Curriculum Vitae

Rick Masonbrink

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Education

BS Biology, Northwest Missouri State University (2006)
Ph.D. Genetics, University of Missouri (2012)

Grants

NSF National Plant Genome Initiative Postdoctoral Research Fellowship ($207,000/3yrs)

Research Experience

1/2006 - 5/2006 **Undergraduate Researcher**: Department of Biology, Northwest Missouri State University.
Principal Investigator: Dr. Jeffrey Thornsberry
Research: Genetic drift in freshwater mussels

8/2006 – 05/2012 **Research Assistant**: Department of Biology, University of Missouri.
Principal Investigator: Dr. James Birchler
Research: Investigating the effects of minichromosomes in maize

07/2012 – 06/2013 **Postdoctoral Research Associate**: Department of EEOB, Iowa State University.
Principal Investigator: Dr. Jonathan Wendel
Research: Centromere evolution and cyto-nuclear coevolution in *Gossypium*

07/2013 – present **Postdoctoral Research Fellow**: Department of EEOB, Iowa State University.
Principal Investigator: Dr. Jonathan Wendel
Research: Centromere evolution in *Gossypium*

Mentoring Experience

06/2014 – 08/2014 Mentored a high school teacher in cytology
06/2013 – 08/2013 Mentored Justin Conover in bioinformatics
11/2012 – 05/2013 Mentored Josef Jareczek in molecular and phylogenetic techniques
02/2011 – 05/2012 Mentored and trained undergraduates in molecular and cytological techniques

Teaching Experience

8/2006 - 12/2006 **Biology 110**
- Undergraduate level introductory biology, taught seminars and labs

1/2007 - 5/2007 **General Genetics**
- Undergraduate level introductory genetics, taught seminars

Skills

Fluorescence in-situ hybridization, PCR, immunostaining, plant transformation and regeneration, chromatin immunoprecipitation, molecular cloning, QPCR, QRTPCR, proficient in Microsoft Office, bioinformatics, phylogenetics, UNIX, Perl, and Python programming, analysis of large-scale sequencing datasets

Current Research

1. Characterizing CenH3 in *Gossypium*
2. Centromere satellite divergence in *Gossypium*
3. Retroelement proliferation and dispersal in *Gossypium*
4. Cyto-nuclear coevolution in *Gossypium*

Publications

Lei Gong, **Rick E. Masonbrink**, Corrinne E. Grover, Simon Renny-Byfield, Jonathan Wendel (2015) A cluster of recently inserted transposable elements associated with siRNAs in *Gossypium raimondii*. (The Plant Genome, *In Press*)

Rick E. Masonbrink, Joseph P. Gallagher, Josef J. Jareczek, Simon Renny-Byfield, Corrinne E. Grover, Lei Gong, Jonathan F. Wendel (2014) CenH3 evolution in diploids and polyploids of three angiosperm genera. BMC plant biology Vol 14, 1588

RT Gaeta, **Rick E. Masonbrink**, C Zhao, A Sanyal, L Krishnaswamy, James A Birchler (2013) In vivo modification of a maize engineered minichromosome. Chromosoma Vol. 122, 221-232

Rick E. Masonbrink, Shulan Fu, Fangpu Han, James Birchler (2013) Heritable Loss of Replication Control of a Minichromosome Derived from the B Chromosome of Maize. Genetics Vol. 193, 77-84

Rick E. Masonbrink, James A Birchler (2012). The Accumulation of Multiple Copies of Maize Minichromosomes. *Cytogenetic and Genome Research* Vol. 137, 50-59

Rick E. Masonbrink, Robert T. Gaeta, James A Birchler (2012). Multiple Maize Minichromosomes in Meiosis. *Chromosome Research*, Vol. 20, 395-402

Robert T. Gaeta, **Rick E. Masonbrink**, Lakshminarasimhan Krishnaswamy, Changzeng Zhao, James A. Birchler (2011). Synthetic Chromosome Platforms in Plants. *Annual Review of Plant Biology*, Vol. 62

Robert T. Gaeta, Tatiana V. Danilova, Changzeng Zhao, **Rick E. Masonbrink**, Morgan E. McCaw, James A. Birchler (2011). Recovery of a telomere-truncated chromosome via a compensating translocation in maize. *Genome*, Vol. 54, 184-195

James A. Birchler, Lakshminarasimhan Krishnaswamy, Robert T. Gaeta, **Rick E. Masonbrink**, Changzeng Zhao (2010). Engineered Minichromosomes in Plants. *Critical Reviews in Plant Sciences*, Vol. 29, 135-147

Rick E. Masonbrink and James A Birchler (2010). Sporophytic Nondisjunction of the Maize B Chromosome at High Copy Numbers. *Journal of Genetics and Genomics*, Vol. 37, 79-84

Oral/Poster Presentations

Rick Masonbrink, Joseph Gallagher, Josef Jareczzek, Simon Renny-Byfield, Corrinne Grover, Lei Gong, Jonathan Wendel (2014) CenH3 Evolution in Diploids and Polyploids of Three Angiosperm Genera. Plant and Animal Genome Conference, Cotton Workshop. San Diego, CA (Oral Presentation)

Rick Masonbrink, Joseph Gallagher, Josef Jareczzek, Simon Renny-Byfield, Corrinne Grover, Jonathan Wendel (2014) Centromere Evolution in Diploid and Polyploid Plants. Evolutionary Research Club. Iowa City, IA (Oral Presentation)

Rick Masonbrink, Joseph Gallagher, Josef Jareczek, Jonathan Wendel (2014). Centromere Evolution in Diploid and Polyploid Plants: an Example from Gossypium PGRP Arlington, VA (Oral Presentation)

Rick Masonbrink, Joseph Gallagher, Josef Jareczek, Jonathan Wendel (2014) Centromere Evolution in Diploid and Polyploid Plants: an Example from Gossypium Plant and Animal Genome Conference, Cotton Workshop San Diego, CA (Oral and Poster Presentation)

Rick Masonbrink, Jonathan Wendel (2013). Centromere Evolution in Diploid and Polyploid Plants: an Example from Gossypium PGRP Arlington, VA (Oral Presentation)

Rick Masonbrink, Josef Jareczek, Simon Renny-Byfield, Corrinne Grover, Jonathan Wendel (2013). Evolution of *CenH3* Genes in Diploid and Allopolyploid Cotton Species. SMBE, Chicago, IL (*Poster Presentation*)

Rick Masonbrink, James Birchler (2011). The Distinct Behavior of Multiple Minichromosomes in Maize. Plant Talks. Columbia, Missouri (*Oral Presentation*)

Rick Masonbrink, James Birchler (2011). Endoreduplication of a Very Small Telomere-Truncated Minichromosome Derived From the B Chromosome. 27th Annual Life Sciences Week. Columbia, Missouri (*Poster Presentation*)

Rick Masonbrink, Fangpu Han, Weichang Yu, James A. Birchler (2011). Increasing the copy number of minichromosomes derived from the B chromosome. 27th Annual Life Sciences Week. Columbia Missouri (*Poster Presentation*)

Rick Masonbrink, James Birchler (2011). Endoreduplication of a Very Small Telomere-Truncated Minichromosome Derived From the B Chromosome. 53rd Annual Maize Genetics Conference. Chicago, Illinois (*Poster Presentation*)

Rick Masonbrink, Fangpu, Han, Weichang Yu, James A. Birchler (2011). Increasing the copy number of minichromosomes derived from the B chromosome. 53rd Annual Maize Genetics Conference. Chicago, Illinois (*Poster Presentation*)

Rick Masonbrink, Fangpu Han, Weichang Yu, James Birchler (2009). Copy Number Accumulation of Minichromosomes 51st Annual Maize Genetics Conference. Washington D.C (*Poster Presentation*)

Rick Masonbrink, Fangpu Han, Weichang Yu, James Birchler (2008). Copy Number Accumulation of Minichromosomes in Maize 50th Annual Maize Genetics Conference. Chicago, Illinois (*Poster Presentation*)

References

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