

Curriculum Vitae: Dean Carl Adams

Associate Professor
Department of Ecology, Evolution and Organismal Biology and
Department of Statistics
Iowa State University
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PERSONAL INFORMATION

Born: Harrisburg, Pennsylvania U.S.A
Languages: English (native), Spanish (fluent), Italian (conversant)

EDUCATION

Ph.D. 1999. State University of New York at Stony Brook. Ecology and Evolution.
M.S. 1994. University of Louisiana at Lafayette. Biology.
B.A. 1992. Franklin and Marshall College. Biology.

ACADEMIC POSITIONS

2006-present. **Associate Professor.** Department of Ecology, Evolution, and Organismal Biology, Iowa State University, Ames, Iowa.
2006-present. **Associate Professor.** Department of Statistics, Iowa State University, Ames, Iowa.
2009-2010. Visiting Associate Professor. Museo di Storia Naturale, Università degli Studi di Firenze, Florence, Italy.
2001-2006. Assistant Professor. Department of Ecology, Evolution, and Organismal Biology, Iowa State University, Ames, Iowa (formerly Zoology and Genetics).
2001-2006. Assistant Professor. Department of Statistics, Iowa State University, Ames, Iowa.
1999-2001. NSF Postdoctoral Research Fellow (Biological Informatics). Department of Zoology and Genetics, Iowa State University, Ames, Iowa.
1994-1999. Research Assistant: Geometric Morphometrics. Department of Ecology and Evolution, State University of New York, Stony Brook, New York.
1998. Consultant. Instituto de Investigação Agrária e Extensão Rural, Estação Agronómica Nacional, Oeiras, Portugal.

RESEARCH INTERESTS: *EVOLUTIONARY THEORY, PHENOTYPIC EVOLUTION, MORPHOMETRICS*

I am a comparative evolutionary biologist interested in the evolution of phenotypic diversity from a theoretical and empirical perspective. I study microevolutionary and macroevolutionary trends in phenotypic diversification to elucidate the historical and contemporary forces responsible for them. I focus on a multivariate characterization of the phenotype (morphometrics), and the inherent complexities of the evolutionary process in multi-dimensional phenotype space. My empirical work examines these patterns and processes in animals; primarily plethodontid salamanders. In my theoretical work, I develop new analytical, statistical, and theoretical tools to address fundamental questions in evolutionary biology.

MAJOR GRANTS

2011-2014. **National Science Foundation.** DEB-1118884. **\$600,000**
“Evolutionary convergence or parallelism? Examining recurrent patterns of phenotypic evolution in marine scallops.” PI: Jeanne M. Serb, Co-PI: Dean Adams.
2005-2011. **National Science Foundation.** DEB-0446758. **\$500,885**
“CAREER: Evolutionary community ecology in *Plethodon* salamanders.”
• 2008: REU Supplement (DEB-0817853) **\$6,000**

- 2007: REU Supplement (DEB-0723929) \$12,000
 - 2006: REU Supplement (DEB-0618243). \$6,000
 - 2005: ROA Supplement (DEB-0535825). \$25,719
 - 2005: REU Supplement (DEB-0527317). \$7,000
- 2001-2003. **National Science Foundation.** DEB-0122281. \$35,000
 “Research Starter Grant: The morphological consequences of competition in *Plethodon* salamanders.”
- 1999-2001. **National Science Foundation.** DBI-9974207. \$100,000
 “Postdoctoral Research Fellowship in Biological Informatics: Comparison of three-dimensional protein structures using geometric morphometrics.”
- 1998-2000. **National Science Foundation.** IBN-9800636 (Co-P.I. with F. James Rohlf). \$7,752
 “Doctoral Dissertation Improvement Grant: Extensions of landmark-based morphometrics methods to articulated structures: an example using *Plethodon*.”

HONORS AND AWARDS

2011. **Outstanding Achievement in Teaching Award.** College of Liberal Arts and Sciences, Iowa State University.
- 2005-2011. National Science Foundation. CAREER Award Recipient.
2009. Excellence in Teaching Advanced Courses in Biology. (Student nominated award).
2006. Faculty of 1000 article (for Fedrigo et al., 2005; *J. Exp. Biol.*).
2003. Iowa State University. Excellence in Education Award Nominee.
2002. CIES Fulbright Foundation. “Research/Lecture Exchange: Morphometric quantification of color patterns in *Heliconius* butterflies.” (awarded but declined).
2000. Editor’s Choice in *Science* (for Adams and Rohlf, 2000; *PNAS*).
1999. Departmental Service Award. Department of Ecology and Evolution, State University of New York at Stony Brook.
1997. Sigma Xi. the Scientific Research Society, State University of New York at Stony Brook Chapter. Award for Excellence in Doctoral Research.

PUBLICATIONS (78 total + 9 submitted: * indicates lab student; ‡ indicates lab postdoc)
 Citations (February, 2012): 2,901 total; H-index = 25; M-index = 1.78; 10 cited > 50 times

79. **BOOK UNDER CONTRACT.** Rohlf, F.J., D.E. Slice, and **D.C. Adams.** 2012 (projected). *Geometric Morphometrics: Theory and Application.* (with Springer-Verlag).
78. Rabosky, D.L., and **D.C. Adams.** 2012. Rates of morphological evolution are correlated with species richness in salamanders. *Evolution.* (In Press).
77. Kaliontzopoulou, A.‡, **D.C. Adams,** A. van der Meijden, A. Perera, and M.A. Carretero. 2012. Relationships between head morphology, bite performance and ecology in two species of *Podarcis* wall lizards. *Evolutionary Ecology.* (In Press).
76. Blankers, T., **D.C. Adams,** and J.J. Wiens. 2012. Ecological radiation with limited morphological diversification in salamanders. *Journal of Evolutionary Biology.* 25:634-646.
75. **Adams, D.C.,** and J.O. Church*. 2011. The evolution of large-scale body size clines in *Plethodon*: evidence of heat-balance or species-specific artifact? *Ecography.* 34:1067-1075.

74. Serb, J.M., A. Alejandrino*, E. Otárola-Castillo*, and **D.C. Adams**. 2011. Morphological convergence of shell shape in distantly related scallop species (Mollusca: Pectinidae). *Zoological Journal of the Linnean Society*. 163:571-584.
73. **Adams, D.C.** 2011. Quantitative genetics and evolution of head shape in *Plethodon* salamanders. *Evolutionary Biology*. 38:278-286.
72. Valenzuela, N., and **D.C. Adams**. 2011. Chromosome number and sex determination co-evolve in turtles. *Evolution*. 65:1808-1813.
- ** Cover Acknowledgment
71. **Adams, D.C.** A. Cardini, L. R. Monteiro, P. O'Higgins, and F.J. Rohlf. 2011. Morphometrics and Phylogenetics: principal components of shape from cranial modules are neither appropriate nor effective cladistic characters. *Journal of Human Evolution*. 60:240-243.
70. Kelly, C.D., and **D.C. Adams**. 2010. Sexual selection, ontogenetic acceleration, and hypermorphosis generates male trimorphism in Wellington tree weta. *Evolutionary Biology*. 37:200-209.
69. Piras, P., P. Colangelo, **D.C. Adams**, A. Buscalioni, J. Cubo, T. Kotsakis, C. Meloro, and P. Raia. 2010. The *Gavialis-Tomistoma* debate: the contribution of skull ontogenetic allometry and growth trajectories to the study of crocodylian relationships. *Evolution and Development*. 12:568-579.
68. Berns, C.M.*, and **D.C. Adams**. 2010. Bill shape and sexual shape dimorphism between two species of temperate hummingbirds: *Archilochus alexandri* (black-chinned hummingbirds) and *Archilochus colubris* (ruby-throated hummingbirds). *The Auk*. 127:626-635.
67. **Adams, D.C.** and A. Nistri. 2010. Ontogenetic convergence and evolution of foot morphology in European cave salamanders (Family: Plethodontidae). *BMC Evolutionary Biology*. 10(216):1-10.
- ** Featured in Commentary in *BMC Evolutionary Biology* 10:221.
66. **Adams, D.C.** 2010. Parallel evolution of character displacement driven by competitive selection in terrestrial salamanders. *BMC Evolutionary Biology*. 10(72):1-10.
65. Deitloff, J.*, J.O. Church*, **D.C. Adams**, and R.G. Jaeger. 2009. Interspecific agonistic behaviors in a salamander community: implications for alpha-selection. *Herpetologica*. 65:174-182.
64. Escalona, T., **D.C. Adams**, and N. Valenzuela. 2009. Nesting ecology in the freshwater turtle *Podocnemis unifilis*: spatiotemporal patterns and inferred evolutionary explanations. *Functional Ecology*. 23:826-835.
63. **Adams, D.C.**, C.M. Berns*, K.H. Kozak, and J.J. Wiens. 2009. Are rates of species diversification correlated with rates of morphological evolution? *Proceedings of the Royal Society of London, B*. 276:2729-2738.
62. Butterworth, K.M.*, **D.C. Adams**, H.T. Horner, and J.F. Wendel. 2009. Initiation and early development of fiber in wild and cultivated cotton. *International Journal of Plant Sciences*. 170:561-574.
61. **Adams, D.C.**, and M.L. Collyer. 2009. A general framework for the analysis of phenotypic trajectories in evolutionary studies. *Evolution*. 63:1143-1154.
- ** Cover Acknowledgment

60. Marsteller, S., **D.C. Adams**, M.L. Collyer, and M. Condon. 2009. Six sympatric cryptic species on a single host plant: morphometric evidence for possible reproductive character displacement. *Ecological Entomology*. 34:66-73.
59. Myers, E.M.*, and **D.C. Adams**. 2008. Morphology is decoupled from interspecific competition in *Plethodon* salamanders in the Shenandoah Mountains. *Herpetologica*. 64:281-289.
58. Berner, D., **D.C. Adams**, A.C. Grandchamp, and A.P. Hendry. 2008. Inferring natural selection from patterns of lake-stream divergence in stickleback foraging morphology. *Journal of Evolutionary Biology*. 21:1653-1665.
57. Olson, C.R.*, C.M. Vleck, and **D.C. Adams**. 2008. Decoupling morphological development from growth in periodically cooled zebra finch embryos. *Journal of Morphology*. 269:875-883.
56. Deitloff, J.*, **D.C. Adams**, B.F.M. Olechnowski, and R.G. Jaeger. 2008. Interspecific aggression in Ohio *Plethodon*: implications for competition. *Herpetologica*. 64:180-188.
55. Condon, M., **D.C. Adams**, D. Bann, K. Flaherty, J. Gammons, J. Johnson, M.L. Lewis, S. Marsteller, S.J. Scheffer, F. Serna, and S. Swensen. 2008. Uncovering tropical diversity: six sympatric cryptic species of *Blepharoneura* (Diptera: Tephritidae) in flowers of *Gurania spinulosa* (Cucurbitaceae) in eastern Ecuador. *Biological Journal of the Linnean Society*. 93:779-797.
54. **Adams, D.C.** 2008. Phylogenetic meta-analysis. *Evolution*. 62:567-572.
** Cover Acknowledgment
53. **Adams, D.C.**, and J.O. Church*. 2008. Amphibians do not follow Bergmann's rule. *Evolution*. 62:413-420.
** Cover Acknowledgment
52. Collyer, M.L.‡, C.A. Stockwell, **D.C. Adams**, and M.H. Reiser. 2007. Phenotypic plasticity and contemporary evolution in introduced populations: evidence from translocated populations of white sands pupfish. *Ecological Research*. 22:902-910.
51. Arif, S.*, **D.C. Adams**, and J.A. Wicknick. 2007. Bioclimatic modeling, morphology, and behavior reveal alternative mechanisms regulating the distributions of two parapatric salamander species. *Evolutionary Ecology Research*. 9:843-854.
50. **Adams, D.C.** 2007. Organization of *Plethodon* salamander communities: guild-based community assembly. *Ecology*. 88:1292-1299.
49. **Adams, D.C.**, and M.L. Collyer‡. 2007. Analysis of character divergence along environmental gradients and other covariates. *Evolution*. 61:510-515.
** Cover Acknowledgment
48. Collyer, M.L.‡, and **D.C. Adams**. 2007. Analysis of two-state multivariate phenotypic change in ecological studies. *Ecology*. 88:683-692.
47. **Adams, D.C.**, M.E. West*, and M.L. Collyer‡. 2007. Location-specific sympatric morphological divergence as a possible response to species interactions in West Virginia *Plethodon* salamander communities. *Journal of Animal Ecology*. 76:289-295.

46. **Adams, D.C.**, and M.M. Cerney*. 2007. Quantifying biomechanical motion using Procrustes motion analysis. *Journal of Biomechanics*. 40:437-444.
45. Hollander, J., **D.C. Adams**, and K. Johannesson. 2006. Evolution of adaptation through allometric shifts in a marine snail. *Evolution*. 60:2490-2497.
44. Hollander, J., M.L. Collyer[‡], **D.C. Adams**, and K. Johannesson. 2006. Phenotypic plasticity in two marine snails: constraints superseding life-history. *Journal of Evolutionary Biology*. 19:1861-1872.
43. Myers, E.M.* , F.J. Janzen, **D.C. Adams**, and J.K. Tucker. 2006. Quantitative genetics of plastron shape in slider turtles (*Trachemys scripta*). *Evolution*. 60:563-572.
- ** Cover Illustration
42. Maerz, J.C., E.M. Myers* , and **D.C. Adams**. 2006. Trophic polymorphism in a terrestrial salamander. *Evolutionary Ecology Research*. 8:23-35.
41. Fedrigo, O.[†], **D.C. Adams**, and G.J.P. Naylor. 2005. DRUIDS – Detection of regions with unexpected internal deviation from stationarity. *Journal of Experimental Zoology (Molecular and Developmental Evolution)*. 304B:119-128.
- ** Featured article in Faculty of 1000
40. Cerney, M.M.* , and **D.C. Adams**. 2004. Sequestering Size: The Role of Allometry and Gender in Digital Human Modeling. *SAE Transactions Journal of Aerospace*. 113:208-214. (republication of: Cerney and Adams, 2004. *Proc. SAE Dig. Hum. Mod. Conf.*).
39. Valenzuela, N., **D.C. Adams**, R.M. Bowden, and A.C. Gauger*. 2004. Geometric morphometric sex estimation for hatchling turtles: a powerful alternative for detecting subtle sexual shape dimorphism. *Copeia*. 2004:735-742.
38. **Adams, D.C.** 2004. Character displacement via aggressive interference in Appalachian salamanders. *Ecology*. 85:2664-2670.
- ** Cover Acknowledgment
37. Swart, C.C., and **D.C. Adams**. 2004. The role of muscle mass and tooth number in ecological character displacement between *Plethodon cinereus* and *P. hoffmani* (Caudata: Plethodontidae). *Herpetologica*. 60:408-413.
36. Kassam, D.D., **D.C. Adams**, and K. Yamaoka. 2004. Functional significance of variation in trophic morphology within feeding microhabitat-differentiated cichlid species in Lake Malawi. *Animal Biology*. 54:77-90.
35. EDITED VOLUME. Loy, A., M. Corti, **D.C. Adams**, D.E. Slice, and F.J. Rohlf, guest editors. 2004. *Proceedings of the Rome Geometric Morphometric Workshop. Homage to Leslie F. Marcus*. Special Publication of the Italian Journal of Zoology, Mucchi Editore, Modena. 71(1). 88 pp.
34. **Adams, D.C.**, F.J. Rohlf, and D.E. Slice. 2004. Geometric morphometrics: Ten years of progress following the ‘revolution’. *Italian Journal of Zoology*. 71:5-16.
33. Loy, A., M. Corti, **D.C. Adams**, D.E. Slice, and F.J. Rohlf. 2004. Introduction to the proceedings. *Italian Journal of Zoology*. 71:1-3.

32. Cerney, M.M.^{*}, and **D.C. Adams**. 2004. Sequestering Size: The Role of Allometry and Gender in Digital Human Modeling. *Proceedings of the SAE Digital Human Modeling Conference*. Syracuse, Michigan. 2004-04DHM-38.
31. Naylor, G.J.P., and **D.C. Adams**. 2003. Total evidence versus relevant evidence: response to O'Leary et al. (2003). *Systematic Biology*. 52:864-865.
30. Kassam, D.D., **D.C. Adams**, A.J.D. Ambali, and K. Yamaoka. 2003. Body shape variation in relation to resource partitioning within cichlid trophic guilds coexisting along the rocky shore of Lake Malawi. *Animal Biology*. 53:59-70.
29. Kassam, D.D., **D.C. Adams**, M. Hori, and K. Yamaoka. 2003. Morphometric analysis on ecomorphologically equivalent cichlid species from Lakes Malawi and Tanganyika. *Journal of Zoology*. 260:153-157.
28. Valenzuela, N., **D.C. Adams**, and F.J. Janzen. 2003. Pattern does not equal process: Exactly when is sex environmentally determined? *American Naturalist*. 161:676-683.
27. Ashlock, D., **D.C. Adams**, and D. Doty. 2003. Morphometric grayscale texture analysis using foot patterns. *Proceedings of the 2003 Congress on Evolutionary Computation*. 1575-1582.
26. Cerney, M.M.^{*}, **D.C. Adams**, and J.M. Vance. 2003. Image Warping of Three-Dimensional Scan Data. *Proceedings of the SAE Digital Human Modeling Conference*. Montreal, Canada. 2003-01-2231.
25. **Adams, D.C.**, and G.J.P. Naylor. 2003. A comparison of methods for assessing the structural similarity of proteins. in *Mathematical Methods for Protein Structure Analysis and Design*. Advanced Lectures. (C. Guerra, S. Istrail., eds.). Springer Verlag Lecture Notes in Bioinformatics. 2666:109-115.
24. Jaeger, R.G., E.D. Prosen, and **D.C. Adams**. 2002. Character displacement and aggression in two species of terrestrial salamanders. *Copeia*. 2002:391-401.
23. **Adams, D.C.** 2002. Review of: Morphology, Shape and Phylogeny. *Biometrics*. 58:694-695.
22. **Adams, D.C.**, and C.K. Beachy. 2001. Historical explanations of phenotypic variation in the plethodontid salamander *Gyrinophilus porphyriticus*. *Herpetologica*. 57:353-364.
21. Naylor, G.J.P., and **D.C. Adams**. 2001. Are the fossil data really at odds with the molecular data? Morphological evidence for cetartiodactyla phylogeny reexamined. *Systematic Biology*. 50:444-453.
20. Rüber, L., and **D.C. Adams**. 2001. Evolutionary convergence of body shape and trophic morphology in cichlids from Lake Tanganyika. *Journal of Evolutionary Biology*. 14:325-332.
19. Tavaré, S., **D.C. Adams**, O. Fedrigo, and G.J.P. Naylor. 2001. A model for phylogenetic inference using structural and chemical covariates. Pp. 215-225 in *Pacific Symposium on Biocomputing*. (R. B. Altman, A. K. Dunker, L. Hunter, K. Lauderdale, and T. E. Klein, etc.). World Scientific. Singapore.
18. **Adams, D.C.**, and F.J. Rohlf. 2000. Ecological character displacement in *Plethodon*: biomechanical differences found from a geometric morphometric study. *Proceedings of the National Academy of Sciences, U.S.A.* 97:4106-4111.

- ** Featured in “Editor’s Choice” in *Science* 288:(5467).
- ** Featured in Commentary in *Proceedings of the National Academy of Sciences, U.S.A.* 97:(11).
- ** Featured as textbook example of character displacement in *Evolution* (Ridley, 3rd ed.).
17. **SOFTWARE/BOOK.** Rosenberg, M.S., **D.C. Adams**, and J. Gurevitch. 2000. *MetaWin: Statistical software for meta-analysis*. Version 2.0. Sinauer Associates, Sunderland, Massachusetts. 128 pp.
 16. **Adams, D.C.**, and G.J.P. Naylor. 2000. A new method for evaluating the structural similarity of proteins using geometric morphometrics. Pp. 120-121 in *Currents in Computational Molecular Biology*. Frontiers Science Series No. 30. (S. Miyano, R. Shamir, and T. Takagi, eds.). Universal Academy Press. Tokyo.
 15. **Adams, D.C.** 2000. Divergence of trophic morphology and resource use among populations of *Plethodon cinereus* and *P. hoffmani* in Pennsylvania: a possible case of character displacement. Pp. 383-394 in *The Biology of Plethodontid Salamanders*. (R. C. Bruce, R. J. Jaeger, and L. D. Houck, eds.). Kluwer Academic/Plenum. New York.
 14. **Adams, D.C.** 2000. Review of: Sampling and Statistical Methods for Behavioral Ecologists. *Quarterly Review of Biology*. 75:76.
 13. **Adams, D.C.** 1999. Methods for shape analysis of landmark data from articulated structures. *Evolutionary Ecology Research*. 1:959-970.
 12. Jackson, J.F., **D.C. Adams**, and U. B. Jackson. 1999. Allometry of constitutive defense: a model and comparative test with tree bark and fire regime. *American Naturalist*. 153:614-632.
 11. **Adams, D.C.** 1999. *Plethodon hoffmani* (Valley and Ridge Salamander). Predation. *Herpetological Review*. 30:160.
 10. **Adams, D.C.** 1999. Review of: Salamanders of the United States and Canada. *Quarterly Review of Biology*. 74:235.
 9. **Adams, D.C.**, and M.S. Rosenberg. 1998. Partial-warps, phylogeny, and ontogeny: a comment on Fink and Zelditch (1995). *Systematic Biology*. 47:168-173.
 8. Caldecutt, W.J., and **D.C. Adams**. 1998. Morphometrics of trophic osteology in four ecotypes of the threespine stickleback, *Gasterosteus aculeatus*. *Copeia*. 1998:827-838.
 7. **Adams, D.C.**, and D.J. Funk. 1997. Morphometric inferences on sibling species and sexual dimorphism in *Neochlamisus bebbianae* leaf beetles: multivariate applications of the thin-plate spline. *Systematic Biology*. 46:180-194.
 6. **Adams, D.C.**, J. Gurevitch, and M.S. Rosenberg. 1997. Resampling tests for meta-analysis of ecological data. *Ecology*. 78:1277-1283.
 5. **Adams, D.C.**, M.S. Di Bitetti, C.H. Janson, L.B. Slobodkin, and N. Valenzuela. 1997. An “audience effect” for ecological terminology: use and misuse of jargon. *Oikos*. 80:632-636.

4. **Adams, D.C.**, and J.F. Jackson. 1997. A phylogenetic analysis of the southern pines (*Pinus* subsect. *Australes* loud.): Biogeographical and ecological implications. *Proceedings of the Biological Society of Washington*. 110:681-692.
3. SOFTWARE/BOOK. Rosenberg, M.S., **D.C. Adams**, and J. Gurevitch. 1997. *MetaWin: Statistical software for meta-analysis with resampling tests*. Sinauer Associates, Sunderland, Massachusetts. 65 pp.
2. **Adams, D.C.**, and C.D. Anthony. 1996. Using randomization techniques to analyse behavioural data. *Animal Behaviour*. 51:733-738.
1. **Adams, D.C.**, and J.F. Jackson. 1995. Estimating the allometry of tree bark. *American Midland Naturalist*. 134:99-106.

Published Abstracts

2. Myers, E.M., F.J. Janzen, and **D.C. Adams**. 2003. Quantitative genetics of shape variation in the slider turtle (*Trachemys scripta*) *Integrative and Comparative Biology*. 43:837.
1. Olson, C., E. Farrar, and **D.C. Adams**. 2002. A morphometric shape analysis of phenotypic plasticity in Plains spadefoot toad (*Spea bombifrons*) tadpoles. *Integrative and Comparative Biology*. 42:1288.

SOFTWARE DEVELOPED

Professionally Published Software

2. 2000. *MetaWin*. Version 2.0. (Rosenberg, **Adams**, and Gurevitch. full citation above).
1. 1997. *MetaWin*. Version 1.0. (Rosenberg, **Adams**, and Gurevitch. full citation above).

Freeware (available on my web site)

5. 2009. *Multivariate phenotypic trajectory analysis*. Package (written in R) to quantify and compare attributes of evolutionary phenotypic trajectories. (see **Adams** and Collyer, 2009. *Evolution*).
4. 2008. *Phylogenetic meta-analysis*. Package (written in R) for performing a meta-analysis accounting for phylogenetic non-independence under a Brownian motion model. (see **Adams**, 2008. *Evolution*).
3. 2007. *Multivariate phenotypic change vectors*. Package (written in R) to quantify and compare evolutionary vectors of phenotypic change. (see Collyer and **Adams**, 2007. *Ecology*).
2. 1999. *Adjustment of landmark data for articulated structures*. Software (written in Pascal) for standardizing the articulation angle between two anatomical substructures, so that subsequent shape variables are invariant to angular rotation. (see **Adams**, 1999. *Evolutionary Ecology Research*).
1. 1996. *Randomization of behavioral data*. Package (written in R) for assessing group differences in mean behavior using randomization tests. (see **Adams** and Anthony, 1996. *Animal Behaviour*).

TEACHING EXPERIENCE: UNIVERSITY INSTRUCTION

Vertebrate Biology (Biol 365; Undergraduate: 4 cr.). Iowa State University. fall 2004, 2005, 2006, 2007, 2008, 2010, 2011.

Advanced Biostatistics (EEOB 590/EEB 698; graduate: 2 cr.). Iowa State University. spring 2000, 2002, 2003, 2005, 2007, 2009, 2011.

Morphometric Analysis (EEOB 565; Graduate: 4 cr.). Iowa State University. spring 2002, 2004, 2006, 2008.

Phylogenetic Comparative Methods (Zool 698; Graduate: 1 cr.). Iowa State University. fall 2003.

TEACHING EXPERIENCE: NATIONAL AND INTERNATIONAL WORKSHOPS

2010. Advanced Geometric Morphometrics Workshop in Evolution and Systematics (Instructor). University of Molise, Molise, Italy. (1-week workshop).

2010. Geometric Morphometrics Short Course (Instructor). University of Firenze, Florence, Italy. (1-week workshop).
2010. Geometric Morphometrics Short Course (Instructor). University of Genova, Genova, Italy. (1-week workshop).
2006. Geometric Morphometrics Workshop (Instructor). Middle East Technical University, Ankara, Turkey. (1-week workshop).
2006. Geometric Morphometrics Workshop (Instructor). Iowa State University, Ames, Iowa. (1-week workshop).
2004. Geometric Morphometrics Workshop (Instructor). Umeå University, Umeå Sweden. (1-week workshop).
2002. Seminario laboratorio di morfometria geometrica (Geometric morphometrics workshop: Instructor) Museo Civico di Zoologica, Rome, Italy. (1-week workshop).
2001. Morfometria geométrica: bases conceptuales y aplicaciones (Geometric morphometrics: basic concepts and applications: Instructor). Departamento de Ciencias Ecológicas, Universidad de Chile, Santiago de Chile, Chile. (1-week workshop).

MENTORING

Graduate Theses/Dissertations Completed: Major or Co-Major Professor

(9)

9. 2011. Ph.D. James Church. "Ecological processes regulating geographic distributions of *Plethodon* salamanders in the Southern Appalachian Mountains." Ecology and Evolutionary Biology. Iowa State University, Ames, IA. 126 pp.
8. 2008. Ph.D. Jennifer Deitloff. "Ecological processes responsible for species co-occurrence patterns in two species of *Plethodon* salamanders." Ecology and Evolutionary Biology. Iowa State University, Ames, IA. 144 pp. (co-advised with N. Valenzuela).
7. 2008. Ph.D. Erin Myers. "Post-orbital color pattern variation and the evolution of a radiation of turtles (*Graptemys*)." Ecology and Evolutionary Biology. Iowa State University, Ames, IA. 153 pp. (co-advised with F. Janzen).
6. 2005. M.S. Saad Arif. "Community structure and distributions of two terrestrial salamanders: A pluralistic approach." Ecology and Evolutionary Biology. Iowa State University, Ames, IA. 52 pp.
5. 2005. Ph.D. Melinda Cerney. "From gesture recognition to functional motion analysis: quantitative techniques for the application and evaluation of human motion." Human Computer Interaction. Iowa State University, Ames, IA. 115 pp. (co-advised with J. Vance).
4. 2003. M.S. Kara Butterworth. "Initiation and early development of wild and cultivated cotton fibers." Botany. Iowa State University, Ames, IA. 38 pp. (co-advised with J. Wendel).
3. 2003. M.S. Aspen Garry. "Geometric morphometric analysis of shark teeth of the genus *Rhizoprionodon*: the modern, the ancient, and the hypothetical. Modern tooth shape analysis and test of ancestor prediction methods by comparison to fossil shapes." Ecology and Evolutionary Biology. Iowa State University, Ames, IA. 40 pp. (co-advised with G. Naylor).
2. 2003. M.S. Jennifer Donnelly. "Mortality in the Patagonian guanaco (*Lama guanicoe*): can skulls provide accurate estimates of juvenile mortality in the absence of other data?" Ecology and Evolutionary Biology. Iowa State University, Ames, IA. 72 pp.
1. 2003. Ph.D. Tibisay Escalona. "Maternal effects on reproductive success in a river turtle (*Podocnemis unifilis*) in southern Venezuela." Ecology, Evolution, and Systematics. University of Missouri at St. Louis, St. Louis, MO. 97 pp. (co-advised with B. Loiselle).

Graduate Students in Progress: Major Professor or Co-Major Professor (2)

| Graduate Student | Major/Program | Degree | Expected |
|------------------|----------------------------------|--------|----------|
| Chelsea Berns | Ecology and Evolutionary Biology | Ph.D. | 2012 |
| Andrew Kraemer | Ecology and Evolutionary Biology | Ph.D. | 2014 |

Member of Graduate Student POS Committee
Completed (15), In Progress (9)

External Graduate Student Committees
Completed (3), In Progress (2)

Undergraduate Honors Theses Completed (2)

2. 2007. Nicole Seda. "Head shape variation and ecology in *Plethodon* salamanders in the southeastern United States." Undergraduate Animal Ecology Program. Iowa State University, Ames, IA.
1. 2006. Mary West. "Location-specific sympatric morphological divergence as a possible response to species interactions in West Virginia *Plethodon* salamander communities." Undergraduate Biology Program. Iowa State University, Ames, IA.

Undergraduate Research Students (24) (*Undergraduate Honor's thesis)

Philip Bice (2011)
Patricia Buck (2009 – 2010)
Ashley Connor (2008)
Joi Davis (2011)
Nadya Gonzalez (2007)
Julie Graesch (nee Perrett 2005)
McKenna Hansel (2010 –)
Mary Harmon (2011 –)
Aubrie James (2011)
Jessica Kissner (2010)
Katie Kramer (2011 –)
Nicole Lindsey (2011 –)
Sara Luchtel (2011 –)
Andrea Mallarino (2011)
Sarah Marsteller (2006)
Clayton Michael (2011 –)
Samantha Pike (2010)
Kristopher Rhodes (2006)
Nicole Seda (2006 – 2007)*
Megan Steffen (2011 –)
Audri Weaver (2007 – 2008)
Mary West (2005 – 2006)*
Katherine Wiegert (2004 – 2006)
Meredith Zipse (2007 – 2008)

Postdoctoral Associates (3)

Dr. Michael Collyer (2003-2007)
Dr. Antigoni Kaliontzopoulou (2011-present)
Dr. Gabriel Rivera (2010-present)

Sabbatical Visitors (1)

Dr. Marty Condon (2005)

Visiting Scientists (Last 5 Years)

Dr. Carl Anthony (John Carroll U.); Jimena Bohórquez-Herrera (Mexico), Dr. Marty Condon (Cornell College); Dr. Nicolás Jaramillo (U. Antioquia, Colombia); Antigoni Kaliontzopoulou (Universidad de

Barcelona); Dr. Germán Manríquez (U. Chile); Dr. Dan Meinhardt (U. Wisconsin-Green Bay); Heather Axen (Cornell College); Michael Collyer (North Dakota State U.); Jessica Harrison (Cornell College); Cari Hickerson (Cleveland State U.); Johan Hollander (Göteborg U.: Sweden); Trevor Krabbenhoft (U. South Carolina); Sara Marsteller (Cornell College); Michael Martinus (Cornell College); Luisa Páez (U. de Los Andes: Colombia); Kristopher Rhodes (Cornell College); Pilar SantaMaria (U. de Los Andes: Colombia)

PROFESSIONAL SERVICE

- 2010- present. Editorial Board. *BMC Evolutionary Biology*.
- 2009- present. Associate Editor. *American Naturalist*.
- 2004-2009. Associate Editor. *Herpetologica*.
- 2011- present. Member, Rohlf Medal Committee. Stony Brook University.
- 2011. Chair of Awards committee for student presentations: Stoye Award in General Herpetology (Joint Annual Meetings of ASIH, HL, and SSAR)
- 2008. Award Judge for student presentations: Storer Award in General Herpetology (Joint Annual Meetings of ASIH, HL, and SSAR)
- 2011. External reviewer of Promotion and Tenure case, Bucknell University
- 2008. External reviewer of Promotion and Tenure case, U. Wisconsin Green Bay
- 2007. External reviewer of Promotion and Tenure case, SUNY Stony Brook
- 2007. National Science Foundation Panel (BIO), Washington, DC.
- 2006. Organizer: Geometric Morphometrics Workshop, Iowa State University.

Reviewer of Grant Proposals for (>30 total)

Austrian Research Fund, Graduate Women in Science Fellowship, National Science Foundation

Reviewer of Manuscripts (> 150 total)

American Naturalist, Amphibia-Reptilia, Anatomical Record, Animal Behaviour, Annals of the Entomological Society of America, Animal Behaviour, Bioinformatics, Biological Journal of the Linnean Society, BMC Evolutionary Biology, Bulletin of Entomological Research, Copeia, Ecography, Ecology, Evolution, Evolutionary Ecology Research, Freeman Publishers, Herpetologica, Herpetological Journal, Hydrobiologia, Journal of Animal Ecology, Journal of Environmental Management, Journal of Evolutionary Biology, Journal of Fish Biology, Journal of Heredity, Journal of Human Evolution, Journal of Microbiological Methods, Journal of Morphology, Infection Genetics and Evolution, Italian Journal of Zoology, Methods in Ecology and Evolution, Molecular Ecology Resources, Naturwissenschaften, Oikos, Paleobiology, Proceedings of the National Academy of Sciences, Systematic Biology, Systematic Botany, Taylor and Francis Publishers, Transactions of the American Fisheries Society, Trends in Ecology and Evolution, ZooTaxa

University Service (Select)

- 2010 – present. Chair. Academic Standards and Admissions Committee, College of Liberal Arts & Sciences.
- 2010 – present. Member. Faculty Senate Academic Standards and Admissions Committee.
- 2010 – present. Member. Representative Assembly, College of Liberal Arts & Sciences.
- 2007 – present. Member. Academic Standards and Admissions Committee, College of Liberal Arts & Sciences.
- 2005 – present. EEOB Department: Faculty mentor for Assistant Professor.
- 2001 – present. Faculty Member: EEB graduate program.
- 2001 – present. Faculty Member: BCB graduate program.
- 2008 – 2009. Faculty mentor for graduate student: PFF program (preparing future faculty).
- 2008 – 2009. Chair, Academic Standards and Admissions Committee. College of Liberal Arts & Sciences.

- 2008 – 2009. Member. Faculty Senate Academic Standards and Admissions Committee.
- 2008. EEOB Department: faculty search committee (ecological/evolutionary theory).
- 2006 – 2009. EEOB Department: Chair of EEB/EEOB Seminar Series.
- 2003 – 2009. EEOB Department: Faculty Advisor for Graduate Student Organization.
- 2006. EEOB Department: faculty search committee (ecology and evolution).
- 2005. EEOB Department: faculty search committee (theoretical biology).
- 2002 – 2005. EEB Graduate Program: Supervisory Committee.
- 2001 – 2004. Graduate College: PACE Awards Committee.

PROFESSIONAL AFFILIATIONS

American Association for the Advancement of Science, American Society of Ichthyologists and Herpetologists, American Society of Naturalists, Ecological Society of America, Herpetologist's League, Sigma Xi, Society for the Study of Evolution, Society of Systematic Biologists

INVITED PRESENTATIONS AND SYMPOSIA

- 2011. *University of Minnesota.*
- 2010. *7th International Symposium on the Lacertids of the Mediterranean Basin., Spain.*
- 2010. *Hull-York Medical School, York, England.*
- 2010. *Museo di Storie Naturale, Università degli Studi di Firenze, Italy.*
- 2008. *University of Iowa.*
- 2007. *Brigham Young University.*
- 2007. *Fifth Conference on the Biology of Plethodontid Salamanders. Mexico.*
- 2007. *National Museum of Natural History, Smithsonian Institution. Washington, D.C.*
- 2005. *John Carroll University, Cleveland, Ohio.*
- 2005. *Cornell College, Mounty Vernon, Iowa.*
- 2004. *Universidad de Los Andes, Bogotá, Colombia.*
- 2004. *Texas A&M University, College Station, Texas.*
- 2004. *Cornell College, Mounty Vernon, Iowa.*
- 2003. *Washington University Saint Louis, St. Louis, Missouri.*
- 2002. *International Congress of Systematic and Evolutionary Biology (ICSEB) VI, Greece.*
- 2001. *University of Iowa.*
- 2001. *University of Nebraska-Lincoln.*
- 2000. *Iowa State University.*
- 1999. *Indiana State University.*
- 1999. *Brigham Young University.*
- 1998. *Instituto de Investigação Agrária e Extensão Rural, Estação Agronómica Nacional, Portugal.*