

Kent E. Holsinger

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Education

- 1978 B.S., *Summa cum laude*, Departmental Honors in Biology, The College of Idaho
- 1982 Ph.D. in Biological Sciences, Stanford University

Positions held

- 1982–1984 Miller Research Fellow, Miller Institute for Basic Research in Science, University of California Berkeley (sponsored by the Department of Botany)
- 1984–1986 Research Associate, Department of Biological Sciences and Dudley Herbarium, Stanford University
- 1986– Assistant Professor, Associate Professor, Professor, Department of Ecology & Evolutionary Biology, University of Connecticut
- 2002– Adjunct Professor, Department of Statistics, University of Connecticut
- 2005–2006 Acting Head, Department of Ecology & Evolutionary Biology, University of Connecticut
- 2012– Interim Vice Provost for Graduate Education and Dean of the Graduate School, University of Connecticut

Notable honors & awards

- 1978–1981 Graduate research fellowship, National Science Foundation
- 2000 Chancellor's Information Technology Award, University of Connecticut
- 2003 Fellow, American Association for the Advancement of Science
- 2006 Centennial Award, Botanical Society of America
- 2007 Service Excellence Award, University of Connecticut Chapter, American Association of University Professors
- 2007 Faculty Award for Research Excellence – Sciences, University of Connecticut

- Alumni Association
 2008 Distinguished Alumni Award, College of Idaho
 2010 Member, Connecticut Academy of Science & Engineering
 2012 Board of Trustees Distinguished Professor, University of Connecticut

Current external funding

- 2011– Collaborative: Dimensions: Parallel evolutionary radiations in *Protea* and *Pelargonium* in the Greater Cape Floristic Region, National Science Foundation DEB-1046328, \$1,976,670 (Carl Schlichting, principal investigator; Cynthia Jones, John Silander, co-principal investigators)

Publications

Edited book

- 1991 Falk, D. A., and **K. E. Holsinger**, eds. 1991. *Genetics and Conservation of Rare Plants*. Oxford University Press, New York, NY.

Peer-reviewed journal articles (since 2000)

- 2000 **Holsinger, K. E.** 2000. Reproductive systems and evolution in vascular plants. *Proceedings of the National Academy of Sciences USA* 97:7037–7042.
- 2001 Farnsworth, E. J., **K. E. Holsinger**, L. J. Mehrhoff, N. Murray, J. Preston, and J. A. Silander, Jr. 2001. The REAL Team: a cooperative student training program in rapid ecological assessment. *BioScience* 51:874–879.
- 2002 Steinbachs, J. E., and **K. E. Holsinger**. 2002. S-RNase mediated gametophytic self-incompatibility is ancestral in eudicots. *Molecular Biology & Evolution* 19:825–829.
- Holsinger, K. E.**, P. O. Lewis, and D. K. Dey. 2002. A Bayesian approach to inferring population structure from dominant markers. *Molecular Ecology* 11:1157–1164.
- Henry, C. S., M. L. M. Wells, and **K. E. Holsinger**. 2002. A study of the inheritance of mating songs in two cryptic sibling lacewing species (Neuroptera: Chrysopidae: *Chrysoperla*). *Genetica* 116:269–289.
- 2003 Fu, R., A. E. Gelfand, and **K. E. Holsinger**. 2003. Exact moment calculations for genetic models with migration, mutation, and drift. *Theoretical Population Biology* 63:231–243.
- Vitt, P., **K. E. Holsinger**, and C. S. Jones. 2003. Local differentiation and plasticity in size and sex expression in jack-in-the-pulpit, *Arisaema triphyllum*. *American Journal of Botany* 90:1729–1735.

- 2004 **Holsinger, K. E.**, and L. E. Wallace. 2004. Bayesian approaches for the analysis of population genetic structure: an example from *Platanthera leucophaea* (Orchidaceae). *Molecular Ecology* 13:887–894.
- Arensburger, P., T. R. Buckley, C. Simon, M. Moulds, and **K. E. Holsinger**. 2004. Evolution and phylogeny of the New Zealand cicada genera (Hemiptera: Cicadidae) based on nuclear and mitochondrial DNA data. *Journal of Biogeography* 31:557–569.
- Heschel, M. S., J. R. Stinchcombe, **K. E. Holsinger**, and J. Schmitt. 2004. Natural selection on light response curve parameters in the herbaceous annual, *Impatiens capensis*. *Oecologia* 139:487–494.
- Morales, J. M., D. T. Haydon, J. Friar, **K. E. Holsinger**, and J. M. Fryxell. 2004. Extracting more out of relocation data: building movement models as mixtures of random walks. *Ecology* 85:2436–2445.
- Arensburger, P., C. Simon, and **K. E. Holsinger**. 2004. Evolution and phylogeny of the New Zealand cicada genus *Kikihia* Dugdale (Homoptera: Auchenorrhynca: Cicadidae) with special reference to the origin of the Kermadec and Norfolk Islands species. *Journal of Biogeography* 31:1769–1783.
- 2005 Sezen, U. U., R. L. Chazdon, and **K. E. Holsinger**. 2005. Genetic consequences of tropical second-growth forest regeneration. *Science* 307:891.
- Fu, R., D. K. Dey, and **K. E. Holsinger**. 2005. Bayesian models for analysis of genetic structure when populations are correlated. *Bioinformatics* 21:1516–1529.
- Lewis, P. O., M. T. Holder, and **K. E. Holsinger**. 2005. Polytomies and Bayesian phylogenetic inference. *Systematic Biology* 54:241–253.
- Hoffmeister, T. S., L. E. M. Vet, A. Biere, **K. Holsinger**, and J. Filser. 2005. Ecological and evolutionary consequences of biological invasion and habitat fragmentation. *Ecosystems* 8:657–667.
- 2006 Song, S., D. K. Dey, and **K. E. Holsinger**. 2006. Hierarchical models with migration, mutation, and drift: implications for genetic inference. *Evolution* 60:1–12.
- 2007 Shannon, R. K., and **K. E. Holsinger**. 2007. The genetics of sex determination in stinging nettle (*Urtica dioica*). *Sexual Plant Reproduction* 20:35–43.
- Bhattacharya, S., A. E. Gelfand, and **K. E. Holsinger**. 2007. Model fitting and inference under latent equilibrium processes. *Statistics and Computing* 17:193–208.
- Sezen, U. U., R. L. Chazdon, and **K. E. Holsinger**. 2007. Multi-generational genetic analysis of tropical second-growth forest regeneration. *Ecology* 88:3065–3075.
- 2008 Evans, M. E. K., **K. E. Holsinger**, and E. S. Menges. 2008. Modeling the effect of fire on the demography of *Dicerandra frutescens* ssp. *frutescens* (Lamiaceae), an endangered plant endemic to Florida scrub. *Population Ecology* 50:53–62.

- Guo, F., D. K. Dey, and **K. E. Holsinger**. 2008. A hierarchical Bayesian approach for estimating origin of a mixed population. *IMS Collections* 3:237–250.
- Lubell, J. D., M. H. Brand, J. M. Lehrer, and **K. E. Holsinger**. 2008. Detecting the influence of ornamental *Berberis thunbergii* var. *atropurpurea* in invasive populations of *Berberis thunbergii* DC. (Berberidaceae) using AFLP. *American Journal of Botany* 95:700–705.
- 2009 Guo, F., D. K. Dey, and **K. E. Holsinger**. 2009. A Bayesian hierarchical model for analysis of SNP diversity in multilocus, multipopulation models. *Journal of the American Statistical Association* 104:142–154.
- Lubell, J. D., M. H. Brand, J. M. Lehrer, and **K. E. Holsinger**. 2009. AFLP and parentage analysis of a feral barberry (*Berberis thunbergii* DC.) population to determine the contribution of an ornamental landscape genotype. *HortScience* 44:392–395.
- Sezen, U. U., R. L. Chazdon, and **K. E. Holsinger**. 2009. Proximity is not a proxy for parentage in an animal-dispersed Neotropical canopy palm. *Proceedings of the Royal Society of London, Series B* 276:2037–2044.
- Holsinger, K. E.**, and B. S. Weir. 2009. Genetics in geographically structured populations: defining, estimating, and interpreting F_{ST} . *Nature Reviews Genetics* 10:639–650.
- 2010 Carlson, J. E., and **K. E. Holsinger**. 2010. Natural selection on inflorescence color polymorphisms in wild *Protea* populations: the role of pollinators, seed predators, and intertrait correlations. *American Journal of Botany* 97:934–944.
- Theiss, K. E., **K. E. Holsinger**, and M. E. K. Evans. 2010. Breeding system variation in ten evening primroses (*Oenothera* sections *Anogra* and *Kleinia*, Onagraceae). *American Journal of Botany* 97:1031–1039.
- Prunier, R., and **K. E. Holsinger**. 2010. Was it an explosion? Using population genetics to explore the dynamics of a recent radiation within *Protea* (Proteaceae L.). *Molecular Ecology* 19:3968–3980.
- Evans, M. E. K., **K. E. Holsinger**, and E. S. Menges. 2010. Fire, vital rates, and population viability: a hierarchical Bayesian analysis of the endangered Florida scrub mint. *Ecological Monographs* 80:627–649.
- Skogen, K. A., L. Senack, and **K. E. Holsinger**. 2010. Dormancy, small seed size, and low germination rates contribute to low recruitment in *Desmodium cuspidatum* (Fabaceae). *Bulletin of the Torrey Botanical Club* 137:355–365.
- 2011 Sundberg, M. D., P. DeAngelis, K. Havens, **K. Holsinger**, K. Kennedy, A. T. Kramer, R. Muir, P. Olwell, K. Schierenbeck, L. Stritch, and B. Zorn-Arnold. 2011. Perceptions of strengths and deficiencies: disconnects between graduate students and prospective employers. *BioScience* 61:133–138.
- Skogen, K. A., **K. E. Holsinger**, and Zoe G. Cardon. 2011. Nitrogen deposition, competition, and the decline of a regionally threatened legume, *Desmodium cuspidatum*. *Oecologia* 165:261–269.

- Carlson, J. E., **K. E. Holsinger**, and R. Prunier. 2011. Plant responses to climate in the Cape Floristic Region of South Africa: evidence for adaptive differentiation in the Proteaceae. *Evolution* 65:108-124.
- Evans, M. E. K., D. J. Hearn, K. E. Theiss, K. Cranston, **K. E. Holsinger**, and M. J. Donoghue. 2011. Extreme environments select for reproductive assurance: evidence from evening primroses (*Oenothera*). *New Phytologist* 191:555-563.
- Song, S., D. K. Dey, and **K. E. Holsinger**. 2011. Genetic diversity of microsatellite loci in hierarchically structured populations. *Theoretical Population Biology* 80:29-37.
- Fu, R., D. K. Dey, and **K. E. Holsinger**. 2011. A beta mixture model for assessing genetic population structure. *Biometrics* 67:1073-1082.
- 2012 Kanno, Y., J. C. Vokoun, **K. E. Holsinger**, and B. H. Letcher. 2012. Estimating size-specific brook trout abundance in continuously sampled headwater streams using Bayesian mixed models with zero inflation and overdispersion. *Ecology of Freshwater Fish* (in press).
- Meiman, S., D. Civco, **K. Holsinger**, and C. S. Elphick. 2012. Comparing habitat models using ground-based and remote sensing data: saltmarsh sparrow presence versus nesting. *Wetlands* (in press).
- Stefaniak, L., H. Zhang, A. Gittenberger, K. Smith, **K. Holsinger**, S. Lin, and R. B. Whitlatch. 2012. Determining the native region of the putatively invasive ascidian *Didemnum vexillum* Kott, 2002. *Journal of Experimental Marine Biology and Ecology* (in press).
- Prunier, R., **K. E. Holsinger**, and J. E. Carlson. 2012. The effect of historical legacy on adaptation: do closely related species respond to the environment in the same way? *Journal of Evolutionary Biology* (in press).

Chapters in edited volumes (since 2000)

- 2000 **Holsinger, K. E.** 2000. Demography and extinction in small populations, In *Genetics, demography, and the viability of fragmented populations*, ed. A. Young and G. Clarke, pp. 55-74. Cambridge University Press, Cambridge.
- 2001 **Holsinger, K. E.** 2001. Sistemaa de apareamiento, biología de la pollinización y diversidad an angiospermas, In *Aspecto contemporáneos para el estudio de la biodiversidad*, ed. H. M. Hernández, A. García-Aldrete, F. Alvarez, and M. Ulloa, pp. 129-148. Instituto de Biología UNAM, Mexico City (translated by the editors).
- Holsinger, K. E.** 2001. Demes (p. 528), Equilibrium population (pp. 646-648), Gene pool (p. 797), Hardy-Weinberg law (pp. 912-914), Natural selection (pp. 1291-1297), Panmixis (pp. 1410-1411), In *Encyclopedia of genetics*, ed. S. Brenner and J. Miller. Academic Press, London.
- 2003 Caira, J. N., K. Jensen, and **K. E. Holsinger**. 2003. On a new index of host specificity, In *Taxonomy, ecology, and evolution of metazoan parasites*, eds. C.

Combes and J. Jourdane, vol. 1, pp. 161–201. Presses Universitaire de Perpignan, Perpignan.

- 2006 **Holsinger, K. E.** 2006. Bayesian hierarchical models in geographical genetics, In *Applications of computational statistics in the environmental sciences*, ed. J. S. Clark and A. E. Gelfand, pp. 25–37. Oxford University Press, New York, NY.

Short papers in peer-reviewed publications (since 2000)

- 2004 **Holsinger, K. E.** 2004. From genes to genomes: the next century of heredity in America. *Journal of Heredity* 95:363–364.
- 2006 **Holsinger, K. E.** 2006. Similar strokes for different folks. *Heredity* 96:203.
- Holsinger, K. E.** 2006. Responding to challenges for biological research and education. *BioScience* 56:3.
- Holsinger, K. E.** 2006. A new era for the public understanding of science. *BioScience* 56:955.
- 2010 **Holsinger, K. E.** 2010. Next generation population genetics and phylogeography. *Molecular Ecology* 19:2361–2363.

Book reviews (since 2000)

- 2001 **Holsinger, K. E.** 2001. Biodiversity in the United States, review of *Precious Heritage: The Status of Biodiversity in the United States*, edited by B. A. Stein, L. S. Kutner, and J. S. Adams. *BioScience* 51:256–257.
- 2003 **Holsinger, K. E.** 2003. Dealing with data: a milestone in statistical genetics, review of *Handbook of Statistical Genetics*, edited by D. J. Balding, M. Bishop, and C. Cannings. *Heredity* 91:1.
- 2010 **Holsinger, K. E.** 2010. Review of *Darwin's Island: The Galapagos in the Garden of England*, Steve Jones. *Reports of the National Center for Science Education* 30(6):30.

Technical reports (since 2000)

- 2001 **Holsinger, K. E., P. O. Lewis, and D. K. Dey.** 2001. A Bayesian approach to inferring population structure from dominant markers. Technical report 01-30, Department of Statistics, University of Connecticut.
- 2002 Fu, R., A. E. Gelfand, and **K. E. Holsinger.** 2002. Exact moment calculations for genetic models with migration, mutation, and drift. Technical report 02-11, Department of Statistics, University of Connecticut.
- 2003 **Holsinger, K. E., and the IBRCS Working Group.** 2003. IBRCS White Paper: Rationale, Blueprint, and Expectations for the National Ecological Observatory Network. American Institute of Biological Sciences, Washington, DC.

68pp.

- Fu, R., D. K. Dey, and **K. E. Holsinger**. 2003. Bayesian inference of genetic population structure from dominant markers. Technical report 03-17, Department of Statistics, University of Connecticut.
- 2004 American Institute of Biological Sciences. 2004. IBRCS White Paper: A Plan for Developing and Governing the National Ecological Observatory Network (NEON). American Institute of Biological Sciences, Washington, DC. vi+17pp (+ appendices).
- Fu, R., D. K. Dey, and **K. E. Holsinger**. 2004. Bayesian models for the analysis of genetic structure when populations are correlated. Technical report 04-12, Department of Statistics, University of Connecticut.
- Song, S., D. K. Dey, and **K. E. Holsinger**. 2004. Hierarchical models with migration, mutation, and drift: implications for genetic inference. Technical report 04-26, Department of Statistics, University of Connecticut.
- 2005 Evolutionary Biology Workshop. 2005. *Frontiers in Evolutionary Biology*. Prepared for the National Science Foundation. 10pp.
- Song, S., D. K. Dey, and **K. E. Holsinger**. 2005. Genetic diversity of microsatellite loci in hierarchically structured populations. Technical report 05-12, Department of Statistics, University of Connecticut.
- 2006 Guo, F., D. K. Dey, and **K. E. Holsinger**. 2006. A hierarchical Bayesian approach for estimating origin of a mixed population. Technical report 06-16, Department of Statistics, University of Connecticut.

Publications by students

- 1992 Kelly, J. K. 1992. Kin selection in density regulated populations. *Journal of Theoretical Biology* 157:447–461.
- 1994 Kelly, J. K. 1994. The effect of scale-dependent processes on kin selection: mating and density regulation. *Theoretical Population Biology* 46:32–57.
- 2001 Vitt, P. 2001. Gender-related differences in gas exchange rates in *Arisaema triphyllum* (Araceae). *Rhodora* 103:387–404.
- 2010 Prunier, R., and A. Latimer. 2010. Microsatellite primers in the white proteas (*Protea* section *Exsertae*, Proteaceae), a rapidly radiating lineage. *American Journal of Botany* 97:e1-e3.

Visiting scientists and students

Visiting scientists

- 1991–1992 Dr. Sylvia Fineschi, Institute for Agroforestry, Italian National Research Council, Porano (currently Ricercatore, CNR Istituto per la Protezione delle

Piante, Florence).

1994–1995 Roberta D’Orazio, *borsa di studio*, Università degli Studi di Padova.

Post-doctoral research associates

2002–2003 Dr. M. Shane Heschel (currently Associate Professor of Biology, Colorado College).

2007– Dr. Jane E. Carlson

2008–2009 Dr. Juan Carlos Vivar

Graduate students

1990 David B. Goldstein, M. S., “The maintenance and geographic distribution of genetic variation,” (currently Director, Center for Human Genome Variation, Duke University).

1993 Roberta J. Mason-Gamer, Ph.D., “A molecular study of intraspecific diversity and speciation in *Coreopsis* section *Coreopsis* (Asteraceae),” (currently Associate Professor of Biology, University of Illinois Chicago).

1994 Jeannette Whitton, Ph.D., “Systematic and evolutionary investigation of the North American *Crepis* agamic complex,” (co-advisor with Robert K. Jansen; currently Associate Professor of Botany and Director of the Herbarium, University of British Columbia).

1996 Claudia Paoletti, Ph.D., “Effects of habitat heterogeneity on *Impatiens capensis* reproduction, genetic, and phenotypic variation,” (currently Scientific Officer, Unit on genetically modified organisms, European Food Safety Authority, Parma, Italy).

1997 Pati Vitt, Ph.D., “Functional ecology of gender switching in *Arisaema triphyllum*: an interdisciplinary approach,” (currently conservation scientist, Chicago Botanic Garden).

1999 Jennifer E. Steinbachs, Ph.D., “The evolution of gametophytic self-incompatibility: a theoretical perspective,” (currently Deputy Director, Center for Genomics and Bioinformatics, Indiana University).

2005 Gregory K. Shenk, Ph.D., “Developmentally plastic responses to pollinators by *Lupinus perennis* flowers and what they tell us about the pollination mechanism in the general lupine flower,” (currently instructor, Greater Hartford Academy of Math & Science).

2008 Krissa A. Skogen, Ph.D., “Declining *Desmodium cuspidatum* (Muhl. ex. Willd.) DC ex D. Loudon, multiple approaches to solving a unique conservation problem,” (currently conservation scientist, Chicago Botanic Garden).

2010 Rachel E. Prunier, Ph.D., “Evolution and community assembly in the genus *Protea*: insights from genetics and morphology,” (currently post-doctoral

2012 research associate, Michigan State University)
Kathryn E. Theiss, Ph.D. (expected)

Service to the profession

Non-profit board memberships

1991–2003 Secretary (1991–1996), Chair (1996–2003), Board of Trustees, *Connecticut State Museum of Natural History*
1992– Member, Vice-Chair (1997–2002), Trustee Emeritus (2002–) Connecticut Chapter, *The Nature Conservancy*
2000– Chair, Board of Directors, *BioOne*

Major society offices

1996–1998 Executive Vice President, *Society for the Study of Evolution*
2002–2004 President-elect, President, Past President, *American Genetics Association*
2004–2007 Treasurer, *Botanical Society of America*
2005–2007 President-elect, President, Past-President, *American Institute of Biological Sciences*
2008–2011 President-elect, President, Past-President, *Botanical Society of America*

Editorial positions

1988–1991 Book Review Editor, *Plant Genetics Newsletter*
1993–1998 Associate Editor, *The American Naturalist*
1994–1998 Associate Editor, *Systematic Botany*
1997–2000 Associate Editor, *Evolution*
1997–2004 Member, Board of Editors, *Conservation Biology*
2002–2004 Editor, *Heredity*
2002–2006 Member, Editorial Committee, *Systematic Botany Monographs*
2002–2004 Associate Editor, *Conservation Genetics*
2007– Member, Editorial Board, *BioScience*
2009– Associate Editor, *Quarterly Review of Biology*
2009– Associate Editor, *BSA Primer Notes & Protocols*

Major university service positions

1996–1998 Member, Chair (1997–1998), Life Sciences Review Panel, University of Connecticut Research Foundation
1999–2004 Member, University Senate
2000–2009 Faculty Representative, Financial Affairs Committee, University of Connecticut

cut Board of Trustees

- 2002 Member, Department of Geology Review Team
- 2003-2004 Chair, University Budget Committee, University Senate
- 2004 Member, University Chief Information Officer Search Committee
- 2005-2012 Member, University Senate
- 2007-2008 Member, College of Liberal Arts & Sciences Dean Search Committee
- 2007-2010 Member, Chair (2009-2010), Academic Center/Institute Review Committee
- 2007-2010 Member, Chair (2009-2010), Faculty Review Board
- 2009-2010 Chair, University Budget Committee, University Senate
- 2010-2012 Member, Chair (2011-2012), Senate Executive Committee
- 2011-2012 Chair, College of Liberal Arts & Sciences Academic Advisory Board