

Matthew B. Hufford

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Education:

- BS Biology, Wheaton College, Wheaton, IL 1999
- MS International Agricultural Development, UC Davis 2009
- PhD Ecology, UC Davis 2010
Dissertation: "Genetic and Ecological Approaches to Guide Conservation of Teosinte (*Zea mays* ssp. *parviglumis*), the Wild Progenitor of Maize"
Advisor: Paul Gepts

Professional Experience:

- Postdoctoral Scholar, UC Davis, Jeffrey Ross-Ibarra's Laboratory, 2010-present
- Graduate Research Assistant, UC Davis, Paul Gepts' Laboratory, 2003-2009
- Collaborator in California Rangeland Yellow Starthistle Project, UC Davis, 2004-2006
- Visiting Scientist, International Center for Insect Physiology and Ecology, Kenya, 2003-2004

Teaching Experience:

- Instructor, UC Davis, California Biodiversity and Rapid Environmental Change (2009)
- Guest Lecturer, UC Davis, Applied Landscape Genetics with GIS (2011), Plant Genetics (2010), Collaborative Studies in Mathematical Biology (2009), Introduction to Plant Breeding (2005)
- Teaching Assistant, UC Davis, Crop Evolution (2009)

Research Grants:

- USDA-NIFA Plant Genome, Genetics, and Breeding (co-PI), 2012-2014 (\$300,000)
- UC Davis Genome Center Seed Grant (co-PI), 2011 (\$2,000)
- USDA-ARS, Plant Exploration Grant (co-PI), 2010 (\$8,599)
- UC MEXUS Small Grant for Postdocs, 2010 (\$1,500)
- UC Davis Humanities Graduate Research Award, 2008 (\$1,500)
- Jastro-Shields Scholarship for Graduate Research, UC Davis, 2003, 2008 (\$4,500)
- National Fish and Wildlife Foundation, Pulling Together Initiative (author), 2007 (\$50,000)
- UC MEXUS Dissertation Research Grant, 2007 (\$12,000)
- Graduate Research Award, Biological Invasions IGERT, UC Davis, 2007 (\$5,000)

Selected Fellowships and Awards:

- Travel Grant Award, UC Davis Postdoctoral Scholar Association, 2011 (\$400)
- Shapiro Family Award for Excellence in Science, UC Davis, 2010 (\$1,000)
- Outstanding Graduate Teaching Award, UC Davis, 2010
- Biological Invasions IGERT, long-term fellowship, UC Davis, 2004
- Four-year departmental fellowship, Plant Sciences, UC Davis, 2004

Submitted Manuscripts:

van Heerwaarden, **M. B. Hufford**, J. Ross-Ibarra. Historical genomics of North American maize.
 Sexton, J. P., **M. B. Hufford**, A. Bateman, D. B. Lowry, H. Meimberg, S. Y. Strauss, K. J. Rice.
 Gene flow and genetic variation inform mechanisms generating limits of a species' range.

Publications:

- 12) **Hufford, M. B.**, X. Xu, J. van Heerwaarden, T. Pyhäjärvi, J.-M. Chia, R. A. Cartwright, R. J. Elshire, J. C. Glaubitz, K. E. Guill, S. Kaeppler, J. Lai, P. L. Morrell, L. M. Shannon, C. Song, N. M. Springer, R. A. Swanson-Wagner, P. Tiffin, J. Wang, G. Zhang, J. Doebley, M. D. McMullen, E. S. Buckler, D. Ware, S. Yang, J. Ross-Ibarra. In Press. Comparative population genomics of maize domestication and improvement. *Nature Genetics*
- 11) Chia J.-M., C. Song, P. Bradbury, D. Costich, N. de Leon, J. Doebley, R. Elshire, B. Gaut, L. Geller, J. Glaubitz, M. Gore, K. Guill, J. Holland, **M. B. Hufford**, J. Lai, M. Li, X. Liu, Y. Lu, W. McCombie, R. Nelson, J. Poland, B. M. Prasanna, T. Pyhäjärvi, T. Rong, R. Sekhon, Q. Sun, M. Tenaillon, F. Tian, J. Wang, X. Xu, Z. Zhang, S. Kaeppler, J. Ross-Ibarra, M. D. McMullen, E. Buckler, G. Zhang, Y. Xu, D. Ware. In Press. Capturing Extant Variation from a Genome in Flux: Maize HapMap II. *Nature Genetics*
- 10) Swanson-Wagner, R., R. Briskine, R. Schaefer, **M. B. Hufford**, J. Ross-Ibarra, C. L. Myers, P. Tiffin, N. M. Springer. In Press. Reshaping of the maize transcriptome by domestication. *Proceedings of the National Academy of Sciences of the United States of America*
- 9) **Hufford, M. B.**, P. Gepts, and J. Ross-Ibarra. 2011. Influence of cryptic population structure on observed mating patterns in the wild progenitor of maize (*Zea mays* ssp. *parviglumis*). *Molecular Ecology* **20**: 46-55
- 8) Tenaillon, M. I., **M. B. Hufford**, B. S. Gaut, J. Ross-Ibarra. 2011. Genome size and TE content as determined by high-throughput sequencing in maize and *Zea luxurians*. *Genome Biology and Evolution* **3**: 219-229
- 7) Epanchin-Niell, R., **M. B. Hufford**, C. E. Aslan, J. P. Sexton, J. D. Port, and T. M. Waring. 2010. Controlling invasive species in complex social landscapes. *Frontiers in Ecology and the Environment* **8**: 210-216
- 6) Gepts P., **M. Hufford**, K. Kraft. 2010. Domestication of plants. In: Encyclopedia of Geography (B. Warf, editor). SAGE Publications, Thousand Oaks, CA

- 5) Aslan, C. E., **M. B. Hufford**, R. S. Epanchin-Niell, J. D. Port, J. P. Sexton, and T. M. Waring. 2009. Practical challenges in private stewardship of rangeland ecosystems: yellow starthistle control in Sierra Nevada foothills. *Rangeland Ecology and Management* **62**: 28-37
- 4) Piñeyro-Nelson, A., J. van Heerwaarden, H. R. Perales, A. Serratos-Hernández, A. Rangel, **M. B. Hufford**, P. Gepts, A. Garay-Arroyo, R. Rivera-Bustamante, and E. R. Álvarez-Buylla. 2009. Transgenes in Mexican maize: molecular evidence and methodological considerations for GMO detection in landrace populations. *Molecular Ecology* **18**: 750-761
- 3) Zizumbo D., R. Papa, **M. Hufford**, S. Repinski, P. Gepts. 2009. Identification of new wild populations of *Phaseolus vulgaris* in western Jalisco. *Annual Report of the Bean Improvement Cooperative* **52**: 24-25
- 2) Pasquet, R. S., A. Peltier, **M. B. Hufford**, E. Oudin, J. Saulnier, L. Paul, J. T. Knudsen, H.R. Herren, and P. Gepts. 2008. Long-distance pollen flow assessment through evaluation of pollinator foraging range suggests transgene escape distance. *Proceedings of the National Academy of Sciences of the United States of America* **105(36)**: 13456-13461
- 1) Hromas, R., **M. Hufford**, J. Sutton, D. W. Xu, X. X. Li, L. Lu. 1997. Plab, a novel placental bone morphogenetic protein. *Biochimica Et Biophysica Acta* **1354**: 40-44

Selected Recent Presentations:

- “Dueling Genomes: Reciprocal gene flow in hybrid swarms of maize and its wild relative, *Zea mays* ssp. *mexicana*.” 2011. Evolution Conference.
- “Genome-wide effects of domestication and improvement in landraces and modern maize.” 2011. Annual Maize Genetics Conference.
- “Distribution of genetic diversity in populations of teosinte: lessons for conservation of crop wild relatives.” 2009. Association of American Geographers Annual Meeting.

References:

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