

Next Generation Plant Breeder's Toolbox

4th Biennial Graduate Student Plant Breeding Symposium
NC State University, Talley Student Union, Coastal Ballroom
Thursday, February 8, 2018

A lunch will be served. The symposium is followed by a reception.

View the [symposium presentations](#) online!

Registration

Registration Deadline: February 2nd, 2018

Symposium Schedule

7:30-8:10	-	Registration with light refreshments
8:10-8:20	-	Welcome, Takshay Patel , NC State University Plant Breeding Club
8:20-8:30	-	Dr. Tom Stafford, Reynolds Coliseum Highlights
8:30-9:30	-	Dr. Jenelle Meyer, DowDuPont, Champaign-Urbana, IL
9:30-10:30	-	Dr. Randy Wisser , University of Delaware, Newark, DE
10:30-11:00	-	Morning break with refreshments
11:00-Noon	-	Dr. Amy Iezzoni , Michigan State University, East Lansing, MI
Noon-1:30	-	Lunch for Registered Attendees, Reynolds Coliseum Tour for Interested participants
1:30-2:30	-	Dr. John Hickey , The Roslin Institute, University of Edinburgh, Scotland
2:30-3:30	-	Dr. Rodolphe Barrangou , NC State University, Raleigh, NC
3:45-5:00	-	Closing remarks , reception with light hors d'oeuvres

Featured Speakers

Strategies to Improve Genetic Gain in Commercial Plant Breeding

Dr Jenelle Meyer, DowDuPont, Champaign-Urbana, IL

Jenelle Meyer grew up on a small family farm in Iowa. She graduated from Wartburg College (Waverly, IA), with a BA in biology and biochemistry. She completed a Ph.D. in plant genetics at the University of Missouri – Columbia studying the genetic basis of recurrent selection for a simply inherited trait in corn. She worked within the USDA as a postdoc for the vegetable crop unit at Madison Wisconsin and the Soybean genetics group at Ames, Iowa. Both postdocs included research to identify candidate genes conferring resistance to important diseases. Jenelle started with Dow AgroSciences in 2009 and has worked in field stations in Iowa, the molecular laboratory in Indianapolis, a project leader for trait introgression for North America, she served a site leader and corn breeder in Illinois, and is currently the Global soybean trait integration leader for the Agricultural Research Division of DowDuPont.



Bricks in the Wall to Environmental Adaptation: Insights from Studies in Response Variation in Maize

Dr. Randall J. Wisser, University of Delaware, Newark, DE

Dr. Randall J. Wisser is an associate professor in the Department of Plant and Soil Sciences at the University of Delaware. He received his Ph.D. in plant breeding and genetics from Cornell University, followed by postdoctoral training in quantitative genetics at North Carolina State University. His laboratory studies genetic diversity and crop improvement, with research topics encompassing the genetics of complex traits, response to artificial selection, environmental adaptation and plant-pathogen interactions.



[View presentation online](#)

RosBREED: A Collaborative Project That is Advancing the 'Toolbox' for Rosaceous Crop Breeders

Dr. Amy Iezzoni, Michigan State University, East Lansing, MI

Amy Iezzoni is a University Distinguished Professor in the Department of Horticulture at Michigan State University where she directs the Michigan State University tart cherry scion and cherry rootstock breeding programs, has an active program in cherry genetics, and co-teaches two graduate courses in plant breeding and genetics. Dr. Iezzoni was the Project Director of the USDA- Specialty Crop Research Initiative (SCRI) coordinated agricultural project entitled "RosBREED: Enabling marker-assisted breeding in Rosaceae", an international collaborative project designed to increase breeding efficiency and the success of new cultivar adoption for apple, cherry, peach and strawberry. She is currently the Project Director of a second coordinated agricultural project, also funded by the USDA-SCRI program, entitled "RosBREED: Combining disease resistance with horticultural quality in new rosaceous cultivars" that is extending the benefits of DNA informed breeding to more rosaceous crops and traits using expanded genomics information.



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Strategies to Exploit Genomic Technology in Plant Breeding Systems

John Hickey, The Roslin Institute, University of Edinburgh, Scotland

Prof. John Hickey is the Chair of Animal Breeding at The Roslin Institute in Edinburgh (<http://www.alphagenes.roslin.ed.ac.uk/>). His area of research spans animal breeding, plant breeding, and human genetics. In particular he seeks to develop computational methods to generate and analyse huge data sets with whole genome sequence information, methods and breeding strategies that use genomic information to increase rates of genetic progress, and the concept of Genomic Selection 2.0. Software and algorithms developed by John Hickey underpin aspects of several of the largest breeding programs globally.



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The CRISPR Craze: From Adaptive Immunity to Genome Editing

Dr. Rodolphe Barrangou, NC State University, Raleigh NC

Dr. Barrangou earned a BS in Biological Sciences from Rene Descartes University in Paris, France, a MS in Biological Engineering from the University of Technology in Compiègne, France, a MS in Food Science from NC State, a PhD in Genomics from NC State and a MBA from the University of Wisconsin-Madison. He spent 9 years in R&D and M&A at Danisco and DuPont. Currently, Rodolphe Barrangou is the T. R. Klaenhammer Distinguished Scholar in Probiotics research and an Associate Professor in the Department of Food, Bioprocessing and Nutrition Sciences at North Carolina State, focusing on the evolution and functions of CRISPR-Cas systems, and their applications in bacteria used in food manufacturing. Rodolphe is also an associate member of the Microbiology graduate program, the Biotechnology graduate program, the Functional Genomics graduate program, the Genetics program and the Comparative Medicine Institute. Recently, Rodolphe received the 2016 Warren Alpert Prize, the 2016 Canada Gairdner International Award, and the 2017 NAS award in Molecular Biology. Dr. Barrangou is also on the Board of Directors of Caribou Biosciences, a co-founder and member of the Scientific Advisory Board of Intellia Therapeutics, and a co-founder and SAB chairman of Locus Biosciences.



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Please direct symposium questions or concerns to Takshay Patel: tkpatel@ncsu.edu or Dr Charlie Stuber.

Hosted by the North Carolina State University Plant Breeding Club,
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Thank you to this year's sponsors!



"The Plant Breeding Club Symposium fundraising efforts operate under the auspices of the NC Agricultural Foundation, Inc., a 501(c)(3) organization."