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Workshop Descriptions

revised 04/18/18

PUI Faculty Development Workshop I Saturday, July 14th 8:30 a.m. - 12:00 p.m.
Requires pre-registration: \$45 fee, \$25 for students/post-docs
Breakfast Included

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 mentoring in the PUI research environment, including a discussion of how to improve communication between mentor and mentee to enhance student learning and research success. Attendees will also participate in sharing their strategies for overcoming common hurdles in mentoring undergraduates in research.

Plant Science Training in 2035 I Saturday, July 14th 8:30 a.m. - 12:00 p.m.
Requires pre-registration, space is limited

The Plant Science Research Network (PSRN) would like to present the results of our strategic planning workshops to address the future of training in the plant sciences. In the fall of 2016 and 2017, the PSRN worked with students, faculty, and industry representatives to identify robust and innovative concepts to improve and modernize training to better prepare trainees for diverse careers. To produce the recommendations, we utilized Scenario planning to stretch our thinking. The scenarios called, Imagining Science in 2035, and supporting materials are available on Plantae. The workshop will be used to share the recommendations and gather specific feedback from ASPB members. The PSRN is an NSF-funded research coordination network, currently composed of 14 professional societies, councils, and associations.

Forest for the Trees: Science Communication with Deep Roots I Saturday, July 14th 8:30 a.m. - 12:00 p.m.

Stories about people in our past connect them to the present and point the way to our future. The purpose of this workshop is to teach human-centered storytelling as an effective approach in science communication to connect with the public, using examples from Canada and just across the border in the USA 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. Stories with deep roots have a lasting impact, and this workshop will explore how to connect present-day plant science stories to the past to make them more compelling and engaging.

Finding and Fixing Genome Annotation Errors with MaizeCODE: Research and Educational Applications | Saturday, July 14th 9:00 a.m. – 12:00 p.m.
Requires pre-registration

MaizeCODE is a collaborative research project to build high-quality genome assemblies for several Maize inbred lines (B73, NC350, W22, and Til 11), and to identify active genomics regions in a variety of tissues and developmental time points.

This workshop will build your understanding of modern genome annotation practices (using the open-source MAKER workflow), and provide insight on the types of uncertainty and mistakes associated with automated annotation. Using MaizeCODE data, we will go through short, hands-on exercises where you will learn parameters and metrics used to identify suspect gene models, and practice using manual curation tools (including Apollo) to fix annotation errors. In addition to providing researchers with important training on critical evaluation of gene annotation, these exercises are part of the larger outreach activities that MaizeCODE is developing for your use in the classroom (educators especially welcome to attend).

The data (including extensive structured metadata) produced by MaizeCODE is a public resource available through the CyVerse MaizeCODE project portal (<http://www.maizecode.org/> in development). The computational infrastructure developed by MaizeCODE serves as a foundation for other large-scale genome projects in Maize and other plants and is funded by NSF (IOS 1445025).

Participants should bring a Wi-Fi-enabled laptop to this event.

Strategies for Developing Leadership Skills | Sunday, July 15th 7:30 a.m. - 8:30 a.m.
Requires pre-registration: \$10 workshop fee

A group of panelists will initiate the discussion and answer questions from the participants. In the second part of the workshop, participants will work in small groups on specific topics. Fee includes breakfast.

Too Creative for Science? | Sunday, July 15th 11:30 a.m. - 1:00 p.m.
Requires pre-registration: \$35 fee/\$25 student rate

Have you ever wondered what it is like to grow up in a family of artists and then end up a scientist? What does thinking like an artist offer the scientist? Can the blending of art and science encourage a more diverse population of students to pursue science, and improve the public understanding of science? Ahna will give you an exciting glimpse into her life and how she has impacted science, education and the public with her two passions: science and art. Fee includes lunch.

Ensuring Plant Scientists Have a Seat at the Table: What You Can Do to More Effectively Communicate with Policy Makers | Sunday, July 15th 11:10 a.m. - 12:30 p.m..

With national research funding stagnating or declining across U.S. and Canadian science agencies, the individual voices of plant scientists are desperately needed in public debates regarding research funding. Join us to find out what you can do locally to support reinvigoration of these critical investments.

Reproducibility for Everyone I Sunday, July 15th 11:10 a.m. -12:30 p.m.
Requires pre-registration, space is limited

Science depends on reproducibility to build trust within and beyond the research community. This workshop will introduce you to reproducible workflows and a range of tools, from method sharing websites such as protocols.io, to Jupyter notebooks for documentation of code. This will help you share work with colleagues more effectively and allow others to build on what you have done.

Environmental and Ecological Plant Physiology Business meeting and Lightning Talks I
Monday, July 16th 11:10 a.m. -12:30 p.m.

Please join us for the 2018 Annual EEPP Section Business Meeting and Lightning Talks! We will discuss the mission, vision and update on the EEPP Section, and have talks that span the breadth of our science. Lunch provided to the first 150 participants!

USDA, DOE & NSF Grant Information Session I Monday, July 16th 11:10 a.m. -12:30 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 the underground mall. No pre-registration is required for this workshop. Seating is first-come, first-served.

How to Review I Monday, July 16th 11:10 a.m. -12:30 p.m.

This workshop on How to Review offers guidelines for peer review for The Plant Cell, Plant Physiology, and Plant Direct (applicable to most scholarly journals). Specifically, the workshop will (1) cover the purpose of reviewing and the author–editor contract, (2) who should review (and who should not—the “ethics of reviewing”), (3) the elements of a good review; (4) the language of reviewing, and (5) what makes a good review (and a bad one). A few short presentations will be followed by an extended question & answer period.

Incorporating Research into the Classroom I Monday, July 16th 11:10 a.m. -12:30 p.m.

Students learn better when they are actively engaged in course material. For the sciences, this translates into involving them in authentic research experiences. Research experiences for undergraduates in our research labs are a valuable opportunity for all concerned, but these spaces are limited. We may all acknowledge that providing research experiences for all our majors (and possibly non-majors) in science classes should be a goal, but large class sections and limited resources restrict access. This workshop will focus on incorporating authentic research experiences into biology classes, both large and small. Classroom examples and resources will be shared from faculty successfully employing these strategies in classrooms serving freshmen to seniors.

**Leadership in Science: Following New Paths and Breaking the Mold | Monday, July 16th
11:30 a.m. -1:00 p.m.**

Requires pre-registration: \$35 fee/\$25 student rate

Your path to leadership ≠ to my path, but our paths should be recognized as equally valid and valuable. If everyone follows the same path to leadership in science, then the resulting leaders in science will be molded in conformation to the dominant culture. What a lost opportunity, if this happens! We all have the potential to bring diverse perspectives to the table, based on our different life and research experiences. Assembling diverse representation is not enough, however; diversity without inclusion is simply the presence of differences. This talk will provide arguments in favor of inclusion and what intentional and unintentional exclusionary behaviors might look like so they can be stopped, along with practical strategies for developing diverse leadership in science.

**NSERC information session on the Discover Grants Program | Monday, July 16th 11:10
a.m. -12:10 p.m.**

This presentation by the Natural Sciences and Engineering Research Council will focus on NSERC news, an update on the mandate of NSERC in relationship to other federal granting agencies, and recent results from the NSERC Discovery Grants competition with an emphasis on those from the Biological Systems and functions evaluation group. Time will be allocated for a question and answer period.

Demonstration of the PhotosynQ Platform | Wednesday, July 18th 12:15pm – 1:15pm

***Located at the Westin Hotel
Requires pre-registration, space is limited***

PhotosynQ is an open science platform that allows researchers, educators, farmers, and citizen scientists to collect, analyze, discuss and share plant photosynthesis related data using low cost handheld devices. This demonstration will allow hands on experience and explanations of the data platform and the MultispeQ photosynthesis monitor. Participants will see the ways this exciting new platform can aid in large scale photosynthesis data collection and building collaborative networks.

**Bioinformatics Workshop: Data Carpentry/RNA-Seq Analysis/Custom ePlant I Thursday,
July 19th**

Requires pre-registration: \$25 fee

This one-day workshop will start with hands-on lessons on the basics of working with genomic data, featuring a module from the Genomics Data Carpentry's workshop on best practices. We will then cover practical aspects of extracting expression levels and differentially-expressed gene lists from RNA-Seq data sets, with consideration given to statistical issues and mapping to a reference genome/ de novo transcriptome assemblies. Finally, we will cover making those expression data available in the Bio-Analytic Resource's ePlant, published last year in *The Plant Cell* (<http://dx.doi.org/10.1105/tpc.17.00073>).

This post-conference workshop, hosted by Jason Williams and Nicholas Provart will take place at an off-site venue. Space is limited, register now!