

# CURRICULUM VITAE

## RACHAEL WINFREE

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## ACADEMIC TRAINING

2001	Ph.D.	Princeton University	Ecology and Evolutionary Biology
1990	B.A.	Dartmouth College	Government

## PROFESSIONAL EXPERIENCE

2008–Present	Assistant Professor, Department of Entomology, Rutgers University, New Brunswick, New Jersey
2006–2008	Postdoctoral Research Associate, Environmental Science, Policy and Management, University of California, Berkeley
2004–2005	Postdoctoral Research Associate, Ecology & Evolutionary Biology, Princeton University
2001–2004	Postdoctoral Fellow, Council on Science and Technology, Princeton University
1996–2001	Graduate Teaching Assistant, Ecology & Evolutionary Biology, Princeton University
1994–1995	Graduate Teaching Assistant, Ecology and Evolution, Rutgers University

## GRANTS, FELLOWSHIPS AND AWARDS

2007	<ul style="list-style-type: none"><li>▪ Promoting sustainable crop pollination by wild bees through farmer outreach and education. With N.M. Williams PI, Bryn Mawr College. Northeast SARE (Sustainable Agriculture Research &amp; Education) \$9330</li></ul>
2005	<ul style="list-style-type: none"><li>▪ National Science Foundation collaborative proposal BIO/DEB #0554790 / 0516205, “Community disassembly and ecosystem function: pollination services across agro-natural landscapes,” \$427,810, Co-PI with C. Kremen and N.M. Williams</li><li>▪ National Fish and Wildlife Foundation, “Assessing and Restoring Native Crop Pollinators on Agricultural Lands in New Jersey,” \$50,128 (with C. Kremen and N.M. Williams; I am not a PI, but I co-wrote and co-administered the grant)</li></ul>
2002	<ul style="list-style-type: none"><li>▪ American Museum of Natural History, Theodore Roosevelt Memorial Fund</li></ul>
2001	<ul style="list-style-type: none"><li>▪ Postdoctoral Fellowship, Princeton Council on Science and Technology</li></ul>
2000	<ul style="list-style-type: none"><li>▪ Princeton Alumni Association Travel Grant</li></ul>
1999	<ul style="list-style-type: none"><li>▪ Princeton Alumni Association Travel Grant</li><li>▪ Eastern Bird Banding Association Research Grant</li></ul>
1998	<ul style="list-style-type: none"><li>▪ Sigma Delta Epsilon Notchev Fellowship Award</li><li>▪ American Museum of Natural History, Chapman Memorial Fund</li></ul>
1995	<ul style="list-style-type: none"><li>▪ National Science Foundation Graduate Research Fellowship</li><li>▪ Rutgers University Graduate School Research Fellowship</li><li>▪ Rutgers University, Hutcheson Memorial Forest Research Grant</li></ul>

## GRANTS PENDING OR IN REVISION

- USDA-NRI, Arthropod and Nematode Biology and Management. "Integrated pollinator management: crop pollination by honey bees and native bees in the Mid-Atlantic region." \$401,413, lead PI with P. Morin (Rutgers University) and N. Williams (Bryn Mawr College). In revision.
- National Science Foundation, BIO/DEB. "Effects of biological invasions on the structure and function of old field food webs." \$614,670, Co-PI with P. Morin (Rutgers University) and S. Meiners (Eastern Illinois University). In revision.

## PUBLICATIONS

- Winfree, R.**, N. M. Williams, H. Gaines, J. Ascher, and C. Kremen. 2008. Wild pollinators provide majority of crop visitation across land use gradients in New Jersey and Pennsylvania. *Journal of Applied Ecology* 45: 793-802.
- Winfree, R.**, N. M. Williams, J. Dushoff, and C. Kremen. 2007. Wild bees provide insurance against ongoing honey bee losses. *Ecology Letters* 10: 1105-1113
- Greenleaf, S.S., N.M. Williams, **R. Winfree** and C. Kremen. 2007. Bee foraging ranges and their relationship to body size. *Oecologia* 153: 589-596
- Winfree, R.**, T. Griswold and C. Kremen. 2007. Effect of human disturbance on bee communities in a forested ecosystem. *Conservation Biology* 21: 213-223
- Kremen, C., N. Williams, M. A. Aizen, B. Gemmill-Herren, G. LeBuhn, R. Minckley, L. Packer, S. G. Potts, T. Roulston, I. Steffan-Dewenter, D. Vazquez, **R. Winfree**, L. Adams, E. E. Crone, S. S. Greenleaf, T. H. Keitt, A. Klein, J. Regetz, T. Ricketts. 2007. Pollination and other ecosystem services produced by mobile organisms: a conceptual framework for the effects of land use change. *Ecology Letters* 10: 299-314
- Winfree, R.**, S.K. Robinson, D. Bengali and J. Dushoff. 2006. A Monte Carlo model for estimating the reproduction of a generalist brood parasite across multiple host species. *Evolutionary Ecology Research* 8: 213-236
- Dobson, A., D. Lodge, J. Alder, G. Cumming, J. Keymer, J. McGlade, H. Mooney, J. A. Rusak, O. Sala, V. Wolters, D. Wall, **R. Winfree**, and M. Xenopoulos. 2006. Habitat loss, trophic collapse and the decline of ecosystem services. *Ecology* 87: 1915-1924
- Winfree, R.**, J. Dushoff, E. Crone, C. Schultz, R. Budny, N. M. Williams and C. Kremen. 2005. Testing simple indices of habitat proximity. *The American Naturalist* 165: 707-717
- Chace, J., C. Farmer, **R. Winfree**, D. Curson, W. Jensen, C. Goguen, and S.K. Robinson. 2005. Cowbird ecology: a review of factors affecting the distribution and abundance of cowbirds across spatial scales. *Ornithological Monographs* 57: 45-70
- Winfree, R.** 2004. High offspring survival in an invaded habitat for the brown-headed cowbird. *Animal Conservation* 7: 445-453
- Dobson, A.P., S. Kutz, M. Pascual and **R. Winfree**. 2003. Pathogens and parasites in a changing climate. Pages 33-38 in L. Hannah and T. Lovejoy, eds, *Climate Change and Biodiversity*:

Synergistic Impacts. *Advances in Applied Biodiversity Science* 4. Washington, DC: Center for Applied Biodiversity Science, Conservation International

**Winfree, R.** 2000. Reply to “Brood parasitism: ducks can be cuckoos, too” (Correspondence) *Trends in Ecology and Evolution* 15: 26

**Winfree, R.** 1999. Cuckoos, cowbirds, and the persistence of brood parasitism. *Trends in Ecology and Evolution* 14: 338-343

## **MANUSCRIPTS IN SUBMISSION**

**Winfree, R.** and C. Kremen. Do interactions among species stabilize ecosystem services? A test using crop pollination. In review, *Proceedings of the Royal Society of London, Series B*

**Winfree, R.** and B. Gross. The value of crop pollination by honey bees and wild bees in New Jersey and Pennsylvania. In revision, *Ecological Economics*

**Winfree, R.,** R. Aguilar, D. P. Vázquez, G. LeBuhn, and M. A. Aizen. How do bees respond to anthropogenic disturbance? A meta-analysis. In review.

## **NON PEER-REVIEWED PUBLICATIONS**

**Winfree, R.** 2004. Art Winfree, Artist of Science. *Journal of Theoretical Biology* 230: 441-443

**Winfree, R.** 1999. Close encounters with North America’s most hated bird. *Bird Watcher’s Digest*, May-June, 56-62

**Winfree, R.** 1998. A Breeding Bird Survey run. *Bird Watcher’s Digest*, March-April, 47-51

**Winfree, R.** and E. Blom. 1995. A bird tax: pro and con. *Bird Watcher’s Digest*, March / April, 12-16

## **POPULAR MEDIA**

Interviews and articles about my work have appeared in the following popular media:

- *Audubon* magazine, “Plan bee,” May/June 2008
- *The Wildlife Professional* (The Wildlife Society), “The buzz on bees,” spring 2008
- *Science News*, “Eastern farms have native-bee insurance,” 24 November 2007
- *Organic Gardening* magazine, “The bee crisis,” Winter 2007-2008
- *The Christian Science Monitor*, “Progress on collapsing bee hives,” 8 November 2007
- *Neue Zürcher Zeitung*, “Unterschätzte Wildbienen,” 7 November 2007
- New Jersey Public Television, “Crop pollination,” 8 August 2007
- New Jersey Public Television, “Pollinator week,” 24 June 2007
- *Defenders of Wildlife* magazine, “The buzz about bees,” winter 2006
- *Science Now*, “Cowbirds hijack forest nests, 31 July 2001
- *Financial Times*, London, “Ungodly behavior by the darling of spring,” 18 December 1999

## INVITED PRESENTATIONS AND WORKSHOPS

- 2008
- NCEAS, member of working group “Restoring an ecosystem service to degraded landscapes: native bees and crop pollination” (since 2005)
  - Woodrow Wilson School of Public Policy, Princeton University
  - Ecological Society of America, “Human disturbance and pollinators at the landscape scale: an overview”
  - Food & Agriculture Organization of the United Nations, Rome
  - Department of Entomology, Rutgers University
  - Department of Biology, University of Nevada, Reno
  - Department of Entomology, University of California, Davis
- 2007
- Entomological Society of America, “Integrating pollinators into integrated pest management”
  - Department of Geography, University of Wisconsin, Madison
  - Department of Biology, Temple University
  - Department of Entomology, Rutgers University
  - Department of Biology, St. Lawrence University
  - Department of Biology, College of William and Mary
- 2005
- Ecology and Evolution Graduate Program, Rutgers University
- 2004
- Center for Environmental Research and Conservation (CERC), Columbia University.
- 2002
- Department of Ecology, Ethology and Evolution, University of Illinois, Champaign-Urbana

## CONTRIBUTED PRESENTATIONS

- 2007
- Ecological Society of America. The insurance value of ecosystem services provided by wild bees
- 2006
- Ecological Society of America. Ecosystem services provided by wild bees in New Jersey and Pennsylvania
- 2004
- Ecological Society of America. Testing indices of habitat proximity.
  - Society for Conservation Biology. Effect of suburban and agricultural development on wild bee biodiversity.
- 2003
- Ecological Society of America. High offspring survival in a novel habitat for an invasive species, the brown-headed cowbird (*Molothrus ater*).
- 2001
- Society for Conservation Biology. Factors influencing the breeding success of the brown-headed cowbird (*Molothrus ater*).
- 1999
- Society for Conservation Biology. Cowbird reproduction in forests and old fields.

## TEACHING EXPERIENCE

- 2005
- Conservation biology, Princeton University
- 2001, 2003
- Biostatistics tutorial for ecology majors, Princeton University
- 2002
- Co-taught conservation biology, Princeton University

1994-2000 Teaching assistant in population and community ecology, biostatistics, terrestrial plant ecology, epidemiology and ecology of parasites and disease, and introductory biology (at both Rutgers University and Princeton University)

## **ADVISING OF STUDENTS**

All in the Department of Ecology & Evolutionary Biology, Princeton University

- 2007 ▪ Larissa Koehler, Patterns of bee visitation and preference in old fields
- 2006 ▪ Courtney Lix, Trade-offs in the protection of rare versus common plant species in Madagascar. Research translated into French for use in conservation planning by the government of Madagascar. Thesis awarded first place in conservation category, Ecology & Evolutionary Biology department.
  - Katherine Fiorella, Reserve site selection: A case study of Madagascar. Research translated into French for use in conservation planning by the government of Madagascar. In university-wide competitions, thesis awarded 2<sup>nd</sup> place in Environmental Studies Senior Thesis Prize and 3<sup>rd</sup> place in Dean Hank Dobin Prize. Thesis award in comparative analysis category, Ecology & Evolutionary Biology department.
  - Laura Westwood, Habitat use by wild bees in human-altered landscapes
- 2002 ▪ Anayi Reynolds, Behavior of a brown-headed cowbird in a wood thrush nest: being greedy or overcoming parental discrimination?

## **PROFESSIONAL SERVICE**

Peer review for *Ecology Letters*, *Ecology*, *Oecologia*, *Journal of Applied Ecology*, *Landscape Ecology*, *Biology Letters*, *Biological Journal of the Linnean Society*, *Behavioral Ecology*, *Restoration Ecology*, *Biological Conservation*, *Journal of the Kansas Entomological Society*, *Journal of Insect Conservation*, *Ecological Entomology*, National Science Foundation, USGS / DOI, National Fish and Wildlife Foundation, Springer textbook publishing, Food and Agriculture Organization of the United Nations (on pollinator declines)

## **OTHER EDUCATION AND WORK EXPERIENCE**

- 2002 American Museum of Natural History, The Bee Course
- 1995 Course in Tropical Biology, Organization for Tropical Studies, Costa Rica
- 1994-1996 Enrolled in Ph.D. program, Dept of Ecology and Evolution, Rutgers University
- 1992-1993 Assistant Editor, Cambridge University Press, New York, NY
- 1990 Harvard University, Radcliffe Publishing Course