



NAPB Newsletter

July 2017

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How to Become a Member of NAPB!

Membership is fee-based and required in order for you to receive all NAPB's benefits.

\$80 for Professionals \$35 for Students

Go to <https://www.plantbreeding.org/> and click on the Membership tab. It only takes a minute to join.

Plant Breeding Success Story

Celebrating 10 Years of DuPont Pioneer Plant Sciences Symposia

Kayla Altendorf and Jeff Neyhart

Co-Chairs, 2017 University of Minnesota Pioneer Plant Sciences Symposium Planning Committee

The DuPont Pioneer Plant Science Symposium Series is a student-organized symposium reaching 15,000 participants across nearly 40 institutions around the world. The Series provides graduate students in plant breeding and plant science the opportunity to organize professional symposia where they engage in scientific discussion and networking with renowned scholars, industry professionals and students.

The Series began as a single event in 2008 as a collaboration between DuPont Pioneer and the University of Minnesota (UMN). Each year since, students in the UMN Applied Plant Sciences graduate program have hosted symposia addressing important topics in plant science, from genomics, innovative phenotyping, new environments and crop systems, and the education of future plant breeders. In March 2017, DuPont Pioneer and UMN celebrated 10 years of successful symposia events and an ever-growing series by hosting a special anniversary symposium and workshop. This two-day event brought scientists, students, and alumni from across the United States to share and discuss research in the plant sciences.

Day 1 of the symposium included a workshop on *Computational Tools and Plant Breeding*. The first session, led by **Karl Broman** (University of Wisconsin - Madison), was an active learning class on reproducibility in scientific research. Many scientists today write computer code as part of their research, and adopting practices in reproducibility will ultimately make science more robust and meaningful. **Rex Bernardo** (University of Minnesota Twin Cities) then led the *1st Invitational Pro-Am Plant Breeding Tournament*, a competition in which participants teamed up to breed a virtual barley variety. Teams learned lessons in the challenges faced by breeders to develop varieties that meet the needs of industry, while reducing inputs through disease resistance.

The main Symposium event was held on Day 2. The theme, *Domestication and Contemporary Plant Breeding*, was a nod to the topic of reflection surrounding the 10th anniversary: to continue to improve our crops, we must look to the lessons of history. Five invited expert researchers from the field of plant domestication and evolution shared their research, including **Briana Gross** (University of Minnesota Duluth), **John Burke** (University of Georgia), **Allison Miller** (Saint Louis University), **Michael Purugganan** (New York University), and **John Doebley** (University of Wisconsin - Madison). These renowned scientists presented their work on studies of the domestication and evolution of crops such as apple, sunflower, and maize, and shared their insights on the importance of these findings to current plant breeding efforts.

Part of the mission of the DuPont Pioneer Plant Sciences Symposia is to foster an environment in which both experts and students can share and discuss their research. To that end, the keynote speakers were complemented with research presentations from 10 invited graduate students from universities across the United States. The event is a venue for many students to communicate their work, and the committee was glad to support the presentation of diverse research, from studies on the domestication of orphan crops in Africa to the use of worldwide seed collections for breeding disease resistance in wheat.

The Symposium was attended by a record 250 people, with more than 25 tuning-in via webinar. The events this year were made possible through the generous contributions of many sponsors. This year's committee is grateful to DuPont Pioneer for their long term and continued support, the Minnesota Soybean Research and Promotion Council, and CFANS Scholarly Events for their support.

The future of the DuPont Pioneer Plant Sciences Symposia Series is bright. The last two years have seen the addition of nearly 20 participating institutions on 6 continents, with more anticipated to join. With robust support from industry and academic sponsors, dedicated teams of graduate student organizers and engaged participants, the Series is poised to enhance the global exchange of scientific knowledge in the plant sciences and plant breeding. Furthermore, the Series continues to provide graduate students around the world the opportunity to enhance their networking and leadership skills as they prepare for rewarding careers in the plant sciences.

For more information on the Symposium Series, see

<https://www.pioneer.com/home/site/about/research/PlantSciSymposiaSeries/>



The 2017 University of Minnesota planning committee with various committee alumni who returned to campus to attend this year's Workshop and Symposium. Tabare Abadie, Geoff Graham and Rex Bernardo (UMN, not pictured) from DuPont Pioneer were involved in initiating the idea of the series in 2007.

From left to right, Kayla Altendorf, Mark Holmes, Hannah Swegarden, Ryan Merry, Becky Zhong, John Hill Price, Sofia Brandariz, Ian Mcnish, Emmanuel Ademeyo, Garrett Heidenreich, Elizabeth Blissett, Dnyaneshwar Kadam, Zenith Tandukar, Amritpal Singh, Geoff Graham, Nicole Mihelich, Steve McKay, Tabare Abadie, Nick Ames, Alex Brohammer, Matt Clark, Celeste Falcon, Austin Dobbels, Addie Thompson, Ana Poets, Emily Conley, Mikey Kantar, Erin Gilbert, Chris Schaefer, and Jeff Neyhart.

Do you have a plant breeding success story that you would like to share? If so, please send a brief description or a link to your current Communications Committee Chair, Jane Dever (jdever@ag.tamu.edu). Success stories will be shared in upcoming NAPB newsletters.

Graduate Student/Early Career Spotlight



Chris Smallwood

Where do you come from and what is your background?

Originally I am from suburban Maryland. Like many in modern society, my exposure to and understanding of agriculture was limited. I graduated in 2008 with a B.S. in Wildlife & Fisheries Science from the University of Tennessee. While working as an armored truck driver/guard in Washington D.C., I decided to pursue graduate school. My father-in-law is a plant breeder, and suggested that I should consider this field. He introduced me to Dr. Vince Pantalone, who leads the University of Tennessee soybean breeding program. Dr. Pantalone took a chance on me and I have worked in his program in every capacity since (hourly worker, M.S. candidate, Ph.D. candidate/Research Associate, Research Scientist)

What institution did you attend, and what was the focus of your research?

I completed my Ph.D. in plant breeding at the University of Tennessee in December, 2015 under Dr. Vince Pantalone. Our program focuses on improving agronomic and seed quality traits in soybean for Tennessee and the Mid-South using both quantitative and molecular approaches. Yield is always the primary focus, but improving soymeal protein and adjusting concentrations of fatty acids within soybean oil are also major objectives. For my Ph.D. research, I examined genomic selection and QTL detection for soybean yield, protein, oil, and fatty acids.

What is your current position and where do you see yourself in the future?

I am lead-investigator for a grant project focused on developing improved fatty acid soybeans for Tennessee. Recently I served as lead- or co-developer on the release of three soybean varieties. This summer I am developing NIL populations to further investigate the genetic effects of QTL detected in my Ph.D. research. In the future, I would like to lead a breeding program.

What would you like the public to know about plant breeding?

You do not need to have an agricultural background to be a plant breeder. People who grew up removed from agriculture may be intimidated by the complexity of a large scale system that is unfamiliar to them. We should work to overcome this disconnect. Our society would benefit greatly if people understood more about agriculture, and how plant breeders contribute to ‘improving plants to improve lives’. Many talented people do not consider plant breeding as a career because they are unaware that it is an option.

What is the biggest plant breeding challenge of our time?

This is a difficult question, because there are so many big challenges. Perhaps it is addressing both short term and long term goals simultaneously. In the short term, we know that population growth is coming, and we need to improve the genetics of the plants that we work on to feed and clothe these people. However, we also need to do this with the limited resources and changing climate of our planet. It is necessary to consider how we can continue to meet the needs of the consumers of plants for as long as we expect to be around. Addressing these challenges will require both creativity to solve problems and flexibility to adjust to changing circumstances.

Do you know a graduate student/recent graduate that we should spotlight? If so, please contact your current Communications Committee Chair, Jane Dever (jdever@ag.tamu.edu).



DIVERSE CROPS-DIVERSE CHALLENGES
August 7-10, 2017 University of California, Davis



2017 NAPB Annual Meeting

Registration Deadline July 21 - [Click Here to Register Now](#)

It's not too late to register for the 2017 NAPB/PBCC Annual Meeting, but act fast as registration will close on July 21st. The theme this year is “Diverse Crops – Diverse Challenges”. The [draft program](#) is now available and includes speakers from across the US who specialize in row and horticultural crops covering a range of topics including high-throughput phenotyping, breeding for nutritional quality, breeding for organic systems, and gene editing.

2017 NAPB meeting highlights:

- Reception and banquet featuring local bands
- Pre- and post-conference tours near Davis and Salinas
- Integration of USDA/NIFA Project Director meeting
- Poster sessions and 1-minute poster introductions
- Award talks and 2017 awards
- Sessions on high-throughput phenotyping, breeding for nutritional quality, breeding for organic systems, and gene editing
- Student workshops on management of breeding program

The Early Career Working Group will be hosting an event at the annual conference on Monday, August 7th. The Mentoring Relationships and Speed Networking Event will start with a presentation on mentoring relationships from Laura Grapes, who is currently Monsanto's Commercial Development Breeding Lead for North America varietal crops. After this engaging presentation, participating Mentee participants will rotate between stationary Mentor tables to speed network with our established career professionals. If you are currently registered for this event (chosen upon registration), you should have recently received an email containing several questions. Please respond to this promptly! This will allow us to obtain a list of our Mentors to establish our mentoring tables, and aid us in table rotation assignments for our Mentees.

In addition to our mentoring and networking event, we would like to invite early career professionals (self-identified) to our informal dinner outing on Wednesday evening. We will meet near the podium in the main room after the conclusion of the Wednesday session at the end of the day and then walk to the local Farmer's Market where food will be available for purchase. There are lots of options and also entertainment available with local musicians performing at the market. An email reminder will be sent closer to the date.

Other News

Congratulations to former NAPB President Dr. David Stelly, who is recipient of the 2017 International Cotton Advisory Committee Researcher of the Year Award: <https://www.icac.org/Press-Release/2017/PR-11-17>

Election for NAPB Secretary is nearing completion (Please vote now!). The incoming secretary is elected to a 3-year commitment, beginning in September, 2017, advancing to Vice-President in 2018-19, and President in 2019-20. The new secretary will serve the upcoming year with 2017-18 officers Past President Klaus Koehler, President Wayne Smith, and Vice-President Todd Campbell. Secretary candidates are listed below. **Members – check your mailbox (including clutter) for an email from Electionbuddy Elections to vote.**

NAPB Secretary Candidates

Dr. Laura Grapes – Commercial Development Breeding Lead for North America varietal crops (soy/cotton/wheat) in Monsanto's Global Breeding Organization

Dr. Peggy Ozias-Akins – Professor of Horticulture and Director of the Institute of Plant Breeding, Genetics & Genomics at the University of Georgia

Dr. Emily Combs – Research Scientist for DuPont Pioneer in Mankato, MN

Events and Opportunities

FY 2017 AFRI Competitive Grants Program RFA is now available and includes funding opportunities for plant breeding. New for this year, the AFRI Foundational RFA welcomes workshop proposals to catalyze activities for harnessing big data to synthesize new knowledge, to make predictive decisions, and to foster data-driven innovation in agriculture. This new focus area aligns with NIFA's Food and Agriculture Cyberinformatics and Tools (FACT) initiative, which supports data-enabled solutions for addressing complex problems facing contemporary agriculture. Visit the [NIFA Funding Opportunity Page](#) for more information.

ASTA, NAPB, Tri-Societies Announce “Better Seed, Better Life” Student Video Contest. Graduate and undergraduate students focusing on plant-science disciplines are invited to submit a video targeted to the general public discussing what plant breeding innovation means to the future of our society, to farmers, the environment, and/or consumers. Deadline for submission is Aug. 31st and tiered prizes up to \$10,000 will be awarded. More information is available at <http://www.betterseed.org/justgrowit/>.

National Academies Announces Committee for Science Breakthroughs 2030 Food and Agriculture Study. The National Academies of Sciences, Engineering, and Medicine is pleased to announce the appointments of the provisional committee of Science Breakthroughs 2030, a project to identify compelling future directions for research in food and agriculture. The year-long study will explore novel scientific approaches suggested by members of the scientific community, with special attention to those ideas empowered by insights and tools from disciplines of science and engineering not typically associated with

food and agriculture. Based on community input, the study committee will produce a report describing ambitious and achievable scientific pathways to addressing major problems and creating new opportunities for the food and agriculture system. Major support for the study is provided by the SoAR Foundation, the Foundation on Food and Agriculture Research, and other agricultural research stakeholders. For more information on the study, visit the Science Breakthroughs 2030 [website](#).

If you have an upcoming event you would like to include in the NAPB newsletter, please send a description and link to any important information to your current Communications Committee Chair, Jane Dever (jdever@ag.tamu.edu). Information will be included in upcoming newsletters.

Please direct comments and suggestions about the NAPB Newsletter to:

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