

# Kevin Edward Bonine

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Dept. of Ecology and Evolutionary Biology  
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## ACADEMIC POSITION

Adjunct Assistant Professor, University of Arizona (2002 – present)  
Department of Ecology and Evolutionary Biology *and* School of Natural Resources

## EDUCATION

**Ph.D., 2001**, University of Wisconsin-Madison, Department of Zoology  
Advisor, Dr. Theodore Garland, Jr.

Dissertation: *Morphological and physiological predictors of lizard locomotor performance: a phylogenetic analysis of trade-offs.*

**M.S., 1997**, University of Wisconsin-Madison, Department of Zoology  
Advisor, Dr. Theodore Garland, Jr.

Thesis: *Lizard sprint performance and morphometric correlates.*

Organization for Tropical Studies, Tropical Ecology Course, Universidad de Costa Rica (Jan. – April 1996)

**B.S., 1995**, Honors, Ecology and Evolutionary Biology, University of Arizona  
Honors Thesis - *Biosphere reserve in the upper Gulf of California, Mexico: Implications for local economies and ecosystems*

**B.A., 1995**, Economics, University of Arizona

University of Massachusetts Amherst, Salamanca, Spain (July 1994)

Université Paul Valéry, Montpellier, France (spring 1994)

## RESEARCH INTERESTS

Evolutionary Physiology, Physiological Ecology, Herpetology, Conservation Biology

## HONORS

Adjunct Assistant Professor, School of Natural Resources, University of Arizona (2004 –)

National Collegiate Honors Council, Everglades and Miami Beach, Florida, City as Text Seminar (Jan. 2006)

National Science Foundation Graduate Research Fellowship (1996-2001)

Best Student Poster, Society for Integrative and Comparative Biology (Div. of Vertebrate Morphology, Jan. 2001)

Visiting Scholar, University of Colorado, Boulder, Dr. Todd T. Gleeson (summers 1997 and 2000)

Wisconsin Alumni Research Foundation Fellowship (1995-1996)

Flinn Foundation Scholarship (1990-1994)

Phi Beta Kappa (inducted 1993)

**PEER-REVIEWED PUBLICATIONS**

- Amarello, M., **K. E. Bonine**, and D. Lazcano. In press. Factors influencing the antipredator behavior of *Crotalus polystictus* (Mexican lance-headed rattlesnakes) toward humans. *Biology of the Rattlesnakes*. Loma Linda University Press. **Melissa Amarello was an Honors Student in my laboratory and this publication is the fruition of her Honors Thesis research.**
- Bonine K. E.** In press. Physiological correlates of foraging mode. Chapter 4 in S. Reilly, L. McBrayer, and D. Miles, eds. *Foraging Behavior in Lizards*. Cambridge University Press.
- Daniel, J. A., K. A. Baker, and **K. E. Bonine**. 2006. Retention rates of surface and implantable marking methods in the Mediterranean house gecko (*Hemidactylus turcicus*), with notes on capture methods and rates of skin shedding. *Herpetological Review* 37:319–321. **Jeremy Daniel was an undergraduate in my Herpetology course and this publication was the fruition of his course research project.**
- Bonine K. E.**, E. F. Enderson, and R. L. Bezy. 2006. *Imantodes gemmistratus* (Central American Tree Snake), Geographic Distribution. *Herpetological Review* 37:363.
- E. F. Enderson, **Bonine K. E.**, and R. L. Bezy. xxIn press. *Gyalopion canum* (Chihuahuan Hook-nosed Snake), Geographic Distribution. *Herpetological Review* 37:362.
- Bonine K. E.**, T. T. Gleeson, and T. Garland, Jr. 2005. Muscle fiber-type variation in lizards (Squamata) and phylogenetic reconstruction of hypothesized ancestral states. *Journal of Experimental Biology* 208:4529-4547.
- Bonine K. E.**, E. W. Stitt, G. L. Bradley, and J. J. Smith. 2004. *Crotalus atrox* (Western Diamond-backed Rattlesnake) entrapment and opportunistic courtship. *Herpetological Review* 35:176-177.
- Jung, R. E., **K. E. Bonine**, M. L. Rosenshield, A. de la Reza, S. Raimondo, and S. Droege. 2002. Evaluation of canoe surveys for anurans along the Rio Grande in Big Bend National Park, Texas. *Journal of Herpetology*. 36:390-397.
- Bonine K. E.**, T. T. Gleeson, and T. Garland, Jr. 2001. Comparative analysis of fiber-type composition in the iliofibularis muscle of phrynosomatid lizards (Squamata). *Journal of Morphology* 250:265-280.
- Bonine, K. E.**, G. H. Dayton, and R. E. Jung. 2001. Attempted predation of Couch's spadefoot (*Scaphiopus couchii*) juveniles by ants (*Aphaenogaster cockerelli*). *Southwestern Naturalist* 46:104-106.
- Bonine, K. E.**, and T. Garland, Jr. 1999. Sprint performance of phrynosomatid lizards, measured on a high-speed treadmill, correlates with hindlimb length. *Journal of Zoology, London* 248:255-265.
- Smith, H. M., D. Chiszar, A. Chiszar, D. L. Auth, J. Auth, C. Henke, C. E. Bock, J. H. Bock, J. A. Rybak, R. L. Holland, **K. Bonine**, and G. J. Watkins-Colwell. 1998. Slevin's bunch grass lizard (*Sceloporus slevini*) decimated on the Sonoita Plain, Arizona. *Herpetological Review* 29:225-226.

**OTHER PUBLICATIONS**

- Bonine, K. E.** 2006. Yarrow's spiny lizards (*Sceloporus jarrovii*) on Lizard Rock, Santa Catalina Mountains, Pima County, Arizona: adventures of a diaper-bag-toting herpetologist. *Sonoran Herpetologist* 19:78-79.
- Edwards, T., **K. E. Bonine**, C. Ivanyi, and R. Prescott. 2005. The molecular origins of spiny-tailed iguanas (*Ctenosaura*) on the grounds of the Arizona-Sonora Desert Museum. *Sonoran Herpetologist* 18:122-125.
- Bezy, R. L., E. F. Enderson, and **K. E. Bonine**. 2004. Tlaconete Pinto *Pseudoeurycea bellii* (Gray, 1850) Arizona's lost salamander. *Sonoran Herpetologist* 17:119-122.
- Bonine, K. E.** 2004. Book Review of *Lizards: Windows to the Evolution of Diversity* (E. R. Pianka and L. J. Vitt. 2003). *Sonoran Herpetologist* 17:95-96.
- Bonine K. E.** and C.R. Schwalbe. 2003. Herpetofauna inventory at Madrona Pools, Chimenea Creek, Rincon Mountain District, Saguaro National Park. Report submitted to National Park Service. 26 pp.
- Bell, D.M. and **Bonine K. E.**, Herpetological inventory 2002 final draft report. Submitted to NPS Inventory and Monitoring Program, USGS Sonoran Desert Field Station, University of Arizona, Tucson, AZ. 16 pp.

**Bonine, K. E.**, and E. D. Clotfelter. 1997. Phylogenetic approaches in animal behavior. Book Review of *Phylogenies and the Comparative Method in Animal Behavior* (ed. by Emilia P. Martins) 1996. *Journal of Evolutionary Biology* 10:683-685.

### SELECTED PRESENTATIONS

- Getting students involved in community projects. *Innovations in College Biology Teaching*, University of Arizona, August 2005 (Invited).
- Arizona Black Rattlesnake (*Crotalus oreganus* [viridis] *cerberus*) ecology: observations from populations in southeastern Arizona. *Current Research on Herpetofauna of the Sonoran Desert III*, Phoenix, AZ, April 2005.
- What we can learn from lizard limbs: comparative analysis of muscle histochemistry and the evolution of locomotor abilities. *Doings Seminar Series*, Interdisciplinary Training in the Neurobiology of Motor Control, Tucson, Arizona, September 2004 (Invited).
- Predictors of sprint locomotor performance abilities in Phrynosomatidae. *Horned Lizard Conservation Society*, Portal, Arizona, June 2002 (Invited).
- Predicting locomotor performance abilities in lizards: morphology, physiology, and the comparative method. *Departmental Seminar Series*, School of Renewable Natural Resources, Tucson, Arizona, May 2002 (Invited).
- How lizards run across the desert: morphological and physiological predictors of locomotor performance in Phrynosomatidae. *Current Research on the Herpetofauna of the Sonoran Desert II*, Tucson, Arizona, April 2002.
- Morphological and physiological predictors of locomotor performance in lizards. *Zoology Colloquium*, Department of Zoology, Madison, Wisconsin, May 2001.
- Phrynosomatid lizards show parallel variation in sprint speed and muscle fiber-type properties. *Society for Integrative and Comparative Biology*, Chicago, January 2001. **Best Student Poster Award.**
- Fiber-type variation in the iliofibularis muscle of phrynosomatid lizards. *American Physiological Society*, 'The Integrative Biology of Exercise,' Portland, Maine, September 2000. (poster)
- Morphology, physiology, and locomotor performance in phrynosomatid lizards. *Society for the Study of Evolution*, Madison, Wisconsin, June 1999.
- Muscle fiber-type variation and locomotion in phrynosomatid lizards. *Society for Integrative and Comparative Biology*, Boston, January 1998.
- Morphometric correlates of lizard sprint performance measured on a high-speed treadmill. *American Society of Ichthyologists and Herpetologists*, Seattle, June 1997.

### TEACHING

- Herpetology** (ECOL 483/583), Instructor, University of Arizona (spring 2002-2007)
- Environmental Biology** (ECOL 206), Instructor, University of Arizona (spring 2003-2007)
- Sustainable Living: Ecology and the Human Experience** (HNRS 295H), Co-instructor, U of A (fall 2006)
- Conservation Biology** (ECOL 406/506), Instructor, University of Arizona (fall 2003-2006)
- Vertebrate Physiology** (ECOL 437), Instructor, University of Arizona (fall 2002-2006)
- Marine Biology** (ECOL 183), *Guest Lecture on "Marine Reptiles,"* U of A (fall 2003, spring 2005, 2006, 2007)
- Human Physiology** (Physiology 335), Graduate Teaching Assistant, UW-Madison Dept. of Physiology (fall 2001)
- Introductory Ecology** (Zoology 260), *Guest Lecture on "Adaptation,"* UW-Madison (February 2001)
- Evolutionary Biology** (Zoology 410), *Guest Lecture on "Quantitative Genetics,"* UW-Madison (March 1999)
- Evolutionary Biology** (Zoology 410), Graduate Teaching Assistant, UW-Madison Dept. of Zoology (spring 1999)
- Human Physiology** (Physiology 335), Graduate Teaching Assistant, UW-Madison Dept. of Physiology (fall 1997)
- Academic Tutor, UW-Madison Department of Athletics (spring 1999 – summer 2001)

**SUMMARY OF TEACHING EVALUATIONS (University of Arizona, 2002-2006):**

Lecture Courses: **4.5** (top possible score = 5, comparison mean on campus: 4.1)

Lab Courses: **4.5** (top possible score =5, comparison mean on campus: 4.3)

Selected quotes from anonymous student course evaluations:

*This course is a huge asset to the Biological Sciences as a tool to raise awareness of current issues.* – Conservation Biology, 2006

*Kevin's passion is contagious. This has been the most meaningful class I have ever had.* – Con. Bio., 2006

*Best class I've taken at the U of A.* – Conservation Biology Lab, 2006

*Best class I have ever taken.* . – Conservation Biology Lab, 2006

*The best lab and professor that I have had on the U of A campus!* – Conservation Biology Lab, 2006

*This was an awesome class; very challenging but a whole lot of fun.* –Vertebrate Physiology. 2006

*An absolutely wonderful course. I wish all of my science courses had such effective instructors as Dr. Bonine* –Vertebrate Physiology, 2006

*Even though this course kicked my ass, it's been my favorite because I feel like I am getting something out of it.* – Vertebrate Physiology, 2006

*The field trips in the labs really made me appreciate what I've taken for granted.* – Environmental Biology, 2006

*This has been my favorite class at the university so far. Dr. Bonine expects a lot and challenges his students without taking the fun and interest out of the course. Excellent professor.* –Herpetology, 2006

*Kevin Bonine is passionate about teaching Conservation Biology.* – Arizona Daily Wildcat (Student Newspaper), 2005

*Best professor at UA. Enjoyed our class and looked forward to it.* – Vertebrate Physiology, 2005

*The projects were really fun. The whole class is amazing though – definitely my favorite I've taken at UA – I really like the open discussions, the lectures, and the people that take the class.* – Con. Bio., 2005

*Kevin's teaching approach is very unique and enthusiastic. I've really enjoyed having him as an instructor and I have learned much about conservation biology.* – Conservation Biology, 2005

*I loved the material; very interesting, taught very well, fun!* – Vertebrate Physiology, 2005

*The prof. cares. Please don't stop doing that no matter what.* – Vertebrate Physiology, 2005

*It was really cool material taught by the best instructor that I've had here. Class was always interesting and fun.* – Vertebrate Physiology, 2005

*This is one of the best classes I have ever taken. The material was interesting and Dr. Bonine always had organized lectures and educational handouts/exercises.* – Environmental Biology, 2004

*Dr. Bonine expected maximum effort, effort that was rewarded with insight and appreciation for physiology.* –Vertebrate Physiology, 2004

*I am glad that you did not 'dumb' down the course to satisfy lazy students.* – Vertebrate Physiology, 2004

*Kevin asks a lot of his class, but he puts in more effort than I've ever seen in an instructor. His teaching makes me want to try harder.* – Herpetology, 2003

*Probably the hardest Ecology class I've had, but the most rewarding and the one I learned the most in.* – Herpetology, 2003

**UNDERGRADUATE ADVISING AND GRADUATE COMMITTEES**

- Jamia Fillinger, undergraduate, *Hyla arenicolor phylogeography* (spring 2007 – )
- Kelly Donithan, undergraduate, *Implications of invasive buffel grass for lizard communities on Tumamoc Hill* (spring 2007 –)
- Kris Ratzlaff, undergraduate, *Hyla arenicolor phylogeography* (spring 2006 –)
- Patricia Wheeler, MS student, UA General Biology Program for Secondary School Science Teachers (fall 2005 – )
- David Hall, Ph.D. Committee, School of Natural Resources, University of Arizona (fall 2005 – )
- Christine Schirmer, undergraduate, *Hyla arenicolor phylogeography* (fall 2005 - summer 2006)
- Chip Cochran, undergraduate, *Herpetology preceptorship* (spring 2006)
- Chip Cochran, undergraduate, *Herpetofauna of Sonora, MX: Photo-specimen vouchers* (spring 2006)
- Nathan Fitzgibbon, high school student, *Ontogeny of metabolism in unisexual whiptail lizards* (spring 2006)
- Saul Guerrero, undergraduate, *Implications of invasive buffel grass for lizard communities on Tumamoc Hill* (fall 2005 – spring 2006)
- Nathan Fitzgibbon, high school student, *Histocompatibility in unisexual whiptail lizards* (summer and fall 2005)
- Kelly Mackay, undergraduate, *Herpetological inventory of the Gila Box Wilderness* (2005)
- Leslie Wood, undergraduate, *Desert Box Turtles (Terrapene ornata luteola) in San Simon Valley, Arizona* (2005)
- Daniel Post, *Incremental environmental impacts of urban development: a GIS-based modelling approach*. Undergraduate Honors Research Thesis (2005)
- Kim Wright, undergraduate, *Herpetology preceptorship* (spring 2005)
- Megan Chambers, undergraduate, *Multiscale analysis of legal framework relevant to the Sonoran Desert Conservation Plan, Pima County, Arizona*. Independent Study (spring 2005)
- Melissa Amarello, *Defensive behavior of Crotalus polystictus (Mexican lance-headed rattlesnakes) towards humans*. Undergraduate Honors Research Thesis (2004-2005)
- Lauren Merin, undergraduate, *Evaluation of small-scale sustainable food production*, Independent Study (summer 2004)
- Melissa Amarello, undergraduate, *Herpetology preceptorship* (spring 2004)
- Alana Kurosaki, undergraduate, *Herpetology preceptorship* (spring 2004)
- Ceit Chesser, undergraduate, *How to teach herpetology*, Independent Study (spring 2003)

**SERVICE**

Undergraduate Task Force, Ecology and Evolutionary Biology *Committee Member* (2006 –)  
 Conservation Biology Option, School of Natural Resources *Committee Member* (2006 –)  
 National Collegiate Honors Council, Honors Semester *Board of Directors* (2006 –)  
 Society for Conservation Biology, Smith Fellows *Application Reviewer* (2005 & 2006)  
 Flinn Foundation, Flinn Scholar *Application Reviewer* (2005 & 2006)  
 Herpetology Reading Group, *Organizer* (each spring 2002 – 2007)  
 Tucson Herpetological Society, *Vice President* (2006-2007)  
 Tucson Herpetological Society, *Board of Directors* (2005)  
 Courtney Conway (SNR) lab meetings; provide feedback to his graduate students (2004 –)  
 Community Outreach, *Reptiles and Amphibians of the Tucson Basin*, Tucson Community Center (fall 2004)  
 High School Outreach, *Introduction to Herpetology*, Amerischools College Preparatory Academy, Tucson, AZ  
 - lectures and lab specimen instruction to two groups (spring 2004)  
 Field Assistant, *Urbanization Impacts on Desert Tortoise Populations in the Tucson Basin* (fall 2003)  
 Middle School Outreach, *Introduction to Herpetology*, Amerischools Middle Academy, Tucson, AZ  
 - lectures and lab specimen instruction to four groups (spring 2002, 2003)

**MANUSCRIPT REVIEWS**

*Evolution* (2006, 2000-2002, 1996), *Herpetologica* (2000, 2005), *The Southwestern Naturalist* (2001, 2003), *Animal Behaviour* (2001, 1999), *Journal of Experimental Biology* (2001), *Journal of Zoology, London* (2001), *Journal of Herpetology* (2000), *The American Naturalist* (1997), *The Herpetological Journal* (1996)

**RELEVANT EMPLOYMENT**

Wildlife Biologist, AZ and NM, *Herpetological Inventory and Monitoring*, USGS/NPS (summer 2002, 2003)  
 Herpetologist, *Madrona Pools Pulse Project*, Saguaro National Park (summer 2003)  
 Medical Assistant, Wingra Family Medical Clinic, Madison, WI (1999-2001)  
 Researcher, Big Bend N.P. *Amphibian Survey and Monitoring*. United States Geological Survey (1998)  
 Intern, *Research Corporation Technologies*, Life Sciences Group (summer 1995)  
 Consultant, *Protein Genesis Inc.* (summer 1995)  
 Student Research Assistant, *Laboratory of Tree-Ring Research*, U. of Arizona, Dr. T. W. Swetnam (1992-1995)