

# Workshop Descriptions

## **Primarily Undergraduate Institution Workshop | June 24<sup>th</sup> 8:30 a.m. - 12:00 p.m.**

This workshop is for faculty currently working at primarily undergraduate institutions (PUIs) or younger scientists who would like to get a job at a PUI. PUIs are defined as institutions that offer few PhDs in the sciences. While teaching is a large part of being a PUI faculty member, maintaining a successful research program is also critical for career advancement and for providing undergraduates with high-caliber research experiences. The workshop will include presentations and discussions on effective PUI research practices at the individual, department, and institutional levels. Attendees will participate in sharing their methods and brainstorming ideas for improvement at their institutions.

## **Introducing RNA-SEQ Data Analysis with R and Integrated Genome Browser | June 24<sup>th</sup> 9:00 a.m. – 12:00 p.m.**

This workshop will introduce basic concepts of RNA-Seq data analysis using published data from *Camelina sativa*, an oilseed relative of *Arabidopsis* with sequenced and annotated genome. Using gene expression profile data from developing seeds and other tissue types, participants will do tutorials introducing R and RStudio, a freely available and easy-to-use environment for data analysis. Participants will learn how to read data files, visualize data with plots, identify differentially expressed genes, and group genes into similarly expressed clusters. To check results and discover biologically interesting patterns, participants will learn to visualize RNA-Seq data, annotations, and sequence using Integrated Genome Browser, free from bioviz.org. To maximize long-term impact of the workshop, participants will do the tutorials on their own computer using software installed in advance. All resources developed for the workshop will be freely available for re-use in research or teaching.

Three hours of pre-work warm-up exercises will be assigned, some of which can even be done en route to the conference. Attendees will gain basic skills that enable them to explore and utilize the many tools available in R and from the larger free software community.

## **A Discussion of the Future of Plant Science | June 24<sup>th</sup> 9:00 a.m. – 11:00 a.m.**

The Plant Science Research Network will host an interactive session to discuss the future of plant science. The session will be split between a scientific or technical talk and a Q&A to discuss the graduate and postdoctoral training. The panelists will discuss broad recommendations for graduate student and postdoctoral training, broadening participation in the plant sciences, cyberinfrastructure and big data, and the National Plant Systems Initiative. The PSRN is sponsored by a Research Coordination Network award from the National Science Foundation. The network members are scientific societies and professional organizations (such as the American Society of Plant Biologists, the American Phytopathological Society, the Global Plant Council, the Genetics Society of America, the Botanical Society of America, the Ecological Society of America, and several others). Please visit us on Plantae for more information or contact Natalie Henkhaus (nhenkhaus@aspb.org).

## **Talk Story and Communication in Hawaii and the Pacific Rim | June 24<sup>th</sup> 9:00 a.m. – 12:00 p.m.**

The audience for this workshop is graduate students and early-career plant scientists. The skills learned in the workshop can also be transferred to writing academic papers and reviews, job applications, and grant proposals. We will also emphasize the critical importance of communication and outreach in realizing the benefits of plant science for society.

The workshop will introduce human-centered storytelling as an effective approach in science communication to connect with the public, using examples from Hawaii and the Pacific Rim as a common theme. The workshop will feature presentations about science communication, facilitated group discussions, and guidance on how to get started in communication as a complement to a scientific career. The title of the workshop comes from the Hawaiian oral tradition to sit in a group and “talk story.”

### **WIPB Breakfast | June 25<sup>th</sup> 7:00 a.m. - 8:30 a.m.**

This breakfast will focus on career development, opportunities, and challenges for women in science. The topics for discussion will be developed prior to this breakfast through *Plantae*, with the participation of the ASPB community. Participants will work in groups according to their preferred discussion topic and define action items for ASPB to work in the next 3-5 year

### **Developing an International Research Collaboration | June 25<sup>th</sup> 11:30 a.m. -1:00 p.m.**

Principal investigators and students interested in initiating collaborative research projects with scientists from other countries. This workshop will provide information about establishing international research collaborations, including discussion of funding sources for multi-national research and education. Panel members (to be announced) representing U.S. government funding agencies or private foundations or faculty with successful experiences collaborating with researchers from other countries will discuss strategies and opportunities for such partnerships.

### **Plant Direct: New Journal, New Ideas | June 25<sup>th</sup> 11:30 a.m. -1:00 p.m.**

Plant Direct is a new sound science journal from Wiley and the societies behind *Plant Physiology*, *The Plant Journal*, and *The Plant Cell*. Our goal is to provide a service to the community with a rapid and transparent review and publication process. As part of that we have solicited ideas from the community on how we can make the journal better. At this workshop we will be presenting these ideas and looking for feedback from the community. The three ideas we will be discussing are

1. A junior review board to provide an opportunity for graduate students and postdocs to get experience reviewing manuscripts while receiving mentorship.
2. Sending reviews to the authors as soon as they are received.
3. Allowing authors to update their manuscripts with additional mechanisms.

These ideas are discussed in more detail on this [Plantae Thread](#). Join us to hear more about these ideas and give us your feedback.

### **MAC Luncheon | June 25<sup>th</sup> 11:30 a.m. -1:00 p.m.**

Me Kealoha 'O Kohala: The Scientific Journey of a Hawaiian Plantation Boy

This talk will describe my scientific journey as influenced by my upbringing in the Kohala sugar plantation, key science mentors, the role of music in communication, a papaya project that catalyzed the importance of the 'human side' of science, my return to Hawaii to deploy my personal and scientific philosophy in a leadership position, and finally retiring to my beloved but changed Kohala to teach seniors to play 'ukulele'!

### **ABC's (Analysis, Bioinformatics and Computation) in the Classroom | June 25<sup>th</sup> 11:30 a.m. - 1:00 p.m.**

Big data, computation and bioinformatics have flooded the research community. This workshop will focus on how to integrate those skills into the curriculum and classroom in undergraduate education. Classroom examples and resources will be shared from faculty successfully employing these strategies in classroom and laboratory settings serving freshmen to seniors and beyond.

### **Ag Bio Tech Products | June 26<sup>th</sup> 11:30 a.m. -1:00 p.m.**

With multiple potential federal agencies of jurisdiction, navigating the ag biotech product regulatory landscape can be both challenging and time consuming. Further, new and emerging technologies such as CRISPR/CAS9 add uncertainty to an already complex system. Join us to hear from experts and get to get the lay of the land. This workshop is sponsored by ASPB's Science Policy committee.

### **USDA, DOE and NSF GRANTSMANSHIP Workshop | June 26<sup>th</sup> 11:30 a.m. -1:00 p.m.**

The workshop will feature talks on Plant related funding opportunities from each agency by Program staff and a panel discussion with Program staff at the end of all the talks. In addition to the workshop, there will be ample time to meet the Program staff at the Joint USDA, DOE and NSF Booth to discuss the funding opportunities offered by the respective agencies. Lunch may be purchased in the exhibit hall or concession stand in lobby. No pre-registration is required for this workshop. Seating is first-come, first-served.

### **Bioinformatics Workshop | June 26<sup>th</sup> 11:30 a.m. -1:00 p.m.**

This workshop is intended for researchers at all levels but especially those relatively new to Plant Biology who would like to learn more about the tools and resources available on the web. This is a show-and-tell workshop where each speaker will spend 10-15 minutes giving an overview of the organization, data content and navigation of their resource. Contributions are expected from Araport, Bio-Analytic Resource, CyVerse, Gramene, KBase, Legume Federation, PlantCyc, Planteome and TAIR. Community members interested in showcasing a new resource should contact the organizer.

### **Common Author Errors and How to Avoid Them | June 26<sup>th</sup> 11:30 a.m. -1:00 p.m.**

The target audience for this workshop is PIs, Postdocs, and Graduate Students. This workshop, which is sponsored by ASPB's journals, will consist of a panel discussion covering common errors made by authors in preparing images and statistical analysis of data, the consequences of errors that get published, and how to avoid these errors.

### **WIPB Luncheon | June 26<sup>th</sup> 11:30 a.m. -1:00 p.m.**

#### ***Challenges and Opportunities for Women in Science***

The overall status of women in science has steadily increased over the last few decades. However, the rate of progress is uneven across the globe, especially in the Pacific Rim countries. In today's society where advances in science and technology can touch every aspect of people's lives, scientists and engineers play a vital role in the economic development of a nation. A country that ignores the talent of half its population will be certain to be left behind. I will share my thoughts on questions such as: (1) What and where are the opportunities for women in science? (2) What challenges may a woman in science encounter in pursuing those opportunities? (3) Can individual scientists make a difference?

Speaker: Machi Dilworth

### **Planning, Executing and Cultivating Broader Impact Programs: Tools, Communities and Resources to GET ORGANIZED, GET CONNECTED, GET NOTICED and GET FUNDED| June 27<sup>th</sup> 11:30 a.m. -1:00 p.m.**

Attendance is open to all but Post-Docs are highly encouraged to attend. Our 2017 workshop will focus on digital resources to assist the plant research community in planning, implementing, connecting, and sharing of broader impact activities. The proposed workshop will showcase integrated and collaborative online resources being developed in Fall 2016-Fall 2017 available from the GETBIO (The Gateway for Education, Training Broader Impacts and Outreach) group from the University of South Dakota and ASPB's Plantae (<http://www.plantae.org>). Various user stories and scenarios will be developed and tested using successful BI programs. NSF Program Directors will also share information about funding opportunities at NSF that can provide support for BI programs and activities.

### **Launching a Start-Up | June 27<sup>th</sup> 11:30 a.m. -1:00 p.m.**

So you've developed a new and innovative product or service, and you are seriously considering launching a start-up. First, how do you patent your idea? How do you know if your idea is commercially viable, and what are the opportunities for commercial development? The average start-up cost is in the range of \$30,000. For most, this represents a significant barrier to entry. Do you take out loans or complete a debt offering? Join us to learn the ins and outs of commercializing your idea and launching a start-up.

**Environmental and Ecological Plant Physiology Section Meeting | June 27<sup>th</sup> 11:30 a.m. -1:00 p.m.**

Come join the Environmental and Ecological Plant Physiology ASPB Section for our annual meeting at Plant Biology 2017. This year we are expanding our event to include five 10-minute talks by selected graduate and postdoc students. We will also have our regular business meeting during this time. All are welcome to come and enjoy the talks and network. Lunch will be provided on a first-come first-served basis.