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Reptile Research
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Education

2005 PhD Biology, Arizona State University
1995 MA Ecology and Evolution, University of California at Riverside
1992 BS Biology, University of California at Riverside

Professional Experience

- 2003-Current. Founder, Executive Director, Board President
Reptile Research: A conservation research organization offering educational and volunteer opportunities.
- 2005-Current. Webmaster and Principal Photographer
Biodiversity Photography: Fine art and stock photography sales to support conservation research.
- 2003-Current. Field Leader and Principal Investigator
“A field survey of the herpetofauna of an ecological cline of rainforests to deserts in western Ecuador”
- 2002-2007. Field Instructor, Reptile Research and Arizona State University
Field, laboratory and lectures for Amazonian Natural History and Tropical Field Ecology.
- 2006 Adjunct Faculty, Glendale Community College
Lecture and Laboratory for Biology for Non-science Majors
- 1999-2005 Faculty Associate, Arizona State University West Campus
Lectures, laboratory and field for:
Natural History of Arizona (3 semesters),
Introductory Biology for Non-majors (5 semesters),
Amazonian Natural History (in Amazonian Ecuador–4 summer sessions)
Field Zoology (in Arizona–1 summer session)
Herpetology (3 summer sessions)
- 2005 Field Leader for Volunteers, International Student Volunteers:
“Habitat restoration in Queensland, and New South Wales, Australia.”
- 1997-2002 Teaching Associate, Arizona State University, Department of Biology
Laboratory and field for Herpetology (2 semesters)
Laboratory for Introduction to Biology for Majors (2 semesters)

Laboratory for Human Anatomy and Physiology (2 semesters)

Laboratory and field for Vertebrate Zoology (6 semesters)

- 2000-2003 Field Ecologist, ASU West Contract with Arizona Game and Fish Dept.
"Status of the Arizona Whiptail, *Cnemidophorus arizonae*."
- 1998-1999 Field Surveyor, SWCA, Inc., Phoenix AZ and Northland Research, Tempe AZ
"Surveys for Desert Tortoises and Cactus Ferruginous Pygmy Owls in Maricopa Co., AZ."
- 1994-1997 Staff Biologist, US Geological Survey, Biological Resources Division
"Raven radio-telemetry and predation on desert tortoises"
"A complete bibliography of the common raven (*Corvus corax*) in North America"
"Highway mortality in desert tortoises"
"Post-mortem analysis of desert tortoise remains"
- 1995-1996 Biology Instructor, Mount San Jacinto Community College
Lectures and laboratory for Biology for Non-Majors (4 semesters)
Lectures and laboratory for Introduction to Environmental Science (2 semesters)
- 1994 Assistant Reserve Manager, University of California at Riverside James Reserve,
San Jacinto Mountains, California
- 1994 Research Assistant, University of California at Riverside, Department of Biology
Project Title: "Immunocompetence and sexual selection in red jungle fowl"
- 1993 Field Surveyor, Colorado State University, Dept. of Fishery and Wildlife Biology
Project Title: "Raven and raptor surveys for a proposed desert landfill site"
- 1992-1993 Teaching Assistant, University of California at Riverside
Laboratory for Introduction to Population Biology (3 quarters)
Laboratory for Introduction to Organismal Biology (3 quarters)
- 1990-1992 Undergraduate Research Assistant, University of California at Riverside:
"Immunocompetence and sexual selection in red jungle fowl"

Courses Available to Teach (other than listed above)

- Amphibian Declines
- Animal Behavior or Behavioral Ecology
- Conservation Biology
- Techniques and Field Methods in Ecology
- Tropical Entomology
- Vertebrate Zoology Lecture & Lab
- Wildlife & Nature Photography

Thesis and Dissertation

- Hamilton, P.S. 1995. Environmental and geographic variation on the expression of sexual dimorphism in the chuckwalla, *Sauromalus obesus*. M.A. Thesis. Department of Biology, University of California at Riverside.
- Hamilton, P.S. 2005. Sexual selection and life history evolution of color: Tests of evolutionary theory across biological levels of organization. Ph.D. Dissertation, School of Life Sciences, Arizona State University. Tempe, AZ.

Publications

- BOARMAN, W. I., T. GOODLETT, G. GOODLETT AND P. S. HAMILTON. 1998. Review of radio transmitter attachment techniques for turtle research and recommendations for improvement. *Herpetological Review*. 29:26-33.
- HAMILTON, P. S. D. E. GAALEMA, S. L. LAAGE AND B. K. SULLIVAN. 2005. A photographic method for quantifying color characteristics and patch morphometrics in lizards. *Herpetological Review*. 36:402-406.
- HAMILTON, P. S., D. GAALEMA AND B. K. SULLIVAN. in press. Short-term changes in dorsal reflectance for background matching in Ornate Tree Lizards (*Urosaurus ornatus*). *Amphibia-Reptilia*.
- HAMILTON, P. S. AND B. K. SULLIVAN. 2005. Mate choice in ornate tree lizards, *Urosaurus ornatus*: a multivariate analysis. *Animal Behavior*. 69:219-224.
- HAMILTON, P. S. AND J. WRIEDEN. 2004. *Crotalus molossus molossus* (Black-tailed Rattlesnake) [Natural History Note]. Male-male fighting. *Herpetological Review*. 35:63.
- HURT, C. R., S. MEREDITH AND P. HAMILTON. 2003. Evolutionary ecology: Concepts and case studies [book review]. *Conservation Biology*. 17:242-243.
- LAPPIN, A. K., P. S. HAMILTON AND B. K. SULLIVAN. 2006. Bite-force performance in the Common Chuckwalla (*Sauromalus ater* [= *obesus*]): Evidence for antagonistic natural and sexual selection on head form. *Biological Journal of the Linnean Society*. 88:215-222.
- SULLIVAN, B. K., M. KWIATKOWSKI AND P. S. HAMILTON. 2004. Growth in Sonoran Desert populations of the common chuckwalla (*Sauromalus obesus*). *Western North American Naturalist*. 645:137-140.
- SULLIVAN, B. K., P. S. HAMILTON AND M. A. KWIATKOWSKI. 2005. The Arizona striped whiptail: past and present. pp. 145-148 in: Connecting mountain islands and desert seas: biodiversity and management of the Madrean Archipelago II (ed. by G. J. Gottfried, B. S. Gebow, L. G. Eskew, and C. B. Edminster). Proceedings RMRS-P-36, USDA, FS, Rocky Mtn Research Station, 631 pp. Peer-reviewed.
- ZUK, M., L. ALLEN, L. CUPP, K. ELLER, P. HAMILTON, L. C. HAZARD, M. JORGENSEN, M. KAUFFMAN, V. MIRMOVITCH, E. RABITTOY AND E. TAYLOR 1992. The evolution of parental care [book review]. *Copeia* 1992:594-596.

Manuscripts in Review

BOARMAN, W. I. AND P. S. HAMILTON. in review. Juvenile Desert Tortoises killed by Common Ravens. Submitted to *Herpetologica*.

HAMILTON, P. S. in review. The life history of sexual selection: new and classic tests of evolutionary theory. *Biological Journal of the Linnean Society*.

Manuscripts in Preparation

HAMILTON, P. S. in prep. Environment, geography, sexual dimorphism in the lizard genus *Sauromalus*.

HAMILTON, P. S. in prep. Dorsal reflectance patterns of Ornate Tree Lizards in the field: Evidence for trade-offs among multiple functions.

HAMILTON, P. S. AND J. MACEDONIA. Reflectance spectra of some Phrynosomatid lizards. Submitted to *Herpetological Review*.

HOSS, S. AND P. S. HAMILTON. in prep. The influence of corticosteroids on sexual ornamentation and parasite load in Ornate Tree Lizards, *Urosaurus ornatus*.

KWIATKOWSKI, M., P. HAMILTON AND B. K. SULLIVAN. in Prep. Does sexual selection influence rates of speciation? A case study with lizards. For *Evolution*.

KWIATKOWSKI, M., S. HOSS, AND P. S. HAMILTON. in prep. Can Ornate Tree Lizards, *Urosaurus ornatus*, discriminate between syntopic predators and harmless lizards based on chemical cues? For *Copeia*.

VIGLE, G. O., P. S. HAMILTON, AND R. SAWBY. in prep. A field guide to the reptiles and amphibians of Jatun Sacha Biological Reserve, Ecuador.

Photo Credits

- ALCOCK, J. 2005. Animal Behavior, 7th Ed. *Uta stansburiana*.
- ALCOCK, J. 2005. Animal Behavior, 7th Ed. *Sceloporus virgatus*.
- ALCOCK, J. 2005. Animal Behavior, 7th Ed. *Crotaphytus dickersonae* male and female [chapter header].
- ALCOCK, J. 2006. Animal Behavior, Easy Reading Edition [German]. Same photos as above
- DUGATKIN, L. 2004. Principles of Animal Behavior. *Crotalus molossus* combat [incorrectly labeled as copperheads by G. Schuett].
- MILLER, J. 2006. Model frog for the logo for the Center for Biological Diversity (a 25,000 member organization).
- MILLER, J. 2006. Annual Report and newsletter for the Center for Biological Diversity. Fossil Creek Habitats.
- ORTEGA, M, et al., In Press, 2006. A field guide of the herpetofauna in the Esmeraldas province, Pacific lowlands of Ecuador, South America. Fourteen species of reptile and amphibian.
- VIGLE, G. O., P. S. HAMILTON AND R. J. SAWBY. 2007. A field guide to the reptiles and amphibians of Amazonian Ecuador: The herpetofauna of Reserva Jatun Sacha. Over 70 photos of reptiles and amphibians.

Academic Grants

- American Museum of Natural History Southwest Research Station Graduate Student Support Fund: A comparative study of sexual selection and life history in Phrynosomatid lizards.
- Sigma-Xi Grant in Aid of Research: Microsatellite Determination of paternity in Tree Lizards, *Urosaurus ornatus*
- ASU West SRCA Fund (with Brian Sullivan): DNA fingerprinting for paternity in Tree Lizards, *Urosaurus ornatus*
- ASU Dept. of Biology/Graduate College Travel Grant: ASIH meetings
- ASASU Graduate Research Support Program: "Sex versus death tradeoffs in lizards"
- ASU Dept. of Biology/Graduate College Travel Grant: ASIH meetings
- ASU Dept. of Biology/Graduate College Travel Grant: SSE meetings
- UCR Dept. of Biology Newell Fund Award: "Geographic variation of morphology in *Sauromalus*"
- UCR Dept. of Biology Newell Fund Award: "Climate and mating Systems in *Sauromalus obesus*"
- UCR Student Minigrant for Undergraduate Research: "The role of nematodes on an herbivorous lizard host"
- UCR Senior Student Minigrant: "Behavioral and physiological adaptations in *Chamaeleo johnstoni*"
- UCR Student Minigrant for Undergraduate Research: "Color Change in *Chamaeleo johnstoni*"

Professional Meeting Presentations

- BIOCOMM: Annual meeting of the Biocommunications Association: “Documenting the Diversity of Life Through Photography” (invited)
- Southwestern Association of Biologists: Presented "A photographic method for quantifying color characteristics and patch morphometrics in lizards"
- American Society of Ichthyologists and Herpetologists: Presented "A photographic method for quantifying color characteristics and patch morphometrics in lizards"
- Current Research on the Herpetofauna of the Sonoran Desert II: Presented "Mate choice in tree lizards, *Urosaurus ornatus*."
- ASU Department of Biology Graduate Student Seminar: Presented “Sexual selection, life history at multiple levels of organization in lizards.”
- American Society of Ichthyologists and Herpetologists: Presented "Sexual Selection and Life History trade-offs in the Phrynosomatid lizards."
- American Society of Ichthyologists and Herpetologists: Presented "Mate choice on behavior and morphology in *Urosaurus ornatus*", and (with Norah DeBellis) "The predation costs of sexually selected traits in *Urosaurus ornatus* using *Crotaphytus nebrius* as a model predator."
- Society for the Study of Evolution: Presented "Geographic and interspecific variation of sexual dimorphism in the lizard genus *Sauromalus* in relation to environment"
- Desert Tortoise Council: Presented "Statistical power of biological surveys"

Research Interests

- Ecology and Conservation Biology: Land use conflicts in arid and tropical environments, anthropogenic influences on ecosystems.
- Evolutionary Ecology: Macroevolutionary and microevolutionary processes, natural and sexual selection, morphological adaptation, life history, parasite evolutionary ecology.
- Behavioral Ecology: mating systems, animal signaling, predator-prey relationships.
- Herpetology: natural history, conservation, systematics and taxonomy of reptiles and amphibians.

Current Research

- Herpetofauna of an ecotone between dry forest and sub montane humid forest in coastal Ecuador: biogeographic and conservation implications.
- Comparative analyses of sexual selection and life history of Phrynosomatid lizards.
- Antagonism of natural and sexual selection in the tree lizard, *Urosaurus ornatus*.
- Male behavior, morphology and predation risk in *Urosaurus ornatus*.
- Sexual selection, signaling and biomechanics of lizard genera *Crotaphytus* and *Sauromalus*.

Professional and Community Service

1997-2004 Collaboration and supervision with 34 undergraduates assisting research projects with histology, specimen dissection and measurement, animal husbandry, data entry, specimen collection, and behavioral observations in the lab and field.

Select Undergraduate Collaborated Projects:

Norah DeBellis: The predation costs of sexually selected traits in *Urosaurus ornatus* using *Crotaphytus nebrius* as a model predator. Sigma-Xi Grant Recipient Presented at American Society for Ichthyologists and Herpetologists, 1999.

Diann Gaalema: An examination of background color matching abilities in tree lizards, *Urosaurus ornatus*. Hughes Program Fellowship Recipient. Presented at the ASU Biology Department Undergraduate Poster Symposium, 2003.

Shannon Hoss: Testing the immunocompetence model of sexual selection using morphological and hormonal correlates of ectoparasite infestation rates in *Urosaurus* and *Sceloporus*. Also: Chemosensory abilities of *Urosaurus*. Sigma-Xi Grant Recipient, Hughes Program Fellowship Recipient.

Erich Hoffeld: Does bright blue coloration in lizards incur a survivorship cost? An experiment with models. Presented at the ASU Biology Department Undergraduate Poster Symposium, 2000.

Christiane Mouette. Continued field efforts of a survey of neotropical herpetofauna at a imperiled tropical dry forest in Ecuador.

Lizabeth Ramirez: The function of reproductive coloration in *Sceloporus jarrovi*. Hughes Program Fellowship Recipient.

Scott Risso: Fire ecology of Slevin's Bunch Grass lizard (*Sceloporus slevini*), in the Chiricahua Mts. of SE Arizona.

2000-2006 Guest Lectures (Class: Topic)

Ecology: Population Ecology and Life History

Ecology: Tropical Biodiversity and Conservation: a case study from Ecuador (3 occasions)

Evolution: Adaptation and the Comparative Method

Vertebrate Zoology: Squamate reptiles (2 occasions)

Vertebrate Zoology: Tropical biodiversity and Conservation: a case study from Ecuador

Herpetology: Tropical biodiversity and conservation: a case study from Ecuador

Arizona Natural History: Tropical versus temperate biodiversity (2 occasions)

Modes of Biological Thought: Biodiversity and conservation, a case study in the tropics

Robotic Engineering: What can snake pit organs tell us about design of human technology? (3 occasions)

1997-2005 Manuscript reviews for the *Journal of Herpetology*, *Herpetologica*, the *Herpetological Journal* and *The Australian Journal of Zoology*

1995-1997 Presentations at public grade schools in Riverside, CA. Presentations included live animal demonstrations with zoological, evolutionary, and environmental content.

1992-2006 Community outreach and education; presented research at schools and community functions:

San Francisco Zoo
San Francisco Naturalist's Society
Ocean Shore Grade School, Pacifica, CA
Northern California Herpetological Society
Tucson Herpetological Society
Tucson Reptile and Amphibian Expo
Southwestern herpetological Society, Los Angeles Chapter
South Mountain Environmental Education Center
Arizona Herpetological Association
San Diego Herpetological Association

Additional Skills

- Photography for artistic and scientific applications
- Knowledge of PowerPoint, Access, FrontPage, ArcView, SPSS, Photoshop
- Techniques in GIS, GPS, and radio-telemetry
- Web design
- Photographic archiving
- Computer hardware configuration and repair
- Working knowledge of Spanish
- Managerial and teamwork skills
- Construction and building repair
- First aid

Personal References

Brian K. Sullivan [Dissertation Advisor]. Arizona State University West. bsullivan@asu.edu
602 543-6022.

Dale Denardo [Colleague]. Arizona State University. denardo@asu.edu.

Matthew Kwiatkowski [Colleague]. Stephen F. Austin State University. kwiatkowm@sfasu.edu
(936) 468-5986.