

The SS-ASPB



February 2020

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

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Greetings from Dr. Aruna Kilaru 2019-2020 SS-ASPB Chair

Greetings! Wish you all a very happy new year. I am excited to welcome you into the new decade and to our 2020 SS-ASPB annual meeting from March 14th – 16th, 2019. The upcoming event, to be held in “The Magic City”, Birmingham, AL, is being hosted by Dr. Mustafa Morsy, Secretary-Treasurer and local organizer, Dr. Shahid Mukhtar. The 2020 Kriton Hatzios

Symposium theme will be “Evolution of Signaling Mechanisms in Plants” with an outstanding lineup of internationally renowned speakers. Brief biography of the speakers Dr. Alan Jones (University of North Carolina), Dr. Jennifer Nemhauser (University of Washington), Dr. Pradeep Kachroo (University of Kentucky) and Dr. Simon Gilroy (University of Wisconsin Madison) is presented in the newsletter.

The primary goal of annual SS-ASPB meetings is to encourage and engage upcoming plant biologists in a scientific discourse, and also to promote interactions with peers and scientists from various backgrounds (academia, industry and government). As such this year, we are hosting “a CPR workshop” on Careers, Publications and Research Funds on the afternoon of March 14th. A panel of experts from various areas will be represented to address any questions and concerns the participants might have. And, thanks to our generous...

Continued on page 2.

Greetings from the Chair, continued from page 1.

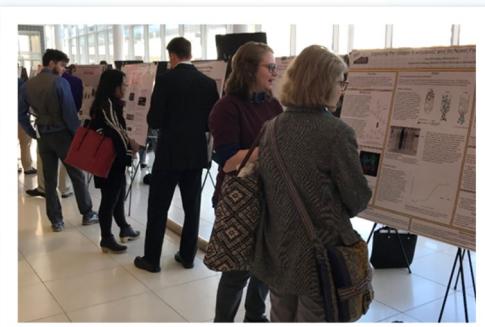
...donors for their continued support; this year we are also able to provide a limited number of travel awards for undergraduate and graduate students. As in the past, reduced conference costs are available for students and both oral and poster presentations will be competitive. Registration is open and details for the meeting are available on our new webpage (<https://southern.asp.org/>), which is hosted on the ASPB site for your convenience. So, mark your calendar for March 14th – 16th and make use of this wonderful and exciting opportunity!

This is our 82nd SS-ASPB annual conference! Such long-term success in maintaining the society and host the annual meeting is only possible because of its dedicated members and leadership. Congratulations to our newly elected officers for 2020-2021; Dr. Jay Shockey (USDA, New Orleans) will serve as the Chair and Dr. Mautusi Mitra (University of West Georgia) as the Secretary/Treasurer. Dr. Mustafa Morsy (University of West Alabama (UWA)) will be moved to the position of vice-chair. We would like to thank Dr. Magaly Rincón-Zachary (Midwestern State University) for her service and Dr. Hong-Gu Kang (Texas State University) for his willingness to run for the office.

We look forward to seeing you all in Birmingham, AL.

**Please consider supporting students' attendance
by donating to the section [here](#).**

All donation levels are accepted and appreciated.



SS-ASPB Election Results



Chair, 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 Browne 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.



Secretary-Treasurer, Dr. Mautusi Mitra is currently an Associate Professor of Biology at University of West Georgia. She received her B.Sc. and M. Sc degree in Botany, from University of Calcutta, India. Her Ph.D. degree in Plant Biology was from Louisiana State University, Baton Rouge, under the supervision of Prof. James V. Moroney. Her graduate research was centered on the carbon concentrating mechanism in the green micro-alga *Chlamydomonas reinhardtii*. Dr. Mitra's post-doctoral research under the supervision of Prof. Anastasios Melis at University of California Berkeley (2004-2009) was focused on the identification of molecular components involved in the regulation of the chlorophyll antenna size in *Chlamydomonas*. She shares a research patent with Dr. Melis, which has been commercially utilized by biotech companies. Her research is centered on studying photo-acclimation, photo-protection and photosynthetic pigment metabolism in *Chlamydomonas*. Dr. Mitra is also interested isolation and characterization of novel bacterial strains for environmental bioremediation.

Dr. Mitra's research program at UWG recruits primarily undergraduates, graduate (MS) and, high school students. To date, she has trained more than 60 research students; many of these students are pursuing successful STEM careers in national and international universities. She received the Excellence in Research Award, and, the Excellence in Teaching Award, for outstanding excellence in student success from the UWG College of Science and Mathematics in 2013 and 2014, respectively. Dr. Mitra received the Women's Young Investigator Travel Award from ASPB in 2012 and, in 2018 she was awarded the ASPB-Plant BLOOME grant to employ *Chlamydomonas* for K16 Biology education. Dr. Mitra is an elected full member in the Sigma Xi organization, NABT and, has been an active member of ASPB, including the southern section since 1999.

Southern Section of the American Society of Plant Biologists (SS-ASPB) Meeting

Birmingham, AL, March 14-16, 2020

- Papers covering all topics in plant biology are encouraged
- Student competition for graduates and undergraduates with monetary awards
- Early bird registration and travel grants to support student attendance

New to 2020 meeting!

CPR workshop, a discussion geared towards addressing questions related to Careers, Publications, and Research Funds. An exceptional panel of federal funding agencies' program directors, journal editors, industry and academic experts



The Kriton Hatzios Symposium's theme is "Evolution of Signaling Mechanisms in Plants" with outstanding speakers

- Pradeep Kachroo, University of Kentucky
- Simon Gilroy, University of Wisconsin Madison
- Alan Jones, University of North Carolina
- Jennifer Nemhauser, University of Washington

Early Bird Ends February 24

FOR MORE INFORMATION, VISIT
<https://southern.aspb.org/>

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Birmingham is conveniently located within driving distance of many schools and the meeting site is about 10 minutes from the airport.



2020 Kriton Hatzios Symposium

Evolution of Signaling Mechanisms in Plants



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.

2020 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.

We're on the web!

<https://southern.aspб.org/>



2019-2020 SS-ASPB Officers

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