Jeffrey Ross-Ibarra

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Education

PhD Genetics (with JL Hamrick), University of Georgia 2006

MS Botany (with NC Ellstrand and A Gomez-Pompa), University of California Riverside 2000

BA Botany, University of California Riverside 1998

Academic Employment

Associate Professor, Dept. Plant Sciences, University of California Davis 2012-present

Assistant Professor, Dept. Plant Sciences, University of California Davis 2009-2012

Postdoctoral Researcher (with BS Gaut), University of California Irvine 2006-2008

Profesor de Asignatura, Universidad Nacional Autónoma de México 2001

Fellowships and Awards

DuPont Young Professor Award 2012

Presidential Early Career Award for Scientists and Engineers 2009

Dean's Award for Postdoctoral Excellence, UC Irvine 2008

Dissertation Completion Fellowship, University of Georgia 2005-2006

NIH Training Grant, predoctoral research assistantship 2003-2005

University-wide Fellowship, University of Georgia 2001-2003

Instruction and Advising

Current thesis committees: 3 PhD, 1 MS

Genetics (BIS 101, undergraduate), Spring 2012-present

Guest Instructor, UC Davis Plant Breeding Academy, 2012-present

Faculty advisor, Pioneer Hi-Bred/CAES graduate student symposium in plant breeding, 2012-present

Faculty advisor, US-Mexico graduate student exchange program, 2011-present

Population and Quantitative Genetics (GGG 201D, graduate), 2010-2013

Plant Genetics (PLS 152, undergraduate), 2010-2011

Guest lecturer, College Success Institute, UCD Academic Preparation Programs, 2009

Biología de Plantas I (undergraduate), UNAM, 2001

Professional Service

College of Ag. and Environ. Sciences Visioning Committee, 2013

Admissions committees: Plant Biology, Population Biology, 2013

Search committees: Bioinformatician (chair), Science Writer, Director Plant Breeding Center, Pop/Quant Geneticist 2012-2013

Global Crop Diversity Trust Crop Relative Genomics workshop, 2012

Chair, Dept. of Plant Sciences IT committee, 2011-2013

Scientific Advisory Board, AMAIZING Project (€30 million to INRA), 2011-present

Dept. of Plant Sciences academic planning committee, 2010-present

Executive Committee, Genetics Graduate Group, 2009-2012

Associate editor, American Journal of Botany 2009-2011

NSF-USDA Phenomics workshop, 2011

College committee on strategic planning for plant breeding, 2011

Grant panel review (last 2 years): USDA NIFA, UC MEXUS

Ad-hoc grant review (last 2 years): BARD, NSF, France ANR,

Journal peer review (last 12 months): PNAS (3), Genome Research, Peerage of Science, Scientific Reports, PLoS ONE, PLoS Biology, PLoS Genetics, Economic Botany, The Plant Journal, Nature Genetics, Evolution, Theor. App. Genet., Plant Physiology, Heredity

Invited Seminars: last 12 months

Plant and Animal Genome Conference, symposium on domestication 2014

Department of Genetics, U. Georgia Sept. 2013

Plenary Speaker, Canadian Plant Genomics Workshop (Halifax) Aug. 2013

Organizer, Evolutionary Genomics symposium, ASPB (RI) July 2013

Biodesign Institute, Arizona State U. 2013

Interdisciplinary Plant Group, U. Missouri 2013

UCD@BGI featured speaker, UC Davis 2013

Plant and Animal Genome Conference, symposium on translational genomics (CA) 2013

Featured Speaker, UC Davis Seed Central 2013

Crop Wild Relative Genomics meeting (CA) 2012

Germplasm Enhancement of Maize, ASTA Conference (IA) 2012

Pioneer Hi-Bred (CA) 2012

Plenary Speaker, Coastwide Salmonid Genomics Conference (CA) 2012

# Publications (lab members in bold, *equal contribution, †cover article, ‡undergraduate, §corresponding)

In review

Mezmouk S, **Ross-Ibarra J**§. The pattern and distribution of deleterious mutations maize.

Waters AJ, **Bilinski P**, Eichten SR, Vaugh MW, **Ross-Ibarra J**, Gehring M, Springer NM. Conservation and divergence of imprinting in maize. Preprint: http://arxiv.org/abs/1307.7678

Gerke JP, Edwards JW, Guill KE, **Ross-Ibarra J**, McMullen MD. The genomic impacts of drift and selection for hybrid performance in maize Preprint: http://arxiv.org/abs/1307.7313

Vann LE, Toulson-Wimmer A, Katz LA, **Ross-Ibarra J**§, Merritt RB. Nuclear and chloroplast DNA sequence variation in *Yucca brevifolia* (Joshua tree). Preprint: *http://goo.gl/XvhPN* Preprint: http://goo.gl/YrC1gE

In press or in print

43. **Pyhäjärvi T**, **Hufford MB**, **Mezmouk S**, **Ross-Ibarra J**§ (2013) Complex patterns of local adaptation in teosinte. textscGenome Biology and Evolution *In Press: Online Early Access*

42. Wills DM, Whipple C, **Takuno S**, Kursela LE, Shannon LM, **Ross-Ibarra J**, Doebley JF (2013) From many, one: genetic control of prolificacy during maize domestication. PLoS Genetics 9(6): e1003604.

41. McCouch S, Baute GJ, Bradeen J, Bramel P, Bretting PK, Buckler E, Burke JM, Charest D, Cloutier S, Cole G, Dempewolf H, Dingkuhn M, Feuillet C, Gepts, P, Grattapaglia D, Guarino L, Jackson S, Knapp S, Langridge P, Lawton-Rauh A, Lijua Q, Lusty C, Michael T, Myles S, Naito K, Nelson RL, Pontarollo R, Richards CM, Rieseberg L, **Ross-Ibarra J**, Rounsley S, Hamilton RS, Schurr U, Stein N, Tomooka N, van der Knaap E, van Tassel D, Toll J, Valls J, Varshney RK, Ward J, Waugh R, Wenzl P, Zamir. (2013) Agriculture: Feeding the future. Nature 499:23-24

40. **Hufford MB**, Lubinsky P, **Pyhäjärvi T**, **Devengenzo MT**‡, Ellstrand NC, **Ross-Ibarra J**§ (2013) The genomic signature of crop-wild introgression in maize. PLoS Genetics 9(5): e1003477.

39. **Provance MC**§, Garcia Ruiz I, **Thommes C**‡, **Ross-Ibarra J** (2013) Population Studies of *Diospyros riojae* (Ebenaceae), an endangered fruit crop from Mexico. Genetic Resources and Crop Evolution *In Press*.

38. Melters DP*, Bradnam KR*, Young HA, Telis N, May MR, Ruby JG, Sebra R, Peluso P, Eid J, Rank D, Fernando Garcia J, DeRisi J, Smith T, Tobias C, **Ross-Ibarra J**§, Korf IF§, Chan SW-L. (2013) Patterns of centromere tandem repeat evolution in 282 animal and plant genomes. Genome Biology 14:R10

37. Kanizay LB, **Pyhäjärvi T**, Lowry E, **Hufford MB**, Peterson DG, **Ross-Ibarra J**, Dawe RK (2013) Diversity and abundance of the Abnormal chromosome 10 meiotic drive complex in *Zea mays*. Heredity 110: 570-577.

36. **Hufford MB**, **Bilinski P**, **Pyhäjärvi T**, **Ross-Ibarra J**§ (2012) Teosinte as a model system for population and ecological genomics. Trends in Genetics 12:606-615†

35. Muñoz Diez C, Vitte C, **Ross-Ibarra J**, Gaut BS, Tenaillon MI (2012) Using nextgen sequencing to investigate genome size variation and transposable element content. *In* Topics in Current Genetics: Plant Transposable Elements - Impact on Genome Structure & Function. *In press*

34. **van Heerwaarden J**§, **Hufford MB**, **Ross-Ibarra J**§ (2012) Historical genomics of North American maize. PNAS 109: 12420-12425

33. Swanson-Wagner R, Briskine R, Schaefer R, **Hufford MB**, **Ross-Ibarra J**, Myers CL, Tiffin P, Springer NM. Reshaping of the maize transcriptome by domestication. (2012) PNAS 109: 11878-11883

32. **Hufford MB**[*], Xun X[*], **van Heerwaarden J**[*], **Pyhäjärvi T**[*], Chia J-M, Cartwright RA, Elshire RJ, Glaubitz JC, Guill KE, Kaeppler S, Lai J, Morrell PL, Shannon LM, Song C, Spinger NM, Swanson-Wagner RA, Tiffin P, Wang J, Zhang G, Doebley J, McMullen MD, Ware D, Buckler ES[§], Yang S[§], **Ross-Ibarra J**[§] (2012) Comparative population genomics of maize domestication and improvement. Nature Genetics 44:808-811[†]

31. Chia J-M[*], Song C[*], Bradbury P, Costich D, de Leon N, Doebley JC, Elshire RJ, Gaut BS, Geller L, Glaubitz JC, Gore M, Guill KE, Holland J, **Hufford MB**, Lai J, Li M, Liu X, Lu Y, McCombie R, Nelson R, Poland J, Prasanna BM, **Pyhäjärvi T**, Rong T, Sekhon RS, Sun Q, Tenaillon M, Tian F, Wang J, Xu X, Zhang Z, Kaeppler S, **Ross-Ibarra J**, McMullen M, Buckler ES, Zhang G, Xu Y, Ware, D (2012) Capturing extant variation from a genome in flux: maize HapMap II. Nature Genetics 44:803-807[†]

30. Fang Z, **Pyhäjärvi T**, Weber AL, Dawe RK, Glaubitz JC, Sánchez González J, **Ross-Ibarra C**, Doebley J, Morrell PL[§], **Ross-Ibarra J.**[§] (2012) Megabase-scale inversion polymorphism in the wild ancestor of maize. Genetics 191:883-894

29. Cook JP, McMullen MD, Holland JB, Tian F, Bradbury P, **Ross-Ibarra J**, Buckler ES, Flint-Garcia SA (2012) Genetic architecture of maize kernel composition in the Nested Association Mapping and Inbred Association panels. Plant Physiology 158: 824-834

28. Morrell PL, Buckler ES, **Ross-Ibarra J**[§] (2012) Crop genomics: advances and applications. Nature Reviews Genetics 13:85-96[†]

27. Studer A, Zhao Q, **Ross-Ibarra J**, Doebley J (2011) Identification of a functional transposon insertion in the maize domestication gene *tb1*. Nature Genetics 43:1160-1163.

26. **van Heerwaarden J**[§], Doebley J, Briggs WH, Glaubitz JC, Goodman MM, Sánchez González JJ, **Ross-Ibarra J**[§] (2011) Genetic signals of origin, spread and introgression in a large sample of maize landraces. PNAS 108: 1088-1092

25. **Hufford MB**[§], Gepts P, **Ross-Ibarra J** (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

24. Tenaillon MI, **Hufford MB**, Gaut BS, **Ross-Ibarra J**[§] (2011) Genome size and TE content as determined by high-throughput sequencing in maize and *Zea luxurians*. Genome Biology and Evolution 3: 219-229

23. Eckert AJ, **van Heerwaarden J**, Wegrzyn JL, Nelson CD, **Ross-Ibarra J**, González-Martínez SC, and Neale DB (2010) Patterns of population structure and environmental associations to aridity across the range of loblolly pine (*Pinus taeda* L, Pinaceae). Genetics 185: 969-982

22. Fuchs EJ, **Ross-Ibarra J**[§], Barrantes G (2010) Reproductive biology of *Macleania rupestris* (Ericaceae): a pollen-limited Neotropical cloud-forest species in Costa Rica. Journal of Tropical Ecology 26: 351-354

21. Whitney KD, Baack EJ, Hamrick JL, Godt, MJW, Barringer BC, Bennet MD, Eckert CG, Goodwillie C, Kalisz S, Leitch I, **Ross-Ibarra J** (2010) A role for nonadaptive processes in plant genome size evolution? Evolution 64: 2097-2109

20. **van Heerwaarden J**, **Ross-Ibarra J**[§], Doebley J, Glaubitz JC, Sánchez González J, Gaut BS, Eguiarte LE (2010) Fine scale genetic structure in the wild ancestor of maize (*Zea mays* ssp. *parviglumis*). Molecular Ecology 19: 1162-1173

19. Shi J, Wolf S, Burke J, Presting G, **Ross-Ibarra J**, Dawe RK (2010) High frequency gene conversion in centromere cores. PLoS Biology 8: e1000327

18. Hollister JD, **Ross-Ibarra J**, Gaut BS (2010) Indel-associated mutation rate varies with mating system in flowering plants. Molecular Biology and Evolution 27: 409-416.

17. **van Heerwaarden J**, van Eeuwijk FA, **Ross-Ibarra J** (2010) Genetic diversity in a crop metapopulation. Heredity 104: 28-39

16. Gore MA*, Chia JM*, Elshire RJ, Sun Q, Ersoz ES, Hurwitz BL, Peiffer JA, McMullen MD, Grills GS, **Ross-Ibarra J**, Ware DH, Buckler ES (2009) A first-generation haplotype map of maize. Science 326: 1115-1117.

15. **May MR**‡, **Provance MC**, Sanders AC, Ellstrand NC, **Ross-Ibarra J**§ (2009) A pleistocene clone of Palmer's Oak persisting in Southern California. PLoS ONE 4: e8346.

14. Zhang LB, Zhu Q, Wu ZQ, **Ross-Ibarra J**, Gaut BS, Ge S, Sang T (2009) Selection on grain shattering genes and rates of rice domestication. New Phytologist 184: 708-720.

13. **Ross-Ibarra J**, Tenaillon M, Gaut BS (2009) Historical divergence and gene flow in the genus Zea. Genetics 181: 1399-1413.

12. **Ross-Ibarra J***, Wright SI*, Foxe JP, Kawabe A, DeRose-Wilson L, Gos G, Charlesworth D, Gaut BS (2008) Patterns of polymorphism and demographic history in natural populations of *Arabidopsis lyrata*. PLoS ONE 3: e2411.

11. Lockton S, **Ross-Ibarra J**, Gaut BS (2008) Demography and weak selection drive patterns of transposable element diversity in natural populations of *Arabidopsis lyrata*. PNAS 105: 13965-13970.

10. **Ross-Ibarra J**§, Gaut BS (2008) Multiple domestications do not appear monophyletic. PNAS 105: E105

9. Gaut BS, **Ross-Ibarra J** (2008) Selection on major components of angiosperm genomes. Science 320: 484-486.

8. **Ross-Ibarra J**, Morrell PL, Gaut BS (2007) Plant domestication, a unique opportunity to identify the genetic basis of adaptation. PNAS 104 Suppl 1: 8641-8648.

7. **Ross-Ibarra J**§ (2007) Genome size and recombination in angiosperms: a second look. Journal of Evolutionary Biology 20: 800-806.

6. Wares JP, Barber PH, **Ross-Ibarra J**, Sotka EE, Toonen RJ (2006) Mitochondrial DNA and population size. Science 314: 1388-90.

5. **Ross-Ibarra J**§ (2005) Quantitative trait loci and the study of plant domestication. Genetica 123: 197-204.

4. **Ross-Ibarra J**§ (2004) The evolution of recombination under domestication: a test of two hypotheses. American Naturalist 163: 105-112.

3. **Ross-Ibarra J** (2003) Origin and domestication of chaya (*Cnidoscolus aconitifolius* Mill I. M. Johnst): Mayan spinach. Mexican Studies 19: 287-302.

2. **Ross-Ibarra J**§, Molina-Cruz A (2002) The ethnobotany of Chaya (*Cnidoscolus aconitifolius* ssp. *aconitifolius* Breckon): A nutritious Maya vegetable. Economic Botany 56: 350-365.

1. Neel MC, **Ross-Ibarra J**, Ellstrand NC (2001) Implications of mating patterns for conservation of the endangered plant *Eriogonum ovalifolium* var. *vineum* (Polygonaceae). American Journal of Botany 88: 1214-1222.