



American Society of Plant Biologists

Cultivating a better future through plant biology research.

NEWS FROM ASPB
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ASPB Names 2015 Awards Recipients

Honors to be presented at Plant Biology 2015 in Minneapolis

ROCKVILLE, MD – The American Society of Plant Biologists (ASPB) is pleased to announce the recipients of its 2015 awards, honoring excellence in research, education, outreach, and service.

ASPB Innovation Prize for Agricultural Technology

Sherri Brown, *Monsanto, Creve Coeur, Missouri*

David Fischhoff, *The Climate Corporation, St. Louis, Missouri*

Mike Koziel, *AgBiome, Durham, North Carolina*

Fred Perlak, *Monsanto, Kapolei, Hawaii*

The inaugural 2015 ASPB Innovation Prize for Agricultural Technology is awarded jointly to Sherri Brown, David Fischhoff, Mike Koziel, and Fred Perlak. Their leadership of pioneering research and development teams led to the engineering of commercially viable varieties of cotton and corn that express derivatives of insecticidal proteins from *Bacillus thuringiensis*. The insect-resistant crops that they developed, and subsequent generations of improved varieties, have had a major impact on crop yields in both developed and developing countries, and they have also had significant environmental benefits by reducing the use of chemical pesticides.

Charles Albert Shull Award

Cyril Zipfel, *The Sainsbury Laboratory, Norwich, United Kingdom*

Cyril Zipfel, who heads The Sainsbury Laboratory, is the 2015 recipient of the Charles Albert Shull Award. Cyril played a leading role in the discovery of pattern-triggered immunity in plants, including the characterization of the bacterial peptides flagellin (flg22) and EF-Tu (elf18) as pattern-associated molecular markers that activate signaling by the receptor-like kinases FLS2 and EFR, respectively, leading to plant immunity. He found that the brassinosteroid co-receptor, BAK1, also cooperates with

FLS2 and EFR, and he identified residues of BAK1 that are key to specifying co-receptor output toward brassinosteroid signaling, cell death control, or innate immunity. Cyril also made the major practical discovery that transgenic expression of Arabidopsis EFR in Solanaceous species, which normally do not recognize the bacterial ligand EF-Tu, confers immunity to a broad range of bacteria, and he has extended this approach to cereals.

Charles Reid Barnes Life Membership Award

Wendy F. Boss, *North Carolina State University, Raleigh*

This year's Charles Reid Barnes Life Membership Award for lifelong service in plant biology goes to Wendy F. Boss. Wendy is recognized for her trailblazing three decades of work in the particularly challenging fields of phosphoinositide biochemistry and inositol phosphate signaling pathways; for her outstanding roles in education, mentorship, and international outreach; and for her graceful and tireless work for ASPB, in Washington, DC, and around the wider world to promote plant science and to encourage people who are interested or involved in the discipline.

Dennis R. Hoagland Award

Maria Harrison, *Boyce Thompson Institute for Plant Science, Ithaca, New York*

Maria Harrison has pioneered studies of phosphate acquisition in arbuscular mycorrhizal (AM) symbioses using the model legume *Medicago truncatula*. In particular, her findings that phosphate transport is linked to maintenance of symbiosis and that plants use classic hormone signaling pathways for regulation of the AM symbiosis have ushered the field of fungal-plant interactions in new directions, and they provide opportunities for the future manipulation of phosphate acquisition in crop species. Maria has identified key gene products required for phosphate transport and uptake, and she has shown that redirected plant protein secretion mechanisms target transporters to symbiotic membranes. Maria has also developed cell biology resources for *in vivo* cellular imaging in *Medicago* that expand research capabilities to further unravel the nutritional function of the AM symbiosis. The Hoagland award is given in recognition of her outstanding contributions to plant mineral nutrition.

Early Career Award

Daniel Chitwood, *Donald Danforth Plant Science Center, Saint Louis, Missouri*

The Early Career Award acknowledges outstanding research by a scientist generally not more than seven years post-Ph.D. This year's Early Career Award recipient is Dr. Daniel Chitwood, who is recognized for his extraordinary contributions to the systems analysis of large, diverse and complex data sets that encompass morphological and

molecular traits. The methods that Dan has developed will be of broad applicability to questions related to plant development and beyond.

Eric E. Conn Young Investigator Award

Joe Louis, *The University of Nebraska–Lincoln*

Joe is recognized for his significant contributions to the field of plant–insect interactions, as well as for his demonstrated excellence in outreach, public service, mentoring and teaching. Joe’s research work has shown that specific elicitors delivered by insects are recognized by plants to induce innate defense mechanisms. His research publications are in high–impact journals, and these publications have excellent citation records. Joe has trained and mentored many students from high school through PhD level, and he has taken multiple leadership roles in outreach activities. He has been very active in scientific society activities, and he has organized many symposia at several national and regional meetings. For his significant contributions at different stages of his career, he has received many awards from different organizations.

Excellence in Education Award

Stanley Roux, *The University of Texas at Austin*

The 2015 Excellence in Education Award acknowledges the outstanding contributions of Dr. Stanley Roux. During a career spanning more than thirty years, Stan has made a considerable impact at his institution by expanding the curriculum while developing and adopting innovative pedagogical methods. Both in the classroom and in his laboratory, Stan has emphasized meaningful hands–on research for students. The recipient of several past teaching awards, Stan was one of the first to challenge the notion that freshmen cannot conduct “real” research. The results of his efforts have been manifest in the form of peer–reviewed publications with many student coauthors, as well as conference awards and further modeling of this paradigm. Stan has offered innovative courses in the realm of plant biology while mentoring numerous undergraduate and graduate students and participating in various science outreach organizations, thereby making lasting impacts in the field.

Fellow of ASPB

Caren Chang, *University of Maryland, College Park*

Caren is well known for her pioneering work in ethylene signaling, and she has continued to contribute significantly in this area by elucidating signaling mechanisms and physical connections among the different players in the ethylene–signaling

pathway. By helping to fill major long-standing gaps in the pathway, Caren's work has provided new advances in our understanding of ethylene perception and ethylene biology in general. In addition to her research contributions, Caren has also served ASPB and the plant biology community through her work on the editorial boards of several Society publications and as a member of the ASPB's Publications Committee.

Keiko Torii, *Howard Hughes Medical Institute and University of Washington, Seattle*
For the past 15 years, Keiko has been studying the role of receptor-like kinases in plant development and the mechanisms controlling stomata formation. Her research on stomata formation has greatly improved our understanding of how plant cells coordinate proliferation and differentiation to generate specific patterns during organ morphogenesis. In addition to her research accomplishments, she is a monitoring editor for *Plant Physiology* and editor-in-chief of *The Arabidopsis Book* (TAB). Additionally, Keiko is currently serving on the ASPB Early Career Award Committee.

Martin Gibbs Medal

Craig Pikaard, *Howard Hughes Medical Institute and Indiana University, Bloomington*

The Martin Gibbs Medal, established in 1993, honors individuals who pioneered advances that have served to establish new directions of investigation in the plant sciences. Craig is honored for his seminal work and important discoveries in the fields of nucleolar dominance, gene silencing, and the role and function of the atypical polymerases IV and V. Craig will convene the Martin Gibbs Medal Symposium at Plant Biology 2016.

Stephen Hales Prize

Bob Goldberg, *University of California, Los Angeles*

Bob Goldberg is well known for his research contributions to plant biology, particularly in the area of reproductive development. He has generated fundamental discoveries that have also resulted in applications in industry, such as the development of the Barnase-Barstar male sterility system together with PGS in Belgium. Bob later served as cofounder and director of Ceres, Inc., a plant biotechnology company. A major contribution to the community was his role as the founding editor-in-chief of *The Plant Cell*. Bob is a leader in educating the public about plant biotechnology. He championed the effort by ASPB to make the documentary film *History's Harvest*, and he often speaks in public forums to promote science-based discussions about the utility and safety of genetically-modified foods. Bob has received several prizes for his excellent teaching at UCLA.

Corresponding Membership Nominees

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 outside the United States.

Renate Scheibe, *University of Osnabrueck, Germany*

Renate Scheibe is a leading contributor to our understanding of redox regulation in plants, extending from metabolic control to transportable reductant, and to rapid environmental responses by plant cells. As Professor of Biology at the University of Osnabrueck, she has pioneered studies defining the impact of redox regulation on enzymes central to inter-organelle communication, sensing, and signaling in response to environmental cues and stress. Her ground-breaking “malate valve” hypothesis (operated by an NADP-dependent malate dehydrogenase) is now a widely accepted mechanism for controlling export of reducing equivalents from illuminated chloroplasts. Renate quickly followed this early work with her discovery of a contrasting system for malate transfer in the dark (this one NAD-dependent) that is essential for deriving ATP from plastidial glycolysis. These advances led her to focus on redox-dependent processes in the cytoplasm, specifically those that affect the cytoskeleton, the outer mitochondrial membrane, and the nucleus. She remains concurrently active in outreach, teaching, administration, and service to national and international societies, and her efforts have immensely aided the popularization of plants among students and the public. Renate has served as Dean of the Faculty of Biology and Chemistry at the University of Osnabrueck, Director of the Botanical Garden (currently active on the Board), National Delegate and Treasurer for the Federation of the European Societies of Plant Biology, and on the editorial board of *Plant Physiology*. Renate has also engaged in numerous other ASPB activities since 1979. She continues to make impressive contributions to our collective outreach efforts, as well as to our knowledge of cellular energy metabolism and the redox-poising systems in plant cell compartments in response to environmental cues and stress.

Kazuo Shinozaki, *RIKEN Center for Sustainable Resource Science, Japan*

Kazuo Shinozaki is Director of the RIKEN Center for Sustainable Resource Science in Japan. He is recognized internationally for his pioneering work on signal transduction in stress responses and plant genome science. In 1986, he elucidated the first complete nucleotide sequence of the chloroplast genome (in tobacco). Later, as a pioneer of plant functional genomics, he collected full length cDNAs, not only from *Arabidopsis*, but also from various crop, tree, and weed species. He has also provided valuable service in distributing these genomics resources from the RIKEN BioResource Center. Kazuo’s main interest has been in response of higher plants to abiotic stress,

including gene expression, cellular signal transduction pathways, and in the molecular process of tolerance using transgenic plants. He and his wife, Kazuko Yamaguchi-Shinozaki, have analyzed gene expression networks that regulate stress responses and have identified many important genes associated with tolerance to various stresses. He has demonstrated the presence of both ABA-independent and ABA-dependent regulatory systems governing drought-inducible gene expression. He also discovered the *cis*-acting and *trans*-acting regulatory elements DRE and DREB, which function in ABA-independent gene expression. Importantly, Kazuo applied these discoveries to the molecular breeding of drought-tolerant plants. Two papers on this subject (DREB transcriptional factors and the *cis* element) are listed among the ten most highly cited papers in *The Plant Cell*. Kazuo and his colleagues have published 437 papers; he is among the most-cited plant scientists. He has been an ASPB member since 1990 and has been invited many times to the ASPB annual meetings. Kazuo has also been President of the Japanese Society of Plant Physiologists (JSPP) (2010–2011), and in this capacity he has contributed to the Global Plant Council.

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ASPB is a professional scientific society, headquartered in Rockville, Maryland, devoted to the advancement of the plant sciences worldwide. With a membership of some 4,500 plant scientists from throughout the United States and around the world, the Society publishes two of the most widely cited plant science journals: *The Plant Cell* and *Plant Physiology*. For more information about ASPB, please visit <http://www.aspb.org/>. Also follow ASPB on Facebook at [facebook.com/myASPB](https://www.facebook.com/myASPB) and on Twitter [@ASPB](https://twitter.com/ASPB).