

CURRICULUM VITAE

KENNETH D. WHITNEY

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APPOINTMENTS

- 2005-present Assistant Professor, Rice University, Department of Ecology and Evolutionary Biology
- 2003-2005 Postdoctoral Fellow, Indiana University
Advisor: Loren H. Rieseberg

EDUCATION

- 2003 Ph.D., Population Biology, University of California at Davis
Major professor: Maureen L. Stanton
Committee Members: Sharon Y. Strauss, Thomas B. Smith
- 1997 M.A., Ecology and Systematics, San Francisco State University
Major professor: Thomas B. Smith
Committee Members: V. Thomas Parker, Eric J. Routman
- 1989 A.B. *summa cum laude*, English, Dartmouth College
minor in Environmental Studies

RESEARCH SUPPORT

- 2009-2010 \$26,608 Hammill Innovation Grant, Rice Institute of Biosciences and Bioengineering AND Rice Faculty Initiatives Fund (co-PI Michael Covington). *Seed-seed signaling in Arabidopsis thaliana: evolutionary ecology and molecular mechanisms of a newly-discovered process*
- 2009 \$7,475 National Science Foundation REU supplement to DEB 0716868
- 2007-2012 \$577,527 National Science Foundation DEB 0716868 (PI; co-PI Loren Rieseberg). *Long-term natural selection and adaptive introgression in weedy sunflowers.* (\$505,137 to Whitney)
- 2007-2009 \$20,000 National Geographic Society 8237-07 (PI; co-PIs Amy Savage, Jennifer Rudgers). *Yellow Crazy Ant invasion of the Samoan Archipelago: Do novel mutualisms amplify the ecological impacts?*
- 2005 \$50,000 Genomics Education Matching Fund Program, Licor Corporation (co-PI

with Michael Kohn)

2003-2005	\$89,200	USDA NRI Postdoctoral Fellowship
2001	\$5,000	ARCS Foundation Scholarship
1999-2001	\$8,800	UC Davis competitive intramural research grants
1998-2001	\$5,000	Center for Tropical Research Grant
1997-2000	\$66,000	EPA STAR Fellowship
1996	\$5,000	NSF Graduate Research Traineeship
1994-1996	\$43,000	NSF Graduate Research Fellowship
1994	\$24,000	Wildlife Conservation Society (co-PI with T. B. Smith, V. T. Parker, M. Fogiel)

OTHER SUPPORT

2007 Brown Foundation Teaching Grant, \$4,977 (co-PI with Jennifer Rudgers)

PUBLICATIONS

(* Huxley Fellow, ** Graduate, ***Postgraduate, or †Undergraduate student associated with my lab)

19. Crawford**, K. M., and K. D. Whitney. *in press*. Population genetic diversity influences colonization success. *Molecular Ecology*.
18. Whitney K.D., Rudgers J.A. 2009. Constraints on plant signals and rewards to multiple mutualists? *Plant Signaling & Behavior* 4(9): 1-4.
17. Savage** A.M., J.A. Rudgers & K.D. Whitney. 2009. Elevated dominance of extrafloral nectary-bearing plants is associated with increased abundances of an invasive ant and reduced native ant richness. *Diversity And Distributions* 15: 751-761.
16. Whitney, K.D. 2009. Comparative evolution of flower and fruit morphology. *Proceedings of the Royal Society B-Biological Sciences* 276:2941-2947.
15. Whitney, K.D., J.R. Ahern**, and L.G. Campbell*. 2009. Hybridization-prone plant families do not generate more invasive species. *Biological Invasions* 11:1205-1215.
14. Whitney, K.D. & C.A. Gabler. 2008. Rapid evolution in introduced species, 'invasive traits' and recipient communities: challenges for predicting invasive potential. *Diversity And Distributions* 14: 569-580.
13. Rieseberg, L. H., S. C. Kim, R. A. Randell, K. D. Whitney, B. R. Gross, C. Lexer, and K. Clay. 2007. Hybridization and the colonization of novel habitats by annual sunflowers. *Genetica* 129: 149-165.

12. Rudgers, J.A. & K.D. Whitney. 2006. Interactions between insect herbivores and a plant architectural dimorphism. *Journal Of Ecology* 94: 1249-1260.
11. Whitney, K. D., R. A. Randell, and L. H. Rieseberg. 2006. Adaptive introgression of herbivore resistance traits in the weedy sunflower *Helianthus annuus*. *American Naturalist* 167(6): 794-807.
10. Whitney, K. D. 2005. Linking frugivores to the dynamics of a fruit color polymorphism. *American Journal of Botany* 92: 859-867.
9. Baack, E. J., K. D. Whitney, and L. H. Rieseberg. 2005. Hybridization and genome size evolution: timing and magnitude of nuclear DNA content increases in *Helianthus* homoploid hybrid species. *New Phytologist* 167:623-630.
8. Whitney, K. D. 2005. Evidence for simple genetic control of a fruit colour polymorphism in *Acacia ligulata*. *Australian Journal of Botany* 53: 363-366.
7. Whitney, K. D., and M. L. Stanton. 2004. Insect seed predators as novel agents of selection on fruit color. *Ecology* 85: 2153-2160.
6. Whitney, K. D. 2004. Experimental evidence that both parties benefit in a facultative plant-spider mutualism. *Ecology* 85:1642-1650.
5. Whitney, K. D., and C. E. Lister. 2004. Fruit colour polymorphism in *Acacia ligulata*: seed and seedling performance, clinal patterns, and chemical variation. *Evolutionary Ecology* 18: 165-186.
4. Whitney, K. D. 2002. Dispersal for distance? *Acacia ligulata* seeds and meat ants *Iridomyrmex viridiaeneus*. *Austral Ecology* 27: 589-595.
3. Whitney, K. D., and T. B. Smith. 1998. Habitat use and resource tracking by African *Ceratogymna* hornbills: implications for seed dispersal and forest conservation. *Animal Conservation* 1: 107-117.
2. Whitney, K. D., M. K. Fogiel, A. M. Lamperti, K. M. Holbrook, D. M. Stauffer, B. D. Hardesty, V. T. Parker, and T. B. Smith. 1998. Seed dispersal by *Ceratogymna* hornbills in the Dja Reserve, Cameroon. *Journal of Tropical Ecology* 14: 351-371.
1. Smith, T. B., K. K. Rasmussen, K. D. Whitney, and M. K. Fogiel. 1996. A preliminary survey of birds from the Lac Lobeke Reserve, south-eastern Cameroon. *Bird Conservation International* 6: 167-174.

MANUSCRIPTS IN REVIEW

Johnson***, S. D., A. M. Savage**, K. D. Whitney, and J. A. Rudgers. *in review*. Extrafloral nectar availability alters the recruitment, dominance and behavior of the invasive ant, *Anoplolepis gracilipes*.

Whitney, K. D., E. J. Baack, J. L. Hamrick, M. J. W. Godt, B. C. Barringer, M. D. Bennett, C. G. Eckert, C. Goodwillie, S. Kalisz, I. J. Leitch, and J. Ross-Ibarra. *in review*. A role for nonadaptive processes in plant genome size evolution?

Scascitelli, M., K. D. Whitney, R. A. Randell, M. King, C. A. Buerkle, and L. H. Rieseberg. *in review*. Genome scan of hybridizing sunflowers from Texas (*Helianthus annuus* and *H. debilis*) reveals asymmetric patterns of introgression and small islands of genomic differentiation.

Whitney, K. D., J. R. Ahern, L. G. Campbell, L. P. Albert, and M. S. King. *in review*. Patterns of hybridization in plants.

HIGHLIGHTS OF MY PUBLISHED WORK

Faculty of 1000 Biology: evaluations for Whitney KD et al *Biol Invasions* 2009 11 :1205-15
<http://www.f1000biology.com/article/id/1162698/evaluation>

INVITED SEMINARS & PRESENTATIONS

- 2009 10th Annual Ecological Integration Symposium, "Resilience from Genes to Ecosystems: Ecological, Evolutionary, and Social Perspectives on Sustainable Conservation", Texas A&M University, March 6.
- 2008 Texas A & M University, Department of Entomology, 2 October.
Rice University, Institute of Biosciences and Bioengineering Symposium, 18 June.
The Evolutionary Ecology of Plant-animal Interactions: from Genes to Communities. Spanish Association of Terrestrial Ecology, Mallorca, Spain, April 21-23.
- 2007 Microevolutionary Change in Human-altered Environments: An International Summit to Translate Science into Policy. University of California, Los Angeles, February 8-11th.
Texas A & M University, Department of Rangeland Ecology and Management, 17 April.
- 2006 Central Texas Ecologists' Meeting, Austin, TX, 18 Nov.
Botanical Society of America Symposium, 'Hybridization as a Stimulus for the Evolution of Invasiveness in Plants.' Chico State University, Chico, CA, 2 August.
Trinity University, Dept. of Biology
- 2005 NSF-USDA-EPA Principal Investigators Symposium
University of Tennessee, Department of Ecology and Evolutionary Biology
USDA Sunflower Unit, Symposium on Wild *Helianthus*
- 2004 Rice University, Department of Ecology & Evolutionary Biology
University of Akron, Department of Biology
Tufts University, C. Orians Lab
- 2003 University of Wyoming, Department of Botany
University of Pittsburgh, Department of Biology
Susquehanna University, Department of Biology
Entomological Society of America Symposium, 'Stable Isotopes in Basic and Applied Entomology'
University of Toronto, Departments of Botany and Zoology
- 2001 University of Arizona, J. Bronstein Lab

PROFESSIONAL MEETING ABSTRACTS

- Whitney, K. D., J. R. Ahern, L. G. Campbell and L. P. Albert. Explaining hybridization propensity in plants. Ecological Society of America, Albuquerque, NM 2009.
- Whitney, K. D., J. R. Ahern, and L. G. Campbell. Hybridization-prone plant families do not generate more invasive species. Society for the Study of Evolution, Minneapolis, MN. 2008.
- Crawford, K. M., P. Thompson, and K. D. Whitney. Genetic diversity and early colonization success: Testing hypotheses with a model system. Ecological Society of America, San Jose, CA. 2007.
- Whitney, K. D., R. A. Randell, L. H. Rieseberg. Adaptive introgression of herbivore-resistance traits and range expansion in sunflowers. Society for the Study of Evolution, Stony Brook, NY. 2006.
- Whitney, K. D., R. A. Randell, C. Orians, L. H. Rieseberg. Introgression of herbivore resistance traits and the evolution of invasiveness in sunflowers (*Helianthus*). Gordon Conference on Plant-Herbivore Interaction. Ventura, CA. 2004.
- Whitney, K. D., R. A. Randell, C. Orians, L. H. Rieseberg. Introgression of herbivore resistance traits and the evolution of invasiveness in sunflowers (*Helianthus*). Ecological Society of America, Portland, OR. 2004.
- Whitney, K. D. Experimental evidence that both parties benefit in an Australian plant-spider mutualism. Ecological Society of America, Tucson, AZ. 2002.
- Whitney, K. D. Seed dispersers, predators, and the maintenance of genetic variation: fruit color polymorphism in *Acacia ligulata*. Ecological Society of America, Madison, WI. 2001.
- Whitney, K. D. Fruit color polymorphism in *Acacia ligulata*: Are seed dispersers or seed predators key to the riddle? 3rd International Symposium on Frugivores and Seed Dispersal, São Pedro, Brazil. 2000.
- Whitney, K. D. Seed dispersers, seed predators, and the maintenance of genetic variation: aril color polymorphism in *Acacia ligulata*. Ecological Society of Australia, Melbourne, Australia. 2000.
- Whitney, K. D. & T. B. Smith. Conservation value of seed dispersal by Hornbills. Earthwatch/UK Tropical Forest Forum conference: African rainforests and the conservation of biodiversity, Limbe, Cameroon. 1997.
- Whitney, K. D. & T. B. Smith. Frugivore visitation, seed removal, and seed deposition at three species of African nutmeg (Myristicaceae). Ecological Society of America, Providence, RI. 1996.
- Whitney, K. D. & T. B. Smith. Seasonal variation in diet and habitat use of two large African forest hornbills: implications for forest dynamics. Ecological Society of America, Snowbird, Utah. 1995.
- Smyth, A. P. & K. D. Whitney. A comparison of seed dispersal in primary vs. secondary forest for an afro-tropical pioneer species, *Rauwolfia macrocarpa*. Ecological Society of America, Snowbird, Utah. 1995.
- Whitney, K. D. & T. B. Smith. Visitation and dispersal of the Myristicaceae by hornbills (Bucerotidae) in an African forest. Association for Tropical Biology, San Diego, CA. 1995.

TEACHING EXPERIENCE

- Instructor: Plant Diversity (Bios 336), Rice University, Spring 2007, Spring 2008.
- Instructor: Graduate Core Class in Ecology and Evolutionary Biology (Bios 529), Ecological Genetics module, Rice University, Fall 2006, Fall 2008, Fall 2009.
- Teaching Assistant: "The Future of Biology" (honors writing course), UC Davis, Spring 2002

Teaching Assistant: Introduction to Ecology, UC Davis, Spring 2001
Teaching Assistant: Introductory Biology, San Francisco State University, Spring 1993 & Fall 1996
Teacher Training: Certificate in Teacher Training (12 hour class), UC Davis Teaching Resources Center, Spring 2001
Supervision of over 40 undergraduate field and lab research assistants, 1994-2008

HONORS AND AWARDS

2001 Phi Sigma, University of California at Davis Chapter
1997 Graduate Student Award for Distinguished Achievement in Biology, SFSU
1989 High Honors in the English Major, Dartmouth College
1988 Phi Beta Kappa, Dartmouth College Chapter
1988 Presidential Scholar, Dartmouth College
1988 Ralston English Prize, Dartmouth College

GRADUATE STUDENT SUPERVISION

Jeffrey Ahern (Ph.D. in progress)
Scott Chamberlain (Ph.D. in progress; co-supervisor with J. Rudgers)
Christopher Dibble (Ph.D. in progress; co-supervisor with V. Rudolf)
Amy Savage (Ph.D. in progress; co-supervisor with J. Rudgers)
Amaris Swann (Ph.D. 2008)
Autumn Hardin (Ph.D. 2007)

MENTORING – UNDERGRADUATE INDEPENDENT RESEARCH PROJECTS

Reshmi Paul, Paul Thompson, Anika Vinze, Kate Boles (senior thesis), Niki VonHedemann (senior thesis), Jeremy Caves, Charles Ary (senior thesis), Matthew King, Loren Albert, Christopher Chen (NSF REU), Marcus Stansberry (NSF REU, senior thesis), Skylar Craig (senior thesis)

SOCIETY MEMBERSHIP

Botanical Society of America
Ecological Society of America
Sigma Xi
Society for the Study of Evolution

SERVICE IN PEER REVIEW - JOURNALS

American Journal of Botany (3)
American Midland Naturalist (2)
Annals of Botany (2)
Australian Journal of Botany
Biological Invasions
BMC Evolutionary Biology
Current Biology
Ecological Research
Ecology (3)

Ecology Letters
Evolution
Genetics
Journal of Applied Ecology
Journal of Ecology (3)
Journal of Tropical Ecology
Molecular Ecology (4)
Naturwissenschaften
Oecologia (5)
Oikos
Plant Biology (2)
Proceedings of the National Academy of Sciences
Proceedings of the Royal Society B: Biological Sciences
Philosophical Transactions of the Royal Society B: Biological Sciences
Trends in Plant Science
Wildlife Research
Zoo Biology

SERVICE IN PEER REVIEW – GRANTING AGENCIES

Grant Agency of the Czech Academy of Science
National Geographic Society
NSF, Environmental Genomics (2)
NSF, Evolutionary Ecology (1)
NSF, Integrative Organismal Systems
NSF, International Research Fellowship Program
NSF, Population and Evolutionary Processes (4)
NSF, Population and Evolutionary Processes, DDIG (22)
NYZS/The Wildlife Conservation Society
USDA, Biology of Weedy and Invasive Plants Panel

SERVICE – GRANTING AGENCY PANELS

NSF, Population and Evolutionary Processes, Doctoral Dissertation Improvement Grants, Feb 2008

SERVICE & OUTREACH IN SCIENCE EDUCATION

2009 Civic Scientist Series. Carnegie Vanguard High School, 14 Oct 2009
Civic Scientist Series. Eastwood Academy, Ms. Cooper's 10th grade biology class, 24 Feb 2009. "Field biology in Africa and Australia"
2007 Instructor, International Baccalaureate teacher training workshop, Rice University
2006 Instructor, Advanced Placement teacher training workshop, Rice University
2006 Instructor, International Baccalaureate teacher training workshop, Rice University