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

Selected 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

Chancellor's Distinguished Fellowship, UC Riverside 1998-2000

Instruction and Advising

Current (total) advisees: 5 (10) postdoc, 4 (5) graduate, 4 (16) undergraduate

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

Ecological Genomics (ECS243, graduate), Winter 2015-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

Biología de Plantas I (undergraduate), UNAM, 2001

Service: selected from last 2 years

University

UC Davis representative, UC-Mexico Initiative committee on the environment, 2014-present

Section Chair for Agricultural Plant Biology, 2014-present

Plant Sciences executive committee, 2014-present

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

Search committees: Director Genome Center Sequencing Core (2014), Bioinformatician (chair, 2013), Director Plant Breeding Center (2013), Science Writer (2012), Pop/Quant Geneticist (2012)

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

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

Professional

Associate Editor: Genes, Genomes, and Genetics (2014-present), *PeerJ* (2013-present), Axios Reviews (2013-present)

Scientific Advisory Board, AMAIZING Project (INRA), 2011-present

Guest editor, PLoS Genetics (2012, 2014)

Journal peer review: Nature (2), Nature Genetics (2), PLoS Biology, PLoS Genetics (4), PNAS (4), Current Biology, Genome Research, MBE (2), American Naturalist, Molecular Ecology, BMC Genomics, BMC Biology, PLoS ONE, Economic Botany, Peerage of Science, Scientific Reports

Current Funding

NSF Plant Genome: Biology of Rare Alleles (Co-PI, $2,370,788 to JR-I), 2013 - 2018

NSF Plant Genome: Functional Genomics of Maize Centromeres (Co-PI, $754,409 to JR-I), 2010 - 2015

Invited Seminars: last 12 months

SMBE workshop on adaptation and next-gen sequencing, Montpellier, March. 2015

LANGEBIO (Irapuato), Sept. 2014

Pioneer Hi-Bred (IA), Sept. 2014

Dept. of Ecology and Evolution, Iowa State U., Sept. 2014

Pioneer Hi-Bred (CA), Aug. 2014

Bioagricultural Sciences and Pest Management, Colorado State, May 2014

Plant Breeding Genetics and Biotechnology Program, Michigan State (MI), Apr. 2014

National Maize Improvement Center of China, China Agricultural University (Beijing), Mar. 2014

Dept. of Agronomy, University of Guelph, Feb. 2014

Plant and Animal Genome Conference, maize workshop, Jan. 2014

Plant and Animal Genome Conference, symposium on domestication, Jan. 2014

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

Submitted

Dyer GA, López-Feldman A, Yúnez-Naude A, Taylor JE, **Ross-Ibarra J**. Reply to Brush *et al.*: A wake up call for crop conservation science.

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
Citations: 3

Vann LE, **Kono T‡**, **Pyhäjärvi T**, **Hufford MB**§, **Ross-Ibarra J**§. Natural variation in teosinte at the domestication locus teosinte branched1 (tb1).
Preprint: http://biorxiv.org/content/early/2014/06/03/005819

In press or in print

H-Index 24 (2130 citations as of Tue Dec 2 12:27:28 2014)

49. Makarevitch I, Waters M, West P, **Stitzer M**, **Ross-Ibarra, J**, Springer NM (2015) Mobile elements contribute to activation of genes in response to abiotic stress. PLoS Genetics *In Press*.
Citations: 0

48. Fonseca RR, Smith B, Wales N, Cappellini E, Skoglund P, Fumagalli M, Samaniego JA, Caroe C, Avila-Arcos MC, Hufnagel D, Korneliussen TS, Vieira FG, Jakobsson M, Arriaza B, Willerslev E, Nielsen R, Hufford MB, Albrechtsen A, **Ross-Ibarra J**, Gilbert MT (2015) The origin and evolution of maize in the American Southwest. Nature Plants *In Press*
Citations: 0

47. Tiffin P, **Ross-Ibarra J**. Advances and limits of using population genetics to understand local adaptation. Trends in Ecology and Evolution 29:673-680
Citations: 0

46. **Bilinski P**, **Distor KD**, **Gutierez-Lopez J**, **Mendoza Mendoza G**, Shi J, Dawe K, **Ross-Ibarra J**§ (2014) Diversity and evolution of centromere repeats in the maize genome. Chromosoma *In Press*
Citations: 0

45. **Mezmouk S**, **Ross-Ibarra J**§ (2014) The pattern and distribution of deleterious mutations in maize. (2014) G3 4:163-171
Citations: 0

44. Waters AJ, **Bilinski P**, Eichten SR, Vaughn MW, **Ross-Ibarra J**, Gehring M, Springer NM (2013) Comprehensive analysis of imprinted genes in maize reveals allelic variation for imprinting and limited conservation with other species. PNAS 110:19639-19644
Citations: 6

43. **Pyhäjärvi T**, **Hufford MB**, **Mezmouk S**, **Ross-Ibarra J**§ (2013) Complex patterns of local adaptation in teosinte. Genome Biology and Evolution 5: 1594-1609.†
Citations: 14

42. Wills DM, Whipple C, **Takuno S**, Kursel LE, Shannon LM, **Ross-Ibarra J**, Doebley JF (2013) From many, one: genetic control of prolificacy during maize domestication. PLoS Genetics 9(6): e1003604.
Citations: 5

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
Citations: 37

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.
Citations: 26

39. **Provance MC**§, Garcia Ruiz I, **Thommes C**‡, **Ross-Ibarra J** (2013) Population genetics and ethnobotany of cultivated *Diospyros riojae* Gómez Pompa (Ebenaceae), an endangered fruit crop from Mexico. Genetic Resources and Crop Evolution 60: 2171-2182.
Citations: 1

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
Citations: 24

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.
Citations: 2

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†
Citations: 5

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* Grandbastien M-A, Casacuberta JM, editors. Topics in Current Genetics v24: Plant Transposable Elements - Impact on Genome Structure & Function. pp. 41-58
Citations: 5

34. **van Heerwaarden J**§, **Hufford MB**, **Ross-Ibarra J**§ (2012) Historical genomics of North American maize. PNAS 109: 12420-12425
Citations: 28

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
Citations: 24

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[†]
Citations: 138

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) Maize HapMap2 identifies extant variation from a genome in flux. Nature Genetics 44:803-807[†]
Citations: 119

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
Citations: 13

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
Citations: 77

28. Morrell PL, Buckler ES, **Ross-Ibarra J**[§] (2012) Crop genomics: advances and applications. Nature Reviews Genetics 13:85-96[†]
Citations: 116

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.
Citations: 92

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
Citations: 90

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
Citations: 7

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
Citations: 49

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
Citations: 127

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
Citations: 2

21. Whitney KD, Baack EJ, Hamrick JL, Godt MJW, Barringer BC, Bennett 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
Citations: 35

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
Citations: 18

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
Citations: 49

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.
Citations: 19

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

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.
Citations: 323

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.
Citations: 11

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.
Citations: 59

13. **Ross-Ibarra J**, Tenaillon M, Gaut BS (2009) Historical divergence and gene flow in the genus Zea. Genetics 181: 1399-1413.
Citations: 72

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.
Citations: 106

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.
Citations: 42

10. **Ross-Ibarra J**[§], Gaut BS (2008) Multiple domestications do not appear monophyletic. PNAS 105: E105
Citations: 11

9. Gaut BS, **Ross-Ibarra J** (2008) Selection on major components of angiosperm genomes. Science 320: 484-486.
Citations: 43

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.
Citations: 153

7. **Ross-Ibarra J**[§] (2007) Genome size and recombination in angiosperms: a second look. Journal of Evolutionary Biology 20: 800-806.
Citations: 16

6. Wares JP, Barber PH, **Ross-Ibarra J**, Sotka EE, Toonen RJ (2006) Mitochondrial DNA and population size. Science 314: 1388-90.
Citations: 26

5. **Ross-Ibarra J**[§] (2005) QTL and the study of plant domestication. Genetica 123: 197-204.
Citations: 25

4. **Ross-Ibarra J**[§] (2004) The evolution of recombination under domestication: a test of two hypotheses. American Naturalist 163: 105-112.
Citations: 42

3. **Ross-Ibarra J** (2003) Origin and domestication of chaya (*Cnidoscolus aconitifolius* Mill I. M. Johnst): Mayan spinach. Mexican Studies 19: 287-302.
Citations: 1

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.
Citations: 29

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.

Citations: 23