May/June 2014 • Volume 41, Number 3

p. 4

Sabeeha Merchant Named Next Editor-in-Chief of *The Plant Cell*

Sabeeha begins her term January 1, 2015

p. 5

ASPB 2014 Award Winners

ASPB awards those individuals who promote the mission of our Society

p. 30

SURF's Up for 2014!

Recipients of the ASPB Summer Undergraduate Research Fellowship (SURF)

ASPB News

THE NEWSLETTER OF THE AMERICAN SOCIETY OF PLANT BIOLOGISTS

See You in Portland!

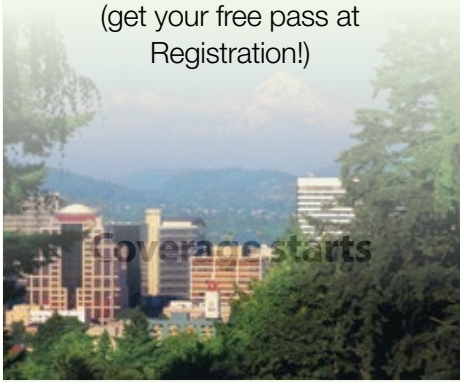
July 12–16!

Inside you'll find

An up-to-date list of minisymposia

Top attractions in Portland

Information on Portland's MAX Light Rail
(get your free pass at Registration!)



President's Letter

Your New Society Celebrates an Old Tradition

Meeting the Needs of the Plant Science Community!

BY ALAN M. JONES
ASPB President, University of North Carolina

Alan Jones

Ninety years ago, the American Society of Plant Physiologists (now ASPB) began with its Constitution and 104 members (http://my.aspb.org/?page=history). Largely spearheaded by founders Charles A. Shull and Rodney B. Harvey, the Society emerged from a growing dissatisfaction that the Physiological Section of the Botanical Society of America was not meeting the needs of its members. One of those needs turned out to be a journal dedicated to plant physiology, which at the time was a rapidly expanding subdiscipline of botany.

Our Society created its first publication, *Plant Physiology*, in early 1926 and has enjoyed many successes ever since. The mandate for *Plant Physiology* was, and remains today, to publish high-quality science covering the breadth of plant biology. The journal has evolved constantly to meet that obligation and the needs of a large global community of plant scientists. In fact, it is this ethos of "meeting the needs of plant scientists" that has shaped our Society for nearly a century.

Twenty-five years ago, ASPB made some bold investments to meet another need of the plant science community. By the 1980s, the fields of plant molecular and cellular biology had matured to a point where their discoveries merited audiences beyond plant physiologists; however, the premier general science journals were not able to keep up with publication of groundbreaking "plant" papers. For example, I discussed a

continued on page 3

Contents

1 President's Letter
3 Donna Gordon
4 Sabeeha Merchant Named Next Editor-in-Chief of The Plant Cell
5 ASPB Announces 2014 Awards
9 ASPB's 2014 Women's Young Investigator Travel Award Winners Announced

Plant Biology 2014

10 It's all About the Science—Previews of Minisymposia
12 Top Attractions in Portland
14 Portland's MAX Light Rail

Section News

15 ASPB Midwestern Section Annual Meeting Report
16 78th ASPB Northeastern Section Annual Meeting Report
18 ASPB Southern Section Annual Meeting Report

Where Are They Now?

18 Machi and Gregory Dilworth

People

20 From Around the Web

Science Policy

21 Science Policy Committee Meets in Washington, D.C.
22 Policy Update

Education Forum

23 "Wicked Good" Outreach in Boston
25 Walk the Talk
27 New ASPB Partnership: The Life Science Teaching Resource Community
28 PULSE: The Beat Goes On
30 SURF's Up for 2014

Obituary

34 Sydney Kustu

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

For quick response, e-mail us at info@aspb.org or visit our FAQ at www.aspb.org/faq.

ASPB Executive Committee

President	Alan M. Jones
Immediate past president	Peggy G. Lemaux
President-elect	Julian Schroeder
Secretary	Karen Koch
Treasurer	Karen Koster
Chair, Board of Trustees	Richard Amasino
Chair, Publications Committee	Sally Mackenzie
Chair, Women in Plant Biology Committee	Kateri Duncan
Chair, Minority Affairs Committee	John Harada
Chair, Education Committee	Kathleen Archer
Chair, International Committee	Tuan-Hua David Ho
Chair, Membership Committee	David Horvath
Chair, Committee on Science Policy	Patrick Schnable
Elected members	Elizabeth (Lisa) Ainsworth
	Richard Vierstra
	MariaElena B. Zavala
Sectional Representatives	
Midwestern	Sarah E. Wyatt
Northeastern	Om Parkash Dhankher
Southern	Kent Chapman
Mid-Atlantic	Hemayet Ullah
Western	Camille Steber

ASPB Staff

Executive director	Crispin Taylor, ctaylor@aspb.org
Director of finance and administration	Kim Kimnach, kkimnach@aspb.org
Executive and governance affairs administrator	Sylvia Lee, slee@aspb.org
Accounts receivable and payable specialist	Stephanie Liu-Kuan, sliu@aspb.org
Senior staff accountant	Jotee Pundu, jotee@aspb.org
Director of digital marketing strategy	Susan Cato, scato@aspb.org
Director of meetings, marketing, and membership	Jean Rosenberg, jean@aspb.org
Membership manager	Shoshana Kronfeld, shoshana@aspb.org
Meetings, marketing, and membership assistant	Melanie Binder, mbinder@aspb.org
Legislative and public affairs director	Tyrone Spady, tspady@aspb.org
Education coordinator	Katie Engen, katie@aspb.org
Director of publications	Nancy A. Winchester, nancyw@aspb.org
Publications assistant	Diane McCauley, diane@aspb.org
Subscriptions manager	Suzanne Cholwek, suzanne@aspb.org
Subscriptions assistant	Linda Palmer, lpalmer@aspb.org
Managing editor	Patti Lockhart, plockhart@aspb.org
Science writer, *Plant Physiology*	Peter Minorsky, peminorsky@aspb.org
Production manager, *Plant Physiology*	Jon Munn, jmunn@aspb.org
Manuscript manager, *Plant Physiology*	Ashton Wolf, awolf@aspb.org
Senior features editor, *The Plant Cell*	Nan Eckardt, neckardt@aspb.org
Features editor, *The Plant Cell*	Mary Williams, mwilliams@aspb.org
Production manager, *The Plant Cell*	Susan Entwistle, susan@aspb.org
Manuscript manager, *The Plant Cell*	Annette Kessler, akessler@aspb.org

The *ASPB News* is distributed to all ASPB members and is also available online. It is published six times annually in odd-numbered months. Its purposes are to keep membership informed of ASPB activities and to reinforce the value of membership. The *ASPB News* is edited and produced by ASPB staff from material provided by members and other interested parties.

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

Contact: Nancy A. Winchester, Editor, *ASPB News,* 15501 Monona Drive, Rockville, MD 20855-2768 USA; nancyw@aspb.org; 301-296-0904.

© 2014 American Society of Plant Biologists

PRESIDENT'S LETTER
continued from page 1

relevant series of high-interest papers on plant transformation in the March/April President's Letter. Therefore, in 1989, ASPB took a huge leap in the publication arena by investing in *The Plant Cell* as a publication home for major advances in topical plant cell and molecular biology. The experiment worked, the investments paid off, and this year we are celebrating *The Plant Cell*'s silver anniversary. We are also celebrating the selection of Sabeeha Merchant as the journal's sixth editor-in-chief (see story on page 4); her term begins in January.

These journals are an integral part of your Society. To make this ever more obvious, the editors-in-chief of *The Plant Cell* and *Plant Physiology*, Cathie Martin and Mike Blatt, respectively, are conducting a new experiment at Plant Biology 2014 (see page 7 in the January/February issue of the *ASPB News*). They have developed a set of journal-organized major and minisymposia and other activities centered on the grand challenge of sustainably feeding a growing human population. I look forward to seeing you in Portland and to enjoying these lectures and networking events that Cathie and Mike have carefully organized for you.

Times are a-changin'. More than ever before, ASPB is now focused on serving the needs of plant biologists faster, more broadly, more deeply, and more efficiently. We will demonstrate many of the new services that we are creating to support and engage the plant science community at PB2014, but I would like to briefly describe your future ASPB here. Imagine a digital ecosystem with the sophistication of ResearchGate™ and LinkedIn™ but customized around your plant biology needs. Imagine sharing your personal libraries of papers, collaborating around a global research project, or even connecting with other like-minded individuals in person and online year-round. How great would it be to have tools that help you stay on top of funding and research opportunities, and then connect to other plant biologists for collaboration around them? Better yet, finding recently funded projects and applying for a position on the team. When you apply, sending your CV will be as easy as exporting it to a preformatted template directly from your online profile.

We are planning other tools to help you succeed, including a revamped career center, an online poster creator, a Feedly™-style content library, professional development modules, TED-like plant science videos, and much more.

Better connections, more professional training, cutting-edge teaching resources, and relevant career advancement services all will soon be available at your fingertips in the digital world.

See you in Portland! ■

Donna Gordon

1949–2014

Donna Gordon

It is with very heavy hearts that we notify our readers that our lovely Donna Gordon died April 4 after a long battle with cancer. Donna was one of the most visible ASPB staff members—always at the registration desk during Plant Biology meetings as our "go-to" person ("Ask Donna! Donna will know!")—and ably managed Executive Committee meetings as our executive assistant until her retirement in fall 2011. She also was the Society's governance affairs administrator, overseeing the voting and awards operations. But more than just a crackerjack office-jack-of-all-trades, Donna was our friend. She was lovely inside and out, and we were heartbroken to hear the very sad news of her death from her family.

Donations in Donna's memory can be made to the Johns Hopkins Kimmel Cancer Center (http://tinyurl.com/7vehl9r).

Read more at http://tinyurl.com/nc7q4kw.

continued on page 4

Sabeeha Merchant Named Next Editor-in-Chief of *The Plant Cell*

Sabeeha Merchant has been named the next editor-in-chief of *The Plant Cell,* succeeding Cathie Martin. Her five-year term will begin January 1, 2015.

"ASPB is very fortunate to have Sabeeha Merchant as the next editor-in-chief of *The Plant Cell,*" remarked ASPB president Alan Jones. "She is one of plant biology's brightest minds, and I am confident that her impressive experience as an editor and her outstanding leadership and vision will ensure continued success and take the journal to new heights in the publishing arena."

Sabeeha is distinguished professor of biochemistry at the University of California, Los Angeles, and a member of the National Academy of Sciences and the American Academy of Arts and Sciences (http://tinyurl.com/n2vn7mm). She has a BS and PhD in biochemistry from the University of Wisconsin and conducted postdoctoral research at Harvard University. She is internationally renowned for developing the concepts of metal sparing and recycling in biology through her analysis of nutritional copper and iron signaling in Chlamydomonas, a tiny but complex green alga. Working with more than 100 scientists worldwide, she was the lead author of a "dictionary" of its approximately 15,000 genes, published in the October 12, 2007, issue of *Science.*

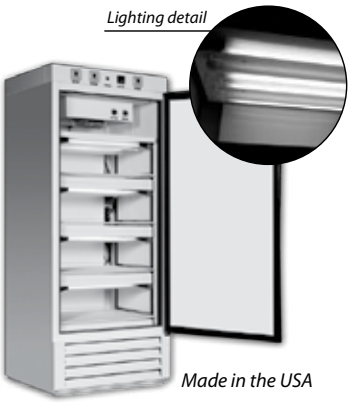
Sabeeha Merchant

Regarding her editorship of *The Plant Cell,* Sabeeha commented that she is excited to step into this position at a time that offers so many opportunities to incorporate technologies for accessing content and reaching out to both readers and authors. "I am committed to providing high-quality articles for our readers and the best publishing experience for our authors, with rapid turnaround and fair decisions from a scholarly and dedicated team of coeditors."

Sabeeha's many honors include a Searle Scholars Award, a National Institutes of Health Research Career Development Award, a Guggenheim Fellowship, the Gilbert Morgan Smith Medal of the National Academy of Sciences, and the Kettering Award from ASPB. ■

Sunny and Cold

That's the forecast if you use **Model TSC33SD** for your vernalization studies. At a setting of 6.5° C, it provides 250 micromoles of digitally controlled light intensity. And our unique air delivery system provides excellent control of air temperature on each shelf because it can be adjusted to correct for air density as the temperature setpoint is changed. No other manufacturer offers that!



- 5-50° C temperature range
- Black light and HO light capabilities
- Shelf to shelf temperature uniformity
- 33" W x 29" H footprint
- Quiet bottom-mounted compressor
- 16.7 ft² of shelf space under the lights
- 8" between shelf and lights
- Shelves/lights unplug and slide out for removal
- Optional humidity control

Powers Scientific, Inc.

Please contact us at **800-998-0500** or **www.powersscientific.com** for more information and pricing.

Sabeeha Merchant Elected Fellow of the American Academy of Arts & Sciences

The American Academy of Arts and Sciences has announced its 2014 class of new members, which includes incoming (2015) editor-in-chief of *The Plant Cell,* Sabeeha Merchant, of the University of California, Los Angeles.

The complete list of new members is located at https://www.amacad.org/members.

Since its founding in 1780, the Academy has elected leading "thinkers and doers" from each generation, including George Washington, Benjamin Franklin, Daniel Webster, Ralph Waldo Emerson, Margaret Meade, and Martin Luther King, Jr. The current membership includes more than 250 Nobel laureates and more than 60 Pulitzer Prize winners.

ASPB Announces 2014 Awards

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.

Charles Albert Shull Award

Libo Shan

Texas A&M University

Libo Shan

Libo Shan has earned this year's Charles Albert Shull Award for her impressive contributions to the field of plant–microbe interactions and plant immune signaling. Libo's research discoveries have deepened our understanding of the function of plant immune receptors and the downstream pathways they trigger. Her multidisciplinary approaches have revealed the important and unexpected mechanisms of ubiquitin-mediated degradation of the FLS2 flagellin receptor in dampening pattern-triggered signaling, dual-specificity phosphorylation by the cytoplasmic receptor kinase BIK1 in immune signaling, and the effects of temperature on the differential regulation of pattern- and effector-triggered signaling pathways. Libo's efforts to establish cotton as a model system will help future work refine disease protection strategies for agriculturally important plants.

Charles Reid Barnes Life Membership Award

James N. Siedow

Duke University

The Charles Reid Barnes Life Membership Award, ASPB's oldest award, was established in 1925 and honors lifelong service in plant biology. This year's recipient is James N. (Jim) Siedow, who is recognized and honored for both his stellar research in plant biochemistry and his service to the plant biology community, within and beyond ASPB. Over the course of a 40-year career, Jim helped found the field of mitochondrial bioenergetics, and he has been a strong and effective advocate for plant biology research. He has also made numerous highly valued contributions to ASPB, including his insightful leadership as the Society's president (1994–1995).

Charles F. Kettering Award

Susanne von Caemmerer

Australian National Ministry

Susanne von Caemmerer

Jim Siedow

Susanne von Caemmerer co-developed what is arguably the most widely used biochemical model in plant biology—the Farquhar, von Caemmerer, and Berry model of C_3 photosynthesis. Susanne co-led the effort to translate the model to practice, first identifying the key physiological measurements and then the new molecular approaches needed to apply the model. She went on to develop an equally widely used model of C_4 photosynthesis. She resolved the long-debated and critical question of why there is so much Rubisco by showing that under high light, Rubisco exerts very strong metabolic control in both C_3 and C_4 plants and therefore is not in excess. Most recently, Susanne has led the way toward resolving anomalies around the critical issue of mesophyll conductance.

Early Career Award

Jing-Ke Weng

Massachusetts Institute of Technology

Jing-Ke Weng

Brent Buckner

The Early Career Award acknowledges outstanding research by a scientist generally not more than seven years post-PhD. This year's recipient is Jing-Ke Weng, who is recognized for his extraordinary record of achievement, creativity, and future promise as a leader in understanding the evolution of biochemical diversity in plants.

Excellence in Education Award

Brent Buckner

Truman State University

The 2014 Excellence in Education Award honors Brent Buckner. Brent is recognized as a leader, not only for his innovative teaching and high-quality mentoring,

continued on page 6

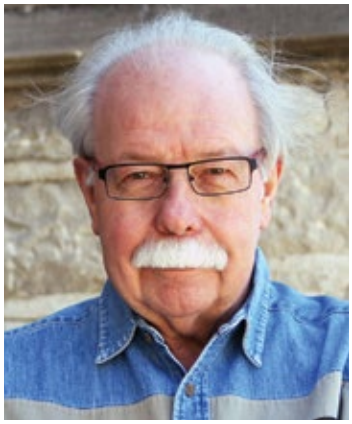
ASPB AWARDS
continued from page 5

but also for engaging in funded projects that reach far beyond his institution. He has an impressive record of working with undergraduate students on meaningful research projects leading to mutual publications and of placing students into excellent graduate and professional programs (frequently in the plant sciences). Brent has been an influential contributor to national programs, including MaizeGDB and DNA Subway, through the iPlant Collaborative. By teaching others to use evidence-based teaching strategies, he serves an invaluable role in the plant biology community.

Lawrence Bogorad Award for Excellence in Plant Biology Research

Thomas J. Guilfoyle
University of Missouri–Columbia

Thomas J. Guilfoyle is the 2014 recipient of the ASPB Lawrence Bogorad Award for Excellence in Plant Biology Research, which honors Dr. Bogorad's many contributions to plant biology. Tom has been an inspiring pioneer and innovative leader since the inception of plant molecular biology. He has made fundamental scientific contributions in applying cutting-edge molecular technologies and approaches toward developing invaluable tools and novel concepts that have illuminated new directions of research in plant hormone signaling and propelled discoveries in plant transcriptional regulation, viral replication, and auxin biology. In addition to his research achievements, Tom's dedication, creativity, and generosity have greatly inspired a broad spectrum of plant biologists and students in fields ranging from plant physiology to biochemistry, genetics, and molecular biology. His work and vision continue to provide illumination in current research and stimulate future innovations in plant biology.



Thomas Guilfoyle

Dominique Loqué

Robert Rabson Award

Dominique Loqué
Lawrence Berkeley National Laboratory, Berkeley, California

For his exceptional creativity in developing several novel and widely applicable strategies for plant cell wall engineering, Dominique Loqué is the winner of the second Robert Rabson Award. This award recognizes Dr. Rabson's steadfast advocacy for plant biology through the creation of funding programs in the DOE for research in basic energy sciences.

Mike Thomashow

Stephen Hales Prize

Mike Thomashow
Michigan State University, East Lansing

Mike Thomashow is the 2014 recipient of the Stephen Hales prize, which honors the Reverend Stephen Hales for his pioneering work in plant biology, published in his 1727 book, *Vegetable Staticks*. Mike is recognized for his important contributions toward understanding the responses of plants to cold. Furthermore, he has served plant biology in many ways, including as president of ASPB (2005–2006), as an editor of major journals, as director of the MSU–DOE Plant Research Lab in a difficult period, and by promoting plant science at the local and national levels.

Corresponding Members

Corresponding Member status is conferred by election on the annual ballot. This honor, initially given in 1932, provides life membership and Society publications to distinguished plant biologists from outside the United States.

Cathie Martin

Cathie Martin
John Innes Centre

Cathie Martin is a group leader at the John Innes Centre and professor at the University of East Anglia, United Kingdom. Her research spans the entire spectrum of plant biology, from fundamental to applied. Her fundamental research has focused on cellular specialization, especially how color and cell shape in flowers are used by different plants for pollinator attraction. Cathie discovered key genes that control pigment production and showed that these genes can be manipulated and transferred among plant species to generate new colors and patterns. Cathie took advantage of the opportunity to develop her research findings for the promotion of human health, and she was recently recognized as Most Promising Innovator of 2014 by the UK, the Biological and Biotechnological Science Research Council.
She was also rewarded for her notable contributions to plant biotechnology and her service to plant science, including as

Carl Douglas

Su-May Yu

Janet Braam

editor-in-chief of *The Plant Cell*, when she was awarded an MBE (Member of the Most Excellent Order of the British Empire) by the Queen of England. Cathie has served on the editorial board of *The Plant Cell* continuously for 15 years as coeditor, assigning editor, and, since 2008, as editor-in-chief. She has been a long-standing member of ASPB, and she has served as a conference chair, keynote speaker, plenary speaker, and session organizer at numerous conferences, including ASPB meetings.

Carl Douglas

University of British Columbia, Canada

Carl Douglas is a professor at the University of British Columbia, Canada. He is recognized internationally for his pioneering work on molecular biology and genetics of plant metabolism with particular contributions through his research on phenylpropanoid metabolism, lignin biosynthesis, and regulation of plant cell wall biosynthesis. He has also been a major contributor to the establishment and development of poplar as a model system for tree biology. Carl was the vice president and president of the Canadian Society of Plant Biologists (CSPB; 2007–2011), in which capacity he served as a cohost for the joint CSPB–ASPB Plant Biology meeting in Montréal in 2010. He has been a member of ASPB for almost 30 years, and he is active this year on the ASPB Program Committee. He has organized several recent international meetings.

Su-May Yu

Institute of Molecular Biology, Academia Sinica, Taiwan

Su-May is a distinguished research fellow at the Institute of Molecular Biology, Academia Sinica, Taiwan. She is recognized internationally for her pioneering work on rice transformation using Agrobacterium, which she followed up by establishing a large rice T-DNA insertional mutant population. Su-May's research has also provided new insight into the source–sink relationship that balances nutrient demand and supply at the beginning of the life cycle in cereals. She has also successfully translated her innovative basic research into applications, resulting in 29 international patents. Su-May has received a number of international and national awards, including Fellow of the American Association for the Advancement of Science (AAAS; 2009) and Taiwan Outstanding Women in Science (2013). In addition, she has been an active member of ASPB.

Eduardo Blumwald

2014 ASPB Fellow Awards

Established in 2007 and granted to no more than 0.2% of the current membership, the Fellow of ASPB Award may be given 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.

Current members of ASPB who have contributed to the Society for at least 10 years are eligible for nomination.

Janet Braam

Rice University, Houston, Texas

Janet has made fundamental contributions to our understanding of the signaling pathways through which plants perceive changes in their environment and mount appropriate responses. She has served ASPB as a proactive and insightful member of the Program Committee (2007–2012) and the Charles Reid Barnes Life Membership Committee (2000–2003; chair, 2003).

Eduardo Blumwald

University of California, Davis

Eduardo's extensive contributions to our understanding of transport mechanisms that contribute to abiotic stress tolerance exemplify the importance of basic plant biology in developing strategies to improve crop performance. He has served ASPB through his service on the International Affairs Committee (2008–2010), by organizing international (1989) and western regional (2003, 2013) ASPB conferences, and by chairing the ASPB Western Section (2010–2013).

Tuan-Hua David Ho

Washington University in St. Louis and Institute of Plant and Microbial Biology, Academia Sinica, Taiwan

David is internationally recognized for his contributions to our understanding of hormonal regulation of seed germination and plant responses to environmental

continued on page 8

ASPB AWARDS
continued from page 7

Tuan-Hua David Ho

Norman G. Lewis

Gloria K. Muday

Robert E. Sharp

stresses. He has an extensive and distinguished record of ASPB service, including as a member of the Program Committee (1994–1998), International Committee (1999–2008; chair, 2013–2016), and Corresponding Membership Awards Committee (chair, 2001–2005); editorial board member of *Plant Physiology* (1983–1992; 1995–2001); ASPB representative to AAAS (1992–1994); and president-elect, president, and immediate past president of ASPB (2008–2011).

Norman G. Lewis

Washington State University, Pullman

Norman is a pioneer in the field of plant lignin biosynthesis and, more broadly, an expert in plant secondary metabolites and metabolomics. He has a distinguished record of service to plant biology through his work on editorial boards and review committees and as the director of a leading plant science research institute. He has served ASPB as a monitoring editor for *Plant Physiology* (2005–2010) and as an active and effective member of the Science Policy Committee (2010–2014).

Gloria K. Muday

Wake Forest University, Winston-Salem, North Carolina

Gloria is widely recognized for her work elucidating plant hormone biology, particularly the transport of auxin and the roles of auxin and other hormones in lateral root development and gravitropism. She has served ASPB in many roles, including monitoring editor of *Plant Physiology* (1998–2000), elected member of the Executive Committee (2010–2013), and member of the Corresponding Membership Award Committee (1994–1998 and 2007–2011; chair, 2008–2011).

Christopher J. Staiger

Robert E. Sharp

University of Missouri–Columbia

Bob is internationally known for his pioneering research on the physiological mechanisms that determine plant growth responses to water deficits, with a focus on root growth adaptation. Bob has served ASPB through various roles, including monitoring editor of *Plant Physiology* (1992–1998), and the ASPB–Pioneer Hi-Bred Graduate Student Fellowship Committee (2005–2013), and by encouraging his students to play active roles in the Society.

Christopher J. Staiger

Purdue University, Lafayette, Indiana

Chris is a leader in the plant cytoskeleton field and has made fundamental contributions to our understanding of the assembly and dynamics of actin, particularly relating to self-incompatibility in pollen and plant–pathogen interactions. His contributions to ASPB include serving on the Corresponding Membership Award Committee (2004–2008) and as a coeditor of *The Plant Cell* (2005 to present). ■

ASPB's 2014 Women's Young Investigator Travel Award Winners Announced

Each year, ASPB awards travel grants to attend the Plant Biology annual meeting to early-career women investigators through a competitive process. The goal of the Women's Young Investigator Travel Award (WYITA) program is to increase attendance of female investigators who are within their first five years as an independent scientist in academia, industry, or government at the annual meeting by providing travel funds. Selection is based on (1) the science and quality of the abstract submitted relative to the amount of time as a young investigator, (2) a statement describing why travel should be supported, and (3) financial need.

Seven women were selected this year. Each will receive a $1,000 award to support attendance at Plant Biology 2014 in Portland, Oregon. A list of the recipients and their abstract titles follows.

Maheshi Dassanayake

Hongtao Liu

Jeanmaire Molina

Rashmi Sasidharan

Beth Thompson

Soledad Undurraga

Xuehua Zhong

Maheshi Dassanayake
Louisiana State University, Baton Rouge

Genome structures and transcriptomes signify evolutionary trajectories for multi-ion salt tolerance

Hongtao Liu
Shanghai Institute of Plant Physiology & Ecology, China

Cryptochrome 2, CIBs, and CO form a complex to regulate photoperiodic flowering

Jeanmaire Molina
Long Island University, Brooklyn, New York

Possible loss of the chloroplast genome in the parasitic flowering plant *Rafflesia lagascae* (Rafflesiaceae)

Rashmi Sasidharan
Utrecht University, Netherlands

Drownproofing: Novel molecular mechanisms driving plant survival strategies in response to flooding stress

Beth Thompson
East Carolina University, Greenville, North Carolina

DICER-LIKE1 functions in maize development

Soledad F. Undurraga
Universidad Mayor, Santiago, Chile

Transcriptome of maqui berry *(Aristotelia chilensis)*: Towards a molecular understanding of the biosynthesis and regulation of the anthocyanin pathway using extreme colored phenotypes

Xuehua Zhong
Wisconsin Institute for Discovery, Madison

Mechanism of DNA methylation in plants

Congratulations to each of the 2014 WYITA winners. ■

Plant Biology 2014

JULY 12–16 PORTLAND, OREGON

OREGON2014.ASPB.ORG

It's All About the Science

Previews of minisymposia that will be held in Portland

Light Signaling
Chair: Julin Maloof
University of California, Davis

Floral Scents & Fruit Aroma
Chair: Florence Zakharov
University of California, Davis

Environmental & Ecological Plant Physiology
Chair: Lisa Ainsworth
University of Illinois, Urbana

Genome Editing Techniques
Chair: Donald Weeks
University of Nebraska, Lincoln

Pollen
Chair: John Fowler
Oregon State University, Corvallis

Hormone
Chair: David Nelson
University of Georgia, Athens

Chloroplast
Chair: Alice Barkan
Oregon State University, Eugene

Transcriptional Networks & Development
Chair: Siobhan Brady
University of California, Davis

Hot Topics from Emerging Scientists

These minisymposia focus on presentations from early-career scientists, postdocs, and graduate students:

Biochemistry
***Chair:* Adrian Hegeman**
University of Minnesota, St. Paul

Development
***Chair:* Matt Evans**
Carnegie Institution for Science at Stanford University, Stanford, California

Stress
Chair: Todd Mockler
Donald Danforth Plant Science Center, St. Louis, Missouri

Hormone
Chair: Lucia Strader
Washington University in St. Louis, Missouri

Emerging Models
Chair: Mark Belmonte
University of Manitoba, Canada

Cell Biology
Chair: David Ehrhardt
Carnegie Institution for Science at Stanford University, Stanford, California

Fertilization
Chair: Daphne Goring
University of Toronto, Canada

Vascular Function & Differentiation
Chair: Brian Ayre
University of North Texas, Denton

Signaling
Chair: Jeff Harper
University of Nevada, Reno

Diverse Ubiquitin Roles
Chair: Judy Callis
University of California, Davis

Root Development
Chair: Ross Sozzani
North Carolina State University, Raleigh

Secretory Biology
Chair: Federica Brandizzi
Michigan State University, East Lansing

Genomics
Chair: Katrien Devos
University of Georgia, Athens

Tree Biology
Chair: Janice Cooke
University of Alberta, Canada

Motor Proteins
Chair: Ram Dixit
Washington University in St. Louis, Missouri

Epigenetics
Chair: Blake Meyers
University of Delaware, Newark

Abiotic Stress
Chair: Mark Knight
Durham University, United Kingdom

Mechanics of Pathogenics
Chair: Wenbo Ma
University of California, Riverside

Biochemistry to Biotechnology
Chair: Bryan Gibbon
Baylor University, Waco, Texas

Specialized Metabolism
Chair: David Gang
Washington State University, Pullman

…and some great fun—which you don't want to miss!

Saturday, July 12

New!

Meet and Greet Coffee (and Tea)
9:00 – 11:30 a.m.

Join this networking coffee to catch up and meet with colleagues who share your scientific interests. A great way to get to know your fellow attendees on opening morning!

Undergraduate Poster Session
9:00 – 10:00 a.m.

(Pre-reserve for a poster spot) Visit the future of plant biology as undergraduates display their posters during this special session.

Undergraduates may move their posters to the exhibit/poster hall after this event if an abstract was submitted for the regular poster sessions.

Small Colleges/PUI Networking Event
10:00 – 11:30 a.m.

This workshop is targeted toward scientists working at or interested in PUIs who want to network, discuss issues of common interest, find out about PUI-related opportunities, and provide feedback on ASPB programs for PUIs.

New!

Science Party for Kids
6:30 – 8:30 p.m.

(For kids 2–13, $15, register through the Child Care registration system) A fun-filled evening for your little ones while you are at the opening reception. Licensed child care providers will keep your child entertained with science-related games and activities.

Opening Mixer
6:45 – 8:00 p.m.

Light hors d'oeuvres and drinks.

Sunday, July 13

New!

The Plant Cell and *Plant Physiology* Editors' Reception
5:30 – 6:30 p.m.

Join the editors of *The Plant Cell* and *Plant Physiology* along with the speakers from the afternoon symposium: 21st Century Grand Challenge: Feeding 9 Billion.

The "Flipped" Classroom Teaching Strategy
7:45 – 10:00 p.m.

In "flipped" classes, students are introduced to the course content outside of class time using online videos and web materials organized by the instructor. Class time is spent on active learning; the instructor clarifies difficult material and facilitates while students engage with in-class assignments, projects, and discussions that promote achievement of learning objectives. Attendance is free but requires registration in advance. Sponsored by the ASPB Education Committee.

Career Adaptability: How to Set Yourself Up for a Changing Professional Environment
7:45 – 10:00 p.m.

Panelists will describe how they have navigated various paths to maneuver through their career. Discussion topics will include mentorship, changing/gaining new skill sets, creating collaborations, speaking influentially, and more. Sponsored by the ASPB Women in Plant Biology Committee.

Monday, July 14

New!

The Plant Cell and *Plant Physiology* Editors' Networking Breakfast
7:30 – 8:30 a.m.

Join the editors of *The Plant Cell* and *Plant Physiology* along with the speakers from the morning symposium: 21st Century Grand Challenge: Feeding 9 Billion.

Science Policy Workshop Plant Science Decadal Vision…One Year Later
11:30 a.m. – 1:30 p.m.

The plant science community has been working toward addressing society's looming challenges through the two-phase Plant Science Research Summit (held in September 2011 and January 2013) and the development of the Decadal Vision (released at PB2013 in Providence). With funding from the U.S. Department of Agriculture, the National Science Foundation, the Department of Energy, and the Howard Hughes Medical Institute, this process brought together representatives from across the full spectrum of plant science. Now that the report has been published, this workshop will provide an opportunity to learn about ASPB's efforts to promote the Decadal Vision and how it is being used to advocate for robust support for plant science research, education, and funding. Join us for a discussion of how you can contribute.

Mix and Mingle
11:20 a.m. – 1:30 p.m.

You won't want to miss this special lunchtime event. Sign up on-site to have your resume reviewed; attend a 30-minute session on working in industry or academia; or just get your lunch and join a table to meet one of our speakers.

Dinner Meet-Up
7:30 p.m.

If you are not planning to attend one of the evening events, drop by the dinner meet-up booth in the registration area. Find some new or old friends and head out for dinner. A list of nearby restaurants will be posted at the dinner meet-up area.

How to Publish
7:45 – 10:00 p.m.

Join representatives from *The Plant Cell* and *Plant Physiology* editorial boards to learn what factors contribute to a successful paper. There will be an opportunity to presubmit questions, as well as a Q & A session after the presentation.

The Key to Success Is....on My Keychain Somewhere at the Bottom of My Purse
7:45 – 10:00 p.m.

Nancy Ryan Gray, current director for the Gordon Research Conferences, explains the lessons she has learned in life about career direction, work/life/family balance, and navigating an ever-changing professional environment.

ASPB Women in Plant Biology Committee–Sponsored Dinner and Speaker

Next Generation Sequencing: Opportunities and Resources
7:45 – 10:00 p.m.

This workshop will provide resources and information on how you can use next-generation sequencing for your plant biology project. Speakers with various levels of expertise in bioinformatics will briefly present their experiences and then meet with attendees in a roundtable fashion to answer specific questions and

continued on page 14

Top Attractions in Portland

International Rose Test Garden

Portland is home to the oldest official continuously operated public rose test garden in the United States. Each year, hundreds of thousands of visitors from around the world enjoy the sights and scents of the garden. A popular Portland Parks & Recreation location, the garden's spectacular views and more than 8,000 roses make it one of Portland's most notable signature landmarks. Located in Washington Park.

Hours: Daily 7 a.m.–10 p.m.
Admission: Free
400 S.W. Kingston Avenue
503.823.3636
http://www.portlandparks.org/parks/introsetestgarden.htm

Lan Su Chinese Garden

A year-round wonder, the Lan Su Chinese Garden is an authentically built Ming Dynasty–style garden. Covered walkways, bridges, open colonnades, pavilions, and a richly planted landscape frame Zither Lake, creating views that are never twice the same. This urban oasis of tranquil beauty and harmony, built by Suzhou artisans, will inspire and engage all who visit. Public tours and audio tours are available, and a teahouse serving light snacks and traditional teas is located within the garden.

Hours: April–October, 10 a.m.–6 p.m.; November–March, 10 a.m.–5 p.m.
Admission: Adults, $8.50; seniors (62+), $7.50; students (ages 6–18 and college students with ID), $6.50; children 5 and younger, free.
Northwest Third Avenue and Everett Street
503.228.8131
http://www.lansugarden.org

Oregon Museum of Science and Industry (OMSI)

One of the nation's leading science museums, OMSI is 219,000 square feet of brain-powered fun! Five enormous halls bring science to life with hundreds of interactive exhibits and displays. You can experience an earthquake, take part in live lab demonstrations, see a movie in the OMNIMAX Dome Theater, explore the universe in a world-class planetarium, and even tour a real submarine. Located on the east bank of the Willamette River.

Hours: Tuesday–Sunday, 9:30 a.m.–5:30 p.m.
Admission: Adults, $11; youth (3–13), $9; seniors (63+), $9; children 2 and younger, free.
Parking: $2/car.
1945 S.E. Water Avenue
503.797.4000
http://www.omsi.edu

Oregon Zoo

Trek through the tropics amid the sounds of birds, monkeys, and other creatures. You're not in West Africa; you're in Portland at the zoo's African Rain Forest exhibit. After you've survived the steamy tropics, dry off in the savanna, where giraffes, rhinos, and hippos graze. From the crest of the Cascade Mountains to the coastal waters of Peru, travel around the world in an afternoon. The zoo is located in Washington Park, five minutes from downtown on Highway 26 West, or about 10 minutes via MAX Light Rail (Blue or Red line, Washington Park stop).

Hours: Open seven days a week, year-round. May–September, 8 a.m.–6 p.m.; September–May: 9 a.m.–4 p.m. Zoo grounds stay open one hour after last entry time. A limited selection of animals is on exhibit at 8 a.m.
Admission: Adults (12–64), $10.50; seniors (65+), $9; youth (3–11), $7.50; children 2 and younger, free. Visitors presenting proof of MAX ridership receive $1.50 off tickets purchased at the gate.
Parking: $2/car.
4001 S.W. Canyon Road
503.226.1561
http://www.oregonzoo.org

Pioneer Courthouse Square

Located in the heart of downtown Portland, Pioneer Courthouse Square is affectionately known as the city's "living room." Once a grim parking structure, the square is now a thriving urban park and the single most-visited site in Oregon, attracting more than 9.5 million visitors annually. The square's on-site resources include the Travel Portland Visitor Information Center and TriMet's bus and light rail ticket office. The square is also one of Portland's leading outdoor venues, hosting 300 events each year, from large-scale concerts to cultural festivals. The Portland Farmers' Market operates in the square every Monday from 10 a.m. to 2 p.m., June–October.

Hours: Open 5 a.m.–midnight daily, year-round.
Admission: Free
Bordered by Southwest Sixth Avenue, Broadway, and Yamhill and Morrison Streets
http://thesquarepdx.org/

Pittock Mansion

Nestled high in the West Hills of Portland, Pittock Mansion soars 1,000 feet above the city's skyline. A century-old symbol of Portland's dramatic transformation from a small lumber town to a bustling city, it's an architectural wonder. With picture-perfect views of rivers, forests, bridges, and mountaintops—and 23 storied rooms teeming with treasures—no other place in town offers a more breathtaking view and more revealing glimpse of Portland's past.

Hours: 11 a.m.–4 p.m. daily, February–June and September–December; 10 a.m.–4 p.m. daily in July and August. Closed major holidays and all of January.
Admission: Adults, $8; seniors (65+), $7; youth (6–18), $5; children 5 and younger, free.
3229 N.W. Pittock Drive
503.823.3623
http://www.pittockmansion.org

Portland Art Museum

Find out why the oldest museum in the Northwest, the Portland Art Museum, is internationally renowned for exciting art experiences. Located in the heart

of downtown's cultural district, the museum's campus includes an outdoor sculpture court and historical interiors. Tour the world and travel through history in magnificent permanent collection galleries, six stories of modern art, and special exhibitions. Each Sunday features activities for families.

Hours: Tuesday–Wednesday, 10 a.m.–5 p.m.; Thursday–Friday, 10 a.m.–8 p.m.; Saturday, 10 a.m.–5 p.m.; Sunday, noon–5 p.m. Closed Mondays and major holidays.
Admission: Adults, $12; seniors (55+), $9; students (18+, with ID), $9; children 17 and under, free. Admission is free on the fourth Friday of every month from 5 p.m. to 8 p.m. The museum also offers four free Sundays a year (check calendar).
1219 S.W. Park Avenue
503.226.2811
http://www.portlandartmuseum.org

Portland Japanese Garden

Nestled in the scenic west hills of Portland, above Washington Park, the Japanese Garden is a haven of tranquil beauty that has been proclaimed one of the most authentic Japanese gardens outside Japan. Encompassing 5.5 acres and five separate garden styles, the garden includes an authentic Japanese teahouse, meandering streams, intimate walkways, and an unsurpassed view of Mt. Hood. View events happening at the Japanese Garden year-round. Guided tours are included with cost of admission.

Hours: April–September, 10 a.m.–7 p.m. (except Monday, noon–7 p.m.); October–March, 10 a.m.–4 p.m. (except Monday, noon–4 p.m.)
Admission: Adult, $9.50; seniors (62+), $7.75; youth (6–17), $6.75; college students (with ID), $7.75; children 5 and younger, free.
611 S.W. Kingston Avenue
503.223.1321
http://www.japanesegarden.com

Portland Saturday Market

Enjoy a distinctive Portland experience at the nation's largest weekly open-air arts and crafts market. Stroll down row upon row of unique arts and crafts created by the people who sell them. Listen to live local music and enjoy a plethora of exotic foods in our international food pavilion. Open rain or shine, Saturday from 10 a.m. to 5 p.m. and Sunday from 11 a.m. to 4:30 p.m., March through December 24. Located in Waterfront Park (Naito Parkway at Southwest Ankeny Street), at the Skidmore Fountain MAX station. Make a $25 purchase and receive a free TriMet ticket or a two-hour parking validation at any Smart Park garage.

Hours: Open rain or shine March–December 24. Saturday, 10 a.m.–5 p.m.; Sunday, 11 a.m.–.4:30 p.m.
Admission: free
Southwest Ankeny Street and Naito Parkway
503.222.6072
http://www.portlandsaturdaymarket.com/

Powell's City of Books

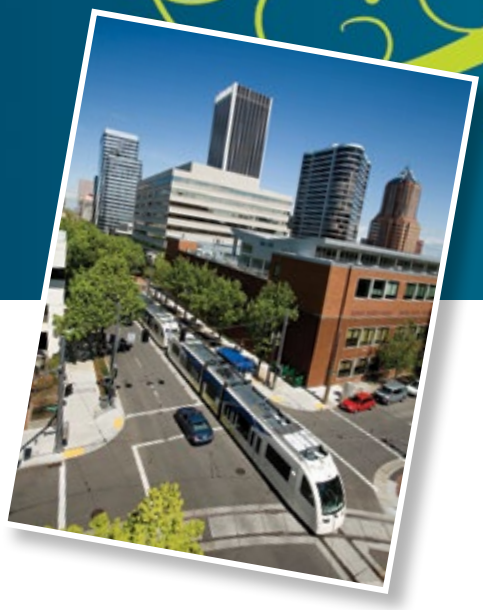
From humble storefront beginnings in 1971, Powell's has grown into a Portland landmark and one of the world's great bookstores. Covering an entire city block, Powell's City of Books contains more than 1.5 million books in 3,500 different sections. Get a cup of joe at the in-store coffee shop, grab a map to the nine color-coded rooms, and lose yourself in the largest used and new bookstore on Earth.

Hours: Open 9 a.m.–11 p.m., 365 days a year.
Admission: Free
1005 W. Burnside Street
503.228.4651
http://www.powells.com ■

Plant Biology 2014

JULY 12–16 PORTLAND, OREGON

OREGON2014.ASPB.ORG



Portland's MAX Light Rail

Pick Up Your Free Pass at the Registration Desk!

All registered attendees of Plant Biology 2014 will be eligible to receive one TriMet MAX Light Rail pass at the conference registration desk located at the Oregon Convention Center. Your MAX Light Rail pass will be valid from July 12 through July 17. If you plan to travel from the airport via Light Rail only, buy a pass for your trip to the hotel and to the convention center. NO NEED TO BUY A LONGER PASS.

MAX Light Rail is Portland's efficient rail system that connects the metro area, Portland International Airport, and the central city. To get to the Oregon Convention Center using MAX Light Rail prior to picking up your pass, you may need to purchase an adult ticket. Current rates are $2.50 for a two-hour ticket and $5 for an all-day ticket.

For information on traveling from Portland International Airport (PDX) to downtown Portland, please visit http://www.travelportland.com/article/portland-international-airport-pdx.

For information on traveling around Portland and schedule information, please visit http://www.travelportland.com/article/max-light-rail.

Instructions for Your Trip into Downtown Portland via MAX Light Rail

The MAX Light Rail Red Line is the easiest way to travel to and from the airport. Here are some quick facts:

- The trip between the airport and downtown Portland takes about 38 minutes.
- An adult ticket costs $2.50 (youth, $1.65; honored citizen, $1). MAX Light Rail ticket machines return change in coins, so small bills are recommended.
- You can roll your luggage on board.
- The first train of the day arrives at PDX at 4:45 a.m. The last train departs PDX at 11:50 p.m.
- The MAX Light Rail station and ticket machines are located on the lower level, next to the south baggage claim area (turn right at the base of the escalator). Visit http://www.portofportland.com/PDX_Terminal_Map.aspx to view an airport map. ■

MINISYMPOSIA
continued from page 11

offer their advice and suggestions. Sponsored by the ASPB Membership Committee.

Your Research Career—What Next?

7:45 – 10:00 p.m.

Sarah Blackford, Society for Experimental Biology

Many career workshops focus on providing information on the range of jobs PhD students and researchers could consider as their future career path—whether within or outside of academia. This workshop aims to help PhD students and researchers to first decide which particular career areas would suit their interests and skills. It is founded on a recognized career theory and provides a framework in which participants are able to map their own preferences on to particular job types and environments.

At the end of the workshop, each participant will receive a comprehensive list of resources to help them find out more about job vacancies and associated information.

Tuesday, July 15

World Forestry Center Party

8:30 – 11:30 p.m.

The traditional party on the final night of the meeting, with music, dancing, and food, will be at the World Forestry Center.

During our party, there will be a special exhibit celebrating the life and art of Theodor Seuss Geisel. This exhibit chronicles Dr. Seuss's life and career with a focus on the common artistic links throughout his nearly 70 years of creativity. See Dr. Seuss's classic illustration art from *The Cat in the Hat, Green Eggs and Ham, Yertle the Turtle,* and *The Lorax,* as well as early magazine covers, advertising pieces, war commentary, his whimsical unorthodox taxidermy, and an amazing assortment of larger-than-life bronze sculptures! ■

ASPB Midwestern Section Annual Meeting Report

BY EDGAR CAHOON
ASPB Midwestern Section Chair, University of Nebraska

The 2014 Midwestern Section annual meeting was held March 22–23 at the Fawcett Center on The Ohio State University campus in Columbus. It was a very successful meeting with 158 registrants, 34 oral and 64 poster presentations, and representation ranging from Nebraska to Ohio. The meeting offered high-quality talks given by graduate and undergraduate students, postdoctoral associates, and one new faculty member, Anna Dobrista from The Ohio State University.

The agenda included a keynote presentation by Jay Hollick from The Ohio State University and featured presentations by Marta Laskowski from Oberlin College and R. Keith Slotkin from The Ohio State University. Ulhas Kadam from Purdue University also gave a presentation on the ASPB Ambassador program. The scientific program on March 22 concluded with a highly interactive poster session. Section Chair Edgar Cahoon brought the meeting to an end on March 23 with a thank you to meeting organizer Patrice Hamel from The Ohio State University and the awarding of best undergraduate and graduate student talks and posters and best postdoctoral talks.

The top graduate student talk winner was a tie between Heejin Yoo from Purdue University and Dominic Petrella from The Ohio State University. Wen Dong from The Ohio State University won third place in this category. The best graduate student poster winner was a tie between Dalen Fultz and Joy-El Talbot, both from The Ohio State University, and the third-place graduate student poster winner was Sarah Hutchinson, from Southern Illinois University–Edwardsville. Avery Tucker from Ohio University gave the top-placing undergraduate student talk, and acknowledgments for their excellent oral presentations were conveyed to Sean Fenstemaker and Taylor DeBrosse, both of Ohio University. The best undergraduate poster winner was a tie between Brooke Anderson, The Ohio State University, and Megan Moore, Ohio University, and Benjamin Julius, Truman State University, was awarded third place. The best postdoctoral talk winners were Jie Qu, The Ohio State University; Kengo Morohashi, The Ohio State University; and Rucha Karve, Purdue University. Among the prizes were gift certificates from local coffee house Boston Stoker and local tea house ZenCha Tea Salon.

At the business meeting on March 22, St. Louis was chosen as the host location for the 2015 Section meeting, with incoming section chair Darron Luesse and Dmitri Nusinow from the Danforth Center serving as local organizers. The venue for the meeting will be forthcoming. We hope to see many old and new faces in St. Louis next year! ■

Teaching Tools now available for individual purchase. $50 per Tool!

Teaching Tools in Plant Biology combines up-to-date peer-reviewed, research-based content with flexible presentation components that can be used alone or integrated into your lesson plans so that you can confidently present these exciting topics in your classroom. Each tool includes a short essay introducing each topic, PowerPoint slides, and suggested readings.

Teaching Tools is available free with a subscription to The Plant Cell and also on a per-Tool basis for $50.

Teaching Tools in Plant Biology is an editorial innovation from The Plant Cell, one of the most trusted names in plant biology.

www.teachingtoolsinplantbiology.org

Teaching Tools in Plant Biology®
ideas to grow on

78th ASPB Northeastern Section Annual Meeting Report

BY ALISON ROBERTS, Conference Chair, University of Rhode Island
and SUBHASH C. MINOCHA, ASPB Northeastern Section Secretary/Treasurer, University of New Hampshire

The 78th annual meeting of the Northeast Section of the American Society of Plant Biologists (NEASPB) was held March 29–30 in the Center for Biotechnology and Life Sciences at the University of Rhode Island in Kingston, Rhode Island. Alison Roberts (chair, NEASPB, University of Rhode Island) organized the meeting of which the theme was "Evolution of Physiological Processes." The 108 participants, included undergraduate and graduate students, postdocs, and faculty from colleges and universities across the Northeast region, including New York, New Jersey, Connecticut, Massachusetts, Rhode Island, Vermont, Maine, and New Hampshire.

The meeting opened March 29 with a greeting from Dean John Kirby, College of the Environment and Life Sciences, University of Rhode Island, read by Alison Roberts. The keynote symposium featured talks by three invited speakers: "Evolution of C_4 Photosynthesis," by Rowan Sage from the University of Toronto; "Evolution of Flowering Time in Seasonally Cold-Adapted Grasses," by Jill Preston from the University of Vermont, and "Red Algal Parasites: The Genomic Consequences of Going Rogue," by Chris Lane from the University of Rhode Island. Keynote talks were followed by a reception and poster session featuring 40 posters, including 21 presented by graduate students and 11 by undergraduate students.

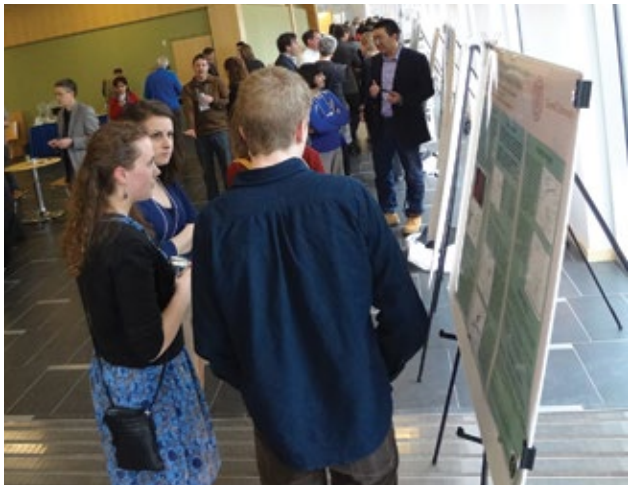
After a book raffle, courtesy of Sinauer and Associates, attendees adjourned to the University Club for a banquet dinner. A meeting of the NEASPB Executive Committee followed the banquet.

The meeting was reconvened March 30 for a continental breakfast and a morning session of 11 contributed talks, including four presented by graduate students and one presented by an undergraduate student. The business meeting was held before the mid-session coffee break and was chaired by Alison Roberts. Secretary/Treasurer, Subhash Minocha, read reports on the 2013 meeting and status of funds. Copies of a new constitution and bylaws were distributed, and members were notified that a vote to approve them would be conducted via e-mail. Page Owen, Connecticut College, and Peter Melcher, Ithaca College, were nominated and elected to the Executive Committee. Carolyn Lee-Parsons invited the section to hold its 79th annual meeting at Northeastern University, Boston, Massachusetts.

A panel of 10 judges selected the best student posters and contributed talks. The winners for best graduate student posters were Sydney Shaw, Northeastern University; Tess Scavuzzo-Duggan, University of Rhode Island; and Hesham Abdullah, University of Massachusetts Amherst. Judith Hoskins, University of New Hampshire, received the award for the best undergraduate poster. Noreen Rizvi, Northeastern University, received the award for the best student oral presentation.

ASPB and the University of Rhode Island College of the Environment and Life Sciences generously supported the meeting. Donations to the Student Travel Fund are gratefully acknowledged. ■

Laura Van Beaver, a sophomore in Subhash Minocha's lab at the University of New Hampshire, explaining her project on the "Production of decaffeinated tea by genetic engineering" to attendees.



An overview of the poster session at the meeting.

ASPB Southern Section Annual Meeting Report

BY KENT CHAPMAN
ASPB Southern Section Representative, University of North Texas

The 2014 meeting of the Southern Section of ASPB was held in Lexington, Kentucky, March 29–31. Rickie Turley, secretary/treasurer, in cooperation with local hosts Joe Chappell and Bob Houtz, both from the University of Kentucky, organized an excellent meeting. Jay Shockey presided as chair and Ashlee McCaskill served as vice chair in putting together this year's thematic symposium.

The meeting enjoyed support from 24 colleges, universities, and government laboratories from 11 states in the southern region. There were 23 oral presentations, including 16 graduate student oral presentations, and 47 participants presented posters, including 13 from undergraduates. The Kriton Hatzios Symposium featured three terrific speakers on the general theme of plant–microbe interactions. Plenary speakers were Carl Fellbaum (graduate student from Heike Bucking's group) from South Dakota State University; Stan Faeth, from the University of North Carolina at Greensboro; and Julia Frugoli, from Clemson University.

In an exceptionally competitive field, the winners of the graduate student oral competition were as follows: first place, James Shaffer, University of Kentucky; second place, Richard Sante, Eastern Tennessee State University; and third place, Ipeleng Randome, University of Arkansas. The winners from the large field of the undergraduate poster competition were as follows: first place, Kevin Mutore, University of North Texas; second place, Taylor Marshall, University of North Georgia; and third place, Ashley Strother, University of South Carolina Aiken. Thanks in large part to the active participation and financial support from the University of Kentucky, the meeting was a great success, offering a diverse array of plant science research for 126 registered attendees. The program pages are available at http://www.SS-ASPB.org. Next year's meeting features a return to the wonderful Dauphin Island Marine Lab near Mobile, Alabama, with secretary/treasurer–elect, Ken Korth, University of Arkansas, as organizer and Tim Sherman and Kelly Major, University of South Alabama, serving as local hosts. ■

Kevin Mutore (right), winner of the undergraduate poster competition, pictured with Jay Shockey (left), 2014 SS-ASPB chair. PHOTO BY STEPHEN BANKS.

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

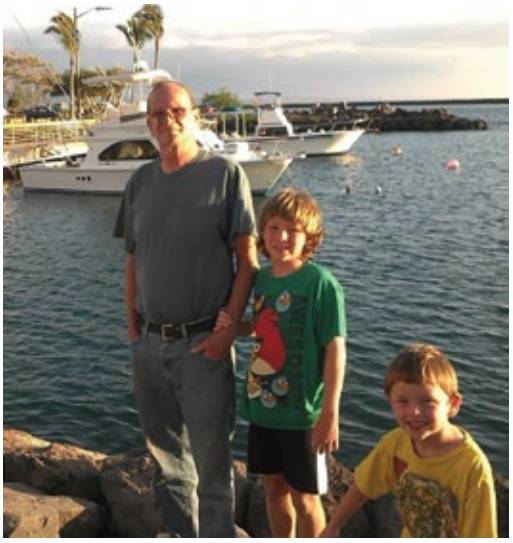
Please feel free to submit your own article to "Luminaries," "Membership Corner," or "Where Are They Now?" For details please contact me, David Horvath, Membership Committee chair, at david.horvath@ars.usda.gov. As always, we are open to suggestions for articles or features of interest to readers of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

Machi F. Dilworth, NSF (Ret.) and Gregory L. Dilworth, DOE (Ret.)

Aloha from the Big Island of Hawaii! It has been 11 years since Greg Dilworth retired and almost two years since I (Machi Dilworth) retired. A couple of years ago, someone hesitantly inquired if Greg was still among the living. Yes, Greg is alive and well, and I am nicely adjusting to a life of retirement.

Greg

Greg took an early retirement from his job as program manager for Energy Biosciences (EB) at the DOE. Many ASPB members will remember Bob Rabson, who was the founding director for EB. Bob hired Greg in 1985. Although the EB's program budget was relatively small then, it played a critical role in supporting fundamental plant sciences. The DOE's policies and practices in those days were such that Bob and Greg had much discretion in setting the direction for the program and in making funding decisions. Greg firmly believed that a complete understanding of the basic biology of plants was a prerequisite to the full development of bio-based renewable resources. EB focused strategically on areas of basic plant research that were directly relevant to energy, such as photosynthesis, cell wall biochemistry, plant growth and development, and biotechnology. EB also supported basic research in microbial biology associated with converting plant products to useful chemicals. It supported the brightest scientists interested in energy-relevant topics by providing them long-term support when warranted. Much of the research supported by EB built a foundation for today's exploding research on biofuels.



Greg with two grandsons, Frankie and Robbie.

But soon after Bob's retirement in 1995, there were some major personnel changes in the leadership of DOE that had an impact on the direction, priorities, and operations of EB. It became increasingly difficult for Greg to manage the EB program in ways that he believed best for advancing basic science in support of bioenergy production. Continual bickering with the department's leadership became so stressful that Greg's health began to suffer. When DOE offered an early retirement option as part of a downsizing exercise in December 2002, Greg jumped at the opportunity. He left DOE in spring 2003 with a sense of quiet satisfaction that over the course of his 18 years there, he had tried to do right by the science and the scientific community.

When Greg retired, he knew exactly what he wanted to do. He wanted to live in a warm climate near a large body of water and do some farming. After some years of searching around the country for a place to spend his retirement life, he settled on a piece of land on the wet (east) side of the Big Island of Hawaii. Our original plan was to build a house and grow ornamental plants and fruit trees. Unfortunately, this plan did not materialize due to legal complications. From 2007 to 2010, I served as the head of the NSF Tokyo office. Greg joined me in Tokyo. He explored the countryside by car, and although not conversant in Japanese, he became very adept at reading maps. Prior to my return to NSF in Arlington, we bought a house on the dry, west side of the Big Island of Hawaii, where Greg relearned bachelor living while I continued working at NSF. One of Greg's primary commitments is caregiver to our grandchildren when they visit. We have four now—11, 7, 3, and 1. Our oldest grandson has spent every summer with us since 2008, and his brother since 2012, something only retired grandparents are able to offer. Greg has recently signed up to audit a class at the University of Hawaii at Hilo in the fundamentals of drawing. The university had a hard time classifying him, but he is officially a freshman with an undeclared major. As you

can see, Greg has accomplished his goal of retirement: doing what he wants to do, wherever and whenever he wants to do it.

Machi

I retired from NSF in June 2012. My career as a government research administrator spans over 33 years—24 years at NSF and nine years at the USDA Competitive Research Grants Office, the predecessor of the National Institute of Food and Agriculture and the Agriculture and Food Research Initiative. I started my career at NSF in 1979 as assistant program director for developmental biology. Mary Clutter, program director for developmental biology at the time, hired me. It was my great fortune that I had Dr. Clutter as a mentor/supervisor and that my more than 30-year career coincided with the extraordinary period of growth in the biological sciences and plant science in particular. The advent of molecular biology, biotechnology, genomics, and information science kept pushing the frontiers of science and spawning new industries along the way. For simply being at the right place at the right time, I was given amazing opportunities to be involved in initiating, developing, or managing a number of new programs and initiatives that have had a major impact on plant sciences, including the postdoctoral research fellowships in plant biology, the DOE/NSF/USDA Joint Programs in Plant Sciences, the Arabidopsis Genome Projects, followed by the Arabidopsis 2010 Project, the Plant Genome Research Program, and iPlant. While at USDA (1981–1989), I had the opportunity to work with leading figures in plant science research who served as chief scientist and panel managers in building a competitive grants program at USDA.

For the last five years of my NSF career, I was not directly involved in biology. Nevertheless, I had unique and rewarding experiences. Being head of the NSF Tokyo office carries an official diplomatic status. I enjoyed all the privileges of a diplomat, such as invitations to events hosted or attended by the emperor and empress of Japan. Upon my return from Tokyo, I temporarily served as deputy assistant director for Mathematical and Physical Science (MPS)—a real departure for me that gave me much personal satisfaction. I found that my scientific knowledge was sufficiently broad to be able to relate to the MPS and that my administrative abilities and experience were applicable directly to managing NSF's largest directorate. My last assignment, director of the Office of International Science and Engineering, exposed me to a myriad of international activities in which NSF is involved. A highlight was to learn about NSF's role in managing the U.S. research bases in Antarctica, including a visit to the McMurdo and the South Pole stations. All in all, I consider my career as being one big, wonderful ride.

I had always wondered how people knew when to retire. My retired colleagues and friends told me that you would just know when it is time, and they were right. That time came to me when I spent the Thanksgiving holiday of 2011 with our family in Hawaii. In early 2012, I informed a small number of people at NSF about my intention to retire at the end of June, and I never had second thoughts after that. Unlike Greg, I did not have a clear vision of what my retirement life should be. I did not completely eliminate the possibility of getting a full-time position. At a minimum, I wanted to be involved in some way with the scientific or academic community. I felt, and still feel, a sense of debt to the scientific research and education community, especially the plant science community, which provided support, advice, and encouragement throughout my career.

A drawing of a pineapple from their yard by Machi.

Since retirement, I have been serving as a part-time consultant to the chancellor of The University of Hawaii at Hilo (UHH), helping UHH's transition from a teaching university to a teaching/research university. There are some excellent faculty and strong research programs at UHH. It has several innovative outreach programs aimed at its very diverse student body. Working with a small institution in an EPSCoR (Experimental Program to Stimulate Competitive Research) state has given me insight into its struggles in trying to realize its considerable potential as an institution of higher learning. I am beginning to think that EPSCoR and EPSCoR-type programs need a significant overhaul. With more than half the states now being classified as EPSCoR-eligible, a one-size-fits-all approach probably won't accomplish the goals of the EPSCoR programs.

In addition to UHH work, I have also served on a committee of the National Research Council studying USDA's competitive research grants program and participated in ASPB's visioning activity that produced the report *Unleashing a Decade of Innovation in Plant Science: A Vision for 2015–2025.* I receive a fair number of inquiries and requests for advice from my old colleagues and researchers, and I try to respond as best as I can. These activities take about a quarter of my time and have helped me ease into a life of retirement by enabling me to stay connected with my preretirement world.

After my retirement, I did acquire a new hobby—botanical drawing. It was something I always wanted to learn but never had the time for. Last February, I found a two-week workshop on botanical illustration held at the National Tropical Botanical Garden (NTBG) on the Island of Kauai. I was very apprehensive in the beginning but became quickly comfortable as I found that my knowledge of plant anatomy and development helped me to accurately draw plants. Also, my poor sense of color is not an issue in botanical drawing, since all I have to do is faithfully match the color of the subject.

This February, I attended the same workshop again at the

continued on page 20

From Around the Web

The past few months have seen the publication of several important reports that touch upon plant science. The first was *Genetic Modification Science Update*, a report released on March 14, 2014, commissioned by the United Kingdom's (UK) Council for Science and Technology (http://bit.ly/1oOGrtj). The purpose of the document, which was coauthored by ASPB member Jonathan Jones of the Sainsbury Laboratory, was to provide an update on recent scientific developments and advise the UK Prime Minister on genetic engineering technology.

The report addressed two areas: the evidence regarding the costs and benefits of genetically modified (GM) organism and what might be done to raise the quality of debate, decision making, and regulation within the UK and European Union (EU). The report's authors argue that recent identification of genes related to photosynthetic efficiency, nitrogen use efficiency, aluminum tolerance, salinity tolerance, pest and disease resistance, and phosphate use efficiency have created enormous scientific potential to improve crops. Further, they call for the improvement of the EU regulatory environment through the adoption of a "product- rather than process-based" assessment framework and that the approval of commercial cultivation of GM crops be handled at the national level. Finally, the report calls on the UK government to create a new translational research program to facilitate the transfer of basic research findings to applications in the field.

The other major report, *Climate Change 2014: Impacts, Adaptation, and Vulnerability*, the Intergovernmental Panel on Climate Change's (IPCC) fifth assessment report, focused on the impacts of climate change (http://1.usa.gov/1hR6qr1). The preliminary materials released by the Nobel Prize–winning IPCC argue that climate change will exacerbate global security issues due to increased competition for natural resources, food insecurity, and extreme weather.

The report, a comprehensive assessment, is the culmination of several years' effort by hundreds of experts from around the globe. "Preventing dangerous interference with the climate system entails mitigating climate change," said Ottmar Edenhofer, cochair of one the report's working groups. "On a transparent scientific basis, our report provides an understanding of the available options to meet this challenge." With regard to plant science, the report concludes that "based on many studies covering a wide range of regions and crops, negative impacts of climate change on crop yields have been more common than positive impacts." The report also identifies the development of more resilient crop varieties as a critical component of the adaptive responses that the world's governments must undertake. At the time of the writing of this article, the full IPCC report has yet to be released. IPCC member governments are expected to approve the report by the end of April 2014.

In other news, ASPB member Graham Farquhar and his colleague Richard Richards received the 2014 Rank Prize in Nutrition "for pioneering the understanding of isotope discrimination in plants and its application to breed wheat varieties that use water more efficiently" (http://bit.ly/1qkl1l8). Awarded biennially by the Rank Prize Fund, a charitable organization, the Rank Prize "seeks to recognize excellence in specific fields of research and reward innovators for their dedication and outstanding contribution." ■

WHERE ARE THEY NOW?
continued from page 19

NTBG. This is the garden that was used in the movie *Jurassic Park,* and it is full of exotic tropical plants. As I sat in the classroom drawing to my heart's content and taking walks through the tropical paradise-like grounds, I found myself thinking that life does not get much better than this. Perhaps I should have done this while I was working. It would have helped me maintain a better work–life balance and made me a better role model to my younger colleagues.

Both Greg and I remain interested in science in our retirement. Our rewards now are to read about the great advances coming from scientists whom we had a hand in supporting. We feel optimistic about the future knowing that people we recruited, like Jane Silverthorne at NSF and Sharlene Weatherwax at DOE, are doing a tremendous job for the causes dear to our hearts. Truth be told, we do miss our friends and colleagues back on the mainland. We would love a chance to introduce them to the Big Island of Hawaii. We know that it is a long way to travel and that it is not easy for working people to spare the chunk of time needed to fully appreciate a place like Hawaii. We hope our friends and colleagues will find their way to Hawaii one way or the other. When you do, please be sure to look us up. ■

Science Policy Committee Meets in Washington, D.C.

BY TYRONE SPADY
ASPB Legislative and Public Affairs Director

March 25, 2014, National Ag Day, marked the 100th birthday of Norman Borlaug, one of the most prominent plant scientists of the 20th century and father of the Green Revolution. To commemorate the day, the U.S. Congress and the state of Iowa unveiled a statue of Borlaug in National Statuary Hall of the U.S. Capitol, where each state is allowed two slots. (The statue of Borlaug joins Samuel Jordan Kirkwood, known as Iowa's Civil War Governor.) ASPB, who was there along with several other agriculture-related advocacy groups, took advantage of Washington's momentary focus on all things agriculture and held its annual Science Policy Meeting and Congressional Visit Day.

The focus of the ASPB congressional visits was to discuss, within the context of the fiscal year (FY) 2015 appropriations process, the importance of sustained annual investment in the federal agencies that support plant science research and the importance of plant science to the economic well-being of the state and district of the members of Congress with whom we met. Additionally, we discussed how plant biology provides the foundation for advancement in agriculture and the bio-economy, mitigation of the impacts of climate change, and development of new medicinal compounds involved in the treatment and prevention of diseases (Decadal Vision; http://bit.ly/1kNedsW).

Given the challenges facing the nation and the scientific opportunities before us, ASPB's funding recommendations for FY2015 are as follows:

- NSF: $7.6 billion
- DOE Basic Energy Sciences (Office of Science [SC]): $1.8 billion
- DOE Biological and Environmental Research (SC): $628 million
- USDA Agriculture and Food Research Initiative: $383 million
- USDA Agricultural Research Service: $1.28 billion
- NIH: Sustained growth and increased support for plant science research.

As part of our Congressional Visit Day, ASPB held 26 congressional meetings with offices representing Iowa, Michigan, New York, Minnesota, Missouri, Mississippi, and Washington. Within most congressional offices, our funding recommendations were well received. Our meetings also included the Senate Agriculture and Appropriations Committees (Commerce, Justice, and Science Appropriations Subcommittees) and the House Science Committee. It was in the latter that we learned of House Science Committee Chairman Lamar Smith's consideration of holding a hearing on GMOs in the coming months. (ASPB staff and Lewis-Burke, our government relations contractor, will explore opportunities to work together on this issue.)

ASPB Science Policy Committee Chair Pat Schnable poses in front of the newly installed statue of Norman Borlaug.

Finally, Science Policy Committee (SPC) Chair Pat Schnable and Plant Summit II cochair David Stern were joined by Rod Williamson (Iowa Corn Promotion Board [ICPB]) to participate in a roundtable discussion hosted by the House Modern Agriculture Caucus and Congressman Adrian Smith of Nebraska's second district. The roundtable, an intimate event, provided several staffers with the opportunity to have an in-depth dialogue on the Decadal Vision and the political issues surrounding modern agriculture.

Prior to the congressional visits, ASPB's SPC met with representatives from several other important organizations.

continued on page 22

Policy Update

BY LAUREN BROCCOLI
Lewis-Burke Associates, LLC

President's FY2015 Budget Request

The president released his budget request for fiscal year (FY) 2015 in March. With the $1.014 budget cap in place, the request was similar to last year, with most agencies relatively flat or with moderate increases compared to FY2014. The National Science Foundation (NSF) would be up 1.2%, the Department of Energy (DOE) Basic Energy Sciences up 5.5%, DOE Biological and Environmental Research up 3%, U.S. Department of Agriculture's (USDA) Agriculture and Food Research Initiative up 2.9%, USDA's Agricultural Research Service down 1.6%, and the National Institutes of Health up 0.7%.

At time of writing, the appropriations process is in full swing as congressional committees hold hearings on President Obama's FY2015 budget and federal agencies are testifying before committees in a collective effort to pass appropriations legislation before the start of the 2015 fiscal year on October 1st. While motivation to pass appropriations bills is high, the House and Senate are expected to have major differences with respect to prioritizing funding within the confines of the spending cap. Support for science and technology funding remains high, but significant funding increases are not expected, as Congress will have to stick to the budget cap.

Farm Bill Implementation

On April 3, Agriculture Secretary Tom Vilsack highlighted USDA's progress in implementing the Agricultural Act of 2014 (Farm Bill), which was signed into law by President Obama on February 7. Following enactment, USDA created an implementation team composed of key subcabinet officials and experts. This team is charged with executing programs and carrying out mandated reforms to existing programs. In an effort to keep the public informed of the entire implementation process, USDA launched a new website (http://tinyurl.com/mqw26zz) dedicated to Farm Bill implementation and progress. Additionally, the agency has hosted 12 outreach and listening sessions to communicate updates and information on the bill and foster dialogue from stakeholders throughout the implementation process.

The new Foundation for Food and Agriculture Research (FFAR), authorized in the Farm Bill, is also moving forward. The National Academies has solicited nominees for the FFAR Board, and USDA issued a federal register notice soliciting additional nominees representative of industry. It is unclear when the final board will be announced.

NSF Personnel Changes

On April 2, France Córdova was officially sworn in as the new NSF director, months after being officially nominated for the position. The Biological Sciences (BIO) Directorate will also see some personnel changes in the coming months. Jane Silverthorne, former division director for integrative and organismal systems, was named BIO's new deputy director, taking the place of Joann Roskoski, who retired from NSF at the end of March. Finally, the search to replace BIO assistant director John Wingfield is under way. Wingfield will leave NSF in September 2014. ■

SCIENCE POLICY COMMITTEE continued from page 21

The first among them was Jane Silverthorne, who was recently promoted to deputy assistant director for the NSF Directorate of Biological Sciences. She provided an update on various NSF programs and discussed opportunities in which the Society might increase its engagement with the Foundation. Then the committee was joined by Rob Williamson (ICPB) and Craig Hill (Iowa Farm Bureau Federation), who were able to provide growers' perspectives on the Decadal Vision and expressed interest in future opportunities to work together. ■

"Wicked Good" Outreach in Boston

ASPB @ National Science Teachers Association Annual Meeting 2014

BY SCOTT WOODY, University of Wisconsin–Madison, and KATIE ENGEN, ASPB Education Coordinator

Science educators visiting the Society's booth during the National Science Teachers Association (NSTA) annual meeting in Boston (April 3–6) enjoyed a wide selection of plant biology materials to meet their individual teaching needs. Booth resources included items from ASPB (http://www.aspb.org/education) as well as Scott Woody's FPsc (Fast Plants, self-compatible; http://www.fpsc.wisc.edu) genetics education resource, math and nutrition activities from Suzanne Cunningham (http://tinyurl.com/CunninghamNSTA2014), and the Back Yard Mystery program from Peggy Lemaux (http://ucbiotech.org/resources).

Beyond the value of receiving free, quality resources, NSTA participants also benefited from conversations with the ASPB members who volunteered in the booth. Scott Woody, ASPB Education Committee member, has organized quite a few of the Society's outreach booths in recent years. Here Scott responds to a few questions about the particular successes of this event.

What is the impression you hope every ASPB booth visitor took home from NSTA?

The ASPB booth stood out in the exhibit hall as an oasis of well-grounded science and science education, offering hands-on activities and quality discussions. The practicing scientists who served as our volunteers had no agenda but to share the science with other educators. This key element was much appreciated by the conference attendees. The free resources/no-sales-pitch approach created great opportunities for in-depth interactions related to plant biology and scientific teaching.

What distinguished NSTA 2014 from our other annual outreach booths to science educators?

NSTA covers all sciences, so it's not just biologists visiting the booth. For 2014, I'd say there was a synergy between our materials and attendee demand that allowed for some healthy cross-curricular integration. For example, math is integrated into the FPsc curriculum, and Suzanne Cunningham's math and nutrition activities (see URLs above) opened doors so our visitors could see how plant science works in other areas. Materials developed by Peggy Lemaux and Barbara Alonso (also see URLs above) referencing bacteria and viruses as well as plant science had the same effect.

Who came to the booth? Which audience found it the most useful?

Well, I did get to share FPsc with Bill Nye the Science Guy and his teacher entourage when they stopped by the booth on Thursday. He seemed quite favorably inclined toward both the plants and the related Mating Game (http://tinyurl.com/MatingGameSW).

More generally speaking, we always get a lot of high school teachers needing help, from basic biology to AP. And K–5 teachers always like the 12 Principles of Plant Biology bookmarks and related inquiry-oriented handouts. This year, many middle school teachers were especially eager to find pedagogically sound ways to bring plants into their science curriculum. They tend to "love plants" but don't know how to teach with them. After visiting us, many planned to adopt entire programs like FPsc, and others were happy to get classroom-ready handouts such as Genes in Your Jeans and Phyllotaxis and Fibonacci, or the *My Life as a Plant* coloring and activity book to build on what they already are doing. (All these and more are available for free at http://www.aspb.org/education.)

Given the hundreds of exhibitors and thousands of educators in the exhibit hall each day, would you say our resources were well received?

Absolutely. We were so busy that I noticed with alarm late on the first day that I had already distributed almost two-thirds of the seed stocks I brought with me and was down to just a handful of trifold brochures from the 100+ I had brought. Fortunately, I could restock to some extent. And of course our other resources were popular as well. Not surprisingly, items toward the back of the booth moved more slowly. And since many NSTA attendees return to our booth each year, the same happened with some of our "old favorites." Overall, folks took what we were offering, but not in the frantic, "stuff the bag" way you often see at these events. I'd say they were pretty thoughtful and appreciative about what they were taking.

continued on page 24

WICKED GOOD
continued from page 23

Did you notice any other benefits to ASPB sponsoring this outreach event?

I think the volunteers got a lot out of the experience. Not only did they interact with the teachers, they got to thoroughly understand the resources ASPB offers in the booth. This led to richer discussions with conference participants and a better overall understanding of science education and outreach, for our volunteers. By getting involved in this kind of outreach, our volunteers either enjoy a really great outlet for their considerable expertise or learn that with a bit of practice they can develop the skills needed for effective science communication and networking in the context of science education. Also, the volunteers' enthusiasm for what they are sharing is an additional validation of the resources ASPB promotes.

Insights from a Veteran and a First-Time Volunteer

Suzanne Cunningham is a seasoned outreach veteran who has energized many ASPB events. Here is a snapshot of her busy day in the booth:

Visitors were very attracted to the plants! Hundreds of times we were explaining that the plants are a special cross between the Wisconsin Fast Plants and another Brassica species. [We were] quite busy showcasing the plants and the various lessons available to high school teachers. Quite a few middle school teachers wanted touse Scott's mutants in some simple Mendelian genetics experiments. We also were visited by education directors from large education districts in Ohio, Georgia, and Florida.

Back Yard Mystery—solved! PHOTO BY BARBARA ALONSO

Educators for many grade levels scooped up the [12 Principles of Plant Biology] bookmarks and the CDs with 12 lab protocols. My Sweet Math and Where's the Starch? displays went over quite well with elementary through ninth-grade teachers. Sweet Math posters vanished by late afternoon. Teachers commented that my bottle models and the linked sugar packets that "graph" volume worked as terrific visuals. I had corn, sorghum, and various bean

continued on page 26

Adán (right) shares FPsc with an interested visitor. PHOTO BY SUZANNE CUNNINGHAM

Irvin welcomes the next generation of plant science educators. PHOTO BY SUZANNE CUNNINGHAM

ASPB's Outstanding Outreach Volunteers

Scott Woody, University of Wisconsin–Madison
Suzanne Cunningham, Purdue University
Adán Colón-Carmona, University of Massachusetts Boston
Barbara Alonso, UC Berkeley
Robin Hoskins, Harvard University
Dennis Mathews, University of New Hampshire
Irvin Pan, Stonehill College
David des Marais, Harvard University
Clara Levy, University of New Hampshire
Katie Greenham, Dartmouth College
Ludmila Tyler, University of Massachusetts Amherst
Chip (John) Celenza, Boston University
Sanda Zolj, Boston University

Walk the Talk

Taking Strides for Professional Growth

BY KATIE ENGEN
ASPB Education Coordinator

Your campus may have a teaching and learning center (TLC) or offer professional development (PD) modules to help you enhance your teaching experiences and your students' learning outcomes. If so, you surely will benefit from contacting its consultants. But maybe you lack the time right now to consider the center's resources properly. Or maybe your campus doesn't offer such things and you need a place to start. In either case, starting small can lead to bigger things. The TLC at Wake Forest University offers one such small step for change.

Pedometers & Pedagogy

Catherine Ross is Wake Forest's TLC director. She devised Pedometers & Pedagogy (P&P), a simple and healthful way for interested participants from all walks of campus life to literally walk the talk by discussing effective teaching practices as they beat feet across campus.

Catherine noted, "I have presented on [Pedometers & Pedagogy] nationally and actually had people in my conference session walk through the conference site so I could model for them how it works—people loved it and said it was so fun and unexpected to actually do it."

In a recent interview with ASPB, Catherine explained the history and application of this clever version of a faculty learning network.

How long have you been developing this model?

I started doing it in spring 2011.

Does it work as intended? Are there any unintended consequences that are particularly positive or negative?

It does work as intended when people show up—but it has not been easy to find times that allow people to show up! This past semester [fall 2013], I moved it from afternoons to mornings and had no one show up all semester, so I will go back to afternoons in the spring.

How do the numbers look? How many participants? How many return regularly? At any point did the number of participants become unwieldy or force you to form separate groups?

The numbers have varied quite a bit depending on the day of the week and time of day, but I have never had more than eight show up. I have a technique I use to keep it from becoming unwieldy: Everyone walks in pairs and, depending on the total number of participants, we switch partners every few minutes so that each person gets advice and ideas from everyone in the group.

Can you share examples of the selected topics used to get discussions going? How often were those topics needed? Or did walkers usually come ready to talk?

I always have these topics ready to go: (1) getting students to participate and/or do the readings, (2) using groups in class, and (3) grading. But people always show up wanting to talk, so I rarely need to prime the pump. I also run a midcareer faculty retreat where folks all read the same book before attending the retreat and we do walking book discussions as well.

Did the quality of the discussions meet expectations? Did they tend to become "complaint/worry sessions" or were they more of a proactive, solutions-oriented focus? If negativity was a problem of any significance, what tips would you share to help with this?

Sometimes people show up because they need to vent, and that's OK with me. We usually end up with solutions once the venting is done, and it sometimes prompts others to share their stories. I've not had any repeat complainers, but if I did, I would probably speak to them privately.

More generally speaking, what tips would you share so that your model could be used elsewhere?

- **How did you advertise? Did word of mouth play a part? Did administration help in any way?**

  We advertise with all our other programs at the beginning of the semester and send out weekly reminders in *Next Week at Wake*.

- **Did you fund this just with staff already in your center?**

  There was no funding needed. I am a walker, so I just invited people to join me. We did give out pedometers once, as a kick-off to the semester. However, it didn't seem to increase the number of people who showed up, nor did it ensure that those who received pedometers continued to come, so I wouldn't do that again.

- **Did you ever focus on particular subject-area teaching needs?**

  No, but you could if that's what people wanted. I do have a faculty member who has incorporated the idea into her contemplative pedagogies techniques and uses it in her class where she has her students walk and discuss.

Since faculty all love data, by any chance did you have any research studies to share with participants about the efficacy of the P&P model on their own learning or professional development?

continued on page 26

Thank You!

DART Container Corporation

ASPB brings hands-on plant biology activities to K-16 science educators and citizen scientists of all ages every year. A real crowd-pleaser is planting mini-gardens in small plastic portion cups. Adding a lid makes transporting these precious plants a breeze

Thanks to DART's generous donation of cups and lids, ASPB's education outreach booths can continue to help plant biology bloom and grow everywhere!

This is DART's second donation to ASPB .

Dart Container Corporation

WALK THE TALK
continued from page 25

I have not done research on this particular idea in terms of its efficacy as a faculty development technique. Instead, I have been focusing my research on the retreat and on a faculty–student book group that I cofacilitate with Student Affairs. I have cited the research that's out there on the benefits of walking and the benefits of getting outside, and my own observations of the power of peer mentoring. This was really intended to be a low commitment way of getting faculty to pay more attention to balance in their lives and to give them a bonus of exercise while working on their teaching since everyone is so frantically busy and stressed out.

Per ASPB's request, Catherine followed up the interview with some related information:

The readings for the mid-career retreat have evolved over the three years I've run it. Last year, I decided to have all the participants read the same book and then used that book as the underpinning for our group work and workshops. The book was *How Learning Works: Seven Research-Based Principles for Smart Teaching* by Susan A. Ambrose, Michael W. Bridges, Michele DiPietro, and Marsha C. Lovett.

In the first two years of the retreat, we gave participants a choice of what books they would read, so in addition to *How Learning Works*, there were *The Heart of Higher Education* by Arthur Zajonc and Parker Palmer, *Inspired College Teaching: A Career-Long Resource for Professional Growth* by Maryellen Weimer, *and Teaching for Critical Thinking* by Stephen Brookfield. Of these, my favorite is *How Learning Works*, but Maryellen Weimer has a new book out that I used this past fall for a faculty book discussion group (not part of the retreat) called *Learner-Centered Teaching: Five Key Changes to Practice* that I think is also very good.

Walk On!

For more information about Pedometers & Pedagogy or Wake Forest's TLC faculty networking options (including learning center retreats), please contact Catherine at rossce@wfu.edu or see https://tlc.wfu.edu/.

To share your innovative professional development, scientific teaching, or faculty networking techniques with ASPB, please contact Katie Engen at katie@aspb.org. ■

WICKED GOOD (INSIGHTS)
continued from page 24

seeds germinating on filter paper. The teachers enjoyed checking the levels of starch in these seeds as well as in the cereal, bread/cracker, and popcorn samples using starch indicators. Handouts for setup and the 45-minute classroom activity were popular. Of course, I had some Lego® bricks on hand to build models, and so a bit of plant biochemistry and photosynthesis was introduced. (See more on photosynthesis modeling with Lego bricks on page 15 of the March/April 2013 issue of the *ASPB News,* http://newsletter.aspb.org/pastissues.cfm.)

Katie [Greenham] was a new ASPB booth volunteer. She reports that NSTA inspired her to become more involved with ASPB and Boston-area outreach. She also said, "It was very encouraging to see so many teachers coming out to learn as much as they could about the upcoming technologies and tools available to them. They were all thrilled with the FPsc plants and encouraged us to 'keep it coming.'" ■

New ASPB Partnership

BY KATIE ENGEN
ASPB Education Coordinator

The Life Science Teaching Resource Community (LifeSciTRC; http://www.lifescitrc.org) is a collaborative digital library of peer-reviewed life science teaching resources that is free and open to educators worldwide.

LifeSciTRC welcomes all life sciences and invites K-to-gray participation. It is a response to the idea that wider dissemination of effective, motivating resources and cross-curricular integration can occur if multiple life science entities create a unified consortium. Not only is this good for scientific teaching and learning but also funding agencies appreciate when societies share resources and collaborate efficaciously.

As of January 2014, the LifeSciTRC contained more than 6,700 peer-reviewed teaching resources and 600 registered users. All resources in the LifeSciTRC are under a Creative Commons License (Attribution NonCommercial-NoDerivs). These resources include audiovisual materials, lesson plans, teaching journal articles, and scientific content materials.

Those who register as LifeSciTRC users also can use tools that recommend items based on classes or course(s) and level(s) taught, save search parameters and search results, customize folders to save results, share resources with colleagues, and allow users to submit materials to LifeSciTRC or serve as a LifeSciTRC reviewer. Registration information is never bought or sold.

Upon learning that ASPB was ready to become a new partner, Marsha Matyas, the American Physiological Society's (APS's) director of education programs, immediately got our Society plugged in with Miranda Byse, LifeSciTRC program manager. Marsha enthused, "Wonderful! We are so happy to have you join us and look forward to working with you!"

Since 1998, APS has been a generous and proactive organizer for this resource. On March 30, 2014, the original archive was rebranded to reflect the cross-curricular life sciences collaboration it has become. APS will continue to serve as the organizing partner (see sidebar, LifeSciTRC Partners).

Online tools allow partners to manage their submissions and reviews. Staff or committee members of the partnering societies will submit or approve submitted resources that have been vetted by their individual protocols. For example, ASPB will vet and post a link to our journals and Teaching Tools in Plant Biology. We also will post links to our classroom materials such as *Plants in Your Pants: Cotton* or the protocol for one of our hands-on, inquiry-oriented outreach booth activities. At least 90% of what any partner offers must be free to users.

To explore or join the LifeSciTRC, please visit http://www.lifescitrc.org. If you register, you also can submit materials. If you do so, please select ASPB as your partner affiliation. Alternatively, you can request that ASPB submit materials you suggest by contacting Katie Engen at katie@aspb.org. ■

LifeSciTRC Partners

American Association of Anatomists

American Physiological Society

American Society of Plant Biologists

Genetics Society of America

Human Anatomy and Physiology Society

Massachusetts Society for Medical Research

National Association for Health and Science Education Partnerships

Physiological Society Northwest Association for Biomedical Research

Society for Developmental Biology

What About CourseSource?

ASPB will continue to actively participate with another digital teaching materials resource, CourseSource (http://coursesourcejournal.wordpress.com; soon to transition from blog to site). This new journal seeks peer-reviewed biology education materials using evidence-based pedagogy. CourseSource follows the traditional submissions and peer-review protocols with direction from an editor-in-chief and staff support, and as such it does not offer the same "open community" flavor as does the LifeSciTRC. Also, only higher-education biology materials will be offered on CourseSource because it is a direct response to Vision and Change (http://www.visionandchange.org). ASPB continues to promote CourseSource in hopes that ASPB members will submit pedagogically excellent plant science teaching resources for AP and higher-education faculty to use.

PULSE: The Beat Goes On

Partnership for Undergraduate Life Science Education

BY KATIE ENGEN
ASPB Education Forum

PULSE Networking

On March 11, 2014, ASPB participated in the Partnership for Undergraduate Life Science Education (PULSE) Leadership Fellows meeting at Howard Hughes Medical Institute (HHMI) in Chevy Chase, Maryland. This particular day (of a four-day event) was dedicated to coordinating PULSE and life science society initiatives. After an informative session on PULSE community progress, small groups of PULSE fellows and the 21 invited education personnel from life science societies and agencies held detailed discussions about shared goals and potentially overlapping resources.

Meeting coordinator and PULSE Leadership Fellow Bill Davis (Washington State University) reported that as a result of this day, "We have identified several new ways that we intend to connect with our professional societies. . . . The fellows feel that the effort to maintain connections to societies like ASPB is so critical to our mission that [a first goal is] to establish a new working circle [for societies] in our governance structure related solely to the PULSE Liaison program."

PULSE PROGRESS

PULSE Toolkit

The PULSE site (http://www.pulsecommunity.org) offers resources that align with Vision and Change (V&C) goals. The toolkit provides guidance and materials for introducing and establishing active learning, assessment, flipped classrooms, effective online lectures, partner organizations, scientific teaching, and strategic plans to administrators and departmental colleagues on their campus.

Ambassador Training Program (ATP)

PULSE secured NSF funding to train life science faculty to serve as V&C ambassadors who will visit higher education life science departments around the country and facilitate dialogue about local planning and implementation of the recommendations in the V&C report. The current grant support will see the program through the piloting, evaluation, and development of ATP; its implementation

This graphic recording reflects the meeting's theme: events and activities on the surface occur only when deep beliefs shift to provide movement and support.

within the fellows group; and visits to 10 campuses. PULSE will offer more funds to expand campus visits beyond the pilot phase and to recruit and train more interested faculty from across the country.

POWER Site

The PULSE Online Workshops and Electronic Resources (POWER) site now offers efficient and informative online workshops (http://tinyurl.com/o9suc7k) that align with scientific teaching and V&C goals. Workshop titles include An Introduction to the Vision and Change; Student-Centered Learning, Course Design; Active Learning; Obtaining Evaluative Data (Scholarly Teaching); and Departmental Transformation.

V&C Certification

The goal of PULSE certification is to recognize V&C campus change achievements at different levels (e.g., bronze, silver, gold, and platinum). The V&C Certification Pilot Team received NSF funding to pilot certification at eight institutions in 2014. More than 70 schools applied for the certification pilot, suggesting broad national interest in making changes to undergraduate biology education. Pilot certification will include a site visit to each institution by a team of two PULSE fellows. Program details and the certification rubrics are available at http://tinyurl.com/p3fu9pn.

PULSE Maps

The PULSE Community Overview Map shows those institutions with active PULSE membership (http://tinyurl.com/o2j6k7k). Color-coded dots specify community colleges, liberal arts campuses, regional comprehensives, research institutions, and other organizations.

Life Science Groups Participating in PULSE

American Institute of Biological Sciences
American Society for Microbiology
Society of Developmental Biology
American Society for Cell Biology
National Science Foundation
American Society of Plant Biologists
Human Anatomy and Physiology Society
NIH/NIGMS
American Association for the Advancement of Science
National Association of Biology Teachers
SENCER
Sociocracy Consulting Group
American Physiological Society
Ecological Society of America
National Association of Biology Teachers
Genetics Society of America
American Society for Biochemistry and Molecular Biology
Howard Hughes Medical Insitute

The PULSE Local Impacts Map plots PULSE leadership fellows' efforts over time, including information about the presentations and workshops held by the fellows at regional and national meetings (http://tinyurl.com/q2oy7gm).

Make your own mark! Join a PULSE initiative and add your campus to one of these maps. More simply, post your customizable PULSE member badge on your social media page today (http://tinyurl.com/q8shxvk).

For more information, visit http://www.pulsecommunity.org or check the PULSE Points link updated regularly at the bottom of ASPB's home page. ■

About PULSE and ASPB

PULSE was established in 2012 by NSF, NIH/ National Institute of General Medical Sciences (NIGMS), and Howard Hughes Medical Institute (HHMI). PULSE aims to stimulate systemic changes to improve undergraduate biology education experiences at all types of postsecondary educational institutions. PULSE springs from the Vision and Change (V&C) movement (http://www.visionandchange.org) that ASPB has actively supported since 2007. There are 35 PULSE fellows; two are active ASPB members. Several PULSE advisers (with whom the fellows consult) also are ASPB members.

My Life as a Plant

coloring & activity book

Now in Chinese and Farsi!

Get your copy now!

Free PDFs at
http://my.aspb.org/?page=My_Life_As_A_Plant

Hardcopies from Amazon:
Farsi: http://tinyurl.com/MLaaP-Farsi
Chinese: http://tinyurl.com/MLaaP-Chinese

Many thanks to the Chinese Society of Plant Biology (CSPB) and the team of volunteer translators:

Zhihong Xu and Hongya Gu (Peking University), Zuhua He (CSPB Secretary General), and Bing Leng and Li Zhou (CSPB Secretaries)

Thank you, volunteer translators!

Sara Zahraeifard and Sareh Poormahdi (Louisiana State University), and Bahman Kholdebarin (Shiraz University) Thanks also to Timothy Lin (North Park University) who proofread the translation.

SURF's Up for 2014!

BY KATIE ENGEN
ASPB Education Coordinator

Recipients of the ASPB Summer Undergraduate Research Fellowship (SURF; http://surf.aspb.org) receive support to conduct 10 consecutive weeks of plant biology research under the direction of a mentor who is an ASPB member.

Program participation is worldwide and represents diverse interests. The SURF committee separately reviews proposals from doctoral-granting (group A) and primarily undergraduate (group B) institutions and makes awards proportionally on the basis of the number of applications received from each group. This year's 16 awards went to 12 group A and four group B applicants. The 2014 SURFers will present their research at the undergraduate and general poster sessions during Plant Biology 2015 in Minneapolis, Minnesota.

Revelations from SURF Reviewers

"The quality of proposals at the top of the applications has increased over the years. A student whose application was awarded an honorable mention can feel good about it, as they would (in my mind) be good enough to win an award if we had more funds to distribute. It is also great to see so much high-quality science being done by undergraduate students all over the United States and beyond."

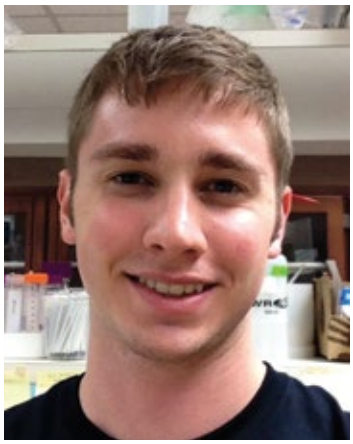
"The applications that comprised both panels were of excellent quality, and it is great to see such a high level of mentoring being done around the world by dedicated—and often overworked—individuals who understand that the future of our profession is in the hands and minds of our undergraduates."

"It was great to see the ideas of the next generation of plant biologists. These students are making excellent contributions to the plant biology community, and I wish we had the budget to support more projects."

Congratulations to the following 2014 SURF recipients and honorable mentions!

Group A

Research and Doctoral Universities



Vincent Provasek

Vincent E. Provasek, Texas A&M University
Mentor: Ping He
Project: *Genetic dissection of Arabidopsis genes governing immune gene expression*

It is truly an honor to have received this fellowship from such a premier organization as ASPB. I have no doubt that upon its conclusion, I will have gained a most unique experience that will help me become a more competitive applicant to graduate schools and, eventually, employers.

Kathleen DiNapoli

Kathleen T. DiNapoli, Wake Forest University
Mentor: Gloria K. Muday
Project: *Introgression lines provide insight into genetic controls of root development in tomato*

This SURF fellowship will allow me to begin my research career and experience an extended and concentrated study in an area of plant physiology that interests me. As I plan to attend graduate school in plant biology, I am also excited to attend the ASPB annual meeting and learn about plant biology to help me choose future research directions and graduate programs.

Yiyin Catherine Zhang

Yiyin Catherine Zhang, Duke University
Mentor: Meng Chen
Project: *Functional characterization of HEMERA in transcriptional regulation by light*

Thanks to the SURF award, I will be able to continue my research at the Chen laboratory this summer and to share my findings at an ASPB conference. This valuable opportunity will allow me to further explore my interest in plant light signaling as well as to develop the requisite skills of a plant biologist. I would also like to thank Dr. Meng Chen and Dr. Yongjian Qiu for their continual guidance and support!

Matthew Galliart

Sean Rogers

Katherine Murphy

Gregory Harrison

Matthew B. Galliart, Kansas State University
Mentor: Loretta Johnson
Project: *Experimental field selection of big bluestem ecotypes across the Great Plains: A novel test for the strength of local adaptation*

Winning the SURF grant will help further my professional goals by building an even stronger foundation in conducting scientific research and preparing me to become a professional scientist.

Sean W. Rogers, University of Missouri
Mentor: Antje Heese
Project: *Examining functional redundancy of the vesicular trafficking genes DRP2A and DRP2B in flg22-induced MAPK pathway using artificial micro RNAs*

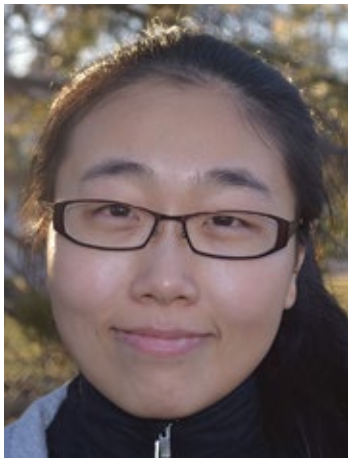
Receiving the ASPB SURF has provided me with the exciting opportunity to continue my research on the role of vesicular trafficking proteins in plant innate immunity in Antje Heese's lab at the University of Missouri. I am also thrilled to attend the 2015 ASPB national meeting in Minneapolis, where I will present my research for the first time and hope to build networks crucial to my advancement as a potential PhD student and future plant science researcher.

Katherine M. Murphy, Stanford University
Mentor: Virginia Walbot
Project: *Reactive oxygen species in maize anther development*

I am honored to be chosen for a SURF grant. Winning this grant will give me the opportunity to perform and share my research project while also connecting me to the plant community to help me pursue my professional aspirations of applying and attending graduate school to study plant biochemistry.

Gregory A. Harrison, Washington University in St. Louis
Mentor: Barbara N. Kunkel
Project: *Jasmonate Hypersensitive 2: A novel component of the JA signaling pathway in Arabidopsis*

I am extremely grateful to ASPB for the opportunity to get involved in the world of plant biology research. I can't wait to scratch the surface of this exciting field this summer and to carry



Dandan [Dawn] Hajdu

Jeffrey Kovach

my experiences with me through graduate school and beyond.

Dandan [Dawn] L. Hajdu, Colorado State University
Mentor: Cristiana T. Argueso
Project: *The role of chromatin modifications in molecular priming of plants against pathogens*

This valuable opportunity will help me to experience the real life of a scientist and give me a chance to take a close look at what my future career will look like. I will be able to work full-time as a researcher, learn new things, and travel to Plant Biology 2015 to talk to other scientists about my research and their projects.

Jeffrey D. Kovach, The Ohio State University
Mentor: Rebecca Lamb
Project: *The role of the chromatin remodeling protein CHR9 in LFY-dependent transcription*

Receiving the ASPB's SURF award will allow me to continue my research during the summer, and I am grateful to my mentor, Dr. Rebecca Lamb, and ASPB for the

continued on page 32

Mark Holmes

Peter Lambert

Linh Nguyen Manh

Elena Cravens

opportunity to expand my knowledge of plant biology. The experience I gain over the summer will be useful for furthering my career in science.

Mark W. Holmes, University of Illinois
Mentor: Andrew Leakey
Project: *Quantitative genetic analysis of tiller angle as a target for improved radiation interception efficiency in C_4 crops*

Winning the SURF grant will allow me to get a head start on an exciting career in crop genetic research. My hope is that this summer will help pave the way for me to continue similar research in graduate school.

Peter M. Lambert, Rice University
Mentor: Paul A. Nakata, USDA/ARS CNRC Baylor College of Medicine
Project: *Characterization of the* Oryza sativa *acyl activating enzyme 3 (OsAAE3)*

Being awarded the SURF fellowship will allow me to commit to my research project full-time and further develop my scientific

Kirsten M. Famiglietti

Michael Armstrong

communication skills. Also, I will be able to gain a valuable research experience that will help me prepare for studies at the graduate level. I am looking forward to this summer!

Linh Nguyen Manh, University of Alberta
Mentor: Enrico Scarpella
Project: *The role of Plasmodesmata in auxin-transport-dependent vein formation*

Thanks to the process of application for the ASPB SURF, I had a chance to seriously consider and formulate all my short-term, intermediate, and long-term goals in my professional career as a plant geneticist.

Group B

Primarily Undergraduate Institutions

Elena N. Cravens, Wellesley College
Mentor: T. Kaye Peterman
Project: *The role of COW1 orthologs in* Physcomitrella patens *in protonemal growth*

The ASPB SURF award will enhance my career goals by giving me the opportunity to continue doing an extended research project with Dr. T. Kaye Peterman. This experience will provide me with an accurate assessment of graduate school and research as a career, thereby helping me decide my future career plans and preparing me for a career in a rigorous academic environment.

Kirsten M. Famiglietti, Southern Connecticut State University
Mentor: Rebecca A. Silady
Project: *Second site genetic screen of* Arabidopsis thaliana *grv2 mutants*

Winning the SURF grant and seeing my plans come to fruition have motivated me to work even harder and be more confident in pursuing my long-term academic goals. I cannot wait to work in the lab this summer and expand upon the skills that volunteering with Dr. Silady already has taught me!

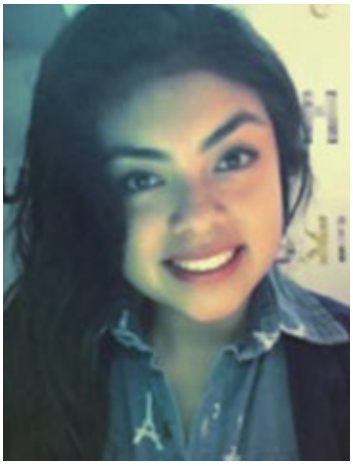
Michael S. Armstrong, San Diego State University
Mentor: Elizabeth R. Waters
Project: *An investigation of the role of ROS in heat and light stress in Boechera*

Receiving the SURF grant will allow me to carry out a research project

Drew Anderson

Keo Corak

Jacob Maman


Karen Chanchavac

Zoe Dubrow

over the summer. This project will help build my understanding and experience in the field of plant biology research. I want to thank everyone on the SURF committee for this wonderful opportunity. I look forward to meeting everyone at Plant Biology 2015.

Drew C. Anderson, University of Puget Sound
Mentor: Andreas Madlung
Project: *Comparison of proteome and transcriptome to red light stimulation in tomato*

As a student aspiring to continue with molecular biology following undergrad, I find SURF to be an exciting opportunity to dedicate a summer to research and immerse myself in cool science. Everything from writing the fellowship proposal to attending the ASPB Plant Biology 2015 conference will help me prepare for a career in plant biology and enrich my undergrad experience.

Category A
Honorable Mentions

Zoe E. Dubrow, Stanford University
Mentor: Mary Beth Mudgett
Project: *Investigation of the role of 14-3-3 proteins in tomato immune signaling*

I hope to continue my studies of plant biology in graduate school, and I am very thankful to ASPB and SURF for supporting undergraduate studies in plant biology!

Keo Corak, Macalaster College
Mentor: Susan Bush, UC Davis
Project: *Analysis of* fel1 *mutation in tomato*

Applying for the 2014 ASPB SURF grant provided me with the opportunity to practice preparing and writing a research proposal. This is a skill I will use often in the future.

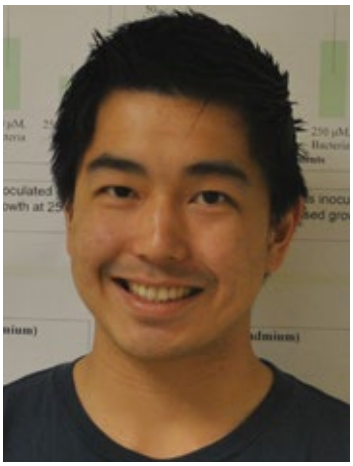
Jacob B. Maman, University of Massachusetts Amherst
Mentor: Alice Y. Cheung
Project: *Structural-functional characterization of FERONIA-pectin interaction*

One of the major benefits of the SURF program is the opportunity to attend Plant Biology 2015. Hearing about cutting-edge research and meeting the leaders in the field will provide me with the opportunity to learn much as well as expand my career options or further define my career path.

Category B
Honorable Mentions

Karen A. Chanchavac, Spring Arbor University
Mentor: Aaron J. Wyman
Project: *Genetic, cellular, and molecular analysis of putative peroxisomal cell proteins*

Applying for the SURF grant supports my educational pursuits by allowing me to become familiar with an organizational application process that included explaining


Stephen Louie

my research, asking for professional advice, and delivering my thoughts in a precise manner.

Stephen B. Louie, Loyola Marymount University
Mentor: Michelle R. Lum
Project: *Study of the biological interactions between* Lupinus chamissonis *and microbial communities exposed to heavy metal stress*

A SURF grant will allow me to invest in materials that could further enhance and expand the scope of my research. ■

Sydney Kustu

1943–2014

This article was adapted from an obituary written by Ann Brody Guy in the College of Natural Resources at the University of California, Berkeley, and is used here with permission from the author. http://plantbio.berkeley.edu/news/uc-berkeley-mourns-loss-professor-emerita-sydney-kustu

Professor Emerita Sydney Kustu, a distinguished faculty member in UC Berkeley's Department of Plant and Microbial Biology, died March 18. She was 71 years old. She was a member of the National Academy of Sciences and was instrumental in the revitalization of the field of microbiology on the Berkeley campus.

"Kustu has made major contributions to our understanding of the regulation of gene expression," a statement read during her induction into the National Academy of Sciences said. "Her work has led to the identification of the novel mechanisms responsible for the regulated expression of the enzymes and transport systems involved in nitrogen metabolism in bacteria."

Sydney Govons Kustu was born in 1943 in Baltimore. She earned a BA at Harvard University and a PhD in biochemistry from UC Davis and did postdoctoral work at UC Berkeley until 1973, when she was appointed to the UC Davis bacteriology faculty. She remained at UC Davis until 1986, when she joined what was then Berkeley's microbiology and immunology faculty, with a dual appointment in plant pathology. She retired in 2010.

Sydney Kustu

In addition to being a National Academy member, Sydney garnered a large number of other awards during her career at Berkeley. She was a fellow of the American Academy of Arts and Sciences, the American Association for the Advancement of Science, and the American Academy of Microbiology. She also held a number of national and international professorships, including a prestigious Gauss Professorship at Universität Göttingen. For more than a decade, her work was supported by NIH MERIT awards.

"Professor Kustu is an eminent scholar and one of the world's leading microbiologists," her longtime colleague Bob Buchanan, professor emeritus of plant and microbial biology, wrote in a letter describing her work. "She added a new dimension to microbiology and potentially to medicine."

Sydney is best known for her seminal contributions on the responses of intestinal bacteria to nutrient limitations, particularly nitrogen. Buchanan enumerated her extraordinary contributions in this area of basic science.

"Sydney Kustu made order out of the chaotic complexity of the genetics of the system," he wrote. "She identified the relevant genes and showed how they are regulated by nitrogen-containing compounds in the environment. She then concentrated on one of these transcriptional activators, NtrC, and proceeded to make a number of discoveries that increased our understanding of transcription in general." Sydney made other seminal contributions related to her nitrogen studies, including her discovery of the Rut pathway for pyrimidine degradation in *E. coli*.

She was a generous mentor, giving enormous amounts of her time and energy to facilitate the publication of key work of younger colleagues. She was also particularly beloved by undergraduate students who worked in the Department of Plant and Microbial Biology. Throughout her career, she was a dedicated teacher at both the undergraduate and graduate levels. Her use of the Socratic method for teaching concepts in microbiology was particularly effective and inspiring.

Sydney is survived by her son, Saul Kustu of Aptos, and her sisters, Roberta Glassman of Calabasas and Marica Govons of Belmont Shores, all in California. ■

OPTI-SCIENCES

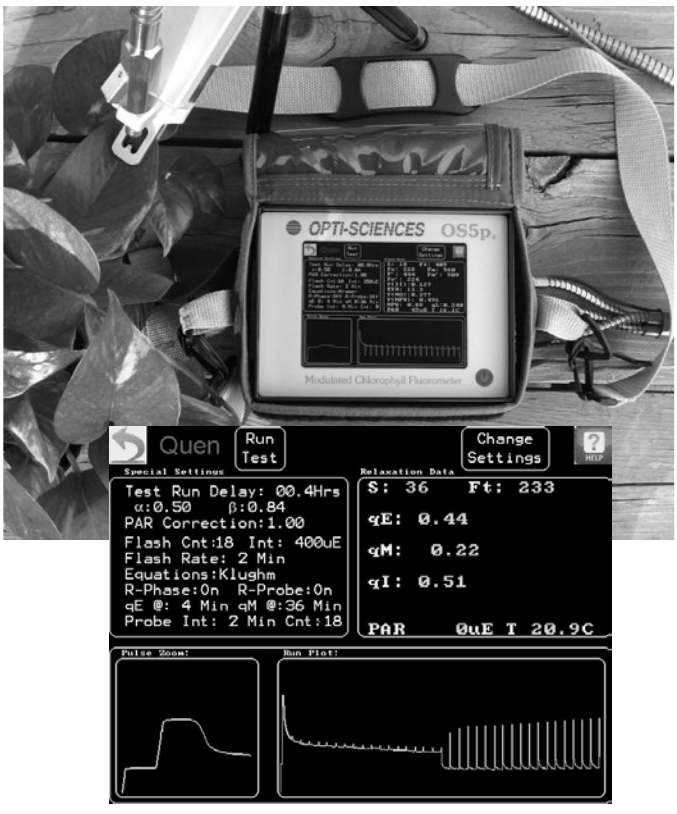
Opti-Sciences Inc. 8 Winn Avenue Hudson, NH 03051 www.optisci.com 603-883-4400

Technology leadership

Look to Opti-Sciences for the latest advances in plant measurement.

Integrated Fluorometer *iFL*

- *First to offer leaf absorptance measurement*
- *First to offer white actinic light to allow chloroplast migration*
- *First to offer **"walk away automation"***
- *First to offer - g_m & C_C readout*
- *Optimal F_M' correction option from Loriaux 2013*



OS5p+ Research Portable Chlorophyll Fluorometer

- *First to measure q_M, chloroplast migration*
- *White actinic light insures reliable chloroplast migration measurement*
- *F_M' correction option included from Loriaux 2013*
- *Stable intensity internal actinic light source for reliable quenching measurements.*

Kramer lake model	Hendrickson lake model
Puddle model	Quenching relaxation

ASPB News
American Society of Plant Biologists
15501 Monona Drive
Rockville, MD 20855-2768 USA

PERIODICALS
POSTAGE PAID
AT ROCKVILLE MD
AND ADDITIONAL
MAILING OFFICES

Plant Physiology®

Call for Papers

Focus Issue on Chromatin and Epigenetics

Deadline for Submission: February 6, 2015. To submit an article, please go to http://submit.plantphysiol.org

The "epi"-genomic information embedded in chromatin and its modifications provide an overarching layer of regulation of gene expression. Mechanistic models of how this layer is integrated with other components of the transcriptional machinery are only just beginning to take shape. Evidence of the importance of chromatin-based processes for plant development, physiology, and adaptation has grown exponentially over the past decade, catapulting chromatin research onto the front line of modern plant science. The emerging relationship between epigenetics and phenotypic variation has alerted crop breeders to its importance, while the role of chromatin in plant–environment interactions opens new avenues for biotechnology. This Focus Issue on Chromatin and Epigenetics will showcase a selection of Update reviews and primary plant research articles on topics including, but not limited to, chromatin modification and remodeling, nucleosome positioning, small RNAs, cell fate, transcriptional responsiveness, acclimation, and epigenetic inheritance. Particular emphasis will be on studies that connect mechanistic insight into chromatin-based processes, whether or not heritable, with plant development as well as cellular and whole plant physiology.

Authors interested in contributing should indicate this in the cover letter when submitting papers online at http//submit.plantphysiol.org/. Please select "Chromatin and Epigenetics (June 2015)" from the Focus Issue list in the online submission system. Articles published in *Plant Physiology* on this topic within 2 years before and after the Focus Issue publication date will be collected in an online Focus Collection on Chromatin and Epigenetics.

Please contact Anna Amtmann (Anna.Amtmann@glasgow.ac.uk), Hong Ma (hongma@fudan.edu.cn), or Doris Wagner (wagnerdo@sas.upenn.edu) for additional information.

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

For quick response, e-mail us at info@aspb.org or visit our FAQ at www.aspb.org/faq.

ASPB News (ISSN 1535-5489; Online ISSN 1544-9149) is published bimonthly by the American Society of Plant Biologists, 15501 Monona Drive, Rockville, MD 20855-2768 USA, telephone 301-251-0560, fax 301-279-2996. Members' dues include a subscription price of $2 per year to *ASPB News.* Subscription price to nonmembers is $30 per year. Periodicals postage paid at Rockville, MD, and at additional mailing offices. Postmaster: Please send address changes to *ASPB News,* 15501 Monona Drive, Rockville, MD 20855-2768 USA.