

Curriculum Vitae
CATHERINE RAMSAY LINNEN

Address:

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Current Position:

2011- Assistant Professor
Department of Biology, University of Kentucky

Education:

2000-2007 Ph.D. in Organismic and Evolutionary Biology
Harvard University; Advisor: Dr. Brian Farrell
1996-2000 B.S. in Ecology (*Summa Cum Laude*, Highest Honors, GPA: 4.0)
University of Georgia; Advisors: Dr. Mark Hunter and Dr. Daniel Promislow

Research Interests:

Genetics of adaptation and speciation
Molecular basis of morphological change
Speciation ecology and biogeography
Phylogenomics and comparative methods
Ecological and population genomics

Professional Experience:

2011- Assistant Professor
Department of Biology, University of Kentucky
2010-2011 Research Associate
Department of Organismic & Evolutionary Biology, Harvard University
PI: Dr. Hopi Hoekstra
2007-2010 Ruth L. Kirschstein NIH–NRSA Postdoctoral Fellow
Department of Organismic & Evolutionary Biology, Harvard University
PI: Dr. Hopi Hoekstra
2005-2006 Teaching Assistant, General Biology
Harvard University Summer School (2 summer sessions)
2005-2006 Teaching Assistant, General Biology
Harvard University Extension School (fall and spring sessions)
2001-2002 Teaching Fellow, Animal Behavior, Harvard University
2001 Teaching Fellow, Ecology, Harvard University

2000-2001 Teaching Fellow, Organismal Biology, Harvard University
1999-2000 Research Assistant
Institute of Ecology, University of Georgia
PI: Dr. Mark Hunter
1997-1999 Research Assistant
Department of Genetics, University of Georgia
PI: Dr. Daniel Promislow.

Grants and Fellowships:

2007-2010 National Institutes of Health Ruth L. Kirschstein National Research Service Award
Postdoctoral Fellowship
2004-2007 Environmental Protection Agency Science to Achieve Results (STAR) Graduate
Fellowship
2004 Graduate School of Arts and Sciences Merit Fellowship (John Parker Scholarship),
Harvard University
2003-2004 National Science Foundation Dissertation Improvement Grant
2000-2004 National Science Foundation Graduate Research Fellowship
2004 Museum of Comparative Zoology Putnam Expedition Grant, Harvard
University
2003 American Museum of Natural History Theodore Roosevelt Memorial Grant
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2002 American Museum of Natural History Theodore Roosevelt Memorial Grant
2002 Museum of Comparative Zoology Putnam Expedition Grant, Harvard
University
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University
1998 Howard Hughes Fellowship for Undergraduate Research

Awards:

2010 Postdoctoral Researcher Travel Award, Society of Molecular Biology and Evolution
2006 Ernst Mayr Award for Best Student Research Presentation, Society of Systematic
Biologists
2003 President's Prize for Student Paper Competition (Honorable Mention), Entomological
Society of America
2001 Derek Bok Award for Excellence in Teaching, Harvard University
2000 Derek Bok Award for Excellence in Teaching, Harvard University
2000 Josh Laerm Memorial Outstanding Ecology Undergraduate Award, Institute of
Ecology, University of Georgia
2000 First Honor Graduate (4.0 GPA), University of Georgia
2000 Phi Beta Kappa Honor Society, University of Georgia

Outreach Activities (selected):

Participant in Science Careers Seminar Series, Georgetown University, 2011
Teaching assistant for the Life Sciences-HHMI High School Outreach Program, 2003-2008
Cape Cod Evaluation Bioblitz volunteer (E. O. Wilson Biodiversity Foundation), 2006
Mentor for undergraduate women in science, Harvard University, 2005-2006
Teaching assistant for Harvard ExperiMentors' Day, 2004-2006

Professional Service:

Journal article reviews: *Evolution*, *Molecular Ecology*, *Philosophical Transactions of the Royal Society*, *Systematic Biology*, *Molecular Phylogenetics and Evolution*, *Proceedings of the Royal Society B: Biological Sciences*
Grant proposal reviews: National Science Foundation (Systematics and Biological Diversity Cluster); Society of Systematic Biologists Graduate Student Research Awards
Editorial Board, *Systematic Biology*, 2010-present

University Service and Student Supervision, University of Kentucky:

Search Committee, Integrative Biology, 2011-2012
Primary advisor for two PhD students in Biology
Member of 5 PhD and 2 MS committees (Biology and Entomology)
Research mentor for 3 undergraduate researchers

Publications (*selected by Faculty of 1000; †authors contributed equally):

- Linnen, C.R.**, Y.-P. Poh, B.K. Peterson, R.D.H. Barrett, J. Larson, J. Jensen, and H.E. Hoekstra. *In prep.* Adaptive evolution of multiple traits through multiple mutations at a single gene.
- Linnen, C.R.** and D.R. Smith. *In press.* Recognition of two additional pine-feeding *Neodiprion* species (Hymenoptera: Diprionidae) in the eastern United States. *Proceedings of the Entomological Society of Washington*.
- Linnen, C.R.** 2010. Species-tree estimation for complex divergence histories: a case study in *Neodiprion* sawflies. *In Estimating species trees: in practice and theory* (L.L. Knowles and L.S. Kubatko, eds.). Wiley-Blackwell, Hoboken, NJ. (invited contribution).
- Linnen, C.R.** and B.D. Farrell. 2010. A test of the sympatric host race formation hypothesis in *Neodiprion* (Hymenoptera: Diprionidae). *Proceedings of the Royal Society of London B*. 277: 3131-3138.
- Manceau, M. †, V.S. Domingues†, **C.R. Linnen**†, E.B. Rosenblum and H.E. Hoekstra. 2010. Convergence in pigmentation at multiple levels: mutation, genes, and function. *Philosophical Transactions of the Royal Society B* 365: 2439-2450.
- Weber, J.N., M.B. Peters, O.V. Tsyusko, **C.R. Linnen**, C. Hagen, N.A. Schable, T.D. Tuberville, A.M. McKee, S.L. Lance, K.L. Jones, H.S. Fisher, M.J. Dewey, H.E. Hoekstra and T.C. Glenn. 2010. Five hundred microsatellite loci for *Peromyscus*. *Conservation Genetics*. 11: 1243-1246.
- Linnen, C.R.** and H.E. Hoekstra. 2009. Measuring natural selection on genotypes and phenotypes in the wild. *Cold Spring Harbor Symposia on Quantitative Biology* 74:155-168.
- ***Linnen, C.R.**, E.P. Kingsley, J.D. Jensen and H.E. Hoekstra. 2009. On the origin and spread of an adaptive allele in deer mice. *Science* 325(5944): 1095-1098.
- Linnen, C.R.** and B.D. Farrell. 2008. Phylogenetic analysis of nuclear and mitochondrial

- genes reveals mitochondrial introgression and evolutionary relationships in the *Sertifer* species group of *Neodiprion* (Hymenoptera: Diprionidae). *Molecular Phylogenetics and Evolution* 48: 240-257.
- Linnen, C.R.** and B.D. Farrell. 2008. Comparison of methods for species-tree inference in the sawfly genus *Neodiprion* (Hymenoptera: Diprionidae). *Systematic Biology* 57: 876-890.
- Linnen, C.R.** and B.D. Farrell. 2007. Mito-nuclear discordance is caused by rampant mitochondrial introgression in *Neodiprion* (Hymenoptera: Diprionidae) sawflies. *Evolution* 61(6): 1417-1438.
- Hunter, M.D., **C.R. Linnen** and B.C. Reynolds. 2003. Effects of endemic densities of canopy herbivores on soil processes along a gradient in elevation in the southern Appalachians. *Pedobiologia* 47(3): 231-244.
- Linnen, C.R.**, M. Tatar and D.E.L. Promislow. 2001. Cultural artifacts: A comparison of senescence in natural, laboratory, and artificially selected lines of *Drosophila melanogaster*. *Evolutionary Ecology Research* 3: 877-888.

Invited Presentations:

- 2012 University of Cincinnati, Department of Biological Sciences (scheduled)
- 2012 American Society of Naturalists Vice-Presidential Symposium: "Natural selection in the wild: from genotype to phenotype", Evolution Meeting, Ottawa, Ontario
- 2012 Georgia Institute of Technology, School of Biology
- 2011 University of Memphis, Department of Biological Sciences
- 2011 Science Careers Seminar, Georgetown College, Science Division
- 2011 University of Georgia, Department of Genetics
- 2010 University of Massachusetts Medical School, Program in Bioinformatics & Integrative Biology
- 2010 "Population Genomics of Adaptive Alleles" Symposium, Society for Molecular Biology and Evolution Meeting, Lyon, France
- 2010 "The Genetics and Evolution of Animal Coloration" Symposium, Radcliffe Institute for Advanced Study, Cambridge, MA
- 2010 University of Pennsylvania, Department of Biology
- 2010 Boston University, Department of Biology
- 2010 University of Kentucky, Department of Biology
- 2009 "Estimating Species Trees: A Phylogenetic Paradigm for the 21st Century" Workshop, University of Michigan, Ann Arbor, MI
- 2005 University of Massachusetts Amherst, Department of Entomology
- 2000 "Frontiers in Aging in a New Millennium" Symposium, 11th Annual Student Convention in Gerontology and Geriatrics, Columbus, GA

Presentations at Meetings:

- 2008 Evolution meeting (Minneapolis, MN) "Molecular basis of adaptation: Cryptic color of deer mice living on the Nebraska Sand Hills."
- 2006 EPA STAR Fellows Conference (Washington, D.C.) "Dueling datasets: Why do mitochondrial and nuclear gene trees disagree on *Neodiprion* phylogeny?" (poster)
- 2006 Genetics of Speciation meeting (Vancouver, BC) "Dueling datasets: Why do mitochondrial and nuclear gene trees disagree on *Neodiprion* phylogeny?" (poster)
- 2006 Evolution meeting (Stonybrook, NY) "Dueling datasets: Why do mitochondrial and nuclear gene trees disagree on *Neodiprion* phylogeny?"

- 2005 Evolution meeting (Fairbanks, AK) “How do *Neodiprion* sawflies speciate?”
- 2004 Evolution meeting (Fort Collins, CO) “The role of host shifts and specialization in the speciation of *Neodiprion* sawflies”
- 2003 Entomological Society of America meeting (Cincinnati, OH) “The role of host shifts and specialization in the speciation of *Neodiprion* sawflies”
- 1999 Southeastern Population Ecology and Genetics Group (Mountain Lake, VA) “Effects of laboratory culture on aging patterns in *Drosophila melanogaster*”

Popular Press (selected):

- “A colorful way to watch evolution in Nebraska’s sand dunes.” New York Times, August 2011.
- “Mouse set to be an ‘evolution icon’.” by M. Walker. BBC News, August 2009.
- “Newly evolved fur coat a quick hit in Nebraska.” by M. Marshall. New Scientist, August 2009.
- “From mousy to blonde -- in 8,000 years.” Telegraph.co.uk, August 2009.
- “Survival of the blondest: Mice change their coat colour over 8,000 years to fool predators.” Daily Mail Online, August 2009.
- “Fast-track evolution gave rise to deer mouse’s pale coat.” Discover Magazine Blogs, August 2009.