which various government agencies work with state and local stakeholders to plan decisions around drought information and forecasts.

ASPB will continue to educate members of Congress and their staff on plant biology-related issues through congressional briefings and meetings to advance plant biology funding and research.

POLICY UPDATE

continued from page 11

2013 ASPB Education Foundation Grant
Promoting Plant Biology Education and Outreach

Apply March 1–June 6, 2013

Instructions and Online Application: http://efg.aspb.org

New Maximum Funding: $50,000

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.
How will plant science research contribute to addressing the societal challenges of today and tomorrow? What areas of research will facilitate solutions to these challenges? And how will we train the next generation of plant scientists to most effectively meet the needs of the future? These are just a few of the questions tackled at the second phase of the Plant Science Research Summit in January at the Howard Hughes Medical Institute in Chevy Chase, Maryland.

Just after ringing in the new year with family and friends, a carefully selected group of 17 participants—chosen for their diverse expertise across plant science—came together to ring in a new era for plant science research. The meeting served as a follow-up to the 2011 Plant Science Research Summit and aimed to build on the foundational work of that first meeting to develop a compelling set of recommended plant science research priorities aimed at addressing profound and urgent societal challenges. For two days, the participants set aside their personal research interests and worked diligently as representatives of the community to identify key areas of research that would move the field forward most efficiently toward solving grand challenges in agriculture and the environment and contributing to the economy.

A written report establishing a strategic vision for plant science research over the next decade is expected to be completed this spring. It is ASPB’s hope that the report will inspire federal and private funding agencies, the scientific community, plant-related industries, commodity groups, and other key stakeholders to pursue a more coordinated research agenda that will span the entire discipline and generate new resources. The report will be shared widely within the plant science research community, and we will encourage your feedback. To stay up-to-date on summit-related activities, be among the first to know when the report is released, and easily provide feedback, simply add your e-mail address on our website (http://plantsummit.wordpress.com) under “Follow Summit Activities via Email,” confirm, and choose the frequency for receiving updates. We look forward to your continued engagement and the upcoming release of the report.

The Plant Science Research Summit has received direct or in-kind support from the following sponsors:
- American Society of Plant Biologists
- Howard Hughes Medical Institute
- NSF (Award # MCB-1136911)
- USDA (NIFA Award # 2011-67013-30637)
- U.S. DOE (Award # DOE-SC0006924).

(left to right) Dan Stanzione, Ian Baldwin, Toni Kutsch, April Burke (Lewis-Burke Associates), Sue Hartman (facilitator; the Hartman Group), Sally Mackenzie, Pat Schnable, Ana Caicedo, David Stern, Machi Dilworth, Ray Riley, Rob Horsch, Christoph Benning, Rob Last, and Nick Carpita. Absent from photo: Annie Schmitt, Pam Ronald, and Crispin Taylor (ASPB executive director).
In mid-December, ASPB’s leadership met in Washington, D.C., with ASPB’s government relations consultants, Lewis-Burke Associates, LLC, to determine how the Society might better serve its membership through public affairs engagement. The strategy meeting was very productive, and ASPB and Lewis-Burke are already at work on tactics to make the Society more proactive and nimble in responding to federal opportunities. ASPB leadership also took advantage of the D.C. location to meet with the leaders at NSF and the USDA’s National Institute of Food and Agriculture (NIFA).

The meeting with outgoing NSF Director Subra Suresh provided an opportunity for ASPB’s leadership to stress the importance of plant biology and discuss with the director his outlook on the uncertain budget situation in Washington. Although he could not speak to what the final fiscal year (FY) 2013 outcome would be or shed light on the still pending FY2014 budget request from the Obama administration, he did say hearing from the plant science community is important in guiding NSF’s actions and where funding is directed. Jane Silverthorne, division director for the Integrative Organismal Systems (IOS) Division within the NSF Biological Sciences Directorate, and Clifford Gabriel, senior adviser to NSF Director Suresh, also attended the meeting.

The meeting with NIFA Director Sonny Ramaswamy represented the first formal one-on-one meeting between the director and ASPB’s leadership. Director Ramaswamy spoke at length about the difficulties of balancing the diverse interests of NIFA while having a constrained budget. However, he said he would like to continue to engage with the plant science community about the future of NIFA. Director Ramaswamy also wants to work “more purposefully” with NSF and the NIH, as well as have NIFA participate in more partnerships with the Department of Energy and the U.S. Agency for International Development.

ASPB will continue to engage with the leadership of NSF and USDA to express the concerns and priorities of the Society’s membership. ■
Playing with Science—You Never Know What the Future May Bring
How One ASPB Member Parlayed Volunteer Experiences into Funding

BY SUZANNE CUNNINGHAM
Purdue University

Who would have guessed that playing with bricks while assisting at the ASPB booth in New Orleans for the 2009 National Science Teachers Association (NSTA) annual meeting would lead to presenting a fully funded workshop at NSTA 2013 in San Antonio? At the 2009 meeting, teachers were having fun conceptualizing simple sugars made from LEGO® Duplo® bricks and creating a model of starch using LEGO 2 × 6 bricks (glucose representations). I picked up the Life Science Photosynthesis kit, produced by LEGO's Educational Division, and the fun began. Opposite the ASPB booth was a vendor selling model kits. Kits for making glucose were available from this vendor, but the crowd was at the ASPB booth “playing with bricks” (as well as doing other activities). At the end of the exhibit, I was offered 12 packages of models, free of charge, if I would use them in my photosynthesis presentations to high school students. Yours truly happily obliged.

I have presented the photosynthesis workshop to high school classes during the past four years, and the students get a kick out of acting as “LEGO Lunatics” and “Model Maniacs.” Portions of this activity also have been presented as teacher workshops about starch metabolism in Indianapolis at HASTI (Hoosier Association of Science Teachers, Inc.) in 2011 and the NSTA national meeting in 2012.

For HASTI 2013 I have split the enzyme presentation into two parts: one highlighting builders, the other digesters. As the 2013 NSTA meetings were planned for San Antonio, I decided to halve my workload and present one workshop highlighting enzymes as synthesizers. The teachers would mimic plants and, acting as enzymes, create glucose, starch, and cellulose. But, I needed more bricks!

While online to purchase “carbon,” “oxygen,” and “hydrogen” LEGO bricks, I noticed a professional development section announcing new grant opportunities. Long story short, LEGO liked my “Enzymes, Group 1: The Builders,” a workshop highlighting “LEGO Lunatics” vs. “Modeling Maniacs” for high school teachers, and funded my expenses to present it at a workshop at NSTA 2013.

So, you never know what may happen when you participate in ASPB booth activities at NSTA annual meetings!

For more of Suzanne’s clever outreach options, go to the K–12 tab on her web page: http://www3.ag.purdue.edu/agry/Pages/scunning.aspx.
Help the world appreciate that plants are unique, useful, and ubiquitous.

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- To share your plants & progress or ask questions email Katie@aspb.org

www.plantday12.eu
Susan Singer’s Team Wins Science Prize for Inquiry-Based Instruction

Genomics Explorer—Bioinformatics for Undergraduates Pursuing Their Own Research Questions

BY KATIE ENGEN
ASPB Education Coordinator

Portions of this article are derived from a January 24, 2013, AAAS press release (http://www.eurekalert.org/pub_releases/2013-01/aaf-t-mp011813.php).

When Susan Singer (Carlton College) was a college student, her freshman science classes were held in huge lecture halls where she and her classmates listened and took notes, preparing themselves for a weekly test. She said it was deadening. Luckily, Susan had experienced what it was like to do scientific research much earlier, in middle school and high school and even as a child, when her parents allowed her to graft the trees in their backyard.

Now as a biology professor striving to create inspiring undergraduate research experiences, Susan has developed a web-based teaching tool called Genomics Explorer. This tool is the winner of the Science Prize for Inquiry-Based Instruction (IBI).

Science’s IBI Prize was developed to showcase outstanding materials, usable in a wide range of schools and settings, for teaching introductory science courses at the college level. The materials must be designed to encourage students’ natural curiosity about how the world works, rather than to deliver facts and principles about what scientists have already discovered. Organized as one free-standing “module,” the materials should offer real understanding of the nature of science as well as provide an experience in generating and evaluating scientific evidence. Science publishes a monthly essay by a recipient of the award. The Genomics Explorer essay, “Keeping an Eye on Biology,” was published on January 25 in Science (339(6118):408–409; http://www.sciencemag.org/content/339/6118/408.full).

Susan is the Laurence McKinley Gould Professor in the Biology and Cognitive Science departments at Carleton College. Carlton hosts the online Genomics Explorer program. According to the winning resource’s website (http://serc.carleton.edu/exploring_genomics/index.html), Genomics Explorer helps students:

1. become inspired about biology;
2. develop a literature-based understanding of important quantitative approaches;
3. define interesting questions that can be addressed with data;
4. make connections between genes and biological functions;
5. analyze and critically evaluate bioinformatic data;
6. connect bioinformatic analyses with wet lab and field experiments; and
7. develop and test a viable hypothesis by bringing together the literature, classroom knowledge, and analysis of data.

The greenhouse team collects data.

Lindsey Guthrie (left) and Anna Brezny collect data.

continued on page 18
In addition to her current investigations on legume flowering and genomics problem solving, Susan always has been an active classroom teacher and is dedicated to the study of science education. Therefore, Genomics Explorer combines rich classroom experience with scholarly data to provide students with in-depth, inspiring learning opportunities. Yet sometimes “in-depth” can seem a bit overwhelming! As reported by AAAS, Susan’s students sometimes panic at the open-endedness of the Genomics Explorers process. That is, until they realize their own ideas are worthwhile. For example, some students were able to anchor their work in the possibility of improving the value of Chamaecrista as a biofuel. With such an inspiring focus, the experimental design issues and data management became less daunting. According to Susan, “they owned it,” and this attitude freed the students’ creativity and confidence.

Each student’s success with Genomics Explorer is important to Susan. Yet in her current role as the director of the NSF undergraduate education division (she’s on leave from Carleton), Susan realizes that winning the IBI Prize and publishing an essay in Science about Genomics Explorer may inspire a larger audience. She says, “What I hope most is that this encourages instructors to bring more authentic research experiences into their teaching laboratories.”

For more information about Genomics Explorer, visit http://serc.carleton.edu/exploring_genomics. For a brief overview of what catalyzed Genomics Explorer and some insights on weaving genomics throughout the undergraduate curriculum, go to http://nygenome.org/blog/prizewinning-teaching-tool-translates-complex-genomics-concepts.

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5. Centrifuge for 1 min at 4°C. Decant & re-centrifuge for 7 min.
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Please contact Alex Webb (aarw2@cam.ac.uk) for additional information.