

January 2016



Happy 2016 from the Plant Breeding Center. 2015 was a year of growth for us, both in the scope of our events and the size of our team. Allen Van Deynze joined the PBC as Associate Director, and Candice Tandiono joined us as the inaugural Undergraduate Student Assistant. Moving forward in 2016, you can expect progress updates on our ongoing projects, continued coverage of plant breeding news through our social media sites, a new and (greatly) improved website, and a new series of seminars and field trips to expand our knowledge and understanding of plant breeding and food systems.

Building On Success

The PBC coordinates and expands plant breeding teaching and research on campus. We are focused on training students to be well rounded, with experience in field-based breeding evaluation and technique, supplemented with understanding of and facility with modern genomics and phenotyping technologies. Our purview covers all crops grown in California and beyond, from nut and fruit trees to vegetable and agronomic crops, including both seed propagated and clonal species.

The PBC is working with the Graduate Group in Horticulture and Agronomy (GGHA) to develop a clear plant breeding coursework track and is currently devising a Graduate Academic Certificate in Plant Breeding. We plan seminars and field trips to supplement plant breeding coursework by giving students real-world examples of the types of work available in both public and private sectors. We also seek funding to expand field-based plant breeding education and prepare graduate students for employment. In 2015, we successfully obtained a USDA-NIFA National Needs Fellowship grant to train four outstanding graduate students to be plant breeding leaders. industry or nurseries and make their way to consumers in grocery stores and restaurants across the country. Last year, the PBC obtained a nearly \$1 million grant from the USDA-NIFA Organic Research and Education Initiative (OREI) to develop cultivars for organic vegetable production and in the process, train



students to develop and conduct actual breeding programs. As part of this project, we are working with the Organic Seed Alliance and organic growers across California to set priorities and eventually to trial new germplasm on-farm. As the project progresses, growers will evaluate germplasm and participate in breeding varieties that have the most desirable traits. Current plans include new varieties of tomato, pepper, common bean, and lima bean, with additional crops added in the future.

Funding the Future

In order to continue field-based breeding training and expand the scope of our public breeding projects across crops, we need collaboration with seed and nursery industry, commodity group, and non-profit organization partners who are interested in either providing in-kind support to breeding programs or in directly funding research, including graduate student stipends, on a particular crop.

Currently, the UC Davis Office of Graduate Studies has a Graduate Student Fellowship Matching Initiative, linked **here**. This is an opportunity for donors to make an immediate impact on UC Davis Plant Breeding, by supporting graduate students. The fellowship initiative provides a significant benefit to students at a time when it is most needed, through a unique student award payout initially funded by the Office of Graduate Studies. The Plant Sciences Department has already received a generous endowment for the Bob and Elizabeth Wych Plant Sciences Fellowship, to support a graduate student in plant breeding. In 2016, we will be advocating for additional funding to ensure both the continued success of our students as well as the longevity of our programs.

Monthly Events

Comprehensive plant breeding education requires that students get experience in an actual germplasm or cultivar development programs. One way to do this is through internships with breeding companies, and we hope to develop an expanded internship program in 2016. A second way is through activities within existing breeding programs on campus – UC Davis has a wide range of programs from walnuts to strawberries, wheat to beans, and many more besides. These programs are funded by commodity groups, industry contracts, competitive grants, and royalty returns.

Public breeding programs have an obligation to develop useful germplasm and cultivars that can be marketed by the seed

The PBC is also starting a new seminar series at 12:00PM on the fourth Tuesday of every month. We will still be gathering for networking and seminars on second Thursdays through the Seed Central events, and will continue our informal discussion and field trip events during our regularly scheduled Third Thursday meetings at 4:00PM. We are also developing an orientation to introduce incoming students interested in plant breeding to the plants currently being bred on campus, show them the many ways they can get involved with breeding projects on campus, and explain the long history of cultivar releases from UC Davis. This orientation will ensure that all of our students are well-versed in the breeding activities on campus and are prepared to represent the university in presentations and discussions with growers and industry members.

-Amanda Pietras

plantbreeding.ucdavis.edu

UC DAVIS NEWS

UC DAVIS SCIENTISTS CRACK THE WALNUT GENOME, AIMING FOR BETTER NUTS - UC DAVIS NEWS

Scientists at the University of California Davis announced Thursday they have sequenced the walnut genome, which could lead to advanced breeding for traits such as disease resistance and drought tolerance.



Having the sequence means that researchers can more quickly find genetic markers which helps them focus breeding programs, said Pat Bailey, a UC Davis spokeswoman. This is the first time the walnut has been sequenced, and it is the first nut to be sequenced.

>>> read more

DRS. KENT BRADFORD AND GURDEV KHUSH NAMED IN TOP 100 SEED INDUSTRY FOUNDERS -SEED WORLD

These are the individuals who have provided leadership during trying times, insight to complex issues, and a commitment to something larger than self. The 100 founders of the seed industry that we've chosen to represent the dramatic changes during the past century have all left a tremendous mark — be it in plant breeding, technology, business or the policy arena that impacts the seed industry. As a group, they represent the industry's diversity and hail from all over the world.

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PAUL GEPTS RECEIVES FRANK N. MEYER MEDAL FOR PLANT GENETIC RESOURCES - UC DAVIS DATELINE

Plant sciences professor Paul Gepts started the month as the keynote speaker at the Bean Improvement Cooperative's biennial meeting, and now he is the recipient of the Frank N. Meyer Medal for Plant Genetic Resources, from the Crop Science Society of America.



OPPORTUNITIES AND EVENTS

SECOND ANNUAL COMMUNITY FILM SCREENING THE MESOAMERICAN DIET: ORIGINS JANUARY 28, 6:00-8:30PM AUDITORIUM 1001, GENOME CENTER UC DAVIS CAMPUS

The Plant Breeding Center will be presenting a screening of the documentary "The Mesoamerican Diet: Origins" at our second annual community film screening event. This event is free and open to all community members, including people not affiliated with UC Davis. Researchers' findings suggest that the recreation of this diet can surmount the dire issues of diabetes, obesity, and loss of biocultural diversity resulting from modern diets high in processed foods containing saturated fats, fiber-free flours, sugars, and carbohydrates. Executive Producers Daniel Zizumbo and Patricia Colunga will also be taking questions via Skype. To register for the screening, click **here**.

8TH ORGANIC SEED GROWERS CONFERENCE: "CULTIVATING RESILIENCE" FEBRUARY 4-6, 2016 OREGON STATE UNIVERSITY

The largest organic seed event in the United States. Attendees will have the opportunity to expand seed knowledge and skills, hear the latest in scientific research, and discover new resources and tools. For details, click **here**.

BREEDING WITH GENOMICS FEBRUARY 16-16, 2016 DAVIS, CA

A hands-on workshop on software support, marker application in breeding programs including R, the Integrated Breeding Platform and BLUPS. This course is aimed at professionals who are involved in plant breeding and germplasm improvement. Register **here**.

5TH INTERNATIONAL CONFERENCE ON QUANTITATIVE GENETICS JUNE 12-17, 2016 MADISON, WISCONSIN

For more information, or to register, click here.

>>>read more

Facebook: Plant Breeding Center

C Twitter: @UCPlantBreeding

POPULATION, EVOLUTIONARY, & QUANTITATIVE GENETICS MEETING (PEQG) JULY 13-17, 2016 ORLANDO WORLD CENTER MARRIOTT, FL

The meeting will be held in conjunction with The Allied Genetics Conference (TAGC) and offers a unique opportunity to network with other researchers from various fields of genetics and share findings. For more information, click **here**.

PLANT BREEDING CENTER:

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