

CURRICULUM VITAE

**Geoffrey Morris, Ph.D.**

*Address:* 3004 Throckmorton Plant Sciences Center  
Department of Agronomy  
Kansas State University  
Manhattan KS 66502  
*Email:* gpmorris@k-state.edu  
*Office:* 785-532-3397  
*Cell:* 312-909-1330

**EDUCATION**

2007 Ph.D., Ecology and Evolution, University of Chicago.  
*Dissertation:* Inferring mechanisms of regulatory evolution in yeast from expression patterns and genome sequence. (Advisor: Wen-Hsiung Li)  
2002 B.Sc., Biology, University of Ottawa (Summa cum laude)  
*Thesis:* Molecular cloning of actin genes and pseudogenes in the tomato family. (Advisor: Guy Drouin)

**ACADEMIC POSITIONS**

2013- Assistant Professor  
Kansas State University, Agronomy  
2012-2013 Research Assistant Professor  
University of South Carolina, Biological Sciences  
2008-2011 Postdoctoral scholar  
University of Chicago, Ecology & Evolution  
2008 Guest researcher  
Argonne National Laboratory, Terrestrial Ecology  
2002 Summer research fellow  
Woods Hole Oceanographic Institution, Department of Biology

**GRANTS**

2015-2019 DOE ARPA-E TERRA: “TERRA Phenotyping Reference Platform” \$1,159,546 subaward as Institutional PI. With T. Mockler (Project PI) and 15 other co-PIs (\$8.0M total award).  
2014-2018 USAID Feed the Future – Sorghum Millet Innovation Lab: “Improving Sorghum Adaptation in West Africa with Genomics-Enabled Breeding” Total award \$1,090,093 as PI, with co-PIs N. Cisse, A. Mamadou, D. Fonceka, E. Weltzien.  
2014-2018 USAID Feed the Future – Sorghum Millet Innovation Lab: “Improved Crop Genetics, Production Practices and Processing Methods for Increased Productivity and Nutrition for Smallholder Sorghum Producers in Ethiopia” as project co-PI, Total award \$804,021 to PI T. Tesso et al.  
2014-2016 Kansas Grain Sorghum Commission: “Improved Genomic Mapping and Marker-Assisted Selection for Cold Tolerance in Grain Sorghum”. Total award \$159,800 as PI, with co-PIs T. Tesso, R. Perumal, V. Prasad.

- 2014-2015 United Sorghum Checkoff Program: “Diversity, Genetics, and Health Benefits of Sorghum Flavonoids” Total award \$26,000 as PI, with co-PIs S. Kresovich, W. Rooney, D. Rhodes.
- 2014-2015 USDA Borlaug Fellowship Program: “Discovery of New Genes for Enhancing Grain and Forage Quality Traits through Association Mapping Pearl Millet” as co-PI \$31,987.
- 2013-2014 Kansas Grain Sorghum Commission: “Development of genomic tools to facilitate drought tolerance and ALS resistance breeding in sorghum”. Total award \$57,250 as PI, with co-PIs T. Tesso, M. Jugulam, V. Prasad.
- 2013-2016 Australian Research Council: “Breaking the nexus: more biomass in cereal grain”. Total award AU\$963,535 to PI Ian Godwin with co-PIs D. Jordan, J. Botella, E van Oosterom, E. Mace, S. Kresovich. AU\$6,667 for International Collaboration Award as Partner Investigator.
- 2012-2015 USDA-AFRI: “At the Root of Sustainable Bioenergy: Using Genetic Variation in Root Traits to Maximize Soil Carbon Sequestration and Biomass Yields”. Total award \$500,000 to PI M. de Graff, \$149,879 subaward as Co-PI.
- 2008-2009 Argonne/UChicago Energy Initiative: “Bioenergy production and carbon sequestration from prairie grassland systems-a population genomics approach for harnessing genetic diversity”. Total award \$100,000

#### FELLOWSHIPS AND AWARDS

- 2004-2007 Graduate Research Fellowship, National Science Foundation
- 2002-2004 Post-graduate Scholarship, NSERC (Canada)
- 2002 Woods Hole Oceanographic Institution Summer Fellowship
- 2002 Univ. of Ottawa Silver Medal, Biology Faculty Plaque
- 2000, 2001 NSERC Undergraduate Summer Research Awards
- 1998-2002 Univ. of Ottawa Faculty of Science Admission Scholarship

#### REFEREED PUBLICATIONS

\*Corresponding author; Morris lab trainee.

Hu ZB, Mbacké B, Perumal R, Codou Guèye M, Sy O, Bouchet S, Prasad PV, **Morris GP\***.

(2015) Population genomics of pearl millet (*Pennisetum glaucum* (L.) R. Br.): comparative analysis of global accessions and Senegalese landraces. *BMC Genomics*. 16:1048.

Boyles RE, Cooper EC, Myers MT, Brenton Z, Rauh BL, **Morris GP**, Kresovich S (2015)

Genome-wide association studies of grain yield components in diverse sorghum germplasm. *The Plant Genome*. 10.3835/plantgenome2015.09.0091

Upadhyaya HD, Wang YH, Dintyala SV, Dwivedi SL, Prasad PVV, Burrell AM, Klein R, **Morris GP**, Klein PE (2015). Association mapping of germinability and seedling vigor in sorghum under controlled low temperature conditions. *Genome*. 10.1139/gen-2015-0122

**Morris GP\***, Hu ZB, Grabowski PP, Borevitz JO, de Graaff MA, Miller RM, Jastrow JD (2015)

Genotypic diversity effects on biomass production in native perennial bioenergy cropping systems. *Global Change Biology Bioenergy*. 10.1111/gcbb.12309

Adkins J, Jastrow JD, **Morris GP**, Six J, de Graaff MA (2016) Effects of switchgrass cultivars and intraspecific differences in root structure on soil carbon inputs and accumulation.

*Geoderma*, 262:147-154.

Lasky JR, Upadhyaya HD, Ramu P, Deshpande S, Hash CT, Bonnette J, Juenger TE, Hyma K, Acharya C, Mitchell SE, Buckler ES, Brenton Z, Kresovich S, **Morris GP\*** (2015)

- Genome-environment associations in sorghum landraces predict adaptive traits. *Science Advances*, 1:e1400218.
- Rhodes DH, Hoffmann L, Rooney WL, Ramu P, **Morris GP**, Kresovich S (2014) Genome-wide association study of grain polyphenol concentrations in global sorghum [*Sorghum bicolor* (L.) Moench] germplasm. *Journal of Agricultural and Food Chemistry*, 62(45):10916–27
- Grabowski PP, **Morris GP**, Casler MD, Borevitz JO (2014) Population genomic variation reveals roles of history, adaptation, and ploidy in switchgrass. *Molecular Ecology*. 23(16):4059–73.
- Shakoor N, Nair R, Crasta O, **Morris GP**, Feltus FA, Kresovich S (2014) A *Sorghum bicolor* expression atlas reveals dynamic genotype-specific expression profiles for vegetative tissues of grain, sweet and bioenergy sorghums. *BMC Plant Biology*, 14:35.
- Lowry DB, Behrman KD, Grabowski P, **Morris GP**, Kiniry JR, Juenger TE. (2014) Local and Climatic Adaptations Across the *Panicum virgatum* Species Complex. *American Naturalist*. 183(5):682–92.
- Morris GP\***, Rhodes DH, Brenton Z, Ramu P, Thayil VM, Deshpande S, Hash CT, Acharya C, Mitchell SE, Buckler ES, Yu J, Kresovich S (2013) Dissecting genome-wide association signals for loss-of-function phenotypes in sorghum flavonoid pigmentation traits. *G3: Genes|Genomes|Genetics* 3(11):2085-2094.
- Morris GP\***, Ramu P, Deshpande SP, Hash CT, Shah T, Upadhyaya HD, Riera-Lizarazu O, Brown PJ, Acharya CB, Mitchell SE, Harriman J, Glaubitz JC, Buckler ES, Kresovich S (2013) Population genomic and genome-wide association studies of agroclimatic traits in sorghum. *Proceedings of the National Academy of Sciences* 110: 453–458.
- Rest JS, Bullaughey K, **Morris GP**, Li W-H (2012) Contribution of Transcription Factor Binding Site Motif Variants to Condition-Specific Gene Expression Patterns in Budding Yeast. *PLoS ONE* 7:e32274.
- Morris GP\***, Grabowski PP, Borevitz JO (2011) Genomic diversity in switchgrass (*Panicum virgatum*): from the continental scale to a dune landscape. *Molecular Ecology* 20:4938–4952.
- Brachi B, **Morris GP**, Borevitz JO (2011) Genome-wide association studies in plants: the missing heritability is in the field. *Genome Biology* 12: 232.
- Borevitz JO, Hazen SP, Michael TP, **Morris GP**, Baxter IR, Hu TT, Chen H, Werner JD, Nordborg M, Salt DE, Kay SA, Chory J, Weigel D, Jones JDG, Ecker JR (2007) Genome-wide patterns of single-feature polymorphism in *Arabidopsis thaliana*. *Proceedings of the National Academy of Sciences* 104: 12057 –12062.
- Byrnes J, **Morris GP**<sup>#</sup>, Li WH (2006) (<sup>#</sup>Co-first author) Reorganization of adjacent gene relationships in yeast genomes by whole-genome duplication and gene deletion. *Molecular Biology and Evolution*. 23(6):1136-43.

#### NON-REFEREED PUBLICATIONS

- Morris GP** and Rhodes DH. (2009) “Greener Pastures: Health and Sustainability on a Family Dairy Farm” *Hunger and Environmental Nutrition Newsletter*. American Dietetic Association.

#### PRESENTATIONS

- 2014 Invited talk, "Genotyping-by-sequencing in sorghum and its application to wild relatives", Global Crop Diversity Trust, Warwick, Australia.

- 2014 Invited talk, "Genomic Signatures of Climate and Soil Adaptation in a Widely-diffused Crop", Plant and Animal Genome XXII.
- 2013 Invited talk, "New resources and strategies for genome-wide mapping in sorghum" Sorghum Improvement Conference of North America.
- 2013 Invited talk, "Population genomic and genome-wide association studies of agronomic traits of sorghum", Plant and Animal Genome XXI.
- 2013 Invited talk, "Genomic resources for complex trait dissection and molecular breeding in sorghum", Plant and Animal Genome XXI.
- 2012 Invited talk, "At the deep end of the gene pool: Genomic diversity in bioenergy grasses" Clemson University.
- 2012 Poster, "Genomic basis of agroclimatic traits in sorghum", Evolution 2012, Ottawa, Canada.
- 2011 Contributed talk, "Genomic diversity in switchgrass: from the continental scale to a dune landscape", Ecological Genomics Symposium, Kansas State University.
- 2011 Poster, "Range-wide genetic variation and population structure of switchgrass (*Panicum virgatum* L.) measured using Genotyping-By-Sequencing (GBS)", Plant and Animal Genome XX.
- 2010 Contributed talk, "Effects of ecotypic diversity on establishment of reconstructed native grasslands and outputs of ecosystem services", SER-MWGL, Madison WI.
- 2008 Poster, "Ecological restoration genetics in tallgrass ecosystems". Biodiversity in a Rapidly Changing World, NCSE Conference, Washington D.C.
- 2008 Invited talk, "Genetic diversity of prairie grasses: What's its role in prairie restoration?", Morton Arboretum, Morton Grove, IL.
- 2006 Contributed talk, "Reorganization of adjacent gene relationships in yeast genomes by whole-genome duplication and gene deletion", Society for Molecular Biology and Evolution, Phoenix, AZ.
- 2004 Poster, "Transcription factor binding divergence of duplicate genes", Society for Molecular Biology and Evolution Annual Meeting, State College, PA.

## TEACHING

- 2016- AGRON 810 "Agronomy Seminar"
- 2016- AGRON 880 "Plant Molecular Biology"
- 2015- AGRON 980 "Genomic Analysis for Crop Improvement"
- 2007-2008 Course designer and instructor, "Prairie Ecosystems: Lessons For Sustainability"
- 2007 Course design workshop, The Center for Teaching and Learning
- 2007 Workshop on Teaching in the College, The Center for Teaching and Learning
- 2007 Teaching assistant, Evolutionary Genomics
- 2006 Teaching assistant, Biological Diversity
- 2006 Teaching assistant, Molecular Biology

## PROFESSIONAL AND OUTREACH ACTIVITIES

- 2015-2016 Planning committee, Scholarship committee: Sorghum Improvement Conference of North America
- 2014 Agronomy Open House committee member, prepared outreach poster on "Crop Genetics and Diversity" and sorghum panicle display, KSU, Manhattan, KS
- 2007-2011 Nature Areas Steward, Chicago Park District. Managing and leading volunteer restoration activities at two urban nature areas.

- 2009-2011 Illinois representative, Society for Ecology Restoration–Midwest/Great Lakes  
2009-2010 Member, Chicago Wilderness Climate Change Task Force  
2008 Policy workshop, National Council for Science and the Environment, Washington D.C.  
2008 Midwest Prescribed Burn Crew Training, Chicago Wilderness  
2008 General and Rights-of-way Pesticide Operator License, Illinois Dept. of Agriculture  
2006- Reviewer: PNAS, Genetics, Journal of Molecular Evolution, American Journal of Botany, PLoS ONE, Journal of Integrative Plant Biology, Nature Plants, The Plant Journal, NSF Plant Genome Research Program, G3: Genes|Genomes|Genetics, Israel Binational Agricultural Research and Development (BARD) Fund, Crop Science, BMC Plant Biology, Theoretical and Applied Genetics, GENETICS, NSF Basic Research to Enhance Agricultural Development, The Plant Genome, Nature Communications