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.

Poster Session:
A poster session and open reception for the speakers will immediately follow the talks in the MPS atrium. Light 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 session by emailing Dr. Dave Douches.

Luncheon:
Plant Breeding, Genetics, and Biotechnology and Genetics Program graduate students and faculty who would like to participate in the luncheon with the speakers please **RSVP** by email to Dr. Dave Douches at: **douchesd@msu.edu**

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

Image Credits:
An artist's depiction of the CRISPR system in action.
Illustration by Stephen Dixon

Transgenic blight resistant potato varieties compared to the susceptible cultivar.
http://www.gmo-safety.eu/

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Schedule:

9:00 – 9:10
Welcome – **Dave Douches** – Director PBGB

9:10 – 10:00
Dr. Adam Bogdanove
Cornell University – Plant Pathology
"The roles of TAL effectors in nature in relation to their unique properties as DNA targeting tools"

10:00 – 10:30
Break

10:40 – 11:30
Dr. Gary Rudgers
DOW AgroScience – Global Regulatory Leader
"Plant Genome Editing: Biotech Tools for the Next Generation "

11:30 – 1:30
Lunch

1:30 – 2:25
Dr. Nic Bate
Syngenta, Group leader – Agronomic traits
"Progress and challenges in the development of drought tolerance from an industry perspective"

2:30 – 3:20
Dr. Peggy Ozias-Akins
University of Georgia – Horticulture
"Engineering parthenogenesis: utility for apomixis and haploid induction"

3:30 – 5:30
Reception and Poster Session – MPS Atrium

Interdepartmental Graduate Program in Plant Breeding, Genetics & Biotechnology

Symposium 2014

Technological Advancements for Genetically Modified Specialty Crops

Friday December 12, 2014
Room A155 PSSB
9 AM to 4 PM

PBGB Plant Breeding, Genetics and Biotechnology
MSU AgBio Research
Dow AgroSciences

MICHIGAN STATE UNIVERSITY

Invited Speakers:

Dr. Adam Bogdanove
Cornell University – Plant Pathology

"The roles of TAL effectors in nature in relation to their unique properties as DNA targeting tools"

Adam Bogdanove is a professor of Plant Pathology and Plant-Microbe Biology at Cornell University. His research centers on diseases of rice caused by Xanthomonas oryzae, with a focus on TAL effectors, transcription factors injected by the bacterium to activate host genes during infection. Bogdanove discovered the modular mechanism by which TAL effectors recognize their DNA targets and pioneered the use of TAL effectors as customizable DNA targeting tools for a variety of applications including genome editing and synthetic biology. Current efforts focus on TAL effector and target genotypic diversity toward broad and durable disease resistance. Bogdanove earned a bachelor of science in Biology at Yale University in 1987, and his PhD in Plant Pathology at Cornell in 1997. Following postdoctoral work at Purdue and later at the Boyce Thompson Institute, Bogdanove joined the faculty of Plant Pathology at Iowa State University in 2000. Bogdanove joined the Cornell faculty in 2012.

Dr. Gary Rudgers
DOW AgroScience – Global Regulatory Leader

"Plant Genome Editing: Biotech Tools for the Next Generation "

Gary Rudgers is the Global Regulatory Leader for New Business at Dow AgroSciences in Indianapolis, Indiana. Over the past six years with the company, Dr. Rudgers has worked to develop, assess and coordinate global regulatory strategies for emerging and leading biotech crops developed through new and novel plant technologies. In addition to his role at Dow AgroSciences, Dr. Rudgers chairs the CropLife International New Breeding Techniques (CLI-NBT) working group.

(continued…)

Since 2013, this industry organization team has developed and distributed documentation on precision breeding applications to governments and regulatory bodies worldwide. As chair of the CLI-NBT team, Dr. Rudgers has represented the CLI-NBT working group at various international organizations, government agencies and international conferences. Prior to joining Dow AgroSciences in 2008, Dr. Rudgers was one of the leading scientists to help launch the biotechnology company, Chromatin, Inc., in Chicago, Illinois. From 2002 – 2008 he led the Chromatin molecular biology research team to develop and construct the first autonomous plant mini-chromosomes. Dr. Rudgers held a post-doctoral fellowship at The University of Chicago from 2001 – 2002 and received his PhD in 2001 in molecular microbiology and immunology from Baylor College of Medicine in Houston, Texas.

Dr. Nic Bate
Syngenta, Group leader – Agronomic traits

"Progress and challenges in the development of drought tolerance from an industry perspective"

Nic Bate is currently Group Leader for Agronomic Traits for Syngenta, located in Research Triangle Park, North Carolina. He leads a group of about 40 scientists in RTP and Beijing, engaged in research to develop solutions to complex traits such as drought in key crops. Previously, Nic was Research Manager at Pioneer/DuPont in Johnston Iowa between 1999 and 2009 and a Principal Investigator with Agriculture Canada in Saskatoon between 1997 and 1999, working on transgene technologies and abiotic stress. Nic received his PhD from the University of Guelph (Canada) and was an NSERC post-doctoral fellow at the Salk Institute for Biological Studies in La Jolla, CA where he worked on gene silencing mechanisms in plants.

Dr. Peggy Ozias-Akins
University of Georgia – Horticulture

"Engineering parthenogenesis: utility for apomixis and haploid induction"

Dr. Peggy Ozias-Akins is a Professor in the Department of Horticulture and affiliated with the National Environmentally Sound Production Agriculture Lab (NESPAL) at the University of Georgia Tifton Campus. Areas of research for which she is internationally recognized are encompassed in the discipline of plant development and include 1) biotechnology for crop improvement, and 2) molecular genetics of apomixis defined as asexual reproduction through seed. Dr. Ozias-Akins has delivered over 100 invited presentations at regional, national, and international meetings. She has served on the editorial boards of four journals. She has attracted consistent funding from federal agencies including USDA-NRI/AFRI and NSF and is active in the Tifton Campus teaching program as professor, advisor, and curriculum committee member. Her outstanding contributions to the field of Agricultural Biotechnology were recently recognized with an award of Fellow of the American Association for the Advancement of Science.