

## **Brandon S. Gaut**

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### Education:

1992	Ph.D.	Genetics University of California, Riverside
1985	B.A. (cum laude)	Genetics University of California, Berkeley

### Academic and Research Appointments:

2006-present	Professor and Chair, Dept. Ecology and Evolutionary Biology University of California, Irvine
2005-2006	Professor, Dept. Ecology and Evolutionary Biology University of California, Irvine
2000-2005	Associate Professor, Dept. Ecology and Evolutionary Biology University of California, Irvine
1998-2000	Assistant Professor, Dept. Ecology and Evolutionary Biology University of California, Irvine
1995-1997	Assistant Professor, Department of Plant Sciences Rutgers University
1992-1994	Post-doctoral Research, Statistical Genetics Bruce S. Weir, advisor North Carolina State University
1988-1992	Doctoral Research, Plant Population Genetics Michael T. Clegg, advisor University of California, Riverside
1987-1988	Staff Research Associate, Molecular Immunology University of California, Berkeley

### Awards:

2008 Elected AAAS Fellow  
2008 Professor of the Year, U.C. Irvine  
2002 Outstanding Professor, U.C. Irvine (voted by the Senior Class)  
2002 Biological Sciences Excellence in Teaching Award  
1995-1997 Sloan Foundation Young Investigator Fellowship  
1992-1995 NIH postdoctoral fellow  
1991-1992 Chancellor's Scholarship, University of California, Riverside  
1988-1991 USDA National Needs Doctoral Training Fellow

### Professional Service:

Editorial Boards and Associate Editorships:

2008-present *Genome Biology and Evolution*  
2003-2007 *Plant Cell*  
2000-2006 *Molecular Biology and Evolution*  
2001-2005 *Comparative Genomics*  
2002-present *Molecular Phylogenetics and Evolution*  
2001-2003 *Journal of Heredity*

Professional Societies and Institutes

2004-2008 External Advisory Board, UC Davis Genome Center  
2004-2006 External Advisory Board, Max Planck Institute for  
Chemical Ecology, Jena, Germany  
2003 Meeting Organizer, International Meeting of the Society  
for  
Molecular Biology and Evolution (SMBE) (> 300  
attendees from > 20 countries)  
2003 Nominating Committee, SMBE  
2002, 2007 Fitch Prize Committee, SMBE

Federal Funding Agencies:

*NSF Panels:* IGERT Panel (1998), Plant Genome Panel (1999),  
Eukaryotic Genetics Panel (2002, 2004, 2005)  
*NSF Site Visits:* UC Davis (1999), UC Davis (2000), Stanford University  
(2000), University of Alabama, Birmingham (2004)  
*Ad hoc reviews:* NSF, USDA, Israeli Science Foundation, Enterprise  
Ireland, National Environment Research Council (UK), NSERC  
(Canada), Austrian Science Fund

UCI Campus and the School of Biological Sciences:

2008 Speaker, Honors Experience Day  
2007 Attendee, NSF-ADVANCE Diversity workshop  
2002-2007 Institute for Genomics and Bioinformatics, Head of  
Evolutionary Genomics Section  
2002-2004 Bioinformatics Training Grant, Steering Committee  
1999-2001 Executive Committee, School of Biological Sciences  
1999-2001 McNair Scholarship Advisory Board

The Department of Ecology and Evolutionary Biology:

2006-present Departmental Chair  
1999-2000, 2000-2001, 2003-2006 Chair of Graduate Admissions  
2001-2006 Chair of Common Lab Facility  
1999-2001 Member, Common Lab Committee  
1999, 2000, 2005 Member, Faculty Recruitment Committees  
1999-2006 Promotion Evaluation Committees  
2002-2004 Assistant Professor Mentoring Committee

External tenure & merit reviews: Columbia University; Iowa State University;

Louisiana State University; Barnard College, Columbia University;

Trinity

College, Dublin; University of Washington; University of Georgia;  
Arizona State University; University of Michigan; University of  
Minnesota; U Mass-Amherst

Journal Reviews: *Nature, Science, Proceedings of the National Academy of the Sciences, Proceedings of the Royal Society, Plant Cell, Genetics, Molecular Biology and Evolution, Evolution, Molecular Phylogenetics and Evolution, Journal of Molecular Evolution, Molecular Ecology, Plant Molecular Biology, Crop Science, Basic and Applied Ecology, Journal of Heredity, Trends in Genetics, Plos Biology, Plos Genetics, Genome Research, Mammalian Genome, Journal of Heredity*

Miscellaneous Reviews: Proposal reviewer for Wellcome Trust (UK), Textbook Review for McGraw-Hill, Proposal reviewer for Montana State Thermal Biology Institute, Chapter reviewer for “Evolution from molecules to ecosystems”, Proposal Reviewer for OARDC Research Enhancement Competitive Grant Competition (Ohio State)

Community:

1999-2000 Weekly volunteer, Turtle Rock Elementary School, Irvine, CA  
2003-2004 Monthly volunteer, Turtle Rock Elementary School, Irvine, CA  
2004-2007 Summer Camp Chaperone (One Week), University High School, Irvine, CA

Grants and Fellowships:

2008-2011 Experimental evolutionary studies of temperature adaptation. NSF, co-PI (\$900,000)  
2007-2010 An *Arabidopsis thaliana* polymorphism database. NSF, PI (Collaborative) (\$486,327)  
2005-2007 Complete genome sequencing of *Arabidopsis lyrata* and *Capsella rubella*, two members of the Brassicaceae, DOE-JGI, co-PI (no direct budget)  
2003-2008 Molecular and Functional Diversity in the Maize Genome. NSF, co-PI (\$9,664,336)  
2003-2007 A Comparative Genomics Investigation of Unprecedented Haplotype Variability in Maize, NSF, co-PI (\$968,402)  
2003-2007 Evolutionary Dynamics of Transposable Elements in Selfing *Arabidopsis thaliana* and its Outcrossing Relative, NSF, PI (\$529,970)  
2003-2004 SNP Surveys in Maize, NSF, co-PI (\$85,000)  
2001-2003 Statistical Analysis of Grass Comparative Maps, NSF, PI (\$94,377)  
2001-2003 The Evolution of Duplicated Genes in *Zea mays* and *Arabidopsis thaliana*, NSF, PI (\$9,000)  
1999-2003 Genealogical studies of polyploidy using tetraploid *Zea perennis* as a model system, NSF, PI (\$100,000)  
1999-2004 Inferring the processes shaping genetic diversity in maize, NSF, co-PI (\$1,391,254 to UCI)  
1998-2000 Examining the processes that have shaped genetic diversity in maize, USDA National Research Initiative, PI (\$110,000)  
1996-1999 Inter-locus, inter-genomic and inter-specific comparisons of

- nucleotide substitution rates, Alfred P. Sloan Foundation Molecular Evolution Young Investigator Award (\$100,000)
- 1996-1999 Systematic and biological studies of Balansieae (Ascomycetes), NSF, co-PI (\$150,000)
- 1996-1998 Biological studies of the Balansieae (Ascomycetes) of South America, National Geographic Society, co-PI (\$20,000)
- 1995-1997 Genetic diversity in maize and its wild relatives, USDA National Research Initiative, PI (\$105,000)
- 1992-1994 NIH Post-doctoral Fellowship (\$70,000)

### Refereed Publications:

93. Ross-Ibarra, J, M. Tenailon and B.S. Gaut. 2009. Historical divergence and gene flow in the genus *Zea*. *Genetics*, *accepted*.
92. Lockton, S. and B.S. Gaut. 2009. The contribution of transposable elements to expressed coding sequence in *Arabidopsis thaliana*. *J. Mol. Evol.*, *in press*.
91. Ross-Ibarra, J. and B.S. Gaut. 2008. Multiple domestications do not appear monophyletic. *Proc Natl Acad Sci U S A*. (Letter, published online)
90. Lockton, S. J. Ross-Ibarra and B.S. Gaut. 2008. Demography and weak selection drive patterns of transposable element diversity in natural populations of *Arabidopsis lyrata*. *Proc Natl Acad Sci U S A*. 105(37):13965-70.
89. Sweredoski, M, L. DeRose-Wilson, and B.S. Gaut. 2008. A comparative computational analysis of nonautonomous helitron elements between maize and rice. *BMC Genomics*. 9:467.
88. Ross-Ibarra, J., S.I. Wright, J.P. Foxe, A. Kawabe, L. DeRose-Wilson, G. Gos, D. Charlesworth and B.S. Gaut. 2008. Patterns of polymorphism and demographic history in natural populations of *Arabidopsis lyrata*. *PLoS ONE*. 11;3(6):e2411
87. Gaut, B.S. and J. Ross-Ibarra. 2008. Selection and Genomic Change in Angiosperms. *Science* 320:484-486.
86. Foxe, P., V. Dar, H. Zheng, M. Nordborg, B.S. Gaut and S.I. Wright. 2008. Selection on amino acid substitutions in *Arabidopsis*. *Mol. Biol. Evol.*, 25:1375-1383.
85. Yamasaki, M., S. Schroeder, H. Sanchez-Villeda, B.S. Gaut and M.D. McMullen. 2007. Empirical analysis of selection screens for domestication and improvement loci in maize by extended DNA sequencing. *The Plant Genome* 1.
84. Briggs W.H., M. McMullen, B.S. Gaut and J. Doebley. 2007 Linkage Mapping of Domestication Loci in a Large Maize-Teosinte Backcross Resource. *Genetics* 177:1915-1928.
83. Thuillet, A.C., M. Tenailon, B.S. Gaut and J. Doebley. 2007. A weak effect of background selection on trinucleotide microsatellites in maize. *J. Heredity*, 177:1915-1928.
82. Hollister, J. and B.S. Gaut. 2007. Population and evolutionary dynamics of *Helitron* transposable elements in *Arabidopsis thaliana*. *Mol. Biol. Evol.*, *in press*.
81. Hufford, K.M., P. Canaran, D.H. Ware, M.D. McMullen and B.S. Gaut. 2007. Patterns of selection and tissue-specific expression among maize domestication and crop improvement loci. *Plant Physiology* 144:1642-1653.

80. deRose-Wilson, L.J. and B.S. Gaut. 2007. Transcription-related mutations and GC content drive variation in nucleotide substitution rates across the genomes of *Arabidopsis thaliana* and *Arabidopsis lyrata*. *BMC Evol Biol.* 23;7:66.
79. Ellis, A.G., A.E. Weis and B.S. Gaut. 2007. The spatial scale of local adaptation and population genetic structure in a miniature succulent, *Argyroderma pearsonii*. *New Phytologist*, 174: 904-914.
78. Zhu, Q., X. Zheng, J. Luo, B.S. Gaut, S. Ge. 2007. Multilocus analysis of variation of *Oryza sativa* and its wild relatives: severe bottleneck during domestication of rice. *Mol. Biol. Evol.*, 24: 875-888.
77. Ross-Ibarra, J., P.L. Morrell and B.S. Gaut. 2007. Plant Domestication, a Unique Opportunity to Identify the Genetic Basis of Adaptation. *Proc Natl Acad Sci, U.S.A.*, 104:8641-8648.
76. Wang, N., P.F. Baldi and B.S. Gaut. 2007. Phylogenetic Analysis, Genome Evolution and the rate of gene gain in the Herpesviridae. *Mol. Phyl. Evol.*, 43(3):1066-75.
75. Gaut, B.S., S.I. Wright, C. Rizzon, J. Dvorak, and L.K. Anderson. 2007. Recombination: An underappreciated factor in the evolution of plant genomes. *Nat. Reviews Genetics*, 8(1):77-84.
74. Wright, S.I., J.P. Foxe, L. DeRose-Wilson, A. Kawabe, M. Looseley, B.S. Gaut, and D. Charlesworth. 2007. Testing for effects of recombination rate on nucleotide diversity in natural populations of *Arabidopsis lyrata*. *Genetics*, 174(3):1421-30.
73. Doebley, J.F., B.S. Gaut and B.D. Smith. 2006. The molecular genetics of crop domestication. *Cell* 127(7):1309-21.
72. Rizzon, C., L. Ponger and B.S. Gaut. 2006. Striking similarities in the genomic distribution of tandemly arrayed genes in *Arabidopsis* and rice. *Plos Comp. Bio.*, 1;2(9):e115.
71. Mishmar D., E. Ruiz-Pesini, M. Mondragon-Palomino, V. Procaccio, B. Gaut and Wallace D.C. 2006. Adaptive selection of mitochondrial complex I subunits during primate radiation. *Gene.* 15:11-8.
70. Buckler, E.S., B.S. Gaut, M.D. McMullen. 2006. Molecular and functional diversity of maize. *Curr. Op. Plant Bio.* 9:172-176.
69. Good-Avila, S.V., V. Souza, B.S. Gaut, and L.E. Eguiarte. 2006. Timing and rate of speciation in *Agave* (Agavaceae). *Proc. Natl. Acad. Sci.*, 103:9124-9129.
68. Morton, B.R., I. Vroh Bi, M.D. McMullen and B.S. Gaut. 2006. An analysis of neighboring nucleotide effects on SNPs in nuclear DNA from maize (*Zea mays* ssp. *mays*). *Genetics* 172:2859-2872.
67. Ellis, A.G., A.E. Weis and B.S. Gaut. 2006. Evolutionary radiation of “Stone Plants” in the genus *Argyroderma* (Aizoaceae): Unraveling the effects of landscape, habitat and flowering time. *Evolution* 60:39-55.
66. Yu, J., G. Pressoir, W.H. Briggs, I. Vroh Bi, M. Yamasaki, J.F. Doebley, M.D. McMullen, B.S. Gaut, D. Nielsen, J.B. Holland, S. Kresovich, and E.S. Buckler. 2006. A Unified Mixed-Model Method for Association Mapping Accounting for Multiple Levels of Relatedness. *Nat. Genetics* 38:203-208.
65. Zhao, W., P. Canaran, R. Jurkuta, T. Fulton, J. Glaubitz, E. Buckler, J. Doebley, B. Gaut, M. Goodman, J. Holland, S. Kresovich, M. McMullen, L. Stein,

- D. Ware. 2006. Panzea: A database and resource for molecular and functional diversity in the maize genome. *Nucl. Acids Res.* 24:D752-757.
64. Anderson, L.K., A. Lai, S.M. Stack, C. Rizzon, and B.S. Gaut. 2006. Uneven distribution of expressed sequence tag loci on maize pachytene chromosomes. *Genome Research* 16:115-122.
63. Yamasaki, M., M.I. Tenaillon, I. Vroh Bi, S.G. Schroeder, H. Sanchez-Villeda, J.F. Doebley, B.S. Gaut, & M.D. McMullen. 2005. Genomic Screening for Domestication and Improvement Genes in Maize. *Plant Cell* 17:2859-2872.
62. Mondragon-Palomino, M. and B.S. Gaut. 2005. Gene conversion and the evolution of three Leucine-Rich-Repeat gene families in *Arabidopsis thaliana*. *Mol. Bio. Evo.*, 22(3):506-19.
61. Wright, S.I., I. Vroh Bi, S.G. Schroeder, M. Yamasaki, J.F. Doebley, M.D. McMullen and B.S. Gaut. 2005. The Effects of Artificial Selection on the Maize Genome. *Science*, 308:1310-1314.
60. Wright, S.I. and B.S. Gaut. 2005. Molecular population genetics and the search for adaptive evolution in plants. *Mol. Biol. Evol.*, 22(3):506-19.
59. Lockton, S. and B. S. Gaut. 2005. Plant conserved non-coding sequences and paralogue evolution. *Trends Genet.* 21(1):60-5.
58. Hampson, S, P. Baldi and B.S. Gaut. 2005. CloseUp: Statistical Detection of Chromosomal Homology using density alone – a comparative analysis. *Bioinformatics*, 21(8):1339-48.
57. Tiffin, P., R. Hacker and B.S. Gaut. 2005. Population genetic evidence for rapid changes in intra-specific diversity and allelic cycling of defense genes in *Zea*. *Genetics*, 168(1):425-34.
56. Tenaillon, M. I., J. U'Ren, O. Tenaillon, and B. S. Gaut. 2004. Selection versus demography: a multilocus investigation of the domestication process in maize. *Mol. Biol. Evol.*, 21:1214-1225.
55. McLysaght, A., P. Baldi and B.S. Gaut. 2003. Extensive gene gain associated with adaptive evolution in poxviruses. *Proc. Natl. Acad. Sci., U.S.A.*, 100(26):15655-60.
54. Zhang, L and B.S. Gaut. 2003. Does recombination shape the distribution and evolution of tandemly arrayed genes (TAGs) in the *Arabidopsis thaliana* genome? *Genome Research*, 13: 2533-2540.
53. Gaut, B.S. and A.D. Long. 2003. The Lowdown on Linkage Disequilibrium. *Plant Cell* 15: 1502-1506.
52. Hampson, S., A. McLysaght, B.S. Gaut and P. Baldi. 2003. LineUp: Statistical Detection of Chromosomal Homology with Application to Plant Comparative Genomics. *Genome Research* 13: 999-1010.
51. Whitt, S.R., L.M. Wilson, M.I. Tenaillon, B. S. Gaut and E.S. Buckler. 2002. Genetic diversity and selection in the maize starch pathway. *Proc. Natl. Acad. Sci., U.S.A.*, 99:12959-12962.
50. Tenaillon, M. I., M.C. Sawkins, L.K. Anderson, J.F. Doebley, S.M. Stack and B.S. Gaut. 2002. Patterns of diversity and recombination along chromosome 1 of maize (*Zea mays* ssp. *mays* L.) *Genetics* 162: 1401-1413.
49. Mondragon-Palomino, M., B.C. Meyers, and B.S. Gaut. 2002. Patterns of positive selection in the complete NBS-LRR gene family of *Arabidopsis*

- thaliana*. *Genome Research* 12: 1305-1315.
48. Zhang, L., A. Peek, D. Dunams, and B.S. Gaut. 2002. Population Genetics of duplicated disease-defense genes, *hm1* and *hm2* in maize (*Zea mays* ssp. *mays* L.) and its wild ancestors (*Zea mays* ssp. *parviglumis*). *Genetics* 162: 851-860.
  47. Zhang, L., T. Vision and B. S. Gaut. 2002. Patterns of nucleotide substitution among simultaneously duplicated gene pairs in *Arabidopsis thaliana*. *Mol. Biol. Evol.* 19:1464-1473.
  46. Gaut, B.S. Evolutionary dynamics of grass genomes. 2002. *New Phytologist*, 154:15-28.
  45. Tiffin, P. and B.S. Gaut. 2002. Molecular evolution of the wound induced serine protease inhibitor *wip1* in *Zea* and related genera. *Mol. Biol. Evol.*, 18: 2092-2101.
  44. Zhang, L., B.S. Gaut and T. Vision. 2001. The evolution of duplicated genes. *Science* 293:U1-U2. (Technical Comment)
  43. Tenaillon, M., M.C. Sawkins, R.L. Gaut, A.D. Long, J.F. Doebley and B.S. Gaut. 2001. Patterns of DNA sequence polymorphism along chromosome 1 of maize (*Zea mays* ssp. *mays* L.), *Proc. Natl. Acad. Sci.* 98: 9161-9166.
  42. Kubik, C., M. Sawkins, W. Meyer and B.S. Gaut. 2001. Genetic diversity in seven perennial ryegrass (*Lolium perenne*) cultivars based on SSR markers. *Crop. Sci.*, 45:1565-1571.
  41. Tiffin, P and B. S. Gaut. 2001. Sequence diversity in the autotetraploids *Zea perennis* and its diploid progenitor *Z. diploperennis*: insights from four nuclear loci. *Genetics* 158:401-412.
  40. Bennetzen, J., E. Buckler, V. Chandler, J. Doebley, J. Dorweiler, B. Gaut, M. Freeling, S. Hake, E. Kellogg, R. S. Poethig, V. Walbot and S. Wessler. 2001. Genetic evidence and the origin of maize. *Latin American Antiquity* 12:84-86 (Letter).
  39. Gaut, B.S. 2001. Patterns of chromosomal duplication in maize and their implications for comparative maps of the grasses. *Genome Research* 11:55-66.
  38. Peek A.S., V. Souza, L.E. Eguiarte and B.S. Gaut. 2001. The interaction of protein structure, selection and recombination on the evolution of the type-1 fimbrial major subunit (*fimA*) from *Escherichia coli*, *J. Mol. Evol.* 52:193-204.
  37. Zhang, L., S. Kosakovsky-Pond and B. S. Gaut. 2001. A survey of the molecular evolutionary dynamics of twenty-five multigene families from four grass taxa. *J. Mol. Evol.* 52:144-156.
  36. Gaut, B.S., M. Le Thierry d'Ennequin, A.S. Peek, M.C. Sawkins. 2000. Maize as a model for the evolution of plant nuclear genomes. *Proc. Natl. Acad. Sci., U.S.A.* 97:7008-7015.
  35. Gaut, B.S., L. Tredway, C. Kubik, R.L. Gaut and B. Meyer. 2000. Phylogenetic relationships and genetic diversity among members of the *Festuca-Lolium* complex (Poaceae) based on ITS sequence data. *Pl. Syst. Evol.*, 224:33-53.
  34. Peek, A., B.S. Gaut, R.A. Feldman, J.P. Barry, R.E. Kochavar, R.A. Lutz and

- R.V. Vrijenhoek. 2000. Neutral and nonneutral mitochondrial genetic variation in deep sea clams from the family Vesicodymidae. *J. Mol. Evol.*, 50:141-153.
33. Gaut, B.S., A.S. Peek, B.R. Morton, M.R. Duvall and M.T. Clegg. 1999. Patterns of genetic diversification within the *adh* gene family in the grasses (Poaceae) *Mol. Biol. Evol.* 16:1086-1097.
  32. Kubik, C., W. Meyer and B.S. Gaut. 1999. Microsatellites in perennial ryegrass (*Lolium perenne*): abundance, polymorphism and assessment of genetic relationships. *Crop Sci.* 39:1136-1141.
  31. Tredway, L.P., J.F. White Jr., B.S. Gaut, P.V. Reddy, M.D. Richardson and B.B. Clarke. 1999. Phylogenetic relationships within and between *Epichloe* and *Neotyphodium* endophytes as estimate by AFLP markers and rDNA sequences. *Mycol. Res.* 103:1593-1603.
  30. Hilton, H. and B.S. Gaut. 1998. Speciation and domestication in maize and its wild relatives: evidence from the *Globulin-1* gene. *Genetics* 150:863-872.
  29. Peek, A., R.V. Vrijenhoek and B.S. Gaut. 1998. Accelerated evolutionary rate in sulfur-oxidizing endosymbiotic bacteria associated with the mode of symbiont transmission. *Mol. Biol. Evol.* 15:1514-1523.
  28. Meyers, B.C., K. A. Shen, P. Rohani, B.S. Gaut, and R.W. Michelmore. 1998. Receptor-like genes in the major resistance locus of lettuce are subject to divergent selection. *Plant Cell* 10: 1833-1846.
  27. Eyre-Walker, A., R.L. Gaut, H. Hilton, D.L. Feldman and B.S. Gaut. 1998. Investigating the domestication bottleneck of maize, using the coalescent. *Proc. Natl. Acad. Sci., U.S.A.* 95:4441-4446.
  26. Wang G-L, D-L Ruan, W-Y Song, S. Sideris, L. Chen, L-Y. Pi, S. Zhang, Z. Zhang, C. Fauquet, B.S. Gaut, M.C. Whalen and P.C. Ronald. 1998. The LRR domain encoded by the rice gene *Xa21D*, an *Xa21* receptor - like gene family member, determines race specific recognition and is subject to adaptive evolution. *Plant Cell* 10: 765-780.
  25. SanMiguel, P., B.S. Gaut, A.Tikhonov, Y. Nakajima, and J.L. Bennetzen. 1998. The Paleontology of Intergene Retrotransposons of Maize: Dating the Strata. *Nature Genetics* 20:43-45.
  24. Gaut, B.S. and J.F. Doebley. 1997. DNA sequence evidence for the segmental allotetraploid origin of maize. *Proc. Natl. Acad. Sci., U.S.A.* 94:6809-6814.
  23. Gaut, B.S., L.G. Clark, J.F. Wendel and S.V. Muse. 1997. Comparisons of the molecular evolutionary process at *rbcL* and *ndhF* in the grass family (Poaceae). *Mol. Biol. Evol.* 14:769-777.
  22. Eyre-Walker, A. and B.S. Gaut. 1997. Correlated rates of synonymous site evolution across plant genomes. *Mol. Biol. Evol.* 14:455-460.
  21. Muse, S.V. and B.S. Gaut. 1997. Interlocus comparisons of the nucleotide substitution process in the chloroplast genome. *Genetics* 146:393-399.
  20. Gaut, B.S., B.R. Morton, B.C. McCaig and M.T. Clegg. 1996. Substitution rate comparisons between grasses and palms: synonymous rate differences at the nuclear gene *Adh* parallel rate differences at the plastid gene *rbcL*. *Proc. Natl. Acad. Sci., U.S.A.* 93:10274-10279.

19. Morton, B.R., B.S. Gaut and M.T. Clegg. 1996. Evolution of alcohol dehydrogenase genes in the Palm and Grass families. *Proc. Natl. Acad. Sci., U.S.A.* 93:11735-11739
18. Hanson, M.A., B.S. Gaut, A.O. Stec, S.I. Fuerstenberg, M.M. Goodman, E.H. Coe, and J. Doebley. 1996. Molecular and phenotypic evolution of *c1*, a regulator of anthocyanin biosynthesis in *Zea*. *Genetics* 143:1395-1407.
17. Gaut, B.S. and P.O. Lewis. 1995. Success of maximum likelihood phylogeny inference in the four-taxon case. *Mol. Biol. Evol.* 12:152-162.
16. Clegg, M.T., B.S. Gaut, G.H. Learn, and B.R. Morton. 1994. Rates and patterns of chloroplast DNA evolution. *Proc. Natl. Acad. Sci. U.S.A.* 91:6795-6801.
15. Gaut, B.S. and B.S. Weir. 1994. Detecting substitution rate heterogeneity among regions of a nucleotide sequence. *Mol. Biol. Evol.* 11:620-629.
14. Muse, S.V. and B.S. Gaut. 1994. A likelihood approach for comparing synonymous and non-synonymous nucleotide substitution rates with application to the chloroplast genome. *Mol. Biol. Evol.* 11:715-724.
13. Gaut, B.S. and M.T. Clegg. 1993. Nucleotide polymorphism in the *Adh1* locus of pearl millet (*Pennisetum glaucum*) (Poaceae). *Genetics* 135:1091-1097.
12. Gaut, B.S., S.V. Muse, and M.T. Clegg. 1993. Relative rates of nucleotide substitution in chloroplast loci. *Mol. Phylo. Evol.* 2: 89-96.
11. Gaut, B.S. and M.T. Clegg. 1993. Molecular evolution of the *Adh1* locus in the genus *Zea*. *Proc. Natl. Acad. Sci. USA* 90: 5095-5099.
10. Weir, B.S. and B.S. Gaut. 1993. Matching and binning of VNTR's in forensics. *Jurimetrics J.* 34:9-19.
9. Weir, B.S. and B.S. Gaut. 1993. Distances between DNA sequences using data from within and between populations. *New Zea. J. Bot.* 31:317-320.
8. Clegg, M.T., B.S. Gaut, M.R. Duvall and J. Davis. 1993. Inferring plant evolutionary history from molecular data. *New Zea. J. Bot.* 31:307-316.
7. Clark, W.D., B. S. Gaut, M.R. Duvall and M.T. Clegg. 1993. Phylogenetic relationships of the Bromeliiflorae-Commeliniflorae-Zingiberiflorae complex of monocots based on *rbcL* sequence comparisons. *Ann. Miss. Bot. Gard.*, 80:987-998.
6. Duvall, M.R., M.T. Clegg, M.W. Chase, W.D. Clark, W.J. Kress, H.G. Hills, L. E. Eguiarte, J.F. Smith, B.S. Gaut, E.A. Zimmer and G.H. Learn. 1993. Phylogenetic hypotheses for the monocotyledons constructed from *rbcL* sequence data. *Ann. Miss. Bot. Gard.* 80:607-619.
5. Chase, M.W., D.E. Soltis, R.G. Olmstead, D. Morgan, D.H. Les, B.D. Mishler, M.R. Duvall, R.A. Price, H.G. Hills, Y.-L. Qiu, K.A. Kron, J.H. Rettig, E. Conti, J.D. Palmer, J.R. Manhart, K.J. Sytsma, H.J. Michaels, W.J. Kress, K.G. Karol, W.D. Clark, M. Hedren, B.S. Gaut, R.K. Jansen, K.-J. Kim, C.F. Wimpee, J.F. Smith, G.R. Furnier, S.H. Straus, Q.-Y. Xiang, G.M. Plunkett, P.S. Soltis, S. Swensen, S.E. Williams, P.A. Gadek, C.J. Quinn, L.E. Eguiarte, E. Golenberg, G.H. Learn, S.W. Graham, S.C.H. Barrett, S. Dayanandan, and V.A. Albert. 1993. Phylogenetics of seed plants: An analysis of nucleotide sequences from the plastid gene *rbcL*. *Ann. Miss. Bot. Gard.* 80:528-580.

4. Gaut, B.S., S.V. Muse, W.D. Clark, and M.T. Clegg. 1992. Relative rates of nucleotide substitution at the *rbcL* locus in monocotyledonous plants. *J. Mol. Evol.* 35:292-303.
3. Gaut, B.S. and M.T. Clegg. 1991. Molecular evolution of *alcohol dehydrogenase I* in members of the grass family. *Proc. Nat. Acad. Sci. U.S.A.* 88:2060-2064.
2. Wilson, M.A., B. Gaut, and M.T. Clegg. 1990. Chloroplast DNA evolves slowly in the palm family (Arecaceae). *Mol. Biol. Evol.* 7:303-314.
1. Watts, S., A.C. Davis, B. Gaut, C. Wheeler, L. Hill, and R. S. Goodenow. 1989. Organization and structure of the *Qa* genes of the Major Histocompatibility Complex of the C3H mouse: implications for *Qa* function and class I evolution. *E.M.B.O.* 8:1749-1759.

### Book Chapters and Symposium proceedings:

7. Ross-Ibarra, J., P.L. Morrell and B.S. Gaut. 2007. Plant Domestication, a Unique Opportunity to Identify the Genetic Basis of Adaptation. In: In the Light of Evolution. Editors: F.J. Ayala and J. Avise. The National Academies Press. Washington, D.C., in press. (cross-listed as a publication)
6. Rocha, M., S. V. Good-Avila, F. Molina-Freaner, H. Arita, A. Castillo, A. Garcia-Mendoza, A. Silva-Montellano, B. S. Gaut, V. Souza, L. E. Eguiarte. 2004. Pollination biology and adaptive radiation of Agavaceae, with special emphasis in the genus *Agave*. In: Proceedings of the Third International Conference on the Comparative Biology of the Monocotyledons (Monocot III), Rancho Santa Ana Botanic Gardens, CA,
5. Gaut, B.S., M. Le Thierry d'Ennequin, A.S. Peek, M.C. Sawkins. 2000. Maize as a model for the evolution of plant nuclear genomes. In; Variation and Evolution in Plants and Microorganisms: Toward a New Synthesis 50 Years after Stebbins, eds. F. J. Ayala, W. Fitch and M.T. Clegg. National Academy Press, Washington, D.C. (cross-listed as a publication)
4. Doyle, J.J. and B.S. Gaut. 2000. The evolution of genes and taxa: a primer. *Pl. Mol. Biol.* 42:1-23.
3. Gaut, B.S. 1998. Molecular clocks and nucleotide substitution rates in higher plants. *Evolutionary Biology* 30:93-120.
2. Gaut, B.S. 1996. Evolution in the genus *Zea*: lessons from studies of nucleotide polymorphism. *Plant Species Biology* 11:1-12.
1. Clegg, M.T., B.S. Gaut, G.H. Learn, and B.R. Morton. 1994. Rates and patterns of chloroplast DNA evolution. In: Tempo and Mode in Evolution, eds. W. Fitch and F.J. Ayala. National Academy Press, Washington, D.C.

### Books and Edited Volumes:

1. Doyle, J.J. and B.S. Gaut. 2000. Plant Molecular Evolution. Kluwer Academic Publishers, Dordrecht, Germany.

## Invited Presentations (from 2004):

2009 Cold Spring Harbor Labs, NY – Meeting on Plant Genomes: Genes, Networks and Applications  
2009 University of Toronto  
2008????  
2008 Forward Genetics Conference, Monsanto Corporation, St. Louis, MO  
2007 Tsujimoto Lecture, Department of Plant and Microbial Biology, UC Berkeley  
2007 Department of Botany, University of British Columbia, Vancouver  
2007 Beijing Genomics Institute, Beijing  
2007 Peking University, Dept. Biology, Beijing  
2007 (2 Talks) Institute of Botany, Chinese Acad. Sciences, Beijing.  
2007 Meeting for the Society for Molecular Biology and Evolution, Halifax, N.S.  
2007 Duke University, Dept. of Biology  
2007 University of North Carolina, Dept. of Biology  
2007 University of Georgia, Dept. of Genetics  
2007 Genome Institute, U.C. Davis  
2006 Sackler Symposium (sponsored by the National Academy), Irvine, CA.  
2006 Department of Ecology and Evolution, University of Chicago  
2005 Institute of Ecology, Universidad Nationale Autonomia de Mexico, Mexico City, MX.  
2005 Dept. Biology, Univ. of Missouri, Columbia, MO  
2005 International Plant Genetics Meeting, Snowbird, Utah  
2005 Xth Congress of the European Society for Evolutionary Biology, Krakow, Poland  
2005 Institute of Botany, Beijing  
2005 International Symposium on Crop Germplasm, Chinese Academy of Agricultural Sciences, Beijing  
2005 Maize Genetics Conference, Lake Geneva, WI  
2005 Dept. of Biology, Colorado State University  
2004 International Arabidopsis Conference, Berlin  
2004 Statistical Genetics, NC State University, Raleigh, NC  
2004 Dept. of Biology, San Diego State University  
2004 Interdisciplinary Plant Biology Seminar Series, University of Arizona, Tucson, AZ  
2004 Genetics Program, University of California, Riverside  
2004 Gordon Conference on Molecular Evolution, Ventura, CA (invited session chair)

## Mentoring and Professional Development:

### Postdoctoral Scholars Mentored:

Jeffrey Ross-Ibarra (2007- present):  
Kristina Hufford (2005-2007): Research Scientist, Australia  
Carene Rizzon (2003-2005): Asst. Professor, University of Evry Val D'Essonne, Paris  
Stephen Wright (2002-2004): Asst. Professor, University of Toronto  
Aoife McLysaght (2001-2003): Asst. Professor, Trinity College,

Dublin, Ireland

Lesley Blancas (2002-2004): Staff Scientist, U.S. State Dept.  
Maud Tenaillon (1999-2002): CNRS Scientist, Paris, France  
Peter Tiffin (2001-2002): Asst. Professor, University of Minnesota  
Mark Sawkins (1999-2001): CIMMYT, Mexico  
Abedali Barakat (2000-2001): Staff researcher, France  
Andrew Peek (1998-2000): Director of Bioinformatics, Integrated DNA  
Technologies  
Holly Hilton (1996-1998): Scientist, Hoffmann-La Roche Inc.  
Adam Eyre-Walker (1995-1997): Royal Society Fellow and Professor,  
University of Sussex

Visiting Scholars

Elizabeth Waters (October-June, 2008-2009), Dept. of Biology, San Diego State  
University  
Brian Morton (July-August, 2004), Dept. of Biology, Barnard College, Columbia  
University  
Shu-Miaw Chaw (July-Sept, 2003), Institute of Botany, Academia Sinica, Taipei  
Song Ge (Jan-March, 2003), Institute of Botany, Chinese Academy of Sciences  
Maud Tenaillon (July-August 2003), CNRS Fellow, Paris  
Luis Eguiarte (2001-2002), Professor, UNAM, Mexico

Graduate Students Supervised:

Liqing Zhang, Ph.D. 2002, Assistant Professor, Virginia Tech  
University  
Mariana Mondragon, Ph.D. 2004, Post-doctoral fellow, University of  
Jena, Germany  
Christine Kubik, M.S., 1999, Research scientist, Rutgers University  
Nan Wang, M.S. 2004-2006  
Steven Lockton, 2002-present  
Jesse Hollister, 2003-present  
Leah deRose-Wilson, 2004-present

Additional Graduate Student Committees / Advancement Exams at UC Irvine

Stephen Schrodi, Ph.D. 2000 – Dissertation Committee  
Michelle Riehle, Ph.D. 2003 – Advancement Committee  
Mark Drapeau, Ph.D. 2003 - Advancement Committee  
Allan Ellis, Ph.D. 2005 – Dissertation Committee  
George Aldridge, Ph.D. 2005 – Dissertation Committee  
Carrie Wu, Ph.D. 2005 – Dissertation Committee  
Carolina Pickens, current – Dissertation Committee  
Melissa Albers, 2005 – Advancement Committee  
Jason Schlumbohm, current – Dissertation Committee  
Jonathan Gruber, current – Dissertation Committee  
Felipe Barreto, 2006 – Advancement Committee

