

**Contact Information:**

Address: Department of Biology  
Indiana University  
Bloomington, IN 47405 USA  
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**Positions held:**

2007 - now Full Professor, Department of Biology, Indiana University, Bloomington.  
2006 - now Associate Dean for Graduate Education, College of Arts & Sciences, Indiana University.  
2005 - 2006 Associate Dean for Student Diversity, University Graduate School, Indiana University.  
2002 - 2007 Director, Center for the Integrative Study of Animal Behavior, Indiana University.  
2001 - 2007 Associate Professor, Department of Biology, Indiana University.  
2000 - 2001 Associate Professor, Department of Biology, University of Oregon.  
1994 - 2000 Assistant Professor, Department of Biology, University of Oregon.

**Education:**

1992-94 postdoctoral work, Univ. of Washington, Seattle (adviser: Joe Felsenstein) and Univ. of Oregon, Eugene (adviser: Mike Lynch)  
1987-92 Ph.D., Zoology, University of Wisconsin, Madison (adviser: Jeff Baylis)  
1987-91 M.S., Biometry, University of Wisconsin, Madison (adviser: Rick Nordheim)  
1983-87 B.A., Zoology and Psychology, University of California, Berkeley

**Publications:**

*Peer-reviewed journal articles:*

- Martins, E. P. 1991. Individual and sex differences in the push-up display of the Sagebrush Lizard, *Sceloporus graciosus*. *Animal Behaviour* 41: 403-416.
- Martins, E. P. and T. Garland, Jr. 1991. Phylogenetic analyses of the correlated evolution of continuous characters: a simulation study. *Evolution* 45: 534-557.
- Martins, E. P. 1993. Contextual use of the push-up display by the Sagebrush Lizard, *Sceloporus graciosus*. *Animal Behaviour* 45: 25-36.
- Martins, E. P. 1993. Comparative studies, phylogenies and predictions of coevolutionary relationships. *Behavioral and Brain Sciences Commentary* 16:714-716.
- Martins, E. P. 1993. A comparative study of the evolution of *Sceloporus* push-up displays. *Am Nat* 142: 994-1018.
- Martins, E. P. 1994. Estimating rates of character change from comparative data. *Am. Nat.* 144: 193-209.
- Martins, E. P. 1994. Structural complexity in a lizard communication system: The *Sceloporus graciosus* "push-up" display. *Copeia* 1994: 944-955.
- Martins, E. P. 1995. Phylogenies and comparative data, a microevolutionary perspective. *Philosophical Transactions of the Royal Society of London B* 349: 85-91.
- Hansen, T. F. and E. P. Martins. 1996. Translating between microevolutionary process and macroevolutionary patterns: a general model of the correlation structure of interspecific data. *Evolution* 50: 1404-1417.
- Martins, E. P. 1996. Conducting phylogenetic comparative analyses when the phylogeny is not known. *Evolution* 50: 12-22.
- Martins, E. P. 1996. Phylogenies, spatial autoregression, and the comparative method: A computer simulation test. *Evolution* 50: 1750-1765.
- Martins, E. P. and T. F. Hansen. 1997. Phylogenies and the comparative method: A general approach to incorporating phylogenetic information into analysis of interspecific data. *Am. Nat.* 149: 646-667. Erratum *Am. Nat.* 153: 448.
- Martins, E. P. and J. Lamont. 1998. Evolution of communication and social behavior: a comparative study of *Cyclura* rock iguanas. *Animal Behaviour* 55: 1685-1706.
- Martins, E. P., A. N. Bissell, and K. K. Morgan. 1998. Population differences in a lizard communicative display: evidence for rapid change in structure and function. *Animal Behaviour* 56: 1113-1119.
- Martins, E. P. 1999. Estimation of ancestral states of continuous characters: a computer simulation study. *Systematic Biology* 48: 642-650.

- Sheldahl, L. A. and E. P. Martins. 2000. Territorial behavior in the western fence lizard. *Herpetol* 56: 192-207.
- Martins, E. P. 2000. Adaptation and the comparative method. *TREE* 15: 295-299.
- Housworth, E. A. and E. P. Martins. 2001. Conducting phylogenetic analysis when the phylogeny is partially known: Random sampling of constrained phylogenies. *Syst. Biol.* 50: 628-639.
- Martins, E.P., Diniz-Filho, J. A., & E. A. Housworth. 2002. Adaptation and the phylogenetic comparative method. *Evolution* 56: 1-13.
- Martins, E. P. and E. A. Housworth. 2002. Phylogeny shape and the phylogenetic comparative method. *Systematic Biology*, 51: 873-880.
- Lacy, K. E. and E. P. Martins. 2003. The effects of anthropogenic habitat usage on the social behaviour of a vulnerable species, *Cyclura nubila*. *Animal Conservation*, 6:3-9.
- Housworth, E.A., E.P. Martins, and M. Lynch. 2004. The phylogenetic mixed model, *Am. Nat.* 163: 84-96.
- Martins, E. P., A. Labra, M. P. Halloy & J. P. Tolman. 2004. Large scale patterns of signal evolution: An interspecific study of *Liolaemus* lizard headbob displays. *Animal Behaviour*, 68: 453-463.
- Thakur, S., K. Börner, K. Mane, E. Martins & T. Ord. 2004. Content coverage of animal behavior data. Proceedings of the Conference on Visualization and Data Analysis 2004, IS&T/SPIE's Electronic Imaging '04, Jan. 2004, San Jose, CA.
- Martins, E. P. 2004. EthoSource: a new initiative for storing, sharing and combining behavioral data. *BioScience*, 54: 886-887.
- Ord, T. J., E. P. Martins, S. Thakur, K. K. Mane & K. Börner. 2005. Ethoinformatics: mining library databases to identify trends in animal behaviour research (1968-2002). *Animal Behaviour*, 69: 1399-1413.
- Martins, E. P., T. J. Ord & S. Davenport. 2005. Combining motions into complex displays: playbacks with a robotic lizard: Playbacks with a robotic lizard. *Behavioral Ecology and Sociobiology*, 58: 351-360.
- Ord, T. J. and E. P. Martins. 2006. Tracing the origins of signal diversity in anole lizards: phylogenetic approaches to inferring the evolution of complex behaviour. *Animal Behaviour* 71: 1411-1429.
- Martins, E. P., T. J. Ord, J. Slaven, J. L. Wright, & E.A. Housworth. 2006. Individual, sex, seasonal and temporal variation in the amount of Sagebrush lizard scent-marks. *Journal of Chemical Ecology* 32: 881-893.
- Smith, C.B. & E.P. Martins. 2006. Display plasticity in response to a robotic lizard: Signal matching or song-sharing in lizards? *Ethology* 112:955-962.
- Bissell, A. N. and E. P. Martins. 2006. Male choice and female avoidance as mechanisms of population discrimination in Sagebrush lizards. *Behavioral Ecology and Sociobiology*, in press.
- Moretz, J. A., E. P. Martins & B. D. Robison. 2007. Behavioral syndromes and the evolution of correlated behavior in zebrafish. *Behavioral Ecology* 18:556-562.
- Moretz, J.A., E. P. Martins & B. D. Robison. 2007. The effects of early and adult social environment on boldness and aggression in zebrafish (*Danio rerio*). *Environmental Biology of Fishes* 80:91-101.
- Kelso, E.C. and E. P. Martins. 2008. The effects of two courtship display components on female reproductive behaviour and physiology in the sagebrush lizard. *Animal Behaviour* 75: 639-646.
- Thompson, J.T., Bissell, A.N. and E. P. Martins. 2008. Inhibitory interactions between multimodal behavioral responses may influence the evolution of complex signals. *Animal Behaviour* 76: 113-121.
- Ruiz, M., E. Davis and E.P. Martins. 2008. Courtship attention in sagebrush lizards varies with individual male identity and female reproductive state. *Behavioral Ecology* 19: 1326-1332.
- Vital, C. and E.P. Martins. 2009. Using graph theory metrics to infer information flow through animal social groups: a computer simulation analysis. *Ethology* 115: 347-355.
- Nava, S.S., M. Conway and E.P. Martins. 2009. Divergence of visual motion detection in diurnal geckos that inhabit bright and dark habitats. *Functional Ecology* 23: 794-799.
- Nava S, Conway M, and E. P. Martins. 2009. Sex-specific visual performance: female lizards outperform males in motion detection. *Biology Letters* 5:732-734..
- Ruiz M, French SS, Demas GE, Martins EP. 2010. Food supplementation and testosterone interact to influence reproductive behavior and immune function in *Sceloporus graciosus*. *Hormones and Behavior* 57:134-139..
- Ruiz M, Beals ZM, Martins EP. 2010. Male sagebrush lizards (*Sceloporus graciosus*) increase exploratory behavior towards females with more courtship experience. *Herpetologica* 66:131-136.
- Ruiz, M, Wang D, Reinke EA, Demas GE, Martins EP. 2011. Trade-offs between reproductive coloration and innate immunity in a natural population of female Sagebrush lizards. *Herpetological Journal* 21:131-134.
- Vital C, Martins EP. 2011. Strain differences in zebrafish social roles and their impact on group task performance. *Journal Comparative Psychology* 125:278-285.

Whiteley AR, Bhat A, Martins EP, Mayden RL, Arunachalam M, Uusi-Heikkilä S, Ahmed ATA, Shrestha J, Clark M, Stemple D, Bernatchez L. 2011. Population genomics of wild and laboratory zebrafish (*Danio rerio*). *Molecular Ecology* 20:4269-4276.

*Peer-reviewed Books and Book Chapters:*

- Martins, E. P. 1994. Phylogenetic perspectives on the evolution of lizard territoriality. In *Lizard Ecology: Historical and Experimental Perspectives*, L. Vitt and E. R. Pianka (eds.), pp. 117-144, Princeton Univ. Press.
- Martins, E. P. and T. F. Hansen. 1996. A microevolutionary link between phylogenies and comparative data. In *New Uses for New Phylogenies*, P. Harvey, J. Maynard-Smith, and A. Leigh-Brown (eds.), Oxford Univ. Press.
- Martins, E. P. editor. 1996. *Phylogenies and the Comparative Method in Animal Behavior*. Oxford Univ. Press.
- Martins, E. P. and T. F. Hansen. 1996. The statistical analysis of interspecific data: A review and evaluation of phylogenetic comparative methods. In *Phylogenies and the Comparative Method in Animal Behavior*, E. Martins (ed.), Oxford Univ. Press.
- Alberts, A., Carter, R.L., W. Hayes, & E. P. Martins, editors. 2004. *Iguanas: Biology and Conservation*. UC Press.
- Martins, E.P. 2004. Behavior and Ecology. Introduction. IN: "Iguanas: Biology and conservation" edited by Allison Alberts, Ron Carter, William Hayes, & Emilia Martins. University of California Press. PP. 97-100.
- Martins, E.P. & K. E. Lacy. 2004. Complex behavior and ecology in rock iguanas. I. Evidence for an appeasement display. IN: *Iguanas: Biology and Conservation* (A. Alberts, R. Carter, W. Hayes & E. P. Martins eds.). PP. 101-108.
- Bissell, A. N. and E. P. Martins. 2004. Complex behavior and ecology in rock iguanas. II. Population differences, behavior and conservation IN: *Iguanas: Biology and Conservation* (A. Alberts, R. Carter, W. Hayes & E. P. Martins eds.). PP.109-118.
- Ord, T. J. and E. P. Martins. Behavioral Phylogeny. 2004. For *Animal Behavior Encyclopedia*, M. Bekoff, Ed. Greenwood Publishing Group, in press.
- Ord, T. J. and E. P. Martins. 2009. Evolution of behavior: phylogeny and the origin of present-day diversity. IN: [Evolutionary Behavioral Ecology](#) (D.F. Westneat and C.W. Fox., eds.) PP. xxx – xxx, in press.

*Computer Programs and On-line Projects (subsequent versions listed only if major intellectual contribution):*

- Martins, E. P. and T. Garland, Jr. 1991. CMAP – Comparative Method Analysis Programs. Distributed by the authors. Department of Zoology, University of Wisconsin, Madison.
- de Queiroz, K. and E. P. Martins. 1996. Squamata on the Tree of Life, a WWW project. (<http://tolweb.org/tree?group=Squamata>)
- Martins, E. P. 1996. COMPARE 1.0: statistical analysis of comparative data. Computer programs distributed by the author via the WWW. (<http://darkwing.uoregon.edu/~compare>)
- Martins, E.P. 1998. COMPARE 2.0: statistical analysis of comparative data. Computer programs distributed by the author (<http://darkwing.uoregon.edu/~compare>, still in C++, but with many more programs).
- Martins, E.P. 1999. COMPARE 3.0: statistical analysis of comparative data. Computer programs distributed by the author (<http://darkwing.uoregon.edu/~compare>, translated into JAVA to make it platform-independent).
- Martins, E.P. 2000. COMPARE 4.0: statistical analysis of comparative data. Computer programs distributed by the author (<http://compare.bio.indiana.edu>, moved to Indiana University, several new programs added).
- Martins, E. P. 2001. Tracker program for frame by frame analysis of video clips. Distributed by the author at <http://www.indiana.edu/~martinsl/tracker.html>.
- Martins, E.P. 2003. EthoSource: an international initiative to compile and share behavioral data. (<http://php.indiana.edu/~emartins/Ethosource/>)
- Martins, E.P. 2003. COMPARE 4.5: statistical analysis of comparative data. Computer programs distributed by the author (<http://compare.bio.indiana.edu>, several programs added including rates estimation, the Phylogenetic Mixed Model, and functions to generate and manipulate random phylogenies).
- Martins, E.P. 2004. COMPARE 4.6: statistical analysis of comparative data. Computer programs distributed by the author (<http://compare.bio.indiana.edu>, several programs added including PGLS multiple regressions and univariate PMM).
- Martins, E.P. 2004. EthoBank: an organized public repository for behavioral data. (<http://www.indiana.edu/~ethobank/>). Includes lizard display archive.
- Vital, C. & E.P. Martins. 2004. BeSt: Behavioral Stream Analyses. Computer programs for analyzing focal animal sample data, including Information Theory Statistics (<http://www.indiana.edu/~martinsl/Programs/BeSt/>).
- Vital, C. & E.P. Martins. 2007. SocANet: Social Animal Networks. Computer programs for simulating and analyzing animal social networks (<http://www.indiana.edu/~martinsl/Programs/SocANet/>).

*Other publications from people done while in the Martins' lab (only those not listed above):*

- Hansen, T. F. 1997. Stabilizing selection and the comparative analysis of adaptation. *Evolution* 51:1341-1351.
- Morales, E. 1999. El Método Comparativo en Ecología Vegetal. "The comparative method in plant ecology". *Boletín de la Sociedad Botánica de México* 66:37-51.
- Morales, E. 2000. Estimating phylogenetic inertia in *Tithonia* (Asteraceae): A comparative approach. *Evolution* 54:475-484.
- Morales, E. 2001. The comparative method and trait evolution in the Asteraceae. *Compositae Newsletter* 36:14-25.
- Zani, P.A. 2000. The comparative evolution of lizard claw and toe morphology and clinging performance. *Journal of Evolutionary Biology* 13: 316-325.
- Zani, P.A. 2001. Clinging performance of the Western fence lizard, *Sceloporus occidentalis*. *Herpetologica* 57:423-432.
- Carter, CS. 2011. Third grade students learn about scientific research design by studying zebrafish behavior. Hoosier Association of Science Teachers.

**Grants (last 5 years):**

- 2011-2014 NSF grant #IOB-0930509, "NSF IOS-1050274, "Collaborative Research: Causes and Consequences of Signal Evolution" (with Diana Hews from Indiana State University, recommended for funding).
- 2009-2013 NSF grant #IOB-0930509, "Increasing diversity through undergraduate student participation in the Animal Behavior Society meetings" (PI, with co-PIs Peggy Hill & Zuleyma Tang-Martinez). Renewal of IOB-0621383 (2006-08), IBN-0205180 (2002-06), and IOB-0735035 (2007-09).
- 2009-2013 NSF Grant, Research Experiences for Undergraduates in Animal Behavior (co-PI with Greg Demas). Renewal of DBI-0453403 (2005-09, co-PI with Bill Timberlake).
- 2006-2008 NSF Research Grant, #IOB-0543491, "Genetic Basis of Behavioral Evolution in Zebrafish", supplemented by IU Faculty Research Support Program award.
- 2006-2009 National Eye Institute, National Institutes of Health Ruth Kirschstein National Research Service predoctoral fellowship for Saúl Nava.

**Recent Teaching Experiences (last 5 years):***Courses:*

- 2010, 2012 Honors Evolution, an intensive writing course (s318), Indiana University (Fall 10, Spring 12)
- 2008 Phylogenies and the Comparative Method (Z620, grad seminar course), Indiana University (Fall 08)
- 2008 Evolution of Sexual Dimorphism (Z620, grad seminar course), Indiana University (Spring 08)
- 2006 Behavioral Evolution (Z620, grad seminar course), Indiana University (Fall 06)
- 2005,2006 Animal Behavior Internship (A495), Indiana University (Fall 05)

*Graduate Students & Postdocs and current positions:*

- Sykes, Delawrence (Ph.D. exp 2016; Indiana University)
- Fuentes, Jesualdo (Ph.D. exp 2016; Indiana University)
- Shelton, Delia (Ph.D. exp 2015, co-advised by J. Alberts; Indiana University)
- Alison Ossip-Klein (Ph.D. exp 2015; Indiana University)
- Lawing, A. Michelle (Ph.D. exp 2012, co-advised by D. Polly; Indiana University)
- Mayté Ruiz (Ph.D. 2010, co-advised by G Demas; Indiana University) – postdoc at University of Puerto Rico
- Cuauhcihuatl Vital (Ph.D. 2009; Indiana University) – asst prof at Universidad Autónoma de Ciudad Juárez
- Saúl Nava (Ph.D. 2009; Indiana University) – asst prof at Massachusetts College of Art & Design
- Erin Kelso (Ph.D. 2006; Indiana University) – postdoc at University of Florida
- Julie T. Thompson (Ph.D. 2002; U Oregon) – ecological consultant in Georgia
- Ahrash N. Bissell (Ph.D. 2001; U Oregon) – Executive Director of ccLearn, Creative Commons
- Kathryn E. Lacy (MS 2001; U Oregon) – instructor at Lane community college
- Lea A. Sheldahl (MS 1999; U Oregon) – veterinarian
- Pete A. Zani (Ph.D. 1999; U Oregon) – lecturer at Gonzaga University
- Jenny Lamont (MS 1997; U Oregon) – manuscript editor for New England Journal of Medicine
- Anuradha Bhat (postdoc, 2006-2008) – asst prof at India Insititute of Science Education and Research (Kolkata)
- Jason Moretz (postdoc, 2004-2007) – environmental consultant in Florida
- Terry Ord (postdoc, 2002-2004) – asst prof at U New South Wales
- Marguerite Butler (postdoc, 2000) – asst prof. at U Hawaii Manoa

- Eduardo Morales (postdoc, 1998-9) – researcher at Conabio, Mexico
- Thomas Hansen (visitor, 1995-1996) – prof at University of Oslo

*Other research training:*

- More than 100 undergraduate researchers, including 32 from 2004-12 that completed senior theses or full-time, paid, summer internships
- 9 K-12 teachers on 2-8 week summer research programs, including 4 on summer-long internships
- 8 high school students
- Co-Director of Charles H. Turner program that uses NSF funds to take undergraduates each year to the annual meeting of the Animal Behavior Society and to run a pre-meeting workshop (2002-2013)
- Director of Animal Behavior REU program, an NSF-supported summer internship for undergraduates at Indiana University (2009-2013)

***Other Professional Experience and Service (last 5 years):***

- 2011-2013 Participant in NESCent workshop on “Integrative models of vertebrate sociality”
- 2009-2011 Conference President (host) of “Behavior 2011” the joint meeting of the Animal Behavior Society and the International Ethological Conference at Indiana University.
- 2006-2009 Associate Editor for American Naturalist journal
- 2006-2008 Editorial Board (B-side) for Proceedings of the Royal Society of London: Biological Sciences
- 2005-2008 Associate Editor for Animal Behaviour journal
- 2004-2010 EthoSource Advisory Board
- 2005-2009 Core Member, NIH Training Grant in “Common Themes in Reproductive Diversity” (Ellen Ketterson, PI; Co-director Dale Sengelaub)
- 2004-2006 Senior Advisory Board, National Evolutionary Synthesis Center
- 2004-2009 NSF Panel member (12 invitations; actually served on 5 panels)

And service as a reviewer for Acta Zoologica Sinica, American Naturalist, Animal Behaviour, Applied Animal Behavior Sciences, Behavioral and Brain Sciences, Behavioral Ecology and Sociobiology, Behavioral Brain Research, Behaviour, Bioinformatics, Biological Journal of the Linnean Society, Biometrika, Biosystems, Cambridge University Press, Canada Council for the Arts, Canadian Journal of Zoology, Caribbean Journal of Science, Comprehensive Physiology, Copeia, Diversity, Diversity and Distributions, Ecology, Ecology Letters, Environmetrics, Encyclopedia of Applied Animal Behavior and Welfare, Ethology, Evolution, Evolutionary Ecology, Genetics, Genome Research, Geology, Herpetologica, Herpetological Journal, Herpetological Natural History, International Journal of Plant Sciences, Journal of Animal Ecology, Journal of Comparative Psychology, Journal of Herpetology, Journal of Theoretical Biology, Journal of Zoological and Systematic Research, MIT Press, Molecular Biology & Evolution, Molecular Phylogenetics & Evolution, National Geographic Society, Nature, New Phytologist, National Institutes of Health, National Science Foundation, Nature, Naturwissenschaften, NSERC, Open Zoology, Oxford University Press, Palaeontologia Electronica, Phyllomedusa, Physiological and Biochemical Zoology, PLoS Biology, PLoS ONE, Proceedings of the Royal Society of London, Science, Systematic Biology, South American Journal of Herpetology, South African National Research Foundation, Trends in Ecology & Evolution, University of Chicago Press, Zoologica Scripta, and the Zoological Journal of the Linnean Society

***Recent Society Memberships and Service:***

American Society of Naturalists: 2006-2009 Associate Editor of American Naturalist journal

Animal Behavior Society: 2005-2008 Associate Editor of Animal Behaviour journal

IUCN/SSC ISG member (International Union for Conservation of Nature and Natural Resources Species Survival Commission Iguana Specialist Group)

Indiana Academy of Sciences

International Society for Behavioral Ecology

Sigma Xi – Scientific Research Society

Society for the Advancement of Chicanos and Native Americans in Science (SACNAS)

Society for the Study of Evolution

Society for Systematic Biology