

Symposium 2017

Emerging Frontiers in Plant Breeding & Genetics

Friday, December 15, 2017

Molecular Plant Sciences Building - Room 1200

12:15 PM to 7 PM



**MICHIGAN STATE
UNIVERSITY**

Participation:

The symposium is open to MSU faculty, staff, graduate students and undergraduates, as well as members of neighboring institutions and the community. There is no registration fee or requirement for preregistration.

Roundtable discussions:

We will be hosting four roundtable discussion sessions with the symposium speakers on the morning of the symposium. These sessions are available to students and faculty from any program who are interested in attending.

Attending the sessions is highly recommended for PBGB students.

There will be two sessions with two roundtables run concurrently, each with two of our speakers.

The sessions have limited space so sign up as early as possible.

Reception and Poster Session:

A poster session and open reception for the speakers will immediately follow the talks in the MPS atrium. Refreshments will be served. Those who wish to present a research poster (4'X 4') are invited to do so. Graduate students and faculty associated with PBGB are particularly encouraged to participate.

Please **register** for the Poster and/or Roundtable sessions using the link:
<http://tiny.cc/PBGB2017-Reg>

Live stream on:
tiny.cc/PBGBsymp2017

Sponsorship

The PBGB program wishes to acknowledge support for the symposium from Dow AgroSciences and MSU AgBioResearch.

Dr. Matthew Willmann

Cornell University
Director, Plant Transformation Facility

“CRISPR/Cas9 genome-editing for scientific discovery and crop improvement”

Matthew Willmann has 25 years of plant science research experience, having worked in several fields, including plant transformation and genome editing, plant pathology, plant development, plant small RNA biology, and plant genomics. He received his undergraduate degree in General Plant Science from Cornell University and his Ph.D. in Genetics from Harvard University. After postdocs at the University of Pennsylvania, Matthew returned to Cornell in January 2016 as Director of the CALS Plant Transformation Facility (PTF). PTF is a service facility that makes transgenic and CRISPR/Cas9 genome-edited plants (currently rice, maize, wheat, apple, and watermelon) for Cornell and external faculty. The facility also conducts research to develop transformation protocols for previously untransformed plants and methods for transgene-free CRISPR/Cas9 genome-editing. Matthew is a member of the Advisory Board for the Cornell Alliance for Science, an organization that supports and promotes the use of plant biotechnology to help farmers around the world. He is also on the editorial board of The CRISPR Journal, a new journal about genome editing coming in 2018. Since 2000, in an attempt to increase the acceptance of plant biotechnology, Matthew has given many talks for the public about how transgenic and genome-edited plants are made.

Contact Information:

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Dr. David Douches

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Schedule:

11:45 – 12:15

Pizza Lunch MPS atrium

12:15 – 12:30

Opening remarks

12:30 – 1:30

Dr. Matthew Hufford – Assistant Professor,
Ecology, Evolution, & Organismal Biology
Iowa State University

*“Demography and adaptation during maize expansion across
the Americas”*

1:30 – 2:30

Dr. Chad Niederhuth – Assistant Professor, Plant Biology
Michigan State University

“Mechanisms and evolution of plant epigenomic diversity”

2:30 – 3:00

Coffee Break

Dr. Shelley Jansky – Research Geneticist, USDA-ARS
Professor, University of Wisconsin-Madison, Horticulture

“Reinventing potato as diploid crop”

4:00 – 5:00

Dr. Matthew Willmann – Cornell University
Director, Plant Transformation Facility

*“CRISPR/Cas9 genome-editing for scientific discovery and
crop improvement”*

5:00 – 7:00

Reception and Poster Session – MPS Atrium



Invited Speakers:

Dr. Matthew Hufford

Assistant Professor, Ecology, Evolution, & Organismal
Biology
Iowa State University

“Demography and Adaptation during Maize Expansion across the Americas”

Matthew Hufford is an evolutionary geneticist and faculty member in the Ecology, Evolution, and Organismal Biology Department at Iowa State University since 2013. Prior to his appointment at ISU, Dr. Hufford completed his BS at Wheaton College, followed by a Masters and Ph.D. at the University of California, Davis. Dr. Hufford then worked as a postdoc with Jeffrey Ross-Ibarra, also at UC Davis, in which he completed studies on maize evolution during domestication and modern crop improvement and assessed the prevalence and evolutionary significance of gene flow between maize and its wild relatives, the teosintes. Current work in the Hufford Laboratory focuses on adaptation of maize to high altitude regions across the Americas and, through de novo genome assembly, is assessing evolution of the pan-genome within the genus Zea.

Dr. Chad Niederhuth

Assistant Professor, Plant Biology
Michigan State University

“Mechanisms and Evolution of Plant Epigenomic Diversity”

Chad Niederhuth is an assistant professor in the Department of Plant Biology at Michigan State University (Starting Jan 2018). Prior to this, he was an NSF postdoc with Robert Schmitz at the University of Georgia working on plant epigenomic diversity and ecology. Chad received a B.S. in Agronomy at Iowa State University where he worked with Kan Wang on vaccine production in plants. He completed an internship with Rachel Chikwamba in South Africa working on microbicide production in plants. He received his Ph.D. in Biological Sciences at the ...

... University of Missouri under John C. Walker working on signaling pathways and the genomics of abscission. The Niederhuth lab uses genome-wide approaches to assess differences in the epigenome and to understand how these differences affect how plants develop and respond to their environment.

Dr. Shelley Jansky

Research Geneticist, USDA-ARS
Professor, University of Wisconsin-Madison,
Horticulture

“Reinventing potato as a diploid crop”

Shelley Jansky is a Research Geneticist with the USDA-ARS and a professor in the Department of Horticulture at the University of Wisconsin-Madison. Her research program focuses on potato germplasm enhancement, with the goal of developing genetics resources for use by breeders in cultivar development. Currently, her program is developing recombinant inbred line populations in interspecific diploid potato populations and self-pollinating cultivated potato to create inbred lines for breeding and genetics analyses. Shelley received her B.S. in Biology at the University of Wisconsin-Stevens Point and M.S. and Ph.D. degrees in Plant Breeding and Plant Genetics at the University of Wisconsin-Madison.
