

The SS-ASPB



February 2021

TO ENCOURAGE AND PROMOTE THE GROWTH OF AND THE WELFARE AND GOOD FELLOWSHIPS OF PLANT BIOLOGISTS GENERALLY...

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Greetings from Dr. Jay Shockley 2020-2021 SS-ASPB Chair

Greetings everyone! After what was probably the most bizarre and unsettling year in any of our lifetimes, SS-ASPB wishes you all a very happy new year and invites you to virtually attend our 2021 SS-ASPB Annual meeting from April 16th -18th, 2021. The meeting this year primarily will be hosted by Drs. Mustafa Morsy and Mautusi Mitra, via Zoom, with the generous support of bandwidth and online resources by the University of West Alabama.

The 2021 Kriton Hatzios Symposium theme will be “Evolution of Signaling Mechanisms in Plants” with an outstanding lineup of internationally renowned speakers. Please see the newsletter for brief biographies of our invited speakers: Alan Jones (University of North Carolina at Chapel Hill), Jennifer Nemhauser (University of Washington), Pradeep Kachroo (University of Kentucky) and Simon Gilroy (University of Wisconsin, Madison).

Our focus at SS-ASPB has always been to foster teamwork and collaboration, and to draw as many students and other early career scientists into the process as we possibly can. By creating an open and accepting environment for communication and networking, young scientists who've had limited opportunities to practice their presentation skills can gain valuable experience in this critical aspect of their career development.

Continued on page 2.

Greetings from the Chair, continued from page 1.

The virtual nature of this years' meeting will allow for free attendance, so we hope to reach many potential attendees that might be unable to attend other more expensive conferences. However, there are limitations to the capacity of the Zoom portal (maximum capacity of 300 attendees) we will be using, and registrations will be accepted on a first-come first-served basis, so register soon! See our website for the registration details (<https://southern.asp.org/>). As in the past, there will be both oral and poster competitions for students, with generous prizes for the top contestants. All students, talk with your advisors, and please consider entering!

The Southern section has held over 80 sectional meetings! The key to this long-term success is the dedication of our members and leadership. Congratulations to our newly elected officers for 2021-2022: incoming Chair, Dr. Mustafa Morsy (University of West Alabama), incoming Vice-Chair, Dr. Mautusi Mitra (University of West Georgia), and incoming Secretary, Dr. Colleen Doherty (North Carolina State University). Based on a recently approved change to the SS-ASPB bylaws, I will serve in the newly formed role of Treasurer, which previously had been included with the role of Secretary. Thank you all for your current and future support in this shared endeavor. Good luck, and hope to see you all online in April!

Changes to the SS-ASPB Leadership Roles

By Dr. Jay Shockey

This year, SS-ASPB leadership discussed the idea of separating the roles of Secretary and Treasurer. This action was approved by the voting membership in 2020. Historically, both roles were performed by the same person. But as the Southern Section has grown, the meeting organization responsibilities and associated financial obligations have grown to the point of becoming an undue burden for one person to carry alone. These duties can be especially daunting in light of the fact that the Secretary/Treasurer is always the newest elected addition to the Section leadership group and may therefore be unfamiliar with the tasks and responsibilities that accompany leading a large, diverse membership. Thus, the drive to separate the two roles, with the newly elected Secretary still leading the effort to organize the annual meeting, with the financial responsibilities falling to the Treasurer position. This position of Treasurer will be filled in three year terms by a longer-tenured member of the leadership, who will have more experience with the obligations and monetary policies of the Section.

SS-ASPB 2020-2021 Election Results

2021-2024 Treasurer



Dr. Jay Shockey is a Research Plant Geneticist in the Commodity Utilization Research Unit at the United States Department of Agriculture, Agricultural Research Service, Southern Regional Research Center in New Orleans, Louisiana, USA. He received a B.S. in Biochemistry in 1992, and a Ph.D. in Molecular Biology in 1996 from New Mexico State University, in Las Cruces, NM, USA. He served as a post-doctoral fellow in the labs of Dr. John Browse at Washington State University and Dr. John Dyer at USDA-ARS, SRRC, prior to his appointment to his current position in 2005. Dr.

Shockey's expertise lies in the fields of lipid biochemistry, molecular biology, and genetics. Most of his professional career has focused on cloning, identification, and characterization of genes and enzymes that control the metabolism of phospholipids, triacylglycerols, and other lipids in plants. Currently, Dr. Shockey is involved in projects pertaining to improvement of transgenic crops producing industrially useful unusual fatty acids, and the improvement of the food chemistry qualities of cottonseed oil. He previously served on SS-ASPB boards and committees from 2011-2016.

2021-2022 Secretary



Dr. Colleen J. Doherty is currently an associate professor in the Department of Molecular and Structural Biochemistry at North Carolina State University. She received her Ph.D. degree in Biochemistry and Molecular Biology from Michigan State University. Her graduate research focused on understanding the signaling pathways that control plant acclimation to low and freezing temperatures. During her graduate work she realized how essential timing is in plant responses to temperature stress. That is, the exact same stress given to the same plant at two times of day can produce very different results.

Therefore, Dr. Doherty's post-doctoral research focused on the circadian regulation of transcriptional responses in plants in Steve Kay's lab at the University of California, San Diego. Current research in the Doherty lab integrates these two pathways, focusing on developing crops that are resilient to highly variable temperature conditions. Her lab works toward this goal by 1) using time as a tool to understand environmental response networks 2) investigating how plants anticipate recurring temperature changes and 3) exploring how time and temperature signals are integrated to regulate growth in plants. She strives to examine plants in field settings whenever possible. Dr. Doherty believes that we have limited time to prepare for the impacts of a changing climate on agriculture. Therefore, she is committed to outreach and training to encourage interest in plant science and recruit the best and brightest from diverse backgrounds to solve the critical issues we will face.

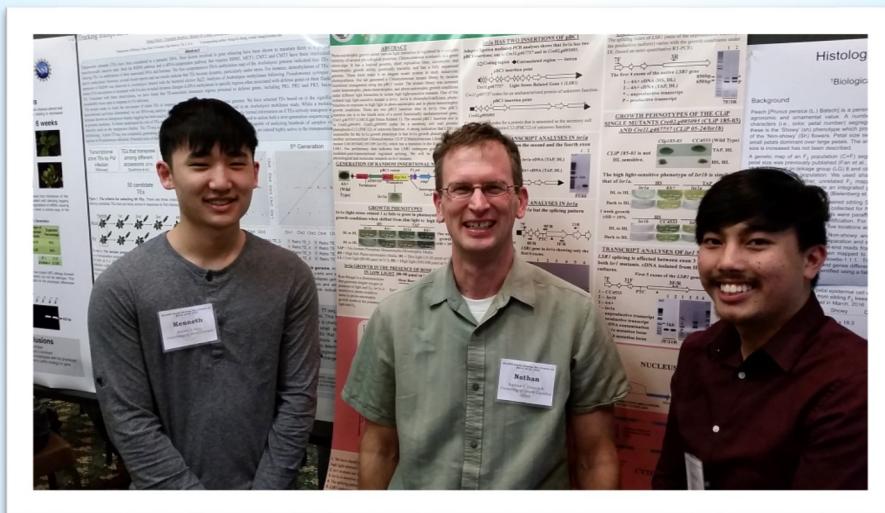
SS-ASPB 2021 Virtual Meeting

*Greetings Plant Biologists:
Mark your calendar and plan to join us for the
2021 Meeting of Southern
Section
of the American Society of
Plant
Biologists
April 16 - 18, 2021
Zoom Meeting*



Details for this year's virtual meeting can be found on our website at
<https://southern.aspб.org/>.

Please consider supporting students' attendance by donating to the section [here](#). All donation levels are accepted and appreciated.



2021 Kriton Hatzios Symposium



The Evolution of G Signaling

Dr. Alan Jones

Kenan Distinguished Professor, Department of Biology

University of North Carolina at Chapel Hill

Alan Jones' expertise is signal transduction with emphasis on plant cells. He introduced the genetic model *Arabidopsis* to the G protein field in 2001 with two high impact papers showing the role of G signaling within a biological context (*Science* **292**:2066 and *Science* **292**:2070). Remarkably, even after 30 years of G protein research and 10 Nobel Laureates in this field by the time those two papers were published, nearly all G protein research had been done with simple cells (*ex vivo*) or with yeast; there was no multicellular context to place the function of G proteins. The knock-out mouse was not yet routine by 2001 therefore Jones' rationalization was to use *Arabidopsis*, particularly since the G protein repertoire was vastly simpler than in the mouse. Two major discoveries came soon after.

JonesLab discovered that plants had a self-activating G protein (*PNAS* **104**:17317) and a receptor RGS (*Science* **301**: 1728). JonesLab later showed that signaling through this system architecture was not threshold based, rather dependent on both dose and duration of the signal (*Cell* **156**: 1084).



Discovering and engineering design rules that govern plant form

Dr. Jennifer Nemhauser

Professor, 2016 HHMI Faculty Scholar, Department of Biology

University of Washington

Jennifer Nemhauser is interested in plant growth networks, and in particular in the small-molecule triggered signaling pathways that integrate information from the environment, developmental programs and metabolism. Jennifer started her research career as a technician in Eric Lander's lab (then at the Whitehead Institute)—an experience that imprinted her with a love for science that draws together new technology, quantitative approaches, and questions about how

genotype is translated into phenotype. As a graduate student at the University of California with Pat Zambryski, Jennifer got hooked on the big question of how cells figure out where they are during development. She discovered that the plant hormone auxin played a pivotal role in relaying this type of information in a highly context-dependent manner. Her postdoctoral work with Joanne Chory at the Salk Institute allowed Jennifer to use first-generation genomic tools to begin to build an organismal, integrated view of plant hormone signaling, environmental responses and development. This adventure continued when she began her own lab in 2006, and took a surprising turn when her group, in collaboration with UW Electrical and Computer Engineering Professor Eric Klavins, recreated auxin signaling in yeast. A major focus of Jennifer's lab today is to use plant parts to program core signaling functions in yeast, and then to use this information to rationally engineer crops. In the process, she hopes to learn a great deal about the principles shaping cell signaling networks and how evolution has re-wired these programs. Alongside her research questions, Jennifer is investigating how social and institutional systems shape the way scientists frame, analyze and disseminate their findings.

2021 Kriton Hatzios Symposium, continued



Chemical signaling in plant defense

Dr. Pradeep Kachroo

*Professor, 2014 Noel Keen Awardee, Department of Plant Pathology
University of Kentucky*

Prof. Pradeep Kachroo received a Ph.D. in Microbiology from the University of Baroda, India. A portion of his dissertation research was conducted at the University of Wisconsin, Madison, through a graduate fellowship from the Rockefeller Foundation. He then moved to be a post-doctoral scholar at the Swiss Federal Institute of Technology (ETH) in Zurich, the Waksman Institute of Microbiology at Rutgers University, and the Boyce Thompson Institute at Cornell University. He joined the faculty of the University of Kentucky in the Department of Plant Pathology in 2002, where since 2013, he is a full professor. His work has significantly contributed to our understanding of signaling pathways regulating host-pathogen interaction. His group uses *Arabidopsis* as a host model and to study molecular, genetic and biochemical mechanisms governing response to infection by various different microorganisms. His work made multiple advances that are foundational to our understanding of plant disease resistance. He is a recipient of the Noel T. Keen Award for Research Excellence in Molecular Plant Pathology.



Do plants feel pain?

Dr. Simon Gilroy

*Distinguished Professor, 2018 Emil H Steiger Awardee, Department of Botany
University of Wisconsin–Madison*

Simon Gilroy received a Ph.D. in Plant Biochemistry from the University of Edinburgh, U.K. followed by postdoctoral research at the University of California-Berkeley. In 1993 he became an Assistant professor in the Biology Department at PennState and in 2007 moved to the University of Wisconsin-Madison, where he is currently a professor in the Department of Botany.

Prof. Gilroy's research program is focused on defining the cellular and molecular machinery that plants use to sense the world around them and then how these signaling networks trigger adaptive responses. His team has studied plant sensory systems related to stimuli as varied as touch and the direction of gravity, to pathogen attack and wounding. The work on wounding in particular has led to a new understanding of how internal cellular signals related to changes in calcium propagate throughout the plant to preemptively trigger defenses. He is also leading a team of researchers evaluating how plants respond to the uniquely stressful environment of spaceflight. His group has sent several experiments to the International Space Station to assess how plants can be adapted to factors such as the lack of gravity and increased radiation in space. These findings are helping space agencies such as NASA define how plants react to spaceflight and so how they might be incorporated into life support systems for long-duration space missions.

ASPB Council Report

By Dr. Nihal Dharmasiri

The ASPB council meeting was held on January 21, 2021. The major discussion focused around the anticipated modification to the ASPB constitution, to change the nomination procedure for elected positions in the society. This has been a discussion for quite some time now, so many members should be knowledgeable about the anticipated changes. Consistent with the past procedure, two nominees will be provided for each office on the ballot—one nomination from the membership at large and the other nomination from the Nomination Committee. The call for nominations for the office of President will be sent to members no later than January 31 (instead of October 1, as in the past) and for Secretary-Elect and the members of the Board of Directors on alternate years. Considerable modification has been suggested for the composition of the nominations committee. Currently, the nominations committee consists of the President-Elect, President, and the Past-President. The suggested composition of the new Nomination Committee is President-Elect, President, and representatives from the Council, the Equity, Diversity and Inclusion Committee, and the Early Career Committee. The intent is to provide a wider opportunity for other committees to contribute in selecting nominees for ASPB offices. Council unanimously agreed to include the above proposal on the ballot to be approved by ASPB members. The arrangements for the Plant Biology 2021 meeting were also discussed. Preparations are underway for the annual ASPB meeting to be held in July. Members will be informed about the final arrangements of Plant Biology 2021 soon.

We're on the web!

<https://southern.aspб.org/>

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