Timothy M. Beissinger

CONTACT INFORMATION

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EDUCATION

The University of Wisconsin at Madison, Madison, Wisconsin USA

Ph.D., **Statistical and Quantitative Genetics** — May 2014

Departments: Agronomy and Animal Science
Advisors: Professors Natalia de Leon and Daniel Gianola

M.S., **Statistics** — May 2011

B.S., **Mathematics and Geography** — May 2009

APPOINTMENTS

Research Geneticist & Adjuct Assistant Professor — 2015 - Present
USDA-ARS, Plant Genetics Research Unit
Division of Plant Sciences
University of Missouri, Columbia

Postdoctoral Research Associate — 2014 - 2015
Mentored by Professor Jeff Ross-Ibarra
Department of Plant Sciences
University of California, Davis

Visiting Scientist — Jan - Apr 2014
Mentored by Professor Henner Simianer
Department of Animal Breeding and Genetics
Georg-August Universität, Göttingen, Germany

PUBLICATIONS

Beissinger, T.M., Gholami, M., Erbe, M., Weigend, S., Weigend, A., de Leon, N., Gianola, D., Simianer, H. 2015. Using the variability of linkage disequilibrium between subpopulations to scan for selection in a diverse panel of chickens. Heredity. DOI: 10.1038/hdy.2015.81.

Haase, N.J., **Beissinger, T.M.**, Hirsch, C.N., Vaillancourt, B., Deshpande, S., Barry, K., Buell, C.R., Kaeppler, S., de Leon, N. 2015. Genetic Dissection of quantitative traits using a bulked segregant analysis (BSA)-sequencing method on a large segregating population of maize. Genes Genomes Genetics. DOI: 10.1534/g3.115.017665.

Beissinger, T.M., Rosa, J.G.M., Kaeppler, S.M., de Leon, N., Gianola, D. 2015. Defining window-boundaries for genomic analyses using smoothing spline techniques. Genetics Selection Evolution. 47(30). DOI: 10.1186/s12711-015-0105-9.

Lorenz, A. J., **Beissinger, T.M.**, Rodrigues, R., de Leon, N. 2015. Selection for silage yield and composition did not affect genomic diversity within the Wisconsin Quality Synthetic maize population. Genes Genomes Genetics. DOI: 10.1534/g3.114.015263.

Foerster, J.M., **Beissinger, T.M.**, de Leon, N., Kaeppler, S.M. 2015. Large effect QTL explain natural phenotypic variation for the developmental timing of vegetative

phase change in maize (*Zea mays L.*). Theoretical and Applied Genetics. DOI: 10.1007/s00122-014-2451-3.

Hirsch, C.N., Flint-Garcia, S.A., **Beissinger, T.M.**, Eichten, S.R., Deshpande, S., Barry, K., Springer, N.M., Buell, C.R., de Leon, N., Kappler, S.M. 2014. Insights into the effects of long-term artificial selection on seed size in maize. Genetics. 198(1): 409-421.

Beissinger, T.M., Hirsch, C.N., Vaillancourt, B., Deshpande, S., Barry, K., Buell, C. R., Kaeppler, S. M., Gianola, D., de Leon, N. 2014. A genome-wide scan for evidence of selection in a maize population under long-term artificial selection for ear number. Genetics. 196(3): 829-840.

*__Beissinger, T.M.__, Hirsch, C.N., Sekhon, R.S., Foerster, J.M., Johnson, J.M., Muttoni, G., Vaillancourt, B., Buell, C.R., Kaeppler, S.M., de Leon, N. 2013. Marker density and read-depth for genotyping populations using genotyping-by-sequencing. Genetics. 193: 1073-1081.
* Selected as a highlighted article by the editorial board.

Wu, X., Chuanyu, S., **Beissinger, T.M.**, Rosa, G., Weigel, K., de Leon, N., Gianola, D. 2012. Parallel Markov chain Monte Carlo - bridging the gap to high performance Bayesian computation in animal breeding and genetics. Genet Sel Evol. 44:29.

Wu, X., **Beissinger, T.M.**, Bauck, S., Woodward, B., Rosa, G., Weigel, K., de Leon, N., Gianola, D. 2011. A primer on high-throughput computing for genomic selection. Frontiers in Genetics. 2, 4.

Software

GenWin: Spline Based Window Boundaries for Genomic Analyses
An R package for analyzing genetic data across distinct bins.
http://cran.r-project.org/web/packages/GenWin/index.html

Grants

2012, University of Wisconsin Graduate School. Awarded one year of funding and supplies to support dissertation research.

2012, DuPont-Pioneer and UW Associated Students of Madison. Co-authored grant to support the first University of Wisconsin Plant Sciences Symposium.

2011, DuPont-Pioneer. Awarded funding to genotyping 240 samples with the Pioneer Public SNP array.

Conference, Webinar, and Departmental Presentations

Invited

Beissinger, T. Plant and Animal Genome Conference 24
Maize workshop
January, 2016

Beissinger, T. Division of Plant Sciences, University of Missouri
November, 2015

Beissinger, T. Department of Botany and Plant Sciences, University fo California, Riverside,
April, 2015

Beissinger, T. USDA-ARS Plant Genetics Research Unit, University of Missouri, Columbia
March, 2015

Beissinger, T., Wang, L., Durvasula, A., Crosby, K., Hufford, M., and Ross-Ibarra, J. 57th annual Maize Genetics Conference
March, 2015

Beissinger, T. Plant and Animal Genome Conference 23
Genomic selection and genome-wide association studies workshop
January 2015

Beissinger, T. Department of Animal Science, University of California, Davis
August, 2014

Beissinger, T. Department of Animal Breeding and Genetics, Georg-August Universitat
February 2014

Beissinger, T. Center of Life and Food Sciences, Technische Universitat Munchen
April 2014

Beissinger, T. Animal Science Department, University of Nebraska, Lincoln
December, 2013

Beissinger, T., Hirsch, C., Buell, R.C., Kaeppler, S., Gianola, D., de Leon, N. Gordon Research Seminar in Quantitative Genetics and Genomics. Galveston, TX, February, 2013.

Contributed

Beissinger, T. Bay Area Population Genomics Meeting XI. Davis, CA, December, 2014.

Beissinger, T. Corn Breeding Webinar Series, hosted by Dr. Rex Bernardo at the University of Minnesota. December, 2012.

Beissinger, T., Hansey, C., Sekhon, R., Vaillancourt, B., Buell, C.R., Kaeppler, S., de Leon, N. North Central Regional Corn Breeding Research Meeting. Portland, OR, March, 2012.

Poster Abstracts

Beissinger, T. and Ross Ibarra, J. Plant and Animal Genome Conference 23. San Diego, CA, January 10-14, 2015.

Beissinger, T., Gianola, D., de Leon, N. Impact of Large-Scale Genomic Data on Statistical and Quantitative Genetics Conference. Seattle, WA, November 23-26, 2013.

Beissinger, T., Hirsch, C., Vaillancourt, B., Buell, R.C., Kaeppler, S., Gianola, D., de Leon, N. Maize Genetics Conference. St. Charles, Il, March 14-17, 2013.

Beissinger, T., Hirsch, C., Buell, R.C., Kaeppler, S., Gianola, D., de Leon, N. Gordon Research Seminar in Quantitative Genetics and Genomics. Galveston, TX, February 16-17, 2013.

Beissinger, T., Hansey, C., Foerster, J., Sekhon, R., Johnson, J., Muttoni, G., Vaillancourt, B., Buell, C.R., Kaeppler, S., de Leon, N. Maize Genetics Conference. Portland, OR, March 15-18, 2012.

Beissinger, T., de Leon, N., Kaeppler, S. Maize Genetics Conference. St Charles, IL, March 17-20, 2011.

Teaching

Co-instructor

Intoduction to Linux and High Throughput Computing — Fall 2010
University of Wisconsin, Madison Department of Animal Sciences

Guest Lectures

Applied Quantitative and Statistical Genetics — December 2015
Two lectures on Genomic Prediction
University of Missouri, Columbia, Division of Plant Sciences

Teaching assistant

Biometrical Procedures in Plant Breeding — Fall 2011, 2013
University of Wisconsin, Madison Department of Agronomy

Experimental Design — Spring 2013
University of Wisconsin, Madison Department of Agronomy

Advanced Plant Breeding — Spring 2012
University of Wisconsin, Madison Department of Agronomy

Tutoring

Statistics — Fall 2010 - Spring 2011
Advanced Placement Statistics

Calculus — Fall 2006- Spring 2007
Advanced Placement Calculus AB

Reviewed for

BMC Evolutionary Biology
Genes Genomes Genetics (G3)
BMC Genomics
Theoretical and Applied Genetics
PeerJ

Awards and Scholarships

Monsanto fellowship recipient — 2009-2014

Scholarship to attend Summer Institute in Statistical Genetics — 2012
University of Washington, Seattle

Scholarship to attend TeraGrid Conference — 2010
Pittspburgh, PA

Scholarship to attend Open Science Grid Summer School — 2010
Madison, WI

	Undergraduate deans list	All semesters 2007-2009
	Susan B. Hotchkiss memorial scholarship	2005
Academic and Professional Development	Monsanto Fellows Professional Development Program	September 2012
	17th Summer Institute in Statistical Genetics	July 2012
	Monsanto Fellows Professional Development Program	September 2011
	Monsanto Fellows Professional Development Program	September 2010
	Monsanto Fellows Professional Development Program	September 2009
	University of Wisconsin Plant Breeding Internship	Summer 2008
Computer Abilities	Software	
	R, Linux/Unix, SAS, Latex, Condor, Java, Perl, Python	
	Linux workstation system administrator	2010 - 2014
	Participated in Open Science Grid Summer School	July 2010
Statistical Expertise	Bayesian analysis, estimation of functions from data, mixed models, mathematical statistics, statistical inference, linear regression and analysis of variance	
Mathematical Expertise	Real and complex analysis, combinatorics, topology, number theory, modern algebra, cellular automata	