

ASPB News



THE NEWSLETTER OF THE AMERICAN SOCIETY OF PLANT BIOLOGISTS

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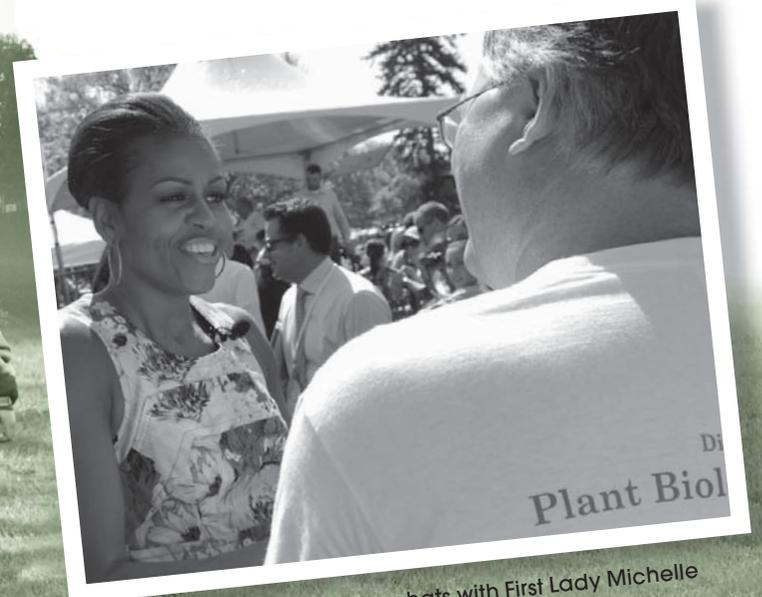
Society Helps Families Dig into Plant Biology During 2011 Easter Egg Roll

ASPB had an “egg-ceptional” day on Monday, April 25, as Society members and staff “hopped to it” to host a plant-based activity during the 2011 White House Easter Egg Roll (<http://www.whitehouse.gov/eastereggroll>). This “eggstra”-popular event is the largest hosted by the White House. For this year’s 133rd celebration, more than 205,000 applications for the online ticket lottery yielded approximately 30,000 ticket winners representing all 50 states. Several film clips of the action on the South Lawn can be viewed on the White House website at <http://www.whitehouse.gov/live>.

The theme of this year’s Easter Egg Roll was “Get Up and Go!” It was designed to coordinate with First Lady Michelle Obama’s Let’s Move! initiative, an ongoing national campaign to combat childhood obesity. Aspects of nutrition were featured in various activities across the South Lawn, including growing, preparing, and eating fresh produce. Plant biology was a natural fit.

To fulfill the first family’s request for science-related activities, ASPB was one of three science organizations invited to participate by the White House Office of Science and Technology Policy (OSTP). ASPB coordinated with OSTP to adapt

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ASPB President Nick Carpita chats with First Lady Michelle Obama about plant biology.

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

ASPB Executive Committee & Staff

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Deadline for September/October 2011
ASPB News: August 5, 2011

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ASPB and Global Food, Water, and Energy Security

At a U.S. State Department ceremony announcing the award of the 2009 World Food Prize to Gebisa Ejeta, Secretary Hillary Clinton began with a reminder: “This morning, 1 billion people around the world woke up hungry, and tonight, they will go to sleep hungry” (1). After decades of complacency about agricultural productivity in the wake of



Nick Carpita

the Green Revolution, the political events of the past year have reawakened our senses to how precipitously close we are coming to potentially catastrophic food and water shortages in the developing world, with ripple effects that will affect even well-fed, rich nations. According to Ejeta, whose decades of research have led to new drought-tolerant and Striga-resistant sorghum varieties for sub-Saharan agriculture, world leaders and development agencies have finally come to a sobering realization: we need to provide sustained support for agricultural science and technologies if we are to transform agricultural productivity in developing countries to anything close to the levels enjoyed by rich nations (2). As the planet's population rapidly approaches the 7 billion mark this year, our worldwide ASPB membership becomes an ever more crucial link to supply the fundamental underpinning research that will keep the steady trajectory we need to get ahead of the curve on food, water, and carbon-neutral energy security.

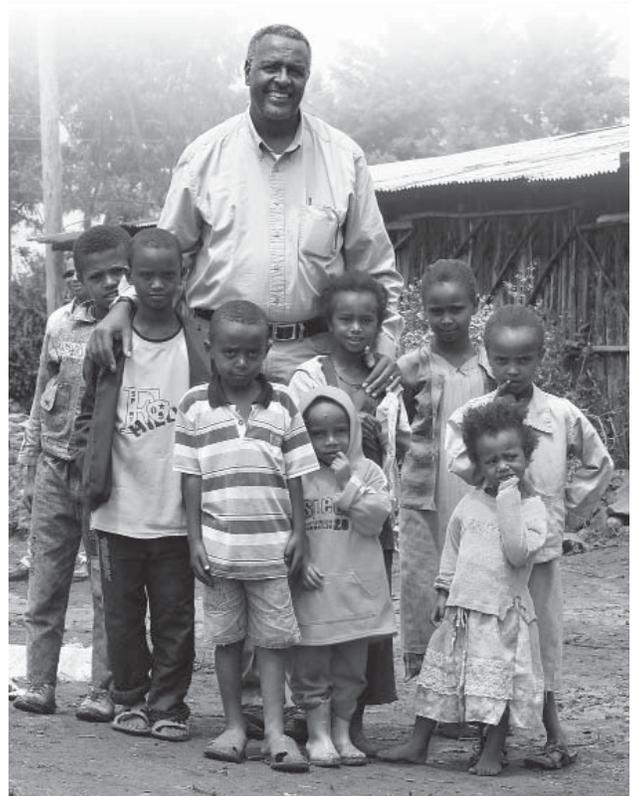
The complacency of global governments toward agriculture is not that surprising when considering the decades of advances. The proportion of domestic disposable personal income U.S. citizens pay for food has dropped from 25% when hybrid corn was first introduced in the 1920–1930s to less than 10% today (3). No developed nation pays more than 15% for its food, although in a rapid-growth economy like China's, the proportion nears 30%, and for India, close to 40%, even

after the Green Revolution made India a grain-exporting country (4). World Bank President Robert Zoellick warns that the political upheavals in North Africa and the Middle East, a region that imports almost half its food, have each been kindled by food shortages, and the rising cost of food is the biggest challenge facing developing nations (5).

This is an unsustainable course that demands far greater input from rich countries. For the United States, the drop in disposable income needed to buy food because of the successes, or excesses, in agricultural productivity has translated into marked decreases in funding for the science and technology needed to sustain the trajectory for continued advances now lagging on a global scale.

The Green Revolution meant major advances in agriculture for Mexico, India, and Indonesia, but how did it miss Africa? According to Ejeta, when the Green Revolution was launched in Asia, the institutional capacity essential for an agricultural revolution in Africa was virtually nonexistent: “Africa was simply not ready for a science-based development campaign at the time. The colonial agricultural research farms were no more than test stations for commodities of European interests such as cotton, coffee, tea, and cacao” (2). The genetic advances in wheat and rice were of little help to a continent with very different staple crops, and precious few resources were devoted to developing what Africans relied on for a sustainable subsistence.

Although rich nations are awash in food, their aid to developing nations continues on a downward spiral—a decrease that was accelerated by the downturn in the global economy, just when the funding is needed most. Fortunately, several private foundations and nongovernmental agencies have stepped up in a significant way to augment much-needed support. The Lugar-Casey Global Food Security Act promises to further stem the decline, but it is not without its detractors because of its willingness to include genetically modified organisms (GMOs) as part of the solution. As coauthor Senator Richard Lugar (R-IN) explains, “Food insecurity is a global tragedy, but it is also an opportunity for the United States. We are the indisputable leader in agricultural technology. A more focused effort on our part to join with other nations to increase yields, create economic opportunities for the rural poor, and broaden agricultural



Gebisa Ejeta in Ethiopia. PHOTO BY TOM CAMPBELL, PURDUE UNIVERSITY



Debby Delmer in Africa.



Leon Kochian in India.

knowledge could strengthen relationships around the world and open up a new era in U.S. diplomacy” (6).

There are indeed lots of challenges, and plant biologists have steadfastly conducted basic research to address them. Former ASPB President Debby Delmer, retired director of food security at the Rockefeller Foundation and currently a consultant in international agriculture, says that “As plant biologists, we most identify with the need to create higher-yielding, more nutritious crop varieties resistant to pests and diseases and more resilient to the stresses imposed by low soil fertility, drought, salinity, and all the other consequences of erratic weather that will only increase with climate change.” The chair of ASPB’s International Committee (IC), Leon Kochian, adds that “There are also other, more subtle issues associated with food insecurity. More than 2 billion people in developing countries suffer from micronutrient malnutrition, such as iron, zinc, and vitamin A deficiencies. For these people, plant-based foods are the primary components of their diets, and these food crops are traditionally poor sources of bioavailable micronutrients.”

What is needed most? Debby’s personal wish is that we “find better ways to identify and nurture those unique young individuals who have the potential for real leadership. These are the people who really make things happen locally and are critical for success.” Debby has already walked that walk through her involvement in foundation work. The Plant Biology in Africa symposium she

organized at ASPB’s 2007 annual meeting in Chicago was a stunning example of how quickly the high-quality science carried out by young scientists she helped identify and support is already being implemented into agronomic practice.

A more substantial investment is still essential, but our ASPB membership is positioned to facilitate much-needed scientific strategic partnerships that can accelerate the outcomes of these investments. Debby suggests that in the big picture, “There are three things we may be best positioned to do: (1) continue to make new fundamental discoveries that will open the way for new advances in all types of agriculture; (2) step up funding and the interest of our membership in human capacity building—identify those leaders of tomorrow and make sure they have the opportunity to engage in state-of-the-art research and bring their energy and education back to their own countries; and (3) find ways for our key scientists to spend some time in a developing country or an international research center, such as the Biosciences Eastern and Central Africa (BecA) in Nairobi, Kenya (<http://hub.africabiosciences.org>), or one of 15 centers of the CGIAR (<http://www.cgiar.org>).” Increased investment in science and technology education in developing countries is core to building infrastructure in these countries. The Generation Challenge program is an effort by the CGIAR centers to take advantage of advances in genomics, genetics, and plant breeding to enhance the lives of resource-poor farmers in developing countries.

ASPB is poised to get involved in meaningful ways. Since its inception in 1999, ASPB’s IC mission has evolved to serve our international membership. We have sponsored workshops to promote international cooperation. ASPB participates in AGORA, an online resource that makes agricultural journals (including both ASPB-published journals) free online to institutions in countries in which the per capita income is less than \$1,000 per year. Through the efforts of Mel Oliver, ASPB has also taken the lead in initiating and promoting the Global Plant Council (<http://globalplantcouncil.org>), a global consortium of plant societies committed to addressing global concerns of hunger, energy, climate change, health and well-being, sustainability, and environmental protection. Leon wants the mission of the “new” IC to focus more intensively on high-impact outreach activities connecting plant biologists and agricultural researchers in developing countries and those working with them. “Our initial activities will focus on ASPB-supported development and sponsorship of workshops in sub-Saharan Africa,” says Leon. Already on the books is a capacity-building workshop on molecular breeding in maize and sorghum at the BecA training facility in Nairobi that Debby also mentioned. This workshop will provide training to a dozen sorghum and maize breeders from research facilities in East and West Africa on the use of molecular markers and genome data to facilitate plant

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Plant Biology 2011

Minneapolis
August 6-10



MINNEAPOLIS CONVENTION CENTER



FARMER'S MARKET



Making Your Way to Minneapolis! Getting There—Planes, Trains, and Automobiles

Come to Minneapolis by Plane

The Minneapolis–St. Paul International Airport (MSP; 612-726-5555; <http://www.mspairport.com>) is between the two cities to the south. It's a hub for Delta Airlines and is served by every major world airline, but great deals can be found on Sun Country (a local regional airline) and, of course, Southwest, which has been serving Minneapolis since 2009. If you are coming from locations not served by these discount airlines, you can take advantage of the discounts arranged by ASPB for travel to the meeting through Delta Airlines and American Airlines.

For reservations and ticketing assistance with **Delta Airlines**, call 1-800-328-1111. Refer to Ticket Designator NM78P.

To make airline reservations with **American Airlines** call 1-800-433-1790 from anywhere in the United States or Canada and refer to your Promotion Code 4671BN, or go online and choose "More Flight Search Options" and insert the promotion code in the appropriate box.

The cheapest way from the airport to the city of Minneapolis is via the Hiawatha light-rail line (\$1.50 to \$2, 25 minutes). The light-rail stops just one block from the hotels being used for our meeting.

Come to Minneapolis by Bus or Train

Greyhound (612-371-3325; <http://www.greyhound.com>; 950 Hawthorne Avenue) runs frequent buses to Milwaukee (seven hours), Chicago (nine hours), and Duluth (three hours).

Megabus (877-462-6342; <http://www.megabus.com/us>) runs express to

Milwaukee and Chicago, often for lower fares. It departs from both downtown and the university; check the website for exact locations.

The **Amtrak** station (651-644-6012; 730 Transfer Road) off University Avenue SE is between Minneapolis and St. Paul. Trains go daily to Chicago (eight hours).

Check your drive time by visiting <http://www.google.com/maps>.

Discounted Rates on Hotels Through July 5, 2011!

Special arrangements have been made with three hotels adjacent to the Minneapolis Convention Center. Check out all the hotels in ASPB's block at <http://www.aspb.org/meetings/pb-2011/housing.cfm>.

Please note that special concessions are being given at the Hilton Minneapolis (headquarters hotel) for attendees of Plant Biology 2011.

Concessions Exclusively Offered to ASPB Attendees Staying at the Hilton

- Complimentary high-speed Internet in the guestrooms
- \$4 domestic 16 oz. draft beer
- \$5 premium 16 oz. draft beer
- 10% off at Barron's Brew and SkyWater Restaurant
- Complimentary barista service at Barron's Brew with four-night minimum stay (includes coffee/beverage and pastry of choice)
- Free soda or tea with minimum \$10 purchase at SkyWater

On-site Child Care Available at Plant Biology 2011

The new attendee benefit created to assist parental participation that was inaugurated at Plant Biology 2010 is returning in 2011. On-site child care for children from infants through 13 years will have subsidized rates for the first 20 children in each time slot. This subsidy is provided by ASPB's Women in Plant Biology Committee.

Kimberlee Care, a bonded, fully accredited child care service with 25 years' experience in providing services for corporations and meetings, will be returning as the provider of this year's child care.

Here is what a few parents had to say about last year's service:

"This is a very useful service and should be continued next year. Best idea of the whole meeting."

"My daughter had a lot of fun."

"I think it was a great initiative. The ASPB meetings always fall during the school holidays. Most people want to stay home during that period because their kids are at home. This was an excellent opportunity to attend the meetings, have the family around, and attach a vacation to it. The children liked it very much, and if it were up to them, they would have stayed there every single time slot available."

Kimberlee Care's staff members are certified child care specialists, and the company is fully insured. Kimberlee Care will set up a facility in the Minneapolis Convention Center in rooms adjacent to those that will be used for the annual meeting. They will bring supplies for fun, engaging activities for your children while you attend scientific sessions and networking events.

Kimberlee Care will provide arts, crafts, puzzles, and other games as well as a rest area with pillows and blankets. For older children, there will be a wide selection of board games, magazines, and other

age-appropriate activities. Kimberlee Care will be open during the opening awards session, the opening mixer, all major and minisymposia sessions, and selected poster sessions. Kimberlee Care will not be open during the events where children are allowed, including the evening poster session and the final party.

You must preregister for this service (<http://my.aspb.org/event/PB11Childcare>). Sign up for one or multiple time slots. Visit the website for specific information and rates.

The Women in Plant Biology Committee thanks the estate of Eli Romanoff for providing funds to support this on-site child care center.



THE MALL OF AMERICA

National Geographic Traveler Names Minneapolis One of World's Top 10 Summer Destinations

National Geographic Traveler recently named Minneapolis as one of the top summer destinations in the world, ranking the city fourth of 10 cities chosen, only three of which are in the United States.

The editors cited Minneapolis as a walking and biking city that has a great restaurant scene along with summer festivals, a vibrant arts culture, sports, and a friendly Midwestern atmosphere.

When you're not attending the great sessions at our upcoming Plant Biology 2011 meeting, be sure to check out some of the many highlights the city has to offer as well as the 22 lakes in and around the area.

For more information and to learn about Minneapolis's many attractions, visit <http://www.minneapolis.org>.

See you in Minneapolis August 6–10. Come enjoy one of the best summer destinations the world has to offer!

ASPB Announces 2011 Award Recipients

Each year ASPB honors excellence in research, education, outreach, and service through its numerous awards to those individuals who promote the mission of our Society. We are proud to announce this year's recipients.

Established in 1927, the **Stephen Hales Prize** is one of our Society's oldest and most prestigious awards honoring exceptional research accomplishments and service to ASPB. **Susan Wessler** (UC Riverside) is this year's winner, honored for her groundbreaking contributions to the field of transposon biology. Sue was the first to show that transposons can function as introns and that aberrant transposition events can lead to chromosome breakage and rearrangements. Sue discovered miniature inverted repeat transposable elements (MITES) and PACK-MULE transposons in rice, which play important roles in gene shuffling and duplications and potentially produce genes with new functions. Sue will present her Hales Prize lecture at the opening of the 2012 ASPB annual meeting in Austin.

The **Charles Reid Barnes Life Membership Award**, ASPB's oldest, was established in 1925 and honors lifelong service in plant biology. This year's honoree is **Peter Hepler** (University of Massachusetts Amherst) for his exceptional contributions to our knowledge of the structure and dynamics of the cytoskeleton. Peter's numerous contributions include providing the first evidence of the interaction between microtubules and cellulose deposition, establishing the cross-bridging between microtubules and the mitotic spindle, and demonstrating the connection between pulsed Ca^{2+} signaling and tip growth of pollen tubes.

Created in 1971, the **Charles Albert Shull Award** recognizes young researchers for outstanding contributions to plant biology in mid-career. This year's recipient is **Sean Cutler** (UC Riverside), who is honored for his contributions to our understanding of ABA-signaling in Arabidopsis and in particular his work on the *ERA1* gene, which is considered a landmark study in hormone signaling. Pioneering a chemical genetics approach, Sean's discoveries produced an extensive community-accessible library of small molecules that show

biological actions toward plants and other organisms. Sean will also address the Society at the 2012 meeting in Austin.

The **Martin Gibbs Medal**, established in 1993, honors an individual who has pioneered advances that have served to establish new directions of investigation in the plant sciences. **Steve Kay** (UC San Diego) will receive the 2011 Gibbs Medal for his development of luciferase reporter and imaging techniques to establish an understanding of the mechanism and regulation of biological clocks. Incorporation of biochemical techniques and genomics approaches into his program provided the means to understand entrainment of the clock by light and other regulatory input as well as the mechanisms that compensate for temperature and other environmental changes. Steve will convene a Martin Gibbs Medal Symposium at the annual meeting in 2012.

This year's **Excellence in Education Award** goes to **Mary Williams** (Features Editor, *The Plant Cell*) for her service and dedication to the educational and outreach mission of ASPB. Through her guidance on the Education Committee, prior to joining ASPB's staff, Mary raised the profile of our outreach efforts through dedicated minisymposia, poster sessions, and workshops at our annual meeting. Mary has written numerous education articles for the *ASPB News*, coordinated the meeting of the Primarily Undergraduate Institutions (PUI) group, and generated inquiry-based activities to illustrate the "12 Principles of Plant Biology" (<http://www.aspb.org/education/12Labs>) that are now publicly available for middle school and high school teachers around the country.

The **Early Career Award** was instituted in 2005 to recognize outstanding research by scientists at the beginning of their career. **Ravi Maruthachalam** (UC Davis) is this year's winner, recognized for his contributions in plant reproductive biology. Ravi first demonstrated that alteration of a single gene brings about functional apomeiosis, a major component of apomixis. He continues to make fundamental discoveries on centromere function and synthetic clonal reproduction through seeds.

Hiroshi Maeda (Purdue University) is the recipient of the first **Eric E. Conn Young Investigator Award**, which is awarded for excellence in outreach, public service, mentoring, or teaching by plant scientists at the beginning of their career. Beyond his outstanding research in plant stress physiology and aromatic amino acid biosynthesis, Hiroshi has made significant contributions to service, outreach, and mentoring.

Established in 2007, the **Fellow of ASPB Award** is granted in recognition of distinguished and long-term contributions to plant biology and service to the Society by current members in areas that include research, education, mentoring, outreach, and professional and public service. This prestigious honor may be granted to no more than 0.2% of the current membership each year. This year's recipients are **Bonnie Bartel** (Rice University), **Gerald Edwards** (Washington State University), **Sheila McCormick** (USDA-ARS, UC Berkeley), **Katherine Osteryoung** (Michigan State University), and **Linda Walling** (UC Riverside).

The **ASPB-Pioneer Hi-Bred Graduate Student Fellowship** is made possible by the generosity of Pioneer Hi-Bred International and recognizes and encourages innovative graduate research and innovation in areas of plant biology that relate to important commodity crops. The 2011 recipient is **Jacqueline Benson** (Cornell University), a plant breeding and genetics student in the lab of Rebecca Nelson. Jacqueline's research focuses on understanding resistance to gray leaf spot disease in maize, a devastating disease that causes widespread yield losses in the United States and Africa.

The **Corresponding Membership Award**, first given in 1932, honors up to three distinguished plant biologists residing outside the United States with life membership. **Carlos Andreo** (CEFOBI, Argentina) and **Jiayang Li** (Chinese Academy of Sciences, China) have been nominated for the **Corresponding Membership Award**. Corresponding Members are elected by the ASPB membership, so these nominees' names have been placed on the 2011 election ballot (<http://www.aspb.org/voting/ballot.cfm>). 

The Social Media Revolution

A New “Value-Added” Resource for ASPB Members

Social media such as Facebook and Twitter have toppled dictators and changed the world. So just imagine unleashing such power for the advancement of plant biology! This is the idea behind the new website design developed for ASPB. The new site is kind of like “Facebook for ASPB members” and offers unique opportunities for collaboration. If you have not visited ASPB’s new website, signed in, and added information to your profile, I hope this article will inspire you to do so.

ASPB’s new website offers the ability to search for other members of the Society by keyword. For example, if you are studying fruit production in raspberries, you can easily find all other ASPB members working on fruit production in other crops, and aspects of fruit production such as flowering. You may also find anyone working on other aspects of raspberry biology, or even those who you didn’t know were also working on fruit production in raspberries. More important, if you fill out your profile, newcomers to your field of interest can find you. When you find others who share your interests, you can “connect to them,” much like “friending” them on Facebook. Doing so allows you to easily follow what they are working on and push information to them that they may be interested in.

The new website design also offers the possibility to push your research forward and seek help for particularly difficult problems. This can be accomplished by blogging about your progress and problems. One can think about a blog as being akin to presenting work at a weekly or monthly lab meeting—except the lab meeting is not only attended by fellow lab mates, but also by all your collaborators, other experts in your field, and anyone else who is interested in your research. Additionally, such running commentaries are like weekly lab meetings—good places to organize your thoughts, develop your data for publications, and seek advice. Indeed, the more you are willing to share, the more others are likely to



David Horvath

find you and become interested in what you are saying. In doing so, you are more likely to become a “known expert” faster than your competitors who do not take the time or who are not ASPB members. Having a blog that lots of people read helps you advance science in your field.

The new ASPB website also allows you to use interest groups for making general announcements to other members, such as links to new publications of interest or meeting invitations. Those of us who follow the *Arabidopsis* newsgroup are well aware of the power of such a medium for both gathering and sharing information. These interest groups also offer the opportunity to seek solutions to problems from a wide variety of scientists in your field.

Really, the power of social information sharing is nothing new to science. Scientific societies such as ASPB publish journals and organize meetings to facilitate communication, foster collaboration between members, and develop a sense of community. It is hoped that the features of the new website will further facilitate communication and provide value to members of ASPB. No longer will you be completely dependent on attending meetings for the opportunity to gather the latest, not-yet-published information; find out who is doing new things; and meet and talk to others who might be inves-

tigating common questions or subjects. Like the traditional meeting, this new resource will reduce duplication of research efforts and open opportunities for collaboration and communication if members take a few moments once a month or so to write about their research plans, goals, and progress.

So go to the ASPB website and fill out your profile. Write about your interests and search for others working in your field of interest. When you find them, send them a note to connect. If you find a lot of folks with your same interests, send a request to ASPB to set up an interest group to facilitate information sharing among your newfound colleagues. Encourage others to sign in and blog about their progress, so you will always have something interesting to read. It is powerful, easy, interesting, fun, and profitable. Start today!

For more information on the features of the ASPB website, visit <http://my.aspb.org/WebFeatureBlog>.

David P. Horvath
Research Plant Physiologist
United States Department of Agriculture
Agricultural Research Service
Red River Valley Agricultural Research Center
Fargo, North Dakota

Check out Dave’s profile at <http://my.aspb.org/members/?id=9092063>.

Maureen Langlois, 2011 AAAS/ASPB Mass Media Fellow, Spending Summer at NPR

Maureen Langlois, of Ohio State University, is the 2011 recipient of an AAAS Mass Media Science & Engineering Fellowship sponsored by ASPB. She will spend 10 weeks this summer at National Public Radio (NPR) in Washington D.C., where she will work at the science desk. Maureen is currently finishing an MS in environmental science, where she is studying how sunlight degrades pollutants in wetland waters. She received her BA in biology and philosophy from Washington University in St. Louis and was a visiting student at Oxford University. Her awards and honors include a National Science Foundation GK-12 fellowship, which enabled her to become a “scientist in residence” at a rural middle school for a year.

Having been a teacher before a scientist, both at the Thomas Jefferson School (St. Louis) and the Hsinchu International School (Taiwan), Maureen recognizes the need to develop dynamic, relevant ways to disseminate scientific understanding. She is grateful to ASPB for sponsoring her fellowship this summer because it will afford her opportunities to innovate the sorts of science communication strategies for which there is, she believes, such an acute need.

The AAAS/ASPB Mass Media Fellowship is designed to enhance coverage of science-related issues in the media to improve public understanding and appreciation of science



Maureen Langlois

and technology. Fellows work for 10 weeks during the summer as reporters, researchers, and production assistants in mass media organizations nationwide. They collaborate with media professionals at radio and television stations, newspapers, and magazines to make important science news

clear and comprehensive to the public. This is ASPB's seventh year participating; the program is in its 37th year and has supported more than 500 fellows.

We wish Maureen a fun and productive summer and look forward to reading a full report of her adventures at NPR in an upcoming issue of the *ASPB News!*

Midwestern Section Meets at Purdue University

The Midwestern Sectional was held March 19–20, 2011, at Purdue University in West Lafayette, Indiana. Approximately 110 students, faculty, and other scientists enjoyed 21 talks and 36 posters presented by undergraduates, graduate students, and postdocs on a wide variety of topics in plant biology at the successful meeting. In addition, ASPB President Nick Carpita (Purdue University) gave the keynote address titled “Capturing the Genetic Diversity of Maize for Improvement of Bioenergy Grasses.”

For some, it was their first scientific meeting or scientific presentation. For others, this was one of many meetings we attend annually, but it's always a favorite. The Midwestern Sectional provides an opportunity for experienced students to give talks, for beginners to present posters, and for all of us to discuss our work in a friendly atmosphere.

Awards were presented for best student presentations. Best undergraduate poster awards were presented to Lara Alpan (Southern Illinois University, Edwardsville), Andrea Brennan (Purdue University), and



Samuel Saitie and Evan Pratt (Michigan State University). Craig Schenck (Ohio University), Brandon Bishop (Purdue University), and Debjani Pal (Miami University), received honors for best graduate posters. The best oral presentation awards were presented to Rachelle Buuck, an undergraduate from Purdue University, and Renate Weizbauer, Purdue University. Joshua Widhalm, University of

Nebraska–Lincoln, and Amanda Storm, Miami University, received honors at the graduate level.

The Midwestern Sectional is a wonderful opportunity for networking and sharing the science we all love. Next year, we will meet at the University of Nebraska–Lincoln on March 24–25, 2012. Plan now to attend!

Sarah Wyatt
Ohio University



Mid-Atlantic Section Spring Meeting Report

The annual spring meeting of the Mid-Atlantic Section was held on Friday, April 8, on the campus of the University of Maryland, College Park. Amid the spring rain, more than 75 plant biologists gathered to share their research, educational experiences, and scientific discoveries through talks and informal interactions at lunch and coffee breaks.

The featured speaker was Dr. Richard Jorgensen from CINVESTAV. Rich was among the pioneers in the study of RNA interference in petunias, which led to the development of RNAi as a powerful technology now used in many model organisms.

His talk, “Evolutionary and Functional Diversification of the Epigenome: A ‘Paragenetic’ Perspective on the Role of RNA Silencing in the Biology of Plants,” narrated the history and progress of traditional genetics as compared and contrasted with the developing understanding of epigenomics, including RNAi.

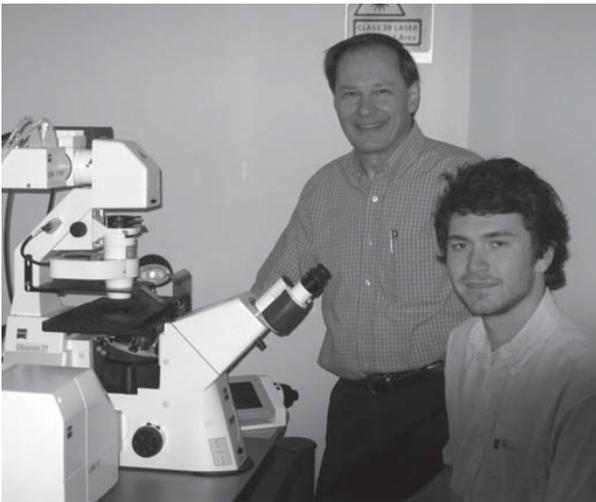
The keynote speaker, Dr. Manuel Lerda, University of Virginia, presented on “Bi-Directional Scaling of Iso-

prene Physiology: From Membranes to the Atmosphere.” He discussed the biochemistry and evolution behind one of many global impacts that plants have via the atmosphere.

Graduate student Thomas Boothby, University of Maryland, won the Marsho Award for best graduate student talk on “Subnuclear Storage of Masked mRNA in the Microspore of *Marsilea vestita*.” At the end of the meeting, Dr. Zhongchi Liu, the Mid-Atlantic Section representative, put out a call for applicants to the ASPB ambassador program.

The meeting was organized by Mid-Atlantic Section chair Gary Coleman, University of Maryland, and Section secretary Hemayet Ullah, Howard University. It successfully showcased the diversity of plant biology researchers and the high level of enthusiasm for plant biology in the Mid-Atlantic region. It is hoped that those who came from outside the D.C. Metro area for the meeting had the opportunity to enjoy the Cherry Blossom Festival—clear evidence that plant biology has the most beautiful model organisms around!

Z. Irene Ying & Zhongchi Liu
University of Maryland



Marsho Award winner Thomas Boothby (seated) with his PhD adviser Dr. Steve Wolniak.



Selected articles from the *ASPB News* will now be posted on the *ASPB News* community group page (<http://my.aspb.org/group/ASPBNews>) before each issue is assembled online and in print. So even though the newsletter is published only bimonthly, *ASPB news* of broad interest will be published “ASAP.”

Report on the Western Section Annual Meeting

Many years ago, I was lucky to be awarded a travel grant from another learned society to attend the ASPB annual meeting in Honolulu, Hawaii. A requirement of the grant was that I write a report on the conference to be published in that society's newsletter. In my article, I commented that it was easy to complain about the life of a research scientist, but that the arrival of the summer conference season brings a break in the clouds when we are able to jet off to exotic locations, although a scientific conference in paradise may be an oxymoron to some. This year I didn't need to wait until the summer to enjoy my first conference in paradise.*

The Western Section held its annual meeting at California State University Long Beach (CSULB), with accommodations and the conference dinner arranged at nearby Seal Beach, a fantastic location and only a short stroll along bohemian Main Street to the pier and beach (see photo).

Judy Brusslan (CSULB) and colleagues did a great job of putting this year's meeting together and are to be congratulated for the choice of conference venue (in the Pyramid Annex at CSULB) and, of course, for accommodation so near the beach. The quality of the scientific program matched the location, and as is characteristic of ASPB meetings, there were talks and posters covering a wide range of plant biology topics. Areas of study

ranged from fruit developmental genetics to NMR-based metabolomics and from the circadian clock to anti-HIV therapeutics. A wide range of plant species were the subjects of study, including walnut, grasses, *Chlamydomonas*, and water hyacinth.

The meeting started with an excellent buffet breakfast in the conference meeting room, which provided a good opportunity to meet fellow attendees. The first talk of the day was the invited keynote from Marty Yanofsky, a tour de force presentation covering some of Marty's groundbreaking research into the genetic control of fruit ripening in *Arabidopsis*. This was a tough act to follow, but speaker after speaker, from graduate student

to more experienced postdoc, gave engaging and well-prepared presentations. Such was the quality of the science that at the taco and margarita conference dinner (or perhaps that should be margarita and taco), three cash prizes were awarded for outstanding presentations. These went to Melissa Scranton (graduate student, UCR); Sheen Lu (postdoc, UCLA); and Colleen Doherty (postdoc, UCSD). Congratulations again to you all. 🌱

David Logan
University of Saskatchewan

*It is quite possible that my idea of paradise has been affected by five months of Canadian prairie winter, but Seal Beach is very pleasant.

ASPB sections provide an excellent opportunity to become involved in the Society, and the sections' small annual meetings provide an ideal environment for networking and opportunities for undergraduate, graduate, and postdoctoral researchers to present their research results to their peers and hone their skills for larger meetings. The Western Section covers a large geographic area, and we would like our annual meeting to reflect this. If you are interested in hosting the Western Section meeting in the future, please contact David Logan at david.logan@usask.ca.



President's Letter *continued from page 5*

breeding. Leon adds, "The follow-up on the workshop would bring participants to the next ASPB annual meeting to build linkages between ASPB members and scientists from sub-Saharan Africa. Another key activity for the IC will be to begin to develop a network connecting scientists from Africa with ASPB scientists from the United States and other countries." Leon urges better linkage between ASPB and the CGIAR system to meet the common goal of improving world food security. Debby suggests that we also con-

sider making membership and registration to all our sponsored meetings free to scientists from AGORA-eligible countries who partner in our cooperation. She adds, "But equally challenging is getting advanced seeds into the hands of farmers through creation of stronger seed systems, both public and private, and creating new markets that provide incentives to farmers to generate more economic security. Another key challenge is the lack of infrastructure, particularly roads and power, that leaves farmers isolated and unable to access inputs and store and deliver outputs. Particularly in Africa, a striking—

some might say alarming—new development is the massive investment, particularly by foreign entities, in long-term leasing or purchasing of undeveloped lands and the creation of massive new farms. While there is no question that consolidation of small farms into larger, more efficient ones has almost always gone hand in hand with agricultural development, the big challenge will be to protect the rights of the poor as this new development unfolds."

Even for developed nations, food security is not guaranteed. The earthquakes on

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Members in the News



Charles Arntzen is the new chair of the Section on Agriculture, Food, and Renewable Resources for the American Association for the Advancement of Science (AAAS) and will lead the section until February 2012. His primary research interests are in plant molecular biology and protein engineering as well as the utilization of plant biotechnology for enhancement of food quality and value, for expression of pharmacologically

active products in transgenic plants, and for overcoming health and agricultural constraints in the developing world. He has also worked to develop plant-based vaccines for human and animal disease prevention. Charles is the Florence Ely Nelson Presidential Chair in Plant Biology and Regents' Professor at Arizona State University. He is a past president of ASPB and has served on the editorial board of *Plant Physiology*. He has received several ASPB awards, including election to the first class of ASPB Fellows, the Charles Albert Shull Award for young researchers, the Dennis Robert Hoagland Award for outstanding plant research in support of agriculture, and the 2004 ASPB Leadership in Science Public Service Award. Charles is an elected member of the National Academy of Sciences and a fellow of AAAS.



Machi Dilworth is the new director of the Office of International Science and Engineering at the National Science Foundation (NSF). Prior to this assignment, she served as acting deputy assistant director for the Mathematical and Physical Science Directorate. She has been with NSF for more than 20 years and has served in many roles, including division director for Biological Infrastructure and the Plant Genome

Research Program within the Biological Sciences Directorate as well as head of NSF's Tokyo office. Earlier in her career, she worked in the U.S. Department of Agriculture's Competitive Research Grants Office for nine years. Machi received the Presidential Distinguished Rank Award in 2002 and was elected a fellow of AAAS in 2007. She was named to the inaugural class of ASPB Fellows in 2007 and received the Society's Albert E. Gude, Jr. Award in 1998 in recognition of her outstanding service to the science of plant biology. She is also a former reviews editor for *The Plant Cell* and a former chair of ASPB's Publications Committee. Machi has been an ASPB member since she was a graduate student.



Nina Fedoroff assumed the 2011–2012 presidency of AAAS, the world's largest general scientific society, in February. She has conducted fundamental research in the molecular biology of plant genes and transposable elements as well as on the mechanisms plants use to adapt to stressful environments. Nina is the Evan Pugh Professor in the Biology Department and Huck Institutes of the Life Sciences at Pennsylvania State University,

a member of the external faculty at the Santa Fe Institute, and a distinguished visiting professor at King Abdullah University of Science and Technology in Saudi Arabia. She had previously served a three-year term as science and technology adviser to the U.S. Secretary of State and the U.S. Agency for International Development. Nina, an AAAS fellow, is an elected member of the National Academy of Sciences, the American Academy of Arts and Sciences, the European Academy of Sciences, and the American Academy of Microbiology. In 2006, she was named a National Medal of Science laureate, the nation's highest award for scientific achievement. She received the ASPB Leadership in Science Public Service Award in 2010.

Nina also served as a guest on National Public Radio's *Science Friday* program. On February 18, she discussed whether science could be used as a diplomatic tool (<http://bit.ly/dRsiLh>). Then the next week, again as a guest on the show, she discussed whether transgenic weeds are an ecological threat (<http://bit.ly/fGpc8a>).



Mary Lou Guerinot is the new chair of the AAAS Section on Biological Sciences. She is a molecular geneticist whose principal expertise and research interests are in the area of metal transport and regulation of gene expression by metals. For most of the world, plants are the major point of entry for essential metals into the food chain, so her work is laying the foundation for crops that offer sustainable solutions for malnutrition.

Mary Lou is the Ronald and Deborah Harris Professor of Biological Sciences at Dartmouth College. She is a past president of ASPB and an elected fellow of both ASPB and AAAS. Mary Lou currently chairs ASPB's Board of Trustees.

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Members in the News
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Teh-hui Kao was featured by *LiveScience* in an article on March 10 (<http://bit.ly/hvrVMs>). He is professor of biochemistry and molecular biology and chair of the Intercollege Graduate Degree Program in Plant Biology at Penn State University. His research focuses on two areas: the self/non-self recognition mechanism adopted by petunia and many other flowering plants to prevent inbreeding and promote outcrossing

and the structure and function of cellulose synthase complexes in a cellulose-synthesizing bacterium and *Arabidopsis*. Teh-hui is a former monitoring editor for *Plant Physiology*.



Cathie Martin is one of the people quoted in a *Nature* article on the anti-cancer properties of fruits and vegetables (<http://bit.ly/i3MIXX>). She was cited for her work in developing a tomato that contains roughly the same concentration of anthocyanins as blueberries. Although berries are high in these antioxidants, Cathie noted that “they are expensive and seasonal, so availability is a limiting factor for a lot of people.” Cathie’s team

showed in 2008 that the deep purple tomato they developed slowed tumor progress in a cancer-prone strain of mice. Her team also developed a tomato strain with a resveratrol concentration 1,000 times higher than red wine. Cathie is a group leader at the John Innes Centre in Norwich, United Kingdom, and a professor at the University of East Anglia. She is the current editor-in-chief of *The Plant Cell*.



Donald Ort is chair-elect for the AAAS Section on Agriculture, Food, and Renewable Resources and will become section chair in February 2012. He is a plant physiologist and research leader with the Global Change and Photosynthesis Research Unit of the U.S. Department of Agriculture’s Agricultural Research Service as well as the Robert Emerson Professor in Plant Biology and Crop Sciences at the University of Illinois at

Urbana–Champaign. Among his research interests are the impacts of increasing carbon dioxide and ozone on photosynthesis and productivity of corn and soybean, seed development in canola, the impact of

cool temperatures on warm-climate crops, and the genomic ecology of global change. Don is a past president of ASPB and the current editor-in-chief of *Plant Physiology*. He is a recipient of ASPB’s Charles F. Kettering Award for Excellence in Photosynthesis and was elected to the first class of ASPB Fellows; he is also a fellow of AAAS.



Seung Yon (Sue) Rhee was among those receiving an honorable mention for illustrations in the 2010 International Science & Engineering Visualization Challenge (<http://bit.ly/g7nWOK>), which is sponsored by the National Science Foundation and the journal *Science*. Her collaborators are Insuk Lee, Michael Ahn, and Edward Marcotte. Their image is “AraNet: A Genome-wide Gene Function Association Network for

Arabidopsis thaliana,” which maps the links between genes based on their biological process. Sue was quoted as saying, “It’s not unlike a social network.” Sue’s lab tries to uncover the mysteries of how plants process the myriad information from their environment and reprogram their growth and development. Sue is staff scientist in the Department of Plant Biology of the Carnegie Institution for Science. The image was featured in a number of places, including *Science* (<http://bit.ly/h5zuMx>) and *The New York Times* (<http://nyti.ms/hQN1U9>).



Gary Stacey is quoted in a March 18 article in *Science* about the proposed cuts to biological and environmental research (BER) at the Department of Energy (<http://bit.ly/ezZ38w>). The cuts were included in the appropriations bill (H.R. 1) passed by the U.S. House of Representatives in February, which would have cut BER programs almost in half. It is believed that the House included such large cuts because of

concerns about research on climate. Gary was quoted as saying, “It’s a little bit like killing the messenger” because BER doesn’t set climate policy. He is the Missouri Soybean Biotechnology Professor in Functional Genomics and Integrated Advanced Technologies, professor of plant sciences, and joint professor of biochemistry at the University of Missouri, where he also directs the Center for Sustainable Energy. He is a former chair of ASPB’s Public Affairs Committee, a current member of the Publications Committee, and a fellow of ASPB.



Sharlene Weatherwax has been officially appointed as the associate director for biological and environmental research (BER) at the Department of Energy (DOE) Office of Science, effective April 10. With an annual budget of more than \$600 million, the Office of Biological and Environmental Research is the nation's leading supporter of fundamental research and facilities for energy, climate, and the environment. Sharlene had previously served as acting associate director for BER and director of its Biological Systems Science Division. She has been at

DOE since 1999 and has worked on a variety of programs, including the Energy Biosciences Program, Genomics:GTL, Genomic Science Systems Biology Knowledgebase, Bioenergy Research Centers, joint USDA–DOE Plant Feedstocks Genomics for Bioenergy, and the interagency National Plant Genome Initiative. Before coming to DOE, Sharlene performed independent research on the study of light- and hormone-regulated plant gene expression.

Compiled by **Adam P. Fagen, PhD**
ASPB Public Affairs Director

Do you have news to share with the ASPB community?
Please let us know by e-mailing afagen@aspb.org.

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February 21 in New Zealand and on March 11 in Japan are testament to how quickly that security can be threatened. The earthquake centered near Sendai, Japan, and the tsunami it triggered wreaked sudden, widespread death and destruction, with continuing impacts at the stricken nuclear power facilities. The latter has had significant consequences for the safety of the local food supply and dire economic consequences as a result of its shortfall. ASPB continues to reach out to the leadership of the Japanese Society of Plant Physiologists (JSPP) and to ASPB members in Japan so that we may learn about the deeper national impacts of these disasters on the plant science infrastructure and the larger plant biology community in Japan, and we stand ready to offer more tangible assistance and support, particularly in the hard-hit Tohoku and Kanto districts. Responses from Japan tell of frightening experiences and the widespread continuing problems with energy stability in the affected northeastern regions, but they also speak of the resilience of the Japanese people in dealing with such crises. We have not heard any reports of members injured or lost, but we also have had limited connections with the hardest hit universities. Kazuo Shinozaki, president of the JSPP, thanks ASPB for its concern and ideas for how we can help. The disaster forced cancellation of the 52nd JSPP

meeting, which had been scheduled for the week following the earthquake in Sendai. The JSPP leadership is planning a minisymposium in Nagoya in July. As Kazuo relates, the western and central districts of the country have not been damaged by the disaster, and plant scientists in Nagoya, Kyoto, Nara, Okayama, and Fukuoka are giving strong support to plant scientists in the affected districts so that they can quickly recover. ASPB stands ready to offer assistance and support through visits to the labs of collaborators during the time of lab reconstruction to keep the science moving forward. Along these lines, Subra Suresh, director of the National Science Foundation, recently issued a "Dear Colleague" letter reminding us that the NSF Rapid Response Research (RAPID) mechanism represents one NSF-funded approach toward addressing immediate research and education needs in the wake of disasters such as these. He also pointed out the possibility of requesting supplemental funds to add an international dimension to an existing NSF grant, such as conducting research remotely through the use of information and communication technologies, temporarily hosting databases on behalf of affected institutions, and providing temporary laboratory space for researchers and students from affected institutions (7).

Nick Carpita
carpita@purdue.edu

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For this issue of the ASPB News, we are deviating from our usual practice of an invited essay from a woman member. Instead, here are . . .

Six Ways That the ASPB Women in Plant Biology Committee Is Working for You (Even If You Are Not Female)

by Carolyn Wetzel

Assistant Professor, Smith College, Northampton, Massachusetts; cwetzel@smith.edu

#1

Organizing and subsidizing child care for the annual meeting

Back by popular demand! We are offering subsidized on-site child care at Plant Biology 2011 in Minneapolis that will be provided by Kimberlee Care, the same group that set up a wonderful program at the 2010 meeting in Montréal. Last year, kids aged 0–13 had a ball doing crafts, playing games, and hanging out with books and toys in a convenient, clean, safe environment. This program is supported by an endowment from the estate of Eli Romanoff that is being supplemented by ASPB funds. It will be continued by ASPB as need indicates—so drop off your kids, attend meeting sessions with peace of mind, and give us your feedback about the service. Check out the Plant Biology 2011 website for details about cost and how you can sign up.

#2

Promoting a network of successful female scientists to tap into for mentoring and role models

Do you have a female student or postdoc you would like to encourage to continue in plant sciences? Do you want to show her, rather than tell her, that women can succeed? What about a male or cisgender student in the same category? Bring them to the meeting to see role model female scientists in action and take them to the luncheon and talk sponsored by the Women in Plant Biology Committee (WIPB). This year, we are pleased to have Dr. Karen Plaut, director of agricultural research and associate dean at Purdue University, speak on “Women in Science:

Leading the Way.” Pre- and post-talk time for conversation with other attendees is a great way to meet new colleagues and catch up with those for whom the luncheon is an annual affair. This event is always invigorating and educational—for all genders at all career stages. Check out the Plant Biology 2011 website for details about cost and how you can sign up.

#3

Organizing career workshops at the annual meeting

The main theme of this year’s two workshops at Plant Biology is communication. *Career Workshop I: Communication Styles that Promote Success* focuses on everyday professional interactions. When you speak at a meeting, is your voice heard? Or do the same or similar comments by colleagues result in a greater response? This interactive workshop, led by Dr. Kim Kidwell, will explore a variety of communication styles, with the goal of promoting effective communication in meetings with colleagues, people who hold authority over you, those you are mentoring, and in classrooms. There will be active audience participation, so you can practice what you’ve learned right away. Kim is uniquely qualified to run a workshop such as this: she is a successful plant geneticist and an award-winning teacher of both plant breeding and communication classes at Washington State University, where she is currently an associate dean.

Career Workshop II: Successful Negotiation focuses on specific types of interactions that will have a major impact on different stages of your career. A panel of scientists from academic, industry, and government labs will discuss topics of interest to graduate students

(such as negotiating among rotation labs and determining project completion); postdocs (such as negotiating your job duties, components of a project that you can take with you when you leave the lab, and conflict resolution); and independent investigators (such as negotiating a competitive salary, space, teaching, and start-up package; dealing with spousal/partner hires; approaches toward sabbaticals, the tenure clock, promotion, and leave; and working through collaborative projects). Come to one or both workshops, come if you are just embarking on your career or are looking to pick up some tips on being a better department chair, come regardless of gender—everyone benefits from better communication! Check out the Plant Biology 2011 website for details about cost and how you can sign up.

#4

Determining travel awards for the annual meeting

ASPB Women’s Young Investigator Travel Awards benefit the Society as a whole by helping to ensure participation in our meetings by as broad a base of the membership as possible. Applications were reviewed and ranked by the WIPB members, and the ASPB awarded seven \$1,000 travel awards to women young investigators who are in their first five years as faculty-level independent investigators in academia, industry, or government to attend Plant Biology 2011. This year’s awardees, who reflect ASPB’s international membership and annual meeting attendance, are Ulrike Bechtold (University of Essex), Su-Chiung Fang (Academia Sinica), Suja George (M. S. Swaminathan Research Foundation), Kerry Lutz (Farming-

dale State College), Rachael Morgan-Kiss (Miami University), Wendy Peer (Purdue University), and Margaretha van der Merwe (Stellenbosch University).

#5

Identifying implicit bias in science institutions and working to effect change that will extend beyond the Society

Some ASPB awards are based on a merit system that assumes a traditional career trajectory. However, women, and many other members of historically underrepresented groups, often follow nontraditional paths because of family- and partner-related demands. Under an initiative started by past chair Judy Brusslan (CSU Long Beach), the WIPB is working to identify ways that criteria and policies for ASPB awards may be

a barrier to nomination of top-notch female scientists. When areas of implicit bias are identified, alternative policies are suggested. The intent is not to alter the rigor of criteria but to make some of the personal requirements—such as the years since receipt of PhD criterion that is a component of several awards—more flexible. ASPB has already been praised by the Association of Women in Science (AWIS) regarding our proactive measures, and ASPB Executive Director Crispin Taylor was invited to speak on the topic at an NSF-ADVANCE PI meeting in November 2010. One outcome of AWIS and ASPB studies, which is easy to implement by all ASPB members, is that the number of women receiving awards is generally proportional to the number nominated. When you see the next call for ASPB awards nominations, make 2012 the year that you nominate a deserving woman colleague.

#6

Presenting a female-friendly face to the public on behalf of the Society

The WIPB is occasionally called on to respond to gender-related events in the sciences, such as during the maelstrom that followed former President of Harvard University Larry Summers's public comments about low female aptitudes in science and engineering. An informed and intelligent response can be made to these requests by a dedicated committee of members concerned with the status of women in plant biology, which reflects well on all of ASPB.

A diverse society is a strong society. If you have ideas for new initiatives or for aiding our current efforts, please share them with the ASPB president, any member of the WIPB, or the executive director. 

Going to Plant Biology 2011?

Career Workshop I: Communication Styles That Promote Success	Sunday, 12:00–2:30 p.m., lunch provided, ticket required
Career Workshop II: Successful Negotiation	Monday, 7:30–10:30 p.m., dinner provided, ticket required
Women in Plant Biology Luncheon and Dr. Karen Plaut's presentation on "Women in Science: Leading the Way"	Monday, 12:00–1:30 p.m., ticket required
On-site Child Care	Ongoing throughout the meeting; check website for hours and reservations





ASPB members share a common goal of promoting the growth, development, and outreach of plant biology as a pure and applied science. This column features some of the dedicated and innovative members of ASPB who believe that membership in our Society is crucial to the future of plant biology. If you are interested in contributing to this feature, please contact ASPB Membership at info@aspb.org.



Name: Jing-Ke Weng

Title: Postdoctoral research associate

Place of Work or School: The Salk Institute for Biological Studies

Research Area: Plant secondary metabolism, protein evolution

Member since: 2006

1. **Has being a member of ASPB helped you in your career? If so, how?**
Yes, of course. When I was a graduate student, I had the opportunity to present a talk at an ASPB annual meeting. It was quite an experience for me back then. Through the meeting, I also met many plant biologists from all over the world, which really broadened my horizons. The *ASPB News* keeps me updated about things going on in plant biology. I was so proud when ASPB reported my discovery on the convergent evolution of syringyl lignin, which was published in *PNAS* in 2008.
2. **Why has being a member of ASPB been important to you?**
It's a great channel for me to stay connected with the plant biology community.
3. **Was someone instrumental in getting you to join ASPB?**
Yes, my PhD adviser, Clint Chapple, highly recommended that I join ASPB.
4. **What would you tell nonmembers to encourage them to join?**
It's the best society to join for a plant biologist.
5. **Have you found a job or hired anyone using ASPB job postings or networking at the annual meeting?**
No.
6. **Do you still read print journals? If so, where do you usually read them: work, home, library, in the car, on the bus, or somewhere else?**
Although I read most of the journal articles online these days, I do enjoy thumbing through the printed journals. I usually do this at home or during leisure time in the lab. While reading online articles is often very targeted, I always learn interesting, random things in other fields when reading the printed journals.
7. **Have there been any issues in plant biology in which you thought ASPB should be involved or that led you to consider becoming active in the governance of the Society, and if so, what were they?**
Climate change and global warming. Climate change in the past must have left marks on plants during their evolution. Plants are also key players in the fight against global warming. ASPB should be involved in getting more government support in research projects that address these important societal issues.
8. **What could ASPB do better?**
Promote plant biology's connections with other scientific disciplines, such as medical sciences and environmental sciences.
9. **What do you see as the most important role for scientific societies such as ASPB?**
Connecting plant biologists with the bigger scientific community, funding agencies, and the general public.
10. **What advice would you give to a plant scientist just starting out?**
Plants are amazing organisms to work with! They do not move around as animals, but because of that, they've evolved some fascinating biological mechanisms to deal with their environmental niches. Advances in plant biology can not only solve big problems in agriculture, but can also have a huge impact on human health and the future of renewable energy.
11. **What do you think is the most important discovery in plant biology over the past year, and why?**
The identification of PYR/PYL/RCAR family of START proteins as ABA receptors. It's the last missing piece found for the ABA signaling puzzle, which has bugged the plant biology community for decades. It opens up a whole set of new opportunities for crop improvement and herbicide development.
12. **What do you think is the next "big thing" in plant biology?**
Going from model plants in the lab to plant diversity in the wild and linking molecular biology to ecology.
13. **What are you reading these days?**
Texts on neutral mutation network and evolvability.
14. **What do you still have left to learn?**
Biological computation. 



ASPB Public Affairs Committee Meets with Federal Agencies and Congress

The ASPB Public Affairs Committee held its annual meeting in Washington, D.C., at the beginning of March. This is the committee's opportunity to interact directly with federal officials and to explain the value of plant biology research to Congress.

On March 7, the committee had the opportunity to hear from representatives of six federal agencies:

- *Department of Energy*: Sharlene Weatherwax, acting associate director for biological and environmental research within the Office of Science, and Cathy Ronning, program manager in the Biological Systems Science Division (both are ASPB members)



Public Affairs Committee member Pat Schnable (right) meets with Sen. Tom Harkin (D-IA).

- *U.S. Department of Agriculture*: Roger Beachy, director of the National Institute of Food and Agriculture (and an ASPB member)
- *National Institutes of Health*: Jeremy Berg, director of the National Institute of General Medical Sciences
- *National Science Foundation*: Jane Silverthorne, deputy director of the Division of Integrative

Organismal Systems (IOS); John Wingfield, director of IOS; and Stephen Howell, director of the Division of Molecular and Cellular Biosciences (Jane and Stephen are ASPB members)

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Congressional Office Meetings

- Rep. Leonard Boswell (D-IA)
- Rep. Larry Bucshon (R-IN)
- Rep. Russ Carnahan (D-MO)
- Rep. Rick Crawford (R-AR)
- Rep. Susan Davis (D-CA)
- Rep. Bob Filner (D-CA)
- Rep. Jeff Fortenberry (R-NE)
- Rep. Doc Hastings (R-WA)
- Rep. Jaime Herrera Beutler (R-WA)
- Rep. Duncan Hunter (R-CA)
- Rep. Tom Latham (R-IA)
- Rep. Cathy McMorris Rodgers (R-WA)
- Rep. Todd Rokita (R-IN)
- Rep. Adrian Smith (R-NE)

- Sen. Roy Blunt (R-MO)
- Sen. John Boozman (R-AR)
- Sen. Maria Cantwell (D-WA)
- Sen. Dan Coats (R-IN)
- Sen. Dianne Feinstein (D-CA)
- Sen. Charles Grassley (R-IA)
- Sen. Tom Harkin (D-IA)
- Sen. Mike Johanns (R-NE)
- Sen. Richard Lugar (R-IN)
- Sen. Claire McCaskill (D-MO)
- Sen. Patty Murray (D-WA)
- Sen. Ben Nelson (D-NE)
- Sen. Mark Pryor (R-AR)

- House Appropriations Agriculture Subcommittee
- House Science, Space, and Technology Committee
- Senate Agriculture Committee
- Senate Appropriations Agriculture Subcommittee



Members of the Public Affairs Committee and ASPB leadership in D.C. (l to r): Sally Mackenzie, Pat Schnable, Maureen McCann, Dick Sayre, Julian Schroeder, Tuan-hua David Ho, Nick Carpita. Also participating in the Public Affairs Committee meeting, but not pictured here, were Beth Hood, Norman Lewis, and Steve Huber.

ASPB Member Beth Hood Testifies in Support of NSF

On March 11, ASPB Public Affairs Committee member Elizabeth Hood testified in support of the National Science Foundation (NSF) before the House Appropriations Subcommittee on Commerce, Justice, Science, and Related Agencies. While recognizing the difficult fiscal environment faced by the nation, Beth's testimony emphasized that investments in scientific research will be a critical step toward sustained economic recovery and supported the \$7.767 billion requested for NSF in fiscal year 2012.

She mentioned that the NSF Directorate for Biological Sciences is a critical source of funding for scientific research, providing 68% of the federal support for nonmedical basic life sciences research at U.S. academic institutions. Beth stated, "Despite the fact that basic plant biology research—the kind of research funded by the NSF—underpins so many vital practical considerations, the amount invested in understanding the basic function and mechanisms of plants is relatively small when compared with the impact plants have on our economy and in addressing some of the nation's most urgent challenges such as food and energy security."

Among the high-impact programs supported by NSF is the Plant Genome Research Program (PGRP), which has laid a strong sci-



Beth Hood testifies before the House Appropriations Subcommittee on NSF as subcommittee chair Rep. Frank Wolf (R-VA) presides.

entific research foundation for understanding plant genomics as it relates to energy (biofuels), health (including nutrition and functional foods), agriculture (such as the impact of changing climates on agronomic ecosystems), and the environment (plants' roles as primary producers in ecosystems). Beth asked that PGRP be restored as a separate line within the NSF budget, as in years past, and be funded at the highest possible level.

She also spoke in support of NSF's career and workforce development programs—

including graduate traineeships, fellowships, and career transition awards—as well as NSF's diversity programs and the research the agency supports on teaching and learning.

Beth is distinguished professor of agriculture at Arkansas State University. ASPB's complete written testimony can be found at <http://bit.ly/e9RftK>.

Adam P. Fagen, PhD
ASPB Public Affairs Director

Public Affairs Committee continued from page 19

- *Department of Defense*: Captain James Brown, director of the Navy Energy Coordination Office for the U.S. Navy
- *U.S. Agency for International Development*: Steven Fondriest, senior scientist and policy analyst at the Office of Science and Technology

All of the speakers emphasized the relevance of plant biology to their mission, whether the application is energy, agriculture, health, basic science, biofuels, or in-

ternational development. They also stressed that the agencies try to work together and coordinate efforts with one another and through the White House Office of Science and Technology Policy, but this is a tough budget environment, and organizations such as ASPB will have to help make the argument about why support for scientific research is important. This message will need to be made not only to Congress, but also to the general public; this speaks to the need for simple messages about the value of plant biology and scientific research in general.

Then, on March 8, members of the Public Affairs Committee fanned out across Capitol Hill, meeting with nearly 30 congressional offices in both the House and Senate as well as the staffs of several congressional committees (see sidebar on page 19). While acknowledging the difficult fiscal climate facing the country, ASPB members emphasized the importance of making strategic investments in areas such as scientific research.

Adam P. Fagen, PhD
ASPB Public Affairs Director

A New Alliance Takes Root

The Association of Independent Plant Research Institutes (AIPI)

As ASPB members know, plant research plays a critical role in addressing some of society's most pressing problems, including ensuring the food supply, discovering sustainable sources of biofuels, and developing tools to help the agricultural sector cope with climate change-driven biotic and abiotic stresses. Now the four not-for-profit U.S. organizations focused primarily around plant research (see box) have come together to form the new Association of Independent Plant Research Institutes (AIPI).

AIPI's goal is to harness the collective power of these four institutes—and perhaps additional partners in the future—to support and execute plant science discovery. AIPI institutions and similar ones have a unique capability because their missions emphasize research rather than teaching, yet each retains strong ties to nearby academic partners. Each AIPI member also has an endowment that allows pursuit of high-risk or proof-of-concept research. Faculty positions in these sorts of institutions are coveted because of the research focus, excellent facilities, academic partners, and financial support. Yet, these institutes are small compared to most research universities. The Boyce Thompson Institute (BTI), for example, employs 17 faculty members along with approximately 110 postdocs, graduate students, and technicians. The other members are of comparable size, although

both Carnegie and Noble have additional components that are not part of AIPI.

AIPI was conceived with three goals in mind: First, to “increase awareness and national support for plant science discovery.” This goal is highly cohesive with ASPB's advocacy efforts, and AIPI's leaders intend to undertake complementary initiatives to build enthusiasm among the public and funding agencies for plant research endeavors. Second, to establish broad-scale collaborative projects among the respective scientific staffs. Indeed, each institute has a distinctive culture and expertise that, when joined, will stimulate the sort of cross-cutting research that funding agencies are increasingly emphasizing, such as the coordinated projects supported by USDA's National Institute of Food and Agriculture. Finally, AIPI will explore sharing core facilities to provide scientists at each institution with the most advanced technologies and to avoid duplication of investments. It is expected that both the scientific collaborations and facility sharing will ultimately reach beyond AIPI members to the broader plant science community.

AIPI arose out of conversations between leaders of the four institutes: David Stern at BTI, Wolf Frommer at Carnegie, Roger Beachy and Jan Jaworski at Danforth, and Rick Dixon at Noble. In September 2010, 36 faculty members from the four institutes gathered for a two-day meeting at the Noble Foundation facilities to share their research, ideas, and visions. A second meeting will take place late this summer, hosted by the Danforth Center.

Although AIPI will be independently incorporated, its plan is to serve as a cohesive voice from a unique sector of the plant research community and to help the community collectively respond to pressures including federal and state budgetary constraints, the pipeline of new scientists, and the push to show results in addressing important scientific questions and societal challenges. 

Adam P. Fagen

ASPB Public Affairs Director

David Stern

The Boyce Thompson Institute

AIPI Members

The Donald Danforth Plant Science Center, St. Louis, Missouri
 Plant Biology Division of The Samuel Roberts Noble Foundation, Ardmore, Oklahoma
 Plant Biology Department of the Carnegie Institution for Science, Stanford, California
 The Boyce Thompson Institute, Ithaca, New York

Roger Beachy to Leave NIFA

ASPB member Roger Beachy has stepped down as director of USDA's National Institute of Food and Agriculture (NIFA) effective May 20, 2011, to be closer to his family in St. Louis. Beachy was tapped to lead the USDA Cooperative State Research, Education, and Extension Service in 2009, which was later reorganized into NIFA. In a memo to NIFA

staff about the departure, USDA Undersecretary for Research, Education, and Economics Cathie Woteki said that Beachy's “leadership contributed to increasing the visibility of science and innovation at USDA so that American agriculture can continue to be the economic engine our nation needs, and help our country keep providing a safe and

healthy food supply to the world.” Beachy will be a professor in the Biology Department at Washington University in St. Louis. While a search is on for a permanent replacement, Chavonda Jacobs-Young, director of the Office of the Chief Scientist at USDA, will serve as interim director of NIFA.



This column provides just a small sample of the content in the ASPB Washington Report and the Plant Biology Policy Blog. The ASPB Washington Report, available at <http://www.aspb.org/publicaffairs/washington.cfm>, is published approximately twice a month by the ASPB Public Affairs Department and includes material provided by ASPB's legislative affairs consultants, Lewis-Burke Associates, LLC. The policy blog may be found on the ASPB website at <http://www.aspb.org/policyblog>.

ASPB Submits Testimony on 2012 Appropriations

ASPB has submitted written testimony to the House and Senate Appropriations subcommittees with responsibility for the Department of Agriculture (USDA), Department of Energy (DOE), National Institutes of Health (NIH), and National Science Foundation (NSF). The testimony outlines some of ASPB's priorities with respect to funding for the agencies, including supporting robust funding for research. You can see copies of the testimony at <http://bit.ly/jySJ28>.

FY2011 Budget Finally Passes

More than six months into fiscal year 2011, Congress finally passed a federal budget. The federal government had been operating on a series of continuing resolutions that mostly continued funding at FY2010 levels. Although the final budget resolution was said to cut \$38.5 million from FY2010 spending levels, the science research agencies were largely spared from dramatic cuts. However, some agencies that contained a large amount of congressionally directed spending experienced larger overcuts with the elimination of earmarks.

- USDA took the biggest hit, with the National Institute of Food and Agriculture (NIFA) down \$126 million from FY2010 levels; most of these cuts were in earmarks, and the Agriculture and Food Research Initiative competitive grants program actually received a 1% increase. The Agricultural Research Service will receive \$1.135 billion, which is down \$44 million from FY2010.
- DOE's Office of Science will receive \$4.884 billion, down \$25 million from FY2010. This is much better than proposals in the House that would have halved, or even completely eliminated, funding

for DOE's biological and environmental research portfolio (see <http://bit.ly/f8sljr>).

- NIH will receive \$30.7 billion, down \$260 million from FY2010, again far less severe than the \$1.6 billion cut passed previously by the House.
- NSF will receive \$6.874 billion, down \$53 million from the FY2010 level. These cuts will apply to both the Research and Related Activities and the Education and Human Resources accounts.

This budget will carry the federal government through the rest of the fiscal year, which ends on September 30.

President Releases FY2012 Budget Request

On February 14, the White House and Executive Branch agencies released the FY2012 budget request (see table on page 23). Despite keeping the discretionary portion of the overall budget at stable levels, there are increases proposed for most of the research agencies of interest to the ASPB community.

Many of the cuts in USDA programs are in earmarks and in canceling unobligated balances from construction projects. Earlier this spring, both houses of Congress and President Obama announced that they would not support congressionally directed spending (i.e., earmarks; <http://bit.ly/hodILa>).

President's Science Adviser Defends S&T Investments

On February 17, the House Science, Space, and Technology Committee received testimony from John Holdren, the president's science and technology adviser and director of the Office of Science and Technology Policy (OSTP). Holdren stated that the FY2012 budget request seeks to responsibly improve America's economy and way of life

To keep up-to-date on ASPB's public affairs activities, please join the Public Affairs group (<http://my.aspb.org/members/group.asp?id=68890>) on the ASPB website and look for us on Facebook and Twitter. To receive an e-mail copy of the ASPB Washington Report, e-mail afagen@aspb.org and ask to be added to the distribution list.

with targeted spending on science, technology, and infrastructure.

Republicans posed a number of questions to Holdren regarding the validity of climate science and voiced concern that the budget request prioritizes climate science ahead of other equally important investments at federal science agencies such as DOE and NSF. Holdren defended climate science investment, which he believes furthers the nation's capabilities in adaptation research and helps maintain the nation's observing networks that forecast weather as well as climate.

Democrats voiced concerns about science, technology, engineering, and mathematics (STEM) education; renewable energy; research; and the relationship between innovation and advanced manufacturing. Holdren indicated that the administration is very interested in developing STEM resources and sees science-related education as a way to increase American competitiveness.

House and Senate Ag Appropriators Question USDA on FY2012 Budget

The House and Senate Appropriations Committees with responsibility for USDA's budget have held hearings with high-level officials including Secretary of Agriculture Tom Vilsack; Undersecretary for Research, Education, and Economics Catherine Woteki; and NIFA Director Roger Beachy on the FY2012 budget.

In his Senate hearing, Secretary Vilsack was asked several questions about agriculture research. Sen. Roy Blunt (R-MO), the ranking Republican on the Agriculture

Agency	Proposed FY2012 Budget	Comparison to FY2010
Department of Agriculture	\$24 billion	↓ \$4 billion (14.3%)
• National Institute of Food and Agriculture	\$1.21 billion	↓ \$141 million (10.4%)
• Agriculture and Food Research Initiative	\$325 million	↑ \$63 million (24%)
• Agricultural Research Service	\$1.156 billion	↓ \$109 million (8.6%)
Department of Energy	\$29.5 billion	↑ \$3.12 billion (11.8%)
• Office of Science	\$5.42 billion	↑ \$452 million (9.1%)
• Basic Energy Sciences	\$1.985 billion	↑ \$386 million (24.1%)
• Biological and Environmental Research	\$717.9 million	↑ \$129.9 million (22%)
National Institutes of Health	\$31.987 billion	↑ \$745 million (2.4%)
• National Institute of General Medical Sciences	\$2.012 billion	↑ \$52 million (2.5%)
National Science Foundation	\$7.767 billion	↑ \$894 million (13.0%)
• Research and Related Activities	\$6.254 billion	↑ \$690 million (12.4%)
• Biological Sciences Directorate	\$794.5 million	↑ \$80 million (11.2%)
• Education and Human Resources	\$911 million	↑ \$38 million (4.4%)
• Major Research Facilities	\$225 million	↑ \$107 million (91.6%)

Appropriations Subcommittee, asked specifically about plant research.

The House subcommittee asked Woteki and Beachy about the necessity of applied research and whether such projects constitute “corporate welfare.” Woteki defended applied research as an inherently governmental undertaking that benefits a wide range of partners including federal, state, and local stakeholders. There were also concerns raised about the process for allocating formula funds, which some subcommittee members said failed to reflect shifts in agricultural production.

Both the subcommittee chair and ranking member showed concern about what would happen to research that in the past was funded through earmarks. Woteki said that affected researchers would be encouraged to apply for the next phase of USDA competitive research grants. One subcommittee member defended research earmarks as Congress’s method of ensuring that agriculture research addresses relevant and current challenges.

House Science Committee Questions NSF Director

On March 11, the House Science, Space, and Technology Committee held a hearing to discuss the FY2012 budget request for NSF with its director, Subra Suresh. Committee Chair Rep. Ralph Hall (R-TX) set the tone

for the hearing by criticizing the significant increase proposed in the budget request for NSF in his opening series of questions. Chairman Hall acknowledged that while NSF plays a key role in advancing the United States in terms of competitiveness, innovation, and breakthrough science, he stressed that the government simply cannot afford to spend the amount of money NSF is seeking. In defending NSF’s large budget increase in the FY2012 budget request, Suresh argued that NSF is an engine of innovation and job growth. These qualities, he noted, are even more important in a weak economy than in a strong one. Suresh specifically cited NSF-funded nanotechnology research leading to the creation of 175 start-up companies and involving 1,200 other companies in the past decade. Other Republicans expressed complaints similar to the chairman’s, including the \$998 million request for clean energy and sustainability research as unnecessary and duplicative to similar research being conducted at DOE and other agencies.

Departures at DOE

Secretary of Energy Steven Chu has lost a key member of his clean energy team with the departure of Assistant Secretary for Energy Efficiency and Renewable Energy (EERE) Cathy Zoi on March 10. Zoi had been the administration’s point person on

DOE’s clean energy technology programs, including wind and solar energy; biomass and biorefinery R&D; hydrogen and fuel cells; geothermal energy; water and hydro-power; and the vehicles, industrial, and buildings technologies programs. She had also served as the acting undersecretary for energy since the departure of Kristina Johnson last November.

Secretary Chu has tapped Arun Majumdar, director of the Advanced Research Projects Agency–Energy (ARPA-E), as the new acting undersecretary for energy. Majumdar will continue to lead ARPA-E during this interim period. Henry Kelly, the current principal deputy assistant secretary for EERE, has been tapped to serve as Zoi’s replacement in an acting capacity. Kelly has served in a variety of government positions, including in OSTP during the Clinton administration and in the congressional Office of Technology Assessment.

Undersecretary for Science Steve Koonin and Bill Brinkman, director of the Office of Science, continue to serve on Secretary Chu’s leadership team during this midterm transition for President Obama.

Adam P. Fagen, PhD
ASPB Public Affairs Director

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12th Annual Education Booth Competition Winners Announced

The ASPB Education Committee is pleased to announce the winners of the highly competitive 12th Annual Education Booth Competition for Innovative Instruction. Winners of the competition will exhibit their innovative plant science teaching and learning initiatives as part of the Education Booth at the upcoming Plant Biology 2011 meeting in Minneapolis.

Celia Knight (University of Leeds) and colleagues will present their efforts to change first-year undergraduate students' perceptions about plants through the Gatsby Plants

project (<http://www.gatsbyplants.leeds.ac.uk>). Celia will be on hand to discuss her team's model for engaging undergraduate students in plant science and will display a variety of resources available through TREE (Tool for Research-Engaged Education), which consists of movies, presentations, and online lecture materials.

John Cushman (University of Nevada, Reno) and collaborators will have an interactive and graphic-rich display titled "Plants Got Rhythm," which explores environmental factors impacting circadian-controlled

phenomena along with plant growth and fitness. John will demonstrate inquiry-based activities examining physiological changes in response to time-keeping mechanisms as well as how to make time-lapse movies of leaf movement controlled by circadian mechanisms, both of which can be easily incorporated into the classroom or laboratory.

Look for these award-winning exhibits and other education displays and materials at the Education Booth in Minneapolis!

Chad Jordan
North Carolina State University

Easter Egg Roll *continued from page 1*

and prepare the "egg-citing" activity called Egg-seeding Expectations: Make Your Own Garden.

More than 2,000 children flocked to the ASPB booth to plant herb seeds (basil, parsley, and dill) in recycled egg carton cups that they could decorate using plant-based paints. The handles for the seed cups featured a colorful rendition of ASPB's first plant biology principle (http://my.aspb.org/?EF_Principles), stating that plants use "photosynthesis [and] provide the world's supply of food, fuel, and energy." Each visitor was engaged to chat about "baby plants," germination, plant growth, and the many things plants can provide such as nutritious food, egg cartons, and dyes/pigments (see Egg-seedingly Effective Engagement sidebar on page 26). Families took home their seed cups and instructions on how to care for the herb seeds, track growth, and use the herbs in cooking to boost flavor and nutrition.

ASPB also presented large photos of plants that provide familiar, kid-friendly foods. Children used clues to "Name That Plant!" This activity, created as part of a larger project by ASPB members David



Puthoff and Kristen Lennon, helped children make the connection between the food they eat and plants, furthering their understanding of green and healthy nutrition.

How did ASPB's outreach efforts fare amid the flurry of egg dying; egg rolling; yoga; strolling characters; face painting; basketball; and live performances of music, dance, and storytelling vying for the attention of the 30,000 people who visited during the 11 hours lucky ticket holders were welcome on the White House lawn? Well,

the ASPB booth was "hopping" the entire time! By day's end, visitors had created more than 2,600 seed cup gardens, a total that easily "egg-ceeded" original projections. The activity was staffed by two shifts of eager and hardy ASPB volunteers and supplemented by White House volunteers and even some OSTP staff (see Many Thanks to Our Volunteers! sidebar on page 27). Despite the long hours (the first shift had to be at the White

continued on page 26

Egg-seedingly Effective Engagement

While guiding each child through the activity steps, our volunteers prompted age-appropriate, upbeat chatter about science-based ideas related to each step of the process.

1. Play “Name That Plant!” game to “earn” an empty seed cup.
2. Affix handle (printed with photosynthesis principle) to the cup.
 - a. Can you say or define “photosynthesis” or “energy”?
 - b. Why is photosynthesis important? How is it unique?
3. Fill the cup with soil.
 - a. What’s the difference between soil and dirt?
 - b. Why do seeds and plants need soil?
4. Poke a hole, drop in seeds, and cover them with soil.
 - a. How deep should the seeds be buried, and why?
 - b. Can you say or define “germinate”?
 - c. These seeds now have soil and air. What else is needed?
5. Mist the seeds/soil with water from a spray bottle.
 - a. How can you care for this at home?
 - b. What will this plant do for you?
6. Using paint made from plant oils, decorate the egg cups.
 - a. What plant do you think grew the material for this cup?
 - b. Plants made this paint. What else comes from plants?
 - c. Why do plants have colors/pigments?

Easter Egg Roll continued from page 25

House at 5:30 a.m.), strong sun, and never-ending flow of interested youngsters, the volunteers did a wonderful job promoting scientific concepts in a light-hearted manner, all while working steadily to maintain material supplies and crowd flow.

Among the notables visiting the ASPB booth, usually with their children or grandchildren, were celebrity chef Jacques Pépin, White House executive pastry chef Bill Yosses, and U.S. Agency for International Development administrator Raj Shah.

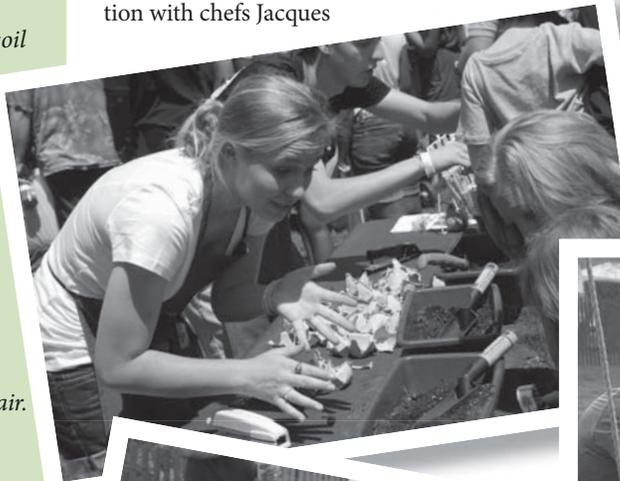
Excitement really ramped up midmorn- ing when the first family addressed the crowd from the White House balcony and then joined various activities on the South Lawn. Mrs. Obama came within shouting distance of the ASPB booth for a cooking demonstra- tion with chefs Jacques

and Claudine Pépin and television personali- ties Kelly Ripa and Al Roker. Some of the ASPB booth volunteers, including Society President Nick Carpita, had the opportunity to meet Mrs. Obama. During their brief ex- change, Nick congratulated the First Lady on her role in promoting the Healthy, Hunger- free Kids Act and the role of plant biology in healthy foods.

As noted in the White House OSTP’s April 27 blog post “I Want to Go Do Science!” (<http://www.whitehouse.gov/blog/2011/04/27/i-want-go-do-science>), “Building science into the Easter Egg Roll was no accident. One of President Obama’s priorities is to have more boys and girls excelling in science, technol- ogy, engineering, and mathematics (STEM) education, and as the faces of the children re- flected, they want to excel in science as well.”

ASPB was pleased to assist with this critical goal by planting seeds of scientific thinking in the fertile minds of the thousands of youngsters enjoy- ing such an “egg-citing” day on the South Lawn of the White House. 🌱

Katie Engen & Adam Fagen





Many Thanks to Our Volunteers!

The ASPB staff, represented on-site by Katie Engen and Adam Fagen, is extremely grateful to the expert support provided by each talented volunteer. ASPB members and associates joining Society President Nick Carpita included Kevin Britt, Mark Brodl, Elena del Campillo, Rob Donaldson, Chioma Ebiringa, Brennah Engen, Katelyn Engen, Courtney Hollender, Karen Mowrer, Janet Slovin, Ganesh Sriram, George Ude, Hemayet Ullah, and Gabi Yamoah.

Throughout the day, White House Office of Science and Technology Policy (OSTP) staff members checked in to be sure the ASPB booth was running smoothly, and OSTP staff Tristen Pegram, Danielle Evers, and Karrie Pitzer provided much-needed help at the end of a long day.

A hearty thanks also goes to the dozen volunteers from the general public and White House intern program assigned to our activity by the White House. This capable group not only added much to the success of the event, but also learned a bit about plant biology for themselves.

Focus on Education at Plant Biology 2011

Vision & Change in Undergraduate Biology Education

Monday, August 8, 2011, 12:00–1:30 p.m.

The National Science Foundation (NSF) and other partners, including the Howard Hughes Medical Institute, National Institutes of Health, American Association for the Advancement of Science, and representatives from The National Academies, have been involved in a multiyear process to consider the future of undergraduate biology education. The Vision & Change (V&C) initiative included discussions with many stakeholders, including a well-attended session at ASPB's 2007 annual meeting and a major conference

in July 2009 that brought together 400 leaders in undergraduate biology education.

The final report from V&C has just been released (<http://www.visionandchange.org>), and ASPB is providing a dedicated opportunity to discuss the report and how to put its recommendations into practice.

- How will the plant biology community respond to the report?
- What tools and resources do you need from ASPB and from NSF to implement the report's recommendations?

This event is free, and advance registration is requested because attendance will be limited. Sign up for the V&C session via online registration for Plant Biology 2011 (www.aspb.org/PlantBiology2011).

To expand the conversation and as an initial follow-up to the V&C Workshop, there will be two special sessions of Hot Topics in Science Education (see below) on undergraduate biology education. 

Additional Education Events at Plant Biology 2011

EVENT	DESCRIPTION	ACCESS NOTES
Small Colleges/PUI Research Networking Breakfast Sat., Aug. 6, 9:00–10:30 a.m.	Join scientists working at or interested in primarily undergraduate institutions (PUIs) to network, discuss issues of common interest, find out about PUI-related opportunities, and provide feedback on ASPB programs for PUIs.	Pre-purchased ticket required: \$15. Purchase via online meeting registration.
Undergraduate Networking Poster Session Sat., Aug. 6, 10:30–11:30 a.m.	Welcome the next generation of plant biologists as undergraduates display their posters during this special session. Poster presenters must reserve a poster spot via online registration.	Free. No registration required to attend.
Education Workshop: Education/Outreach Grant Proposals Sun., Aug. 7, 7:30–9:30 p.m.	Learn to prepare education and outreach grant proposals, including those offered by the ASPB Education Foundation, NSF, NIH, and HHMI. Agency reps will answer questions, and PIs will share their successful (and not so successful!) proposals, reviews, and revisions.	Free. Advance registration required. Use online registration for tickets.
Education Minisymposium Tues., Aug. 9, 8:30–10:10 a.m.	Experts share the impacts and implications of planning plant biology outreach. Discover the techniques used and learning patterns noted in these diverse outreach programs.	Free. No registration required.
Education Booth Competition for Innovative Instruction Daily in the Education Booth	View the new and clever techniques, technologies, and strategies developed for teaching and learning plant science in the laboratory, classroom, or other venues. Speak with the competition winners who created them.	During Exhibit Hall hours
Hot Topics in Science Education Daily in the Education Booth 30–60 min./session Topic schedule posted online and in the booth.	Join interactive discussions that focus on strategies for preparing successful education and outreach grant proposals, assessing student learning, and other education-related topics of interest to conferees. To suggest a topic or facilitate a discussion, please e-mail Erin Dolan, Education Committee chair, at edolan@vt.edu . Sponsor: Fralin Life Science Institute.	During Exhibit Hall hours
Resource Library Daily in the Education Booth	Visitors can peruse carefully selected resources on the research-based science of teaching and learning along with an updated array of outreach materials free for the taking.	During Exhibit Hall hours

Please verify times and room assignments online or on-site during the conference.

ASPB Awards 15 Summer Undergraduate Research Fellowships (SURF) for 2011

Five Applicants Earn Honorable Mentions

Summer Undergraduate Research Fellowships (SURF; <http://www.aspb.org/SURF>) assist promising undergraduate students so that they can conduct meaningful research in plant biology early in their college careers. SURF students must work with a mentor who is an ASPB member. Because SURF recognizes that institutions have varying resources for sustaining different types of

research, applications received from larger (category A) and smaller, primarily undergraduate institutions (category B) are reviewed separately.

ASPB's SURF Committee would like to thank all the students and mentors who applied to the 2011 SURF program. The applications were both plentiful and outstanding. The process was very competitive, and it was

indeed difficult for the reviewers to choose the 15 SURF recipients and five honorable mentions. The 15 awardees will present their SURF research results at the undergraduate and general poster sessions during Plant Biology 2012 on July 20–24 in Austin, Texas.

Congratulations to all the students listed here.

CATEGORY A Research and Doctoral Universities



Matthew Bedewitz, Michigan State University

Mentor: Cornelius Barry

Project: *Development of a functional genomics platform for exploring tropane alkaloid biosynthesis in Atropa belladonna*

I am very honored to receive the ASPB SURF award, as it will be an excellent opportunity for me to gain valuable full-time research experience and allow me to fully participate in a research project. My long-term goal is to work in the area of crop improvement, and this project will be an opportunity for me to gain experience in functional genomics.



Kristina Chun, University of California, San Diego

Mentor: Joseph P. Noel

Project: *Identification of functional protein "sectors": Statistical coupling analysis of the terpene synthase family*

I am extremely honored and grateful to have been chosen by ASPB as a SURF recipient. This fellowship will allow me to continue my work on terpene synthases into the summer and gain valuable training and experience to further expand my knowledge and education. I would like to thank ASPB for this wonderful opportunity as well as Dr. Joseph Noel, Dr. Charisse Crenshaw, and Dr. Kit Pogliano for their continuing support and guidance.

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ASPB appreciates the hard work of the SURF cochairs, Amy Clore (New College of Florida) and Ken Helm (Siena College). Once again, their attention to detail and high standards certainly enhanced the SURF program's continued success this year. To select the 2011 award recipients and honorees, they were joined by a great team of 10 reviewers. The hard work of these volunteers furthered both the career paths of a group of promising students as well as ASPB's initiatives in supporting quality science education.

To learn about volunteering with the SURF program, e-mail katie@aspb.org.

CATEGORY A Research and Doctoral Universities (continued from page 29)



Karina Friman, University of Florida

Mentor: Alisa Huffaker

Project: *Role of AtPep6 as a signal in Arabidopsis thaliana*

With the SURF fellowship, I hope to work hard, learn as much as possible, and gain new experiences.



Laura Gates, University of Massachusetts Amherst

Mentor: Alice Y. Cheung

Project: *Developmental regulation of pollen tube reception in Arabidopsis*

Winning the 2011 SURF grant means that I can spend the summer satisfying my curiosity about the natural world. I will be able to interact full-time with a group of brilliant, hardworking people in plant biology and hope to learn new techniques and approaches that will help me in graduate school and beyond. I am very excited and appreciative to have been given this opportunity.



Jonathan Herrmann, Washington University in St. Louis

Mentor: Joseph M. Jez

Project: *Biochemical and structure analysis of Arabidopsis thaliana GH3.10/DFL2: Defining its role in jasmonate or auxin regulation*

I am excited and honored to receive this fellowship from ASPB. I look forward to using this opportunity to learn more about the field of plant biochemistry and contribute to the perpetually growing body of knowledge in this area. Thank you so much to ASPB as well as to the Jez Lab at Washington University in St. Louis.



David Higgins, North Carolina State University

Mentor: Robert G. Franks

Project: *Investigation of carpel margin meristem (CMM) development in Arabidopsis thaliana*

By winning the ASPB SURE, I've been granted an excellent opportunity to advance my study of plants beyond the classroom. I look forward to using this experience to further prepare myself for future graduate studies in the field of plant sciences.

CATEGORY A Research and Doctoral Universities



Hung-Hsueh (Helen) Lai, University of Washington

Mentor: Keiko Torii

Project: *Functional analysis of EPFL family as signaling ligands in Arabidopsis*

I would like to thank ASPB for this rare scholarship opportunity for international students. I appreciate the guidance and support from Dr. Keiko Torii, Torii lab members, and HHMI undergraduate research adviser Dr. Brian Buchwitz during the research and SURF application process. I am looking forward to continuing the exciting EPFL project over the summer. It is going to be an important experience that contributes to my scientific career!



Taylor Lloyd, University of Kentucky

Mentor: A. Bruce Downie

Project: *Using phage display and biopanning to examine the diversity of seed proteins associating with an LEA protein at supraoptimal germination temperatures*

The ASPB Summer Undergraduate Research Fellowship will provide me with the opportunity to continue my education in the challenging science of seeds and build a resume that will allow me to begin the daunting task of entering the evolving field of seed pathology. The summertime experience this grant provides will truly enhance my undergraduate experience by allowing undistracted time on the bench to delve further into the scientific method.



Amanda Miller, University of Wisconsin–Madison

Mentor: Simon Gilroy

Project: *Role of calcium signaling in the adaptation to low-oxygen stress in Arabidopsis*

Winning the SURF grant is an amazing opportunity that I am privileged to have been awarded. This will allow me to feel established as a researcher and make a contribution to my area of research. With this, I will easily be able to excel in the field of agricultural sciences, my ideal field for the future.



Jesse Pyle, Texas A&M University

Mentor: Karen-Beth G. Scholthof

Project: *Analysis of the phosphorylated SPMV capsid protein and its biological significance*

It is such an honor to be selected for the 2011 SURF program! I would like to thank ASPB for supporting me as I expand my education within the field of plant pathology. I would also like to thank everyone in the Scholthof lab at Texas A&M for their guidance throughout this entire process. This award has given me the unique opportunity to connect with my peers from around the country as we all contribute to the expanding scientific community. My summer research will help to define my professional goals and pave the way for future learning experiences.

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CATEGORY A Research and Doctoral Universities (continued from page 31)



James Thierer, University of Maryland, College Park

Mentors: Caren Chang and Charles Delwiche

Project: *Search for ancestral plant hormone pathways in Charophyte Algae*

Applying for the ASPB SURF fellowship was an enriching experience in itself, as it gave me experience in the grant proposal process. Receiving the award is even more useful, as it has not only allowed me to perform undergraduate research in my field of interest, but also provided me with networking opportunities that will be invaluable to me as I pursue my career goals.



Katherine Walsh, University of Massachusetts Amherst

Mentor: Magdalena Bezanilla

Project: *The role of GAPs, GEFs, and GDIs in regulating tip growth*

I'm extremely grateful to both ASPB and my mentor Magdalena Bezanilla for giving me the opportunity to further pursue my research goals this summer and better understand the molecular mechanisms driving moss tip growth.

CATEGORY B Master's Universities, Baccalaureate Colleges, and Associate of Arts Colleges



Timothy Godfrey, Grand Valley State University

Mentor: Sheila Blackman

Project: *Identification and surveillance of the LEA proteins in Orchidaceae*

I am extremely thrilled and grateful to have been awarded this unique opportunity from ASPB. I look forward to conducting this exciting research this summer as well as presenting the project at the ASPB 2012 annual meeting. I'd like to give my most sincere appreciation to my mentors, Dr. Sheila Blackman and Dr. Pei-Lan Tsou, as well as to ASPB for making this possible!



Josef Jareczek, Bellarmine University

Mentor: David Lowell Robinson

Project: *Nitrogen-fixing endophyte population in local plant species and reinfection effects in nonnatural hosts*

I am incredibly honored to have been chosen to receive the SURF research grant. I've been given a great opportunity to perform research at the undergraduate level, and this will help me springboard my graduate career. I would also like to thank Dr. Lau and Dr. Robinson for their continuing help and support.

CATEGORY B Master's Universities, Baccalaureate Colleges, and Associate of Arts Colleges



Tyler Wernecke, Elmhurst College

Mentor: Eve M. Mellgren

Project: *Identifying the role of *phoP* and *phoQ* in virulence of DC3000*

The ASPB SURF grant will help me grow as a scientist by giving me a more in-depth research experience. It will prepare me so that one day I will be able to enroll in a graduate program and someday even have my own lab.

HONORABLE MENTIONS

CATEGORY A Research and Doctoral Universities



Hannah De Jong, Cornell University

Mentor: Georg Jander

Project: *Does turnip mosaic virus suppress siRNA-mediated aphid defense responses in Arabidopsis?*

Research in Georg Jander's lab has shown that aphids fare better on virus-infected Arabidopsis plants than on uninfected plants. For my project, I am performing bioassays to determine whether virus-mediated suppression of RNA silencing compromises Arabidopsis defense against aphids.



Anders Hokinson, Worcester Polytechnic Institute

Mentor: Luis Vidali

Project: *Coarse-grained modeling of F-actin and myosin XI dynamics in moss*

As a physics major applying to a primarily biological fellowship, I was unsure that I would be considered for any award. Upon being acknowledged as an honorable mention, my confidence was bolstered, and I am flattered to receive such recognition. I am certainly more determined to complete my research this summer, and this has kept my eyes open for future possibilities with ASPB and in biological physics.

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CATEGORY A Research and Doctoral Universities (Honorable Mentions continued from page 33)



Jaime Werenka, University of Saskatchewan

Mentor: David C. Logan

Project: *Study of the dynamics of subnuclear Cajal bodies within plant cells*

Being honored as a part of the 2011 SURF process has provided me with the recognition and confidence that is necessary for obtaining future undergrad and graduate research positions. It will give me an advantage over my peers and serve as a solid beginning for my future in scientific research and discovery. Thank you!

CATEGORY B Master's Universities, Baccalaureate Colleges, and Associate of Arts Colleges



Katie Leonardo, The King's University College

Mentor: Hank D. Bestman

Project: *The influence of nitrogen-limited growing conditions on carbon flux into starch and lipids in the oleaginous alga Neochloris oleoabundans investigated with 13C-labeling experiments*

Applying for the ASPB SURF award has afforded me the opportunity to explore new academic avenues. I never would have imagined plant biology as a potential career, but the past year has drastically changed my perspective on the natural sciences. Being part of the SURF process has been foundational, and I'm honored to be a part of it.



Tyree Ratcliff, William Carey University

Mentor: Gretchen F. Sassenrath

Project: *Efficiency of converting solar energy to bioenergy*

Applying for the 2011 SURF grant and receiving honorable mention allowed me to become better at the process of developing a research thesis. Even though I did not receive the SURF grant, I am sure I will be better prepared to apply next year.

Katie Engen
Education Foundation Coordinator

Plant Physiology Back Issues Available

Anyone interested in free back issues of *Plant Physiology* from 1944 to 2000 should contact Peter Davies at peter.davies@cornell.edu to arrange shipping.

ASPB Outreach Partner PlantingScience Honored to Receive AAAS Science SPORE Award

ASPB congratulates education outreach partner PlantingScience (PS) for winning the March 2011 *Science* Prize for Online Resources in Education (SPORE). The goal of SPORE, a project of the journal *Science*, is to encourage innovation and excellence in education as well as to encourage the use of high-quality online resources by students, teachers, and the public.

PlantingScience (<http://plantingscience.org>) is a learning and research resource that uses online collaboration to bring together students, plant scientists, and teachers from across the nation. Students engage in hands-on plant investigations while working with peers and scientist mentors to improve their understanding of science. PS Education

Director Claire Hemingway explains, “The typical generic introduction to plants that young scientists get is not ‘Gee whiz! This is really fascinating!’ But the PlantingScience experience flings open the door and invites people to engage with plants.”

PS, which is led by the Botanical Society of America (BSA), is a partnership of 14 scientific societies, academic institutions, corporate partners, and funding agencies. ASPB joined the effort in 2006, just a year after the program was launched. PS coordinators Claire Hemingway, William Dahl, Chris Haufler, and Carol Stuessy fully describe the PS resource in the SPORE essay (<http://www.sciencemag.org/site/special/spore>) published in the March 25 issue of *Science*. The authors

make a point of noting their appreciation for the role of the program’s partners, including ASPB, in the success of PS.

Additionally, Hemingway states, “What an honor for PlantingScience! What a tribute to the contributions of the mentors, teachers, and students!”

Since 2006, the unique partnership between ASPB and BSA has included ASPB sponsorship of the PS Master Plant Science Team of mentors who are graduate students, concept development for PS teaching modules, dissemination of PS materials during various outreach events, and contributions to the PS steering committee.

Katie Engen

Education Foundation Coordinator

ASPB Outreach at NSTA San Francisco *Great Ideas for Guided Inquiry by the Golden Gate*

The ASPB Education Committee sponsored an outreach booth at the National Science Teachers Association’s (NSTA’s) National Conference on Science Education held March 9–12, 2011, in San Francisco’s Moscone Center. ASPB’s booth featured a diverse set of outreach and educational activities designed to spark interest in plant biology and integrate more plant-based teaching materials into existing K–12 science curricula.

In addition to a vast array of teaching materials, four “hands-on” activities were featured in this year’s booth. First, Jane Ellis (Presbyterian College), former chair of

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Graduate student Megan Casey (left) assists two young plant scientists-in-training with extracting DNA from frozen strawberries to create a DNA necklace at the NSTA 2011 ASPB booth. PHOTO BY JOHN CUSHMAN.





Participants at the ASPB booth featured at the NSTA 2011 meeting included (from left to right) Jane Ellis, Mary Ann Cushman, John Cushman, and James Schnable.

ASPB Outreach continued from page 35

the Education Committee, presented a demonstration of one of the 12 inquiry-based activities exploring the 12 Principles of Plant Biology sponsored by the Education Foundation of (<http://my.aspb.org/12labs>). The activity explores how plants defend themselves against pests, microbial diseases, and other threats and is based on germination of radish (or corn) seeds in the presence of a variety of extracts from plant parts to test for allelopathic compounds.

Second, John and Mary Ann Cushman (University of Nevada, Reno) presented a hands-on demonstration and instructional flyer of DNA extraction from frozen strawberries, a lab activity originally developed by Kristi DeCourcy and Erin Dolan of the Fralin Life Science Institute at Virginia Tech. The concept was extended to include the creation of DNA necklaces that can be worn and shared by students.

Third, Lilliputian garden cup necklaces, originally developed by Paul Williams of Wisconsin Fast Plants®, were again featured

NSTA 2011 Attendance

TOTAL CONFERENCE
ATTENDANCE: 9,802

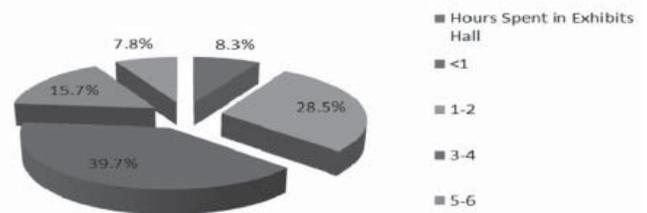
76%	TEACHERS, PROFESSORS, AND DEPARTMENT HEADS
12%	PRINCIPALS, SUPERVISORS/ COORDINATORS, ADMINISTRATORS
9%	INDUSTRY REPRESENTATIVES
7%	STUDENTS:
37%	GRADES K-6
34%	GRADES 7-8
43%	GRADES 9-12
18%	COLLEGE/UNIVERSITY

PLEASE NOTE: DEMOGRAPHIC INFORMATION IS SELF-REPORTED, AND ATTENDEES CAN SELECT ALL CATEGORIES THAT APPLY, THEREFORE PERCENTAGES WILL NOT NECESSARILY ADD UP TO 100%.

visualization of root growth. Then, small plantlets of mother-of-thousands (*Kalanchoe diademontiana*) were planted to convey the concept of clonal propagation, illustrated by the somatic embryos produced at the margins of leaves of this drought-tolerant crassulacean acid metabolism species. After planting, the cups were strung with brightly colored mason twine and worn as small plant necklaces.

Fourth, Barbara Alonso and Peggy Lemaux (University of California, Berkeley) featured information on their DNA for Dinner curriculum, five lessons for a middle school

Dynamic exhibits, including the ASPB booth, sustain prolonged interest at NSTA.



Over 63% of attendees spent more than 3 hours in the Exhibits Hall!

SOURCE: NSTA POST-EVENT SURVEY, 2011 SAN FRANCISCO NATIONAL CONFERENCE



Barbara Alonso (right) is pictured here showing off the Dirt-to-Dinner game at the NSTA 2011 ASPB booth. PHOTO BY JOHN CUSHMAN.

as a hands-on activity to engender interest in plants by simply growing them. Small 1.25 oz. soufflé cups were first filled with either peat moss or a transparent gelling agent to allow

audience that focus on genetic diversity, genomes, DNA, proteins, classical breeding, and genetic engineering (<http://ucbiotech.org/dnafordinner>). They also brought their new Dirt-to-Dinner game, which featured five clear seed boxes that could be placed on the correct miniature soil pots centered under a picture of the foods that might be made from the grains or vegetables produced from each seed.

Special thanks go to Zheng-Hui He, a professor in the Department of Biology at San Francisco State University, and UC Berkeley graduate students James Schnable, Ludmila Tyler, Laurie Leonelli, Emilie Rennie, and Megan Casey, who ably assisted with the booth activities over the course of this three-day event, informing and training hundreds of science teachers from the United States and around the world.

John Cushman
University of Nevada, Reno

ASPB at AAAS Family Science Days in Washington, D.C.

Capital Ideas in the Nation's Capitol

It was a landslide victory for science at the AAAS Family Science Days event held Presidents' Day Weekend (February 19–20) in Washington, D.C. Scientists, science educators, and families interested in all things science showed unilateral support for the power of interactive inquiry to draw and inspire a diverse audience. The appeal of this community science showcase is real. After all, Presidents' Day is a federal holiday, and many government employees in the D.C. area take a three-day weekend out of town. Coupled with the unseasonably warm weather in the days leading up to the conference, there was also the potential for families to opt for outdoor activity. Yet, after a quiet start on Saturday morning, the exhibit hall maintained a steady flow of highly interested patrons of all ages.

Family Science Days features interactive exhibits on cool, science-related topics important to the general public. The booths are staffed by experts ready to lead inquiry-based activities and answer questions. Once again, ASPB members volunteered in the booth (see sidebar on page 38) to engage visitors with a variety of plant explorations. The families were especially motivated to meet expert scientists and discuss plant biology concepts. The volunteers were pleased by the sophisticated questions and high levels of interest the kids, teens, and parents had in using a microscope; discussing genetics, cloning, and medicinal plants; and playing games to identify the plants used to make familiar foods. The range of topics was wide. Some visitors had in-depth questions about genetics, while many others were notably surprised and fascinated by the basic fact that the fruits, veggies, and grains they eat contain protein or DNA.



Creating a Lilliputian garden cup with *Kalanchoe* plantlets proved to be a fun way to dig into plant biology!



A self-proclaimed future plant scientist colors a page on medicinal plants from a *Flora Delaterre*™ coloring book (<http://www.floradelaterre.com/coloring-book.html>).



Kristen Lennon (left) talks with visitors making fruit salad bracelets about the special code in the cells of fruit-bearing plants that yields traits such as taste, texture, and aroma.

Various high school students were intrigued with the concepts presented in the booth and inquired about access to summer research internships. ASPB does not offer high school internships, but our volunteers were able to address the students' inquiries and set them on the right path.

One youngster proclaimed, "I'm going to go to plant school and become a plant scientist!" Many others buzzed about the booth with frequent requests to try the various activities and take "just one more look" in the microscope.

Professional researchers, nonexpert parents, and curious kids were stumped by a new game created by ASPB members David Puthoff and Kristen Lennon from Frostburg State University that challenged people to identify the food they eat by looking at a sample or photo of the plant that produces the food.

David commented, "It was great to interact with the many young minds present at the festival. I have a great interest in K–12 plant biology education and always enjoy teaching children about plants. The activities were interactive, [which was] a big draw for the

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Family Science Days
continued from page 37

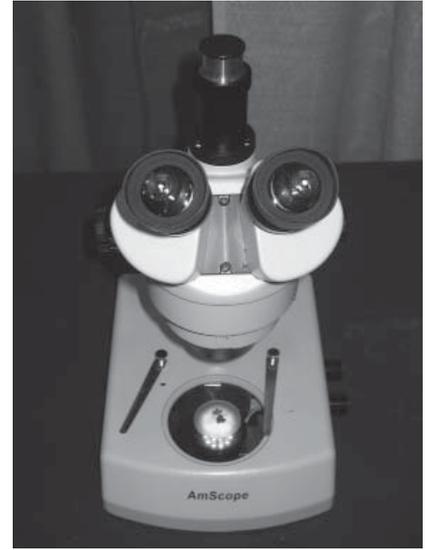
kids and hopefully will inspire them to think about plants.”

As part of ASPB’s ongoing efforts to present the beauty and science of plant biology to the general public, a new poster featuring gorgeous dahlia blooms and a graphic explanation of the genus’s genetic variations debuted in the booth (see sidebar below). Active volunteers and ASPB members Rejane Pratelli and Guillaume Pilot from Virginia Tech created this eye-catching display with images they took in tandem with their own

research. Rejane and Guillaume generously donated this poster to ASPB. Arrangements are under way to make the poster available to ASPB members and the public.

Finally, while it can sometimes be difficult to measure the long-term impact of the many one-on-one teachable moments in an outreach booth, a recent email to ASPB shows that some lasting interest has indeed taken root: “I wanted to tell you that the teeny baby Kalanchoe bud that we took home just opened up four tiny leaves today.”

Katie Engen
Education Foundation Coordinator



ASPB’s new LED Trinocular Stereo Zoom Microscope (7x–45x) was a very popular tool among visitors interested in getting a closer look at the contrast between Kalanchoe plantlets and germinated radish seeds.

Dahlias as an example of genetic variation

Dahlia is a genus of bushy, tuberous, perennial plants native to Mexico, Central America, and Colombia.

Kingdom	Plants
	Angiosperms
	Eudicots
	Asterids
	Asterales
Order	Asteraceae
Family	Asteraceae
Subfamily	Asteroideae
Tribu	Compositae
Genus	Dahlia
	30 species, 20 000 cultivars

Structure of dahlia flowers

The great variety results from dahlias having eight sets of chromosomes ("octoploid"), whereas the majority of plants have two.

One set of chromosomes

8 sets of chromosomes

Segregating traits:
 Petals: length, color, shape, texture
 Flowers: number of ray and disk flowers
 Length of the stem
 Number and shape of the leaves

Poster and photos: Rejane Pratelli and Guillaume Pilot

ASPB Booth Volunteers for AAAS FSD

- Elena del Campillo (University of Maryland)
- Erin Dolan (Virginia Tech)
- Beth Gant (University of Maryland)
- Sarah Josway (USDA-ARS)
- June Kwak (University of Maryland)
- Kristen Lennon (Frostburg State University)
- Guillaume Pilot (Virginia Tech)
- Rejane Pratelli (Virginia Tech)
- David Puthoff (Frostburg State University)
- Janet Slovin (USDA-ARS)
- Michael Tims (Northern Virginia Community College)
- George Ude (Bowie State University)
- Hemayet Ullah (Howard University)

Thank you, volunteers!

ASPB Member Ude Helps Establish the International Society of African Bioscientists and Biotechnologists

Several years ago, ASPB member George Ude (Bowie State University) and a few African scientists in the United States met and started the International Society of African Bioscientists and Biotechnologists (ISABB; <http://isabbio.org>) with the mission to organize African bioscientists and biotechnologists in the diaspora to become change agents in matters regarding research and development in Africa. So many international students from Africa migrate to Western nations for postgraduate studies every year and are unable to go back to their countries after graduation because of persistent economic hardships and little or no research infrastructure in their countries of origin.

The implication of this trend is “brain drain,” which deprives Africa of the very natural resources needed to address its economic woes. Many skilled scientists of African origin are scattered all over the world, especially in the Western world, where they have continued to do cutting-edge research with a wish that someday they will be able to give back to Africa. Unfortunately, there is a lack of an effective forum for the exchange of ideas and a mechanism to harness the capabilities of African researchers in the biotech and biosciences to address specific problems pertinent to the African continent.

Cognizant of this vacuum, the ISABB was initiated to encourage free exchanges among African scientists living outside the African continent and working in cutting-edge fields, with the hope that these interactions might result in collaborations that would promote R&D on the continent. ISABB is also a platform for non-African scientists to invest their resources and

time into the development of R&D within Africa.

Every summer, ISABB scientists travel to Africa with young adults of African descent in the medical profession to provide free medical care to very poor people in remote villages on the continent. (Visit <http://isabbcommhealth.org> to see video of ISABB’s medical outreach to Nigeria in the summer of 2010.)

ISABB Mission

1. Maintain a current annual directory of ISABB members, including their institutions and professional specializations
2. Facilitate dissemination of scientific information and technology through publications, seminars, and international conferences
3. Promote research and collaboration among African scientists and between African scientists and other scientists worldwide

4. Foster high standards of education through the establishment of exchange and mentoring programs involving educational institutions on the African continent and those participating institutions or organizations abroad
5. Promote and support high standards of professional ethics among members and those participating with ISABB
6. Promote the use of ISABB scientists as reviewers and panelists by funding agencies and governments seeking to aid developmental activities, involving the areas emphasized, throughout the African continent
7. Cooperate with other organizations with similar objectives

About ISABB

ISABB is organized into six divisions (agriculture, genetics of bioresources, health sciences, environmental sciences, biotechnology, bioinformatics), each of which is coordinated by a committee of accomplished African scholars in the diaspora. ISABB is working to establish three official journals that the society hopes to launch this fall: *ISABB Journal of Food and Agricultural Sciences*, *ISABB Journal of Health and Environmental Sciences*, and *ISABB Journal of Biotechnology and Bioinformatics*. Information about ISABB projects and needs can be obtained by emailing info@isabbio.org or visiting the websites at <http://isabbio.org> or <http://isabbcommhealth.org>.

George Ude
Bowie State University and
ISABB President

2011 Inaugural ISABB International Conference

The first annual international conference of ISABB is scheduled to take place September 9–10, 2011, at Bowie State University in Maryland. The conference will provide a forum for African scientists in the diaspora to network with scientists in Africa. The theme of the conference is “Bioscience and Biotechnology Research Infrastructure and Training: Challenges in the Sub-Saharan Africa.” More information about the conference is available from George Ude.

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<http://isabbio.org>, <http://isabbcommhealth.org>
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ASPB Member George Ude Coordinates NSF-Funded Summer Biotechnology Program for Undergraduates and High School Science Teachers at Bowie State University

Bowie State University (BSU); the University of Maryland, College Park (UMCP); and the National Science Foundation (NSF) have identified a need for laboratory experience for undergraduate students (especially minorities) and high school science teachers in the field of biotechnology. Biotechnology, which has significantly evolved in the past two decades due in part to the contributions of the Human Genome Project and advances in recombinant DNA technology, is transforming a number of fields, including forensics, health, energy, and agricultural sciences.

However, due to inadequate laboratory infrastructure, students in many minority-serving institutions are often disadvantaged in their exposure to modern biotechnology research and techniques. As a result, these biology graduates lack the needed skills for basic biotechnology research and the tools for the pursuit of postgraduate studies in biotechnology and its related fields.

To address these issues, BSU and UMCP are working in tandem and with support from NSF to create a summer institute on biotechnology. The relationship between BSU and UMCP started out as a very casual collaboration between George Ude and his PhD supervisor, William Kenworthy, who provided space and stipends for minority students from BSU to work in his soybean laboratory. The collaboration has since expanded to include other plant science professors at UMCP, providing opportunities for many BSU biology students to spend their summer doing research with different mentors and in different laboratories. The current four-year NSF-funded joint proposal will help BSU and UMCP accomplish the following three objectives at BSU: (1) conduct a biotechnology summer institute for minority undergraduates and high school teachers, (2) establish a plant genomics laboratory, and

Laboratory Topics for the Summer Institute

- Lab 1:** DNA Extraction
- Lab 2:** PV92, PCR/Informatics Kit
- Lab 3:** GMO Investigator
- Lab 4:** pGLO Bacterial Transformation
- Lab 5:** Forensic DNA Fingerprinting
- Lab 6:** GFP Purification
- Lab 7:** Comparative Proteomics I: Protein Profiling
- Lab 8:** Comparative Proteomics II: Western Blotting

For more information, please contact:
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(3) develop an applied biotechnology course for biology majors in the Department of Natural Sciences. The goals of the biotechnology summer institute include the following: promote the interest of students in biotechnology as a possible career path, provide research experience that will help students succeed in postgraduate education, train personnel to serve in the burgeoning biotechnology industry in Maryland and the nation, and reach out to the youth in high schools by providing teachers with additional skills in biotechnology to augment their capacity to prepare students to succeed in college.

Principal investigator George Ude, who has over 15 years of high school and college teaching and research experience, will present the institute. The team of collaborators from UMCP also includes Gary Coleman

and Jianhua Zua from the Department of Plant Sciences and Landscape Architecture and Ganesh Sriram from the Department of Chemical and Biomolecular Engineering. The instructors from BSU are George Acquah, dean of the College of Arts and Sciences, and Bradford Braden, who is a protein biochemist in the Department of Natural Sciences.

Teachers and students who complete the institute will be better acquainted with the tools and techniques of modern biotechnology. At the end of every summer institute, two student participants are selected for a two-month paid summer research experience in Gary Coleman's plant molecular biology laboratory at UMCP.

BSU President Mickey Burnim commented on the collaboration between BSU and UMCP: "The NSF-funded program is significant because it provides Bowie State the opportunity to address the workforce needs of the state in a major industry while providing minority students training in a field where they have been underrepresented." He explained, "The project will equip BSU and other HBCU [Historically Black College and University] undergraduates with the necessary research skills to pursue STEM [science, technology, engineering, and mathematics]-based postgraduate program opportunities at the University of Maryland, College Park, and other biotechnology research institutions in Maryland."

George Acquah, dean of BSU's College of Arts and Sciences, commended the collaborative effort and said, "We are excited about the program to provide research experience for minorities and train them in the discipline of biotechnology."

Information about applying to the institute is available at <http://www.bowiestate.edu/academics/departments/natural/sacademy>. 🌱

George Ude
Bowie State University



Paulo de Tarso Alvim (1919–2011) and Moacyr Maestri (1925–2011)

Master and Pupil: Two Close Friends, Two Great Plant Physiologists

With great sadness, we inform the scientific community of the deaths of Dr. Paulo de Tarso Alvim, on February 18 from nephrological problems, and Prof. Moacyr Maestri, two days later from cardiological complications. Paulo and Moacyr were master and pupil at the College of Agriculture and Veterinary Studies (ESAV; currently Federal University of Viçosa [UFV], Brazil), where they graduated in agricultural sciences in 1940 and 1948, respectively.

Paulo was born in Ubá, Minas Gerais, and Moacyr in Santa Teresa, Espírito Santo. They became close friends despite their opposite personalities: Paulo was quite expansive and warm, while Moacyr was timid or even shy. This friendship lasted until the end of their lives. Paulo completed his PhD in 1948 at Cornell University when he presented the thesis “Studies on Mechanisms of Stomatal Behavior,” an outstanding contribution. With the thesis “Structural and Functional Effects of Endothall on Plants,” Moacyr completed his PhD in 1967 at the University of California, Davis. Moacyr was considered exceptionally bright, becoming, in Paulo’s words, “the best scholar of plant physiology in all Latin America in the last 70 to 80 years of the last century.”

Paulo was admitted to UFV to teach plant taxonomy, which impressed upon him a holistic view of plant science. In 1943, he began teaching plant physiology, which became an official discipline of the course of agricultural sciences. In a scientific tour to the arid zone of northeastern Brazil with undergraduate students, he concluded that the drought condition of the “Caatinga” ecosystem was a natural phenomenon and not a result of human activities. Later, he postulated that the “Cerrado” ecosystem was a consequence of soil mineral deficiencies and not a result of the periodic burnings that affect the ecosystem.



Alvim (left) and Maestri during the VII Brazilian Congress of Plant Physiology (Brasília 1999) when the latter was awarded an honorary citation.

In 1951, Paulo was admitted to the Inter-American Institute of Agricultural Sciences (IICA) of the Organization of American States (OAS) in Costa Rica, which represented a turning point in his scientific career. There, he had the chance to see a cocoa tree for the first time. As a member of the graduate school, he supervised 30 MSc students, whose theses were devoted to the study of tropical crops. His concern with the welfare of mankind led him to dedicate himself to applied physiology, always using the principles of crop physiology.

Upon returning from UC Davis with his PhD, Moacyr was faced with poor working conditions in Viçosa. He formed a small research group and in 1970 succeeded in establishing the first MSc program in plant physiology in South America. Another of his pioneering initiatives occurred in 1988,

when he created the PhD program. As of December 2010, the program had graduated 249 MScs and 85 PhDs who are engaged in research and teaching throughout Latin America. The scientific contribution of the program to high-impact journals has been significant, which led CAPES (the governmental agency of classification of programs) to designate the program with its maximum mark, comparable to graduate programs in the developed world, in 2010. Moacyr’s devotion to the training of plant physiologists did not lead to neglect of his scientific career. In addition to articles in scientific journals, several of his works appeared in books published by Academic Press, CRC Press, Elsevier, and others.

While at the IICA, Paulo also worked at La Molina (Peru) from 1955 to 1963.

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During this time, he succeeded in noting that in continuously irrigated coffee trees, flower buds were kept dormant. If watering was withheld and plants were later irrigated again, dormancy was broken. In other words, drought-induced dormancy breakage and reirrigation were required for bud growth. To this phenomenon, he applied the term *hydroperiodism*, which occurs under natural conditions when several developmental and growth phenomena are observed after rains anteceded by a dry period.

Paulo took part in the Alpha Helix Expedition in 1967—in the company of, among others, Loomis, Williams, and Scholander—to visit the Upper Negro River Basin in the Amazonian rainforest. During the 1960s, it was believed that the Amazonian forests were the world's "lungs," a point Paulo demystified on the grounds that the Amazonian forests were in climax and thus the amounts of O₂ produced by the forests were similar to the amounts consumed. The fragility of Amazonian ecosystems was therefore due to other causes. He always argued that with 6 billion souls on Earth to be fed and with ever-increasing demands, the Amazonian ecosystems should be used for sustainable agriculture under a rational exploitation (timber, typical fruits, etc.); grains and cereals were never to be cultivated in those ecosystems.

During a technical visit to the cocoa region of Bahia State (Brazil), whose production was in sharp decline, Paulo convinced the Brazilian authorities to transform an incipient financial program into an institution able to deal with cocoa research and extension. The Plan for Cocoa Farming (CEPLAC) was then structured with two departments: the Cocoa Research Center (CEPEC) and Extension Department (DEPEX). Paulo was the scientific director of CEPEC for over 25 years. Within a few years of taking the post, cocoa production increased from 120,000 to 400,000 tons per year—his greatest achievement! Always concerned with environmental preserva-

tion, he created the Pau-Brazil Foundation, a nongovernmental organization dedicated to developing conservationist actions in the Atlantic tropical humid forests. In recognition of his contributions to plant science and agriculture, Paulo's name has been attributed to several plant genera and species: *Acanthosiris Paulo-alvini* (Santalaceae), *Acrococcus alvini* (Bromeliaceae), *Alvimia* (Bambusae), *Alvimiantha* (Rhamnaceae), *Eschweilera alvini* (Lecythidaceae), *Micoalvimia* (fungus), *Strychnos alvimiana* (Loganiaceae), and *Tibouchina Paulo-alvini* (Melastomataceae).

Although he was involved mainly with applied plant physiology, Paulo's contribution to pure science was also considerable. He designed the viscous flow porometer for measuring stomatal aperture in homobaric leaves; devised a ranking series of two liquids of different densities, allowing the estimation of stomatal opening; and created a phytotensiometer to measure both stem growth and water status. His scientific legacy is substantial: some 250 papers were published in high-impact scientific journals such as *Science*, *Nature*, *Plant Physiology*, and *Physiologia Plantarum*, among others.

It is not surprising that Paulo and Moacyr participated in the creation and maintenance of scientific societies. In 1949, Paulo was one of the founding fathers of the Brazilian Society of Botany and chaired the Latin American Society of Plant Physiology (1972–1976), which was later chaired by Moacyr (1981–1983). Both were affiliated with the American Society of Plant Physiologists (now ASPB) for several decades, becoming life members. They were also associated with the Scandinavian Society of Plant Physiology and the Brazilian Society of Plant Physiology. Various awards and honors were granted to them. They were both Knights of the Merit Order (Secretary of Science and Technology, Brazil). Paulo was awarded Bahia State citizenship (1973), the Diploma of Merit Honor of the Argentinean Society of Plant Physiology, the title of emeritus researcher of the IICA, and the Inter-American Medal for Agriculture; he

was also a member of the Brazilian Academy of Sciences. Moacyr was awarded the Medal of Merit in Research by UFV and also the status of emeritus professor at the same university.

Upon retirement, both men kept working for several years until illness no longer allowed them to continue. Paulo is survived by his wife, Simone, who was his devoted secretary for over two decades, always receiving his friends and peers in their home with simplicity and elegance. He is also survived by daughters and sons Fátima, Alexandre, Marília, Heloísa, Léo, and Paulo Cesário. Moacyr is survived by his daughters, Clotilde and Esmeralda.

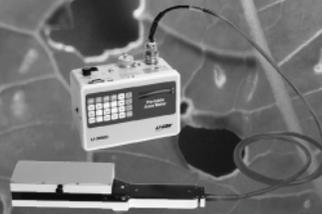
The work of these two great physiologists of such diverse personalities was complementary: Moacyr was concerned with the education of researchers, and Paulo with applied physiology. The great work both men did throughout their lives earned them the admiration and respect of their peers, family, and friends.

Raimundo Santos Barros
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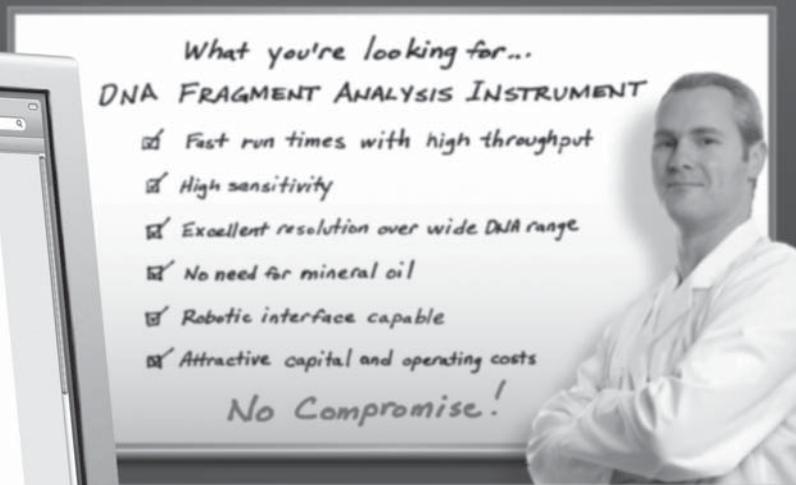
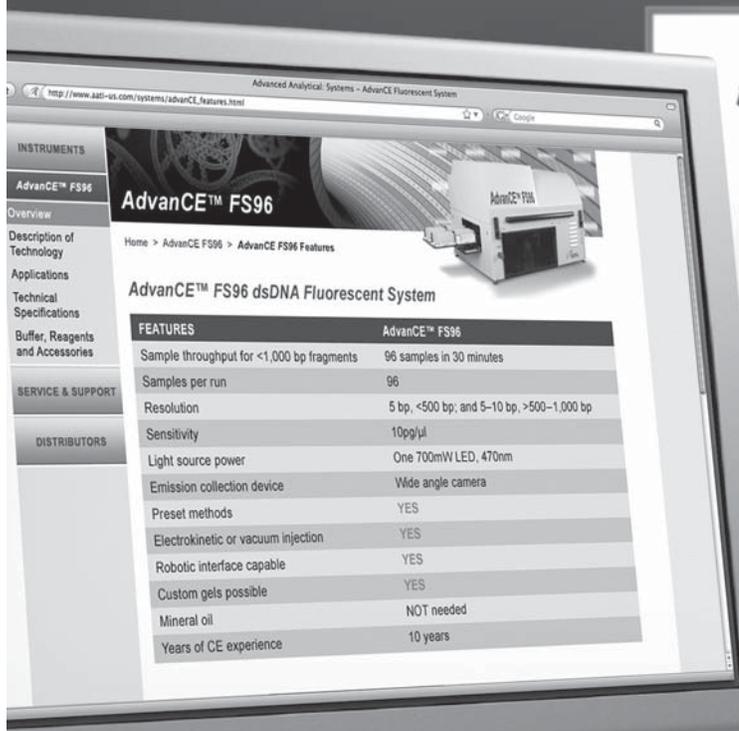
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