

S.K. MORGAN ERNEST

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EDUCATION

Ph.D. Biology, with distinction, University of New Mexico, Albuquerque, 2001

B.S. Ecology and Evolutionary Biology, University of Arizona, Tucson, 1994

Summa cum laude.

RESEARCH AND PROFESSIONAL EXPERIENCE

2010-	Associate Professor, Department of Biology, Utah State University
2004-2010	Assistant Professor, Department of Biology, Utah State University
2002-2004	Post-doctoral Researcher, University of New Mexico
2002	Instructor, Natural Sciences Program, University of New Mexico
2001-2002	Post-doctoral Research Associate, Department of Biological Sciences, Texas Tech University

PUBLICATIONS

- Thibault, K.M., E.P. White, A.H. Hurlbert, **S.K.M. Ernest**. 2011. Multimodality in the individual size distribution of bird communities. *Global Ecology and Biogeography* 20:145-153.
- Smith, F.A. A.G. Boyer, J.H. Brown, D.P. Costa, T. Dayan, **S.K.M. Ernest**, A.R. Evans, M. Fortelius, J.L. Gittleman, M.J. Hamilton, L.E. Harding, K. Lintulaakso, S.K. Lyons, C. McCain, J.G. Okie, J.J. Saarinen, R.M. Sibly, P.R. Stephens, J. Theodor, M.D. Uhen. 2010. The evolution of maximum body size of terrestrial mammals. *Science* 330:1216-1219.
- White, E.P., **S.K.M. Ernest**, P.B. Adler, A.H. Hurlbert, S.K. Lyons. 2010. Integrating spatial and temporal approaches to understand biological diversity. *Philosophical Transactions of the Royal Society B* 365: 3633-3643
- Thibault, K.M., **S.K.M. Ernest**, J.H. Brown. 2010. Redundant or complementary? Impact of a colonizing species on community structure and function. *Oikos* 119: 1719-1726
- Thibault, K.M., **S.K.M. Ernest**, E.P. White, J. H. Brown, J.R. Goheen. 2010. Long-term insights into the influence of precipitation on community dynamics in desert rodents. *Journal of Mammalogy* 91:787-797.
- Ernest, S.K.M.**, T.J. Valone, J.H. Brown. 2009. Long-term study and manipulation of a Chihuahuan Desert ecosystem. *Ecology* 90:1708.
- Ernest, S.K.M.**, E.P. White, J.H. Brown. 2009. Changes in a tropical forest support metabolic zero-sum dynamics. *Ecology Letters* 12:507-515.
- Ernest, S.K.M.**, J.H. Brown, K.M. Thibault, E.P. White, J.R. Goheen. 2008. Zero-sum dynamics, the niche, and metacommunities: a temporal perspective on community assembly. *American Naturalist* 172: E257-E269
- Ernest, S.K.M.** 2008. Homeostasis. Pages 1879-1884 in S.E. Jorgensen and B.D. Fath, eds. The Encyclopedia of Ecology, Elsevier Press.

- Lima, M., **S.K.M. Ernest**, J.H. Brown, A. Belgrano, N.C. Stenseth. 2008. Chihuahuan Desert kangaroo rats: Nonlinear effects of population dynamics, competition, and rainfall. *Ecology* 89:2594-2603.
- Smith, F.A., S.K. Lyons, **S.K.M. Ernest**, J.H. Brown. 2008. Macroecology: more than the division of food and space among species on continents. *Progress in Physical Geography* 32:115-138.
- White, E.P., **S.K.M. Ernest**, A.J. Kerkoff, B.J. Enquist. 2007. Relationships between size and abundance in ecology. *Trends in Ecology and Evolution* 22: 323-330.
- Houlihan, J.E., D.J. Currie, K. Cottenie, G.S. Cummings, **S.K.M. Ernest**, C.S. Findlay, S.D. Fuhlendorf, U. Gaedke, P. Legendre, J.J. Magnusson, B.H. McArdle, E.H. Muldavin, D. Noble, R. Russell, R.D. Stevens, T.J. Willis, I.P. Woiwod, S.M. Wondzell. 2007. Compensatory dynamics are rare in natural ecological communities. *Proceedings of the National Academy of Sciences, USA* 104:3273-3277
- Goheen, J.R., E.P. White, **S.K.M. Ernest**, J.H. Brown. 2006. Intra-guild compensation regulates species richness in desert rodents: reply. *Ecology* 87:2121-2125
- Savage, V.M., E.P. White, M.E. Moses, **S.K.M. Ernest**, B.J. Enquist, E.L. Charnov. 2006. Comment on "The Illusion of Invariant Quantities in Life Histories". *Science* 312:198b
- Charnov, E.L., **S.K.M. Ernest**. 2006. The offspring/clutch size tradeoff in mammals. *American Naturalist* 167:578-582
- Ernest, S.K.M.** 2005. Body size, energy use, and community structure of small mammals. *Ecology* 86:1407-1413.
- Goheen, J., E.P. White, **S.K.M. Ernest**, J.H. Brown. 2005. Intra-guild compensation regulates species richness in desert rodents. *Ecology* 86: 567-573.
- White, E.P., **S.K.M. Ernest**, K.M. Thibault. 2004. Tradeoffs in community properties in a desert rodent community. *American Naturalist* 164: 670-676.
- Brown, J.H., E.J. Bedrick, **S.K.M. Ernest**, J.E. Cartron, J.F. Kelly. 2004. Constraints on negative relationships: mathematical causes and ecological consequences. Pages 298-308 *In* M.L. Taper, S. Lele, N. Lewin-Koh, eds. The Nature of Scientific Evidence: Empirical, Statistical, and Philosophical Considerations, University of Chicago Press.
- Thibault, K.M., E.P. White, **S.K.M. Ernest**. 2004. Temporal dynamics in the structure and composition of a desert rodent community. *Ecology* 85:2649-2655.
- Chesson, P., R.L.E. Gebauer, S. Schwinning, N. Huntly, K. Wiegand, **M.S.K. Ernest**, A. Sher, A. Novoplansky, J.F. Weltzin. 2004. Resource pulses, species interactions and diversity maintenance in arid and semi-arid environments. *Oecologia* 141:236-253
- Maurer, B.A., J. Alroy, J.H. Brown, T. Dayan, B. Enquist, **S.K.M. Ernest**, E. Hadly, J.P. Haskell, D. Jablonski, K.E. Jones, D.M. Kaufman, K. Lyons, K. Niklas, W. Porter, K. Roy, F.A. Smith, B. Tiffney, M.R. Willig. 2004. Convergence in body size distributions of small-bodied flying vertebrates. *Evolutionary Ecology Research* 6: 783-797.
- Smith, F.A., J.H. Brown, J.P. Haskell, S.K. Lyons, J. Alroy, E.L. Charnov, T. Dayan, B.J. Enquist, **S.K.M. Ernest**, E.A. Hadly, K.E. Jones, D.M. Kaufman, P.A. Marquet, B.A. Maurer, K.J. Niklas, W.P. Porter, B. Tiffney, M.R. Willig. 2004. Similarity of mammalian body size across the taxonomic hierarchy and across space and time. *American Naturalist* 163:672-691.
- Ernest, S.K.M.** 2003. Life History Characteristics of Non-Volant Placental mammals. *Ecology* 84:3401 (Ecological Archives E084-093).

- Smith, F.A., S.K. Lyons, **S.K.M. Ernest**, K.E. Jones, D.M. Kaufman, T. Dayan, P.A. Marquet, J.P. Haskell. 2003. Body mass of late Quaternary mammals. *Ecology* 84:3402. (Ecological Archives E084-094).
- Ernest, S.K.M.**, B.J. Enquist, J.H. Brown, Eric L. Charnov, J.F. Gillooly, V.M. Savage, E.P. White, F.A. Smith, E.A. Hadly, J.P. Haskell, S.K. Lyons, B.A. Maurer, K.J. Niklas, B. Tiffney. 2003. Thermodynamic and metabolic effects on the scaling of production and population energy use. *Ecology Letters* 6:990-995.
- Valone, T.J., S.E. Nordell, **S.K.M. Ernest**. 2002. Effects of fire and grazing in an arid grassland ecosystem. *Southwestern Naturalist* 47: 557-565.
- Brown, J.H., **S.K.M. Ernest**. 2002. Rain and rodents: complex dynamics of desert consumers. *BioScience* 52:979-987.
- Ernest, S.K.M.**, J.H. Brown. 2001. Homeostasis and compensation: the role of species and resources in ecosystem stability. *Ecology* 82: 2118–2132.
- Ernest, S.K.M.**, J.H. Brown. 2001. Delayed compensation for missing keystone species by colonization. *Science* 292:101-104.
- Charnov, E.L. J.P. Haskell, **S.K.M. Ernest**. 2001. Density-dependent invariance, dimensionless life-histories and the energy-equivalence rule. *Evolutionary Ecology Research* 3:117-127.
- Brown, J.H., T.G. Whitham, **S.K.M. Ernest**, C.A. Gehring. 2001. Complex species interactions and the dynamics of ecological systems: long-term experiments. *Science* 293:643-650.
- Brown, J.H., **S.K.M. Ernest**, J.M. Parody, J.P. Haskell. 2001. Regulation of diversity: maintenance of species richness in changing environments. *Oecologia* 126:321-332.
- Ernest, S.K.M.**, J.H. Brown, R.R. Parmenter. 2000. Rodents, plants, and precipitation: Spatial and temporal dynamics of consumers and resources. *Oikos* 88:470-482.

Technical Report

- Parmenter, R.R., J.W. Brunt, D.I. Moore, and **S. Ernest**. 1993. The Hantavirus epidemic in the southwest: Rodent population dynamics and the implications for transmission of Hantavirus-associated Adult Respiratory Distress Syndrome (HARDS) in the four corners region. A report submitted to the Federal Centers for Disease Control and Prevention. Sevilleta LTER Publication No. 41.

Manuscripts in Review/Revision

- Ernest, S.K.M.** Using size distributions to understand the role of body size in mammalian community assembly. In F.A. Smith and S.K. Lyons, eds. Body Size: Linking pattern and process across space, time, and taxonomic groups. University of Chicago Press.
- Brown, J.H., **S.K.M. Ernest**, E.P. White. Introduction to 'Macroecology before Macroecology'. In F.A. Smith, J.L. Gittleman, and J.H. Brown, eds. Foundations of Macroecology, University of Chicago Press.
- Ernest, S.K.M.** Commentary on Rosenzweig (1968). In F.A. Smith, J.L. Gittleman, and J.H. Brown, eds. Foundations of Macroecology, University of Chicago Press.
- Ernest, S.K.M.** Commentary on Sheldon and Parsons (1967). In F.A. Smith, J.L. Gittleman, and J.H. Brown, eds. Foundations of Macroecology, University of Chicago Press.
- Ernest, S.K.M.** Commentary on Hutchinson and MacArthur (1959). In F.A. Smith, J.L. Gittleman, and J.H. Brown, eds. Foundations of Macroecology, University of Chicago Press.

- Stephens, P.R., A.G. Boyer, J.H. Brown, D.P. Costa, T. Dayan, **S.K.M. Ernest**, A.R. Evans, M. Fortelius, M.J. Hamilton, L.E. Harding, K. Lintulaakso, S.K. Lyons, J.G. Okie, J.J. Saarinen, R.M. Sibly, F.A. Smith, M.D. Uhen, J.L. Gittleman. Understanding the relationship between phylogenetic signal and evolutionary rate: a natural experiment in mammalian body size evolution. In revision at *Proceedings of the Royal Society B*
- Thibault, K.M., S.R. Supp, M. Giffin, E.P. White, **S.K.M. Ernest**. Species composition and abundance of mammalian communities. Submitted to *Ecology*

GRANTS

- Ernest, S.K.M. (PI) "LTREB: Experimental monitoring and manipulation of a Chihuahuan Desert rodent community" \$87,289, NSF-DEB 1100664. 2011-2013.
- Smith, F.A. (PI), S.K. Lyons, S.K.M. Ernest. "Research Coordination Network: Integrating Macroecological Patterns and Processes Across Scales" \$490,000, NSF-DEB 0541625. 2006-2011.
- Ernest, S.K.M. (PI), J.H. Brown, T.J. Valone. "Collaborative grant: LTREB: Experimental manipulation and monitoring of an arid ecosystem at Portal, AZ" \$115,277, NSF DEB-0702875, 2006-2010.
- Ernest, S.K.M. "Examining the long-term stability of the rank-abundance distribution" New Faculty Starter Grant, Utah State University. \$15,000. 2007-2008

TEACHING AND ADVISING

- Animal Community Ecology, Biology 5590/6590, Utah State University (2008, 2010)
- Biology and the Citizen, Biology 1010, Utah State University (2009, 2007, 2005)
- Special Topics in Community Ecology, Biology 6750, Utah State University (Spring & Fall 2008, Spring & Fall 2007, Fall 2006)
- Graduate Ecology, Biology 6960, Utah State University (2005, 2006, 2007)
- Life Science, Natural Science 262, University of New Mexico (Spring & Fall 2002)
- Species Richness and Productivity, Biology 6000, Texas Tech University (2001)
- Biogeography, Biology 494, University of New Mexico (2000)

Students

- Glenda Yenni, Ph.D student (2006-present)
- Sarah Mohlman, Ph.D student (2007-present)
- Zachary Brym, Ph.D. student (2011-present)
- Mikaelle Giffin, Biology Undergraduate (2007-2010)

INVITED TALKS

- July 2000, Arizona State University, Center of Environmental Studies.
- October 2000, Archbold Biological Station, Florida
- April 2001, Rice University, Department of Ecology and Evolution
- August 2001, 8th International Theriological Congress, Symposium on Consumer and Resource Dynamics. Organizers: P. Meserve, J. Yunker
- November 2001, University of Texas at Austin, Section of Integrative Biology

December 2001, Oregon State University, Department of Fisheries and Wildlife
 December 2001, Yale University, Department of Ecology and Evolutionary Biology
 January 2002, University of Pittsburgh, Department of Biological Sciences
 February 2003, Oregon State University, Department of Zoology
 August 2003, Ecological Society of America, Symposium on Body Size, Biophysics, and
 Biological Stoichiometry, Organizers: B. Enquist, J. Sabo
 May 2003, Princeton University, Department of Ecology and Evolutionary Biology
 November 2003, University of Arizona, Department of Ecology and Evolutionary Biology
 March 2004, Miami University, Department of Zoology
 April 2004, Utah State University, Department of Biology
 August 2005, Ecological Society of America, Organized Oral Session on Days to Decades and
 Meters to Miles: exploring community dynamics across scales, taxa, and habitats,
 Organizers: J. Houlahan, C.S. Findlay
 September 2005, Michigan State University, Ecology, Evolutionary Biology, and Behavior
 Program
 August 2006, Ecological Society of America, Organized Oral Session on Niche verses neutral: a
 look at an iconic idea in community ecology, its challenger, and the middle ground, Part II,
 Organizers: N Sanders, A. Ostling, and J. Lake.
 June 2007, American Society of Mammalogists, Symposium on Long-term Studies of Small
 Mammal Communities in Arid and Semi-arid Ecosystems: Synthesis and Progress.
 Organizer: P. Stapp
 August 2007, Ecological Society of America, Organized Oral Session on Stepping back in time:
 The application of historical and fossil records to recovering ecological baselines.
 Organizers: F.A. Smith, R. Terry.
 November 2008, University of British Columbia, Department of Zoology
 February 2010, University of Notre Dame, Department of Biology
 July 2010, Gordon Research Conference "Metabolic Basis of Ecology and Evolution". Chairs: D.
 Atkinson and B.J. Enquist
 August 2010, Ecological Society of America, Organized Oral Session on Long-term Research on
 Ecological Dynamics from Local through Global Scales: Insights from the NSF LTREB
 Program, Organizers: M.J. Vanni, S. Twombly, and S.K.M. Ernest

INVITED WORKSHOPS

"Nature of Scientific Evidence" (1999) National Center for Ecological Analysis and Synthesis
 (NCEAS). Working group leaders: M.L. Taper, S. Lele, N. Lewin-Koh
 "Ecological Implications of Body Size" (2000-2002) NCEAS. Working group leader: F.A. Smith
 "A Knowledge Network for Biocomplexity" (2001) NCEAS. Group leaders: R.Waide, S.
 Andelman, M.R. Willig
 "Hierarchies and Scale" (2001) Santa Fe Institute. Workshop organizers: C.S. Holling, C. Allen,
 G. Peterson
 "Precipitation pulse use in arid and semi-arid ecosystems" (2002) University of Arizona.
 Workshop organizers: J. Ehleringer, O. Sala, S. Schwinning

“Population dynamics in biology: epidemics, bacteria, vegetation, and sundries” (2002)
University of New Mexico. Workshop organizer: Consortium of the Americas for
Interdisciplinary Science

“Spatial and temporal community dynamics” (2004-2006) NCEAS. Working group leaders: J.
Houlahan, S. Findlay, and D. Currie.

“Integrating Macroecological Patterns and Processes” (2005-present) NSF Research
Coordination Network. Organizers: F.A. Smith, S.K. Lyons, and S.K.M. Ernest.

CONFERENCE PRESENTATIONS

Ernest, SKM, JH Brown. American Society of Mammalogists, 1997

Ernest, SKM, JH Brown. Ecological Society of America, 1998

Brown, JH, SKM Ernest. Ecological Society of America, 1998

Ernest, SKM, JH Brown. American Society of Mammalogists, 1999

Brown, JH, SKM Ernest. American Society of Mammalogists, 1999

Ernest, SKM, JH Brown. Ecological Society of America, 1999

Ernest, SKM, JH Brown. American Society of Mammalogists, 2000

Brown, JH, SKM Ernest. American Society of Mammalogists, 2000

Brown, JH, SKM Ernest, JM Parody, JP Haskell. Ecological Society of America, 2000

Brown, JH, SKM Ernest. 8th International Theriological Congress, South Africa. 2001

Ernest, SKM, RD Stevens, MR Willig, JH Brown. British Ecological Society Symposium on
Macroecology, 2002

Ernest, SKM, RD Stevens, MR Willig, JH Brown Ecological Society of America, 2002

Ernest, SKM. International Biogeography Society, 2003

Brown, JH, SKM Ernest. 13th Annual Jornada Symposium, 2003

Ernest, SKM. Gordon Conference on Metabolic Basis to Ecology, 2004

White, EP and SKM Ernest. Gordon Conference on Metabolic Basis to Ecology, 2004

Ernest, SKM. Ecological Society of America, 2004

White, EP, KM Thibault, SKM Ernest. Ecological Society of America, 2004

Thibault, KM, EP White, and SKM Ernest. Ecological Society of America, 2004

Lyons, SK, FA Smith, SKM Ernest, JH Brown. Ecological Society of America, 2004

Goheen, JR, EP White, SKM Ernest, JH Brown, P Meserve, J Merritt. International Biogeography
Society, 2005.

Cottenie, K, SKM Ernest, RD Stevens, S Fuhlendorf. Ecological Society of America, 2005.

Ernest, SKM, JH Brown, JR Goheen, KM Thibault, EP White. Gordon Conference on Metabolic
Basis of Ecology, 2006.

White, EP, BJ Enquist, SKM Ernest, J Green. Ecological Society of America, 2006.

Thibault, KM, SKM Ernest. American Society of Mammalogists, 2007.

White, EP, AH Hurlbert, SKM Ernest. Ecological Society of America, 2007.

Ernest, SKM, EP White, JH Brown. Gordon Research Conference on Metabolic Basis of Ecology,
2008.

Ernest, SKM, EP White, JH Brown. Ecological Society of America, 2008.

Thibault, KM, SKM Ernest. Ecological Society of America, 2008.

- Smith, FA, A Boyer, JH Brown, DP Costa, T Dayan, A Evans, SKM Ernest, L Harding, K Lintulaakso, SK Lyons, RM Sibly, J Saarinen, J Theodor, and MD Uhen. International Biogeography Society 4th Biannual Meeting, Merida, Mexico. 2009.
- Mohlman, SR, SKM Ernest. American Society of Mammalogists, 2009.
- Mohlman, SR, SKM Ernest. Ecological Society of America, 2009.
- Thibault, KM, EP White, AH Hurlbert, SKM Ernest. Ecological Society of America, 2009.
- Smith, FA, AG Boyer, JH Brown, DP Costa, T Dayan, A Evans, SKM Ernest et al. Ecological Society of America, 2009.
- Hurlbert, AH, KM Thibault, EP White, SKM Ernest. Gordon Research Conference on Metabolic Basis of Ecology, 2010
- Hurlbert, AH, KM Thibault, EP White, SKM Ernest. Ecological Society of America, 2010

ACTIVITIES AND SERVICE

- Member, USU Ecology Center Director Search (2010)
- Co-Vice Chair, Gordon Research Conference on the Metabolic Basis of Ecology (2010-present)
- Director of Graduate Studies, Department of Biology, Utah State University (2010- present)
- Vice Chair, Long-term Studies Section, Ecological Society of America (2009-present)
- Faculty Sponsor, Tri- Beta, Biology Honor Society, Utah State University (2009-present)
- Member, Biology Advisory Board, Utah State University (2009-present)
- Faculty Sponsor, Biology Club, Utah State University (2008-present)
- Member, Biology Graduate Programs Committee, Utah State University (2006-present)
- Co-Organizer, (w/ M. Vanni, and S. Twombly), Organized Oral Session, Ecological Society of America: Long-term Research on Ecological Dynamics from Local through Global Scales: Insights from the NSF LTREB Program. (2010)
- Member, Animal Physiological Ecologist Search, Department of Biology, Utah State University (2007-2008)
- National Science Foundation *ad hoc* reviewer (2006-2010, 2001)
- Presenter, Department of Biology Presentation for USU Departmental Teaching Excellence Award finalists (2008)
- Faculty Adviser, Ecology Center Seminar Graduate Selection Committee (2007)
- Reviewer, USU New Faculty Start-up Grant (2007)
- Member, Animal Population Ecologist Search, Department of Wildland Resources, Utah State University (2006-2007)
- Judge, Buell Student Award, Ecological Society of America (2006, 2004)
- Member, Evolutionary Biologist Search, Department of Biology, Utah State University (2005)
- Reviewer for *American Naturalist*, *Ecology*, *Ecology Letters*, *Global Ecology and Biogeography Letters*, *Journal of Mammalogy*, *Proceedings of the Royal Society – Series B*, *Canadian Journal of Zoology*, *Conservation Biology*, *Ecography*, *Ecological Monographs*, *Journal of Animal Ecology*, *Journal of Zoology*, *Oecologia*, *Oikos*, *Proceedings of the National Academy of Science*, *Science*, *Southwestern Naturalist*, *Trends in Ecology and Evolution*, *University of California Publications in Zoology*, *Wildlife Society Bulletin*.