

CURRICULUM VITAE
THOMAS S. RISCH
(he/him)

Vice Provost for Research and Technology Transfer
Executive Director of Arkansas Biosciences Institute
Judd Hill Endowed Chair of Environmental Biology
Professor of Animal Ecology

Arkansas State University

P.O. Box 639
State University, AR 72467-0599
Phone: (870) 972-2025
E-mail: trisch@astate.edu
Fax: (870) 972-2638

EDUCATION

- 1999 **Auburn University, Auburn, Alabama**
Ph.D. Zoology, Graduated Phi Kappa Phi
Dissertation: Significance of Litter Size and Costs of Reproduction
in Small Mammals
- 1993 **Frostburg State University, Frostburg, Maryland**
M.S. Wildlife Management
Thesis: An Experimental Study of the Relative Influences of
Parental Quality and Egg Mass on Chick Survival in the
Herring Gull (*Larus argentatus*)
- 1986 **Stockton State College, Pomona, New Jersey**
B.S. Environmental Studies

PROFESSIONAL APPOINTMENTS

- 2019 - present Vice Provost for Research and Technology Transfer &
Executive Director of Arkansas Biosciences Institute
Arkansas State University
- 2018 - 2019 Interim Associate Vice Chancellor of Research &
Interim Executive Director of Arkansas Biosciences Institute
Arkansas State University
- 2012 - present Judd Hill Endowed Chair of Environmental Biology
Arkansas State University
- 2011 - present Professor of Animal Ecology, Department of Biological Sciences
Arkansas State University

2011 - 2018	Chair, Department of Biological Sciences Arkansas State University
2010	Interim Chair, Department of Biological Sciences Arkansas State University
2010-2013	Director, Graduate Program in Environmental Science Arkansas State University
2009-2010	Interim Director, Graduate Program in Environmental Science Arkansas State University
2007-2009	Graduate Program Coordinator, Department of Biological Sciences Arkansas State University
2006-2011	Associate Professor and Curator of Mammals, Department of Biological Sciences Arkansas State University
2001-2006	Assistant Professor, Department of Biological Sciences Arkansas State University
2000-2001	Post-Doctoral Research/Teaching Associate, Department of Biological Sciences Auburn University
1998-1999	Instructor, Department of Zoology and Wildlife Science Auburn University

SELECT AWARDS, FELLOWSHIPS & APPOINTMENTS

2022-presnt	Elected Chair of Science Advisory Commission, Division of Science And Technology, Arkansas Economic Development Commission
2021-present	Appointed by United States Fish and Wildlife Service to National Red Wolf Recovery Team
2015-2019	Member of Executive Board, Arkansas Chapter of the Wildlife Society (President 2016-2018)
2009 - 2012	Chair, Graduate Council, Arkansas State University (elected)
2008 - 2012	Board of Directors, Southeastern Bat Diversity Network (2010-2012: Chair White Nose Syndrome Committee 2011)

- 2008 College of Science and Mathematics, Arkansas State University
Faculty Award for Scholarship
- 2007 College of Science and Mathematics, Arkansas State University
Faculty Award for Scholarship
- 2001 Beta Beta Beta - Auburn University Chapter
Teacher of the Year for the Biological Sciences
- 1998 American Society of Mammalogists
Alberta R. and Alma Shadle Fellowship in Mammalogy
- 1993-1998 Long-term Graduate Research Fellowship
The University of Georgia's Savannah River Ecology Laboratory
Aiken, South Carolina

PUBLICATIONS in preparation

- Custer, H.N., P.L. Roby, T.E. Inebnit, MC. Anderson, D B. Sasse, P.R. Moore, and T.S. Risch. *Submitted*. Spring Migration Behavior of Female Indiana Bats Overwintering in Arkansas, USA. *Wildlife Society Bulletin*.
- Kearny, V.M., R.W. Perry, T.S. Risch, and V. Rolland. *In review*. *Myotis leibii* summer, diurnal roost microhabitat use in west-central Arkansas. *Canadian Journal of Zoology*

PUBLICATIONS peer reviewed

- Neupane, D., S. Baral, T.S. Risch, and A. Campos-Arceiz. 2022. Broad scale functional connectivity for Asian elephants in the India-Nepal transboundary region. *Journal of Environmental Management* 321: [Link](#)
- Scherman, S.J., T.S. Risch, and V. Rolland. 2022. Fall and winter activity of two bat species in response to winter flooding and decreasing temperature. *Global Ecology and Conservation* 38. [Link](#)
- Doty, A.C., M.D. Connior, and T.S. Risch. *Accepted pending minor revisions*. Drivers of southern flying squirrel (*Glaucomys volans*) group size in South Carolina, USA. *American Midland Naturalist* 188: 20-32: [Link](#)
- Kearny, V.M., R.W. Perry, T.S. Risch, and V. Rolland. 2022. Distribution and roost site selection of eastern small-footed bats (*Myotis leibii*) in mountains of west-central Arkansas. *Southeastern Naturalist* 21:74-92: [Link](#)

- Risch, T.S. and S.J. Scherman. 2022. Record of the northern yellow bat, *Lasiurus intermedius* (Chiroptera, Vespertilionidae), from Ometepe Island, Nicaragua, and bat diversity implications for this region. *Ecotropica* 24: [Link](#)
- Doty, A.C., A.D. Wilson, L.B. Forse, and T.S. Risch. 2022. Biomarker metabolites discriminate between physiological states of field, cave and white-nose syndrome diseased bats. *Sensors*. 22, 1031: [Link](#)
- Neupane, D., Y. Kwon T.S. Risch, and R.L Johnson. 2020. Changes in habitat suitability over a two-decade period before and after Asian elephant recolonization. *Global Ecology and Conservation*. 22: [Link](#)
- Doty, A.C., A.D. Wilson, L.B. Forse, and T.S. Risch. 2020. Assessment of the portable C-320 electronic nose for discrimination of nine insectivorous bat species: implications for monitoring white-nose syndrome. *Biosensors*. 10, 12: [Link](#)
- Fuller, N.W, L.P. McGuire, E.L. Pannkuk, T. Blute, C.G. Haase, H.W. Mayberry, T.S. Risch and C.K.R. Willis. 2020. Disease recovery in bats affected by white-nose syndrome. *Journal of Experimental Biology*. 223: [Link](#)
- Sasse, D.B., S.J. Scherman, R.W. Perry, and T.S. Risch. 2019. Morphological discrimination of gray bats and southeastern bats. *Southeastern Naturalist* 18, 630-640: [Link](#)
- Kwon, Y., A.C. Doty, M.L. Huffman, V. Rolland, D.R. Istvanko, and T.S. Risch. 2019. Management implications of sex-specific habitat use by *Nycticeius humeralis* in north-central Arkansas. *Journal of Mammalogy* 4, 1263-1273: [Link](#)
- Neupane, D., Y. Kwon T.S. Risch, A. Williams, and R.L Johnson. 2019. Habitat use by Asian elephants: context matters. *Global Ecology and Conservation*.17: [Link](#)
- Schratz, S., V. Rolland, J. Phillips, R. Crossett, D. Richardson, and T. Risch. 2017. Bat occupancy estimates and species richness at Cache River National Wildlife Refuge. *Journal of the Arkansas Academy of Science*: Vol. 71, 20: [Link](#)
- Neupane, D., R.L Johnson, and T.S. Risch. 2017. How do land-use practices affect human-elephant conflict in Nepal? *Wildlife Biology* 2017: [Link](#)
- Moore, P.R. T.S. Risch, D. K. Morris D.K., and V. Rolland. 2017. Aerial telemetry to assess habitat use of female gray bats. *Journal of Wildlife Management*. 81, 1242–1253: [Link](#)
- Neupane, D., S. Kunwar, A.K. Bohara, R.L. Johnson, and T.S. Risch. 2017. Willingness to pay for mitigating human-elephant conflict by residents of Nepal. *Journal for Nature Conservation*. 36, 65-76: [Link](#)

- Istvanko, D.R., T.S. Risch, and V. Rolland. 2016. Sex-specific foraging habits and roost characteristics of *Nycticeius humeralis* in north-central Arkansas. *Journal of Mammalogy* 97, 1336-1344: [Link](#)
- Perry, R.W., S.C. Brandebura, and T.S. Risch. 2016. Selection of tree roosts by male Indiana bats during the autumn swarm in the Ozark Highlands. *Wildlife Society Bulletin* 40, 78-87: [Link](#)
- Pannkuk, E.L., L.P. McGuire, L. Warnecke, J.M. Turner, C.K.R. Willis, and T.S. Risch. 2015. Glycerophospholipid profiles of bats with white-nose syndrome. *Physiological and Biochemical Zoology* 88, 425-432: [Link](#)
- Pannkuk, E.L., T.S. Risch, and B.J. Savary. 2015. Isolation and identification of an extracellular subtilisin-like serine protease secreted by the bat pathogen *Pseudogymnoascus destructans*. *PLoS ONE*: [Link](#)
- Jordan, P.N., P.R. Moore, E.L. Pannkuk, and T.S. Risch. 2014. Captures of the Tome's sword-nosed bat (*Lonchorhina aurita*) (Chiroptera, Phyllostomidae), from Ometepe Island, Nicaragua, and range implications for this species. *Mastozoología Neotropical* 21: 339-342: [Link](#)
- Pannkuk, E.L., N.W. Fuller, P.R. Moore, D.F. Gilmore, B.J. Savary, and T.S. Risch. 2014. Fatty acid methyl ester profiles of bat wing surface lipids. *Lipids* 49, 1143-1150: [Link](#)
- Pannkuk, E.L., H.B. Blair, A.E. Fischer, C.L. Gerdes, D.F. Gilmore, B.J. Savary, and T.S. Risch. 2014. Triacylglyceride composition and fatty acyl saturation profile of psychrophilic and psychrotolerant fungal species grown at different temperatures. *Fungal Biology* 118, 792-799: [Link](#)
- Sasse, D.B., M.L. Caviness, M.J. Harvey, J.J. Jackson, T. Klotz, P.R. Moore, R.W. Perry, R.K. Redman, T.S. Risch, D.A. Saugey, and J.D. Wilhide. 2014. New records and notes on the ecology of the northern long-eared bat (*Myotis septentrionalis*) in Arkansas. *Journal of the Arkansas Academy of Science* 68, 170-173: [Link](#)
- Bobowski, M. M., V. Rolland, and T.S. Risch. 2014. Abundance and distribution of overwintering Red-tailed Hawks and American Kestrels in an agricultural landscape in northeastern Arkansas. *Journal of Raptor Research* 48, 273-279: [Link](#)
- Pannkuk, E.L., L.P. McGuire, D.F. Gilmore, B.J. Savary, and T.S. Risch. 2014. Glycerophospholipid analysis of eastern red bat (*Lasiurus borealis*) hair by electrospray ionization tandem mass spectrometry. *Journal of Chemical Ecology* 40, 227-235: [Link](#)

- Robinson, T. J., L. M. Siefferman, A.B. Bentz, and T.S. Risch. 2014. The separate effects of egg size and parental quality on the development of ornamental plumage colouration. *Ibis* 156, 15–42: [Link](#)
- Pannkuk, E.L., D.F. Gilmore, N. W. Fuller, B.J. Savary, and T.S. Risch. 2013. Sebaceous lipid profiling of bat integumentary tissues: Quantitative analysis of free fatty acyls, monoacylglycerides, squalene, and sterols. *Chemistry & Biodiversity* 10, 2122-3: [Link](#)
- Pannkuk, E.L., T.S. Risch, and B.J. Savary. 2013. Profiling the triacylglyceride contents in bat integumentary lipids by preparative thin layer chromatography and MALDI-TOF mass spectrometry. *Journal of Visualized Experiments* 79: [Link](#)
- Sasse, D.B., T.S. Risch, D.A. Saugey, M.J. Harvey, J.D. Wilhide, R.K. Redman, J.J. Jackson, T. Klotz, and P.R. Moore. 2013. New records of the eastern small-footed bat (*Myotis leibii*) in Arkansas. *Journal of the Arkansas Academy of Science* 67, 214-216: [Link](#)
- Worm, A.J., M.M. Bobowski, and T.S. Risch. 2013. Perch-type characteristics of overwintering Red-tailed Hawks (*Buteo jamaicensis*) and American Kestrels (*Falco sparverius*). *Journal of the Arkansas Academy of Science* 67, 159-162: [Link](#)
- Pannkuk, E.L., D.F. Gilmore, B.J. Savary, and T. S. Risch. 2012. Triacylglyceride (TAG) profiles of integumentary lipids isolated from three bat species determined by matrix-assisted laser desorption–ionization time-of-flight mass spectrometry (MALDI–TOF MS). *Canadian Journal of Zoology*. 90, 1117–1127: [Link](#)
- Brandebura, S.C., E.L. Pannkuk, and T.S. Risch. 2011. Indiana bat (*Myotis sodalis*) maternity colonies in Arkansas. *Southeastern Naturalist* 10, 529-532: [Link](#)
- Medlin, R.E. Jr, M.B. Connior, K.F. Gaines and T.S. Risch. 2010. Responses of bats to forest fragmentation in the Mississippi River Alluvial Valley, Arkansas, USA. *Diversity* 2, 1146-1157: [Link](#)
- Connior M.B., A.A. Kershen, R.E. Medlin Jr, D.A. Elrod, D.B. Sasse, and T.S. Risch. 2010. Distribution and habitat attributes of an endemic subspecies of pocket gopher. *American Midland Naturalist* 164, 217–229: [Link](#)
- Robinson, T.J., L.M. Siefferman, and T.S. Risch. 2010. Seasonal tradeoffs in reproductive investment in a multi-brooded passerine. *Condor* 112, 390-398: [Link](#)
- Connior, M.B., and T.S. Risch. 2010. Home range and survival of the Ozark pocket gopher in Arkansas. *American Midland Naturalist* 64, 80-90: [Link](#)

- Klotz, T.L., and T.S. Risch. 2009. New county distribution record for the Seminole bat in Arkansas. *Journal of the Arkansas Academy of Science* 63, 190-191: [Link](#)
- Connior, M.B., and T.S. Risch. 2009. Benefits of subcutaneous implantation of radiotransmitters in pocket gophers. *Southwestern Naturalist* 54, 214-216: [Link](#)
- Connior, M.B., and T.S. Risch. 2009. Live trap for pocket gophers. *Southwestern Naturalist* 5, 100-103: [Link](#)
- Connior, M.B., I. Guenther, T.S. Risch and S.E. Trauth. 2008. Amphibian, reptile, and small mammal associates of Ozark pocket gopher habitat in Izard County, Arkansas. *Journal of the Arkansas Academy of Science* 62, 45-51: [Link](#)
- Medlin, R.E. Jr, and T.S. Risch. 2008. Habitat associations of bottomland bats, with focus on the Rafinesque big-eared bat and the southeastern *myotis*. *American Midland Naturalist* 160, 400-412: [Link](#)
- Fokidis, H.B. and T.S. Risch. 2008. Does gliding when pregnant select for larger females? *Journal of Zoology* 275, 237-244: [Link](#)
- Fokidis, H.B. and T.S. Risch. 2008. The burden of motherhood: gliding locomotion in mammals influences maternal reproductive. *Journal of Mammalogy* 89, 617-625: [Link](#)
- Risch, T.S., G.R. Michener, and F.S. Dobson. 2007. Variation in litter size: A test of hypotheses in Richardson's ground squirrels. *Ecology* 88, 306-314: [Link](#)
- Fokidis, H.B., T.S. Risch, and T.C. Glenn. 2007. Reproductive and resource benefits of female body size in a mammal exhibiting female-biased sexual size dimorphism. *Animal Behaviour* 73, 479-488: [Link](#)
- Medlin, R.E. Jr, S.C. Brandebura, H.B. Fokidis, and T. S. Risch. 2006. Distribution of Arkansas's bottomland bats. *Journal of the Arkansas Academy of Science* 60, 189-191: [Link](#)
- Brandebura, S.C., R.E. Medlin Jr, and T.S. Risch. 2006. New evidence for a maternity colony of the Indiana bat in the delta of Arkansas. *Journal of the Arkansas Academy of Science* 60, 169-170: [Link](#)
- Baxter DeViney, S.A., R.J. Baxter, and T.S. Risch. 2006. An unusual prey item in an Eastern Bluebird nest. *Journal of the Arkansas Academy of Science* 60, 168: [Link](#)
- Medlin, E.C. and T.S. Risch. 2006. An experimental test of snakeskin use in artificial bird nests. *Condor* 108, 963-965: [Link](#)

- Fokidis H.B., C. Robertson, and T.S. Risch. 2006. Keeping tabs: are redundant marking systems needed for rodents? *Wildlife Society Bulletin* 34, 764–771: [Link](#)
- Risch, T.S. and T.J. Robinson. 2006. First observation of cavity nesting by a female Blue Grosbeak. *Wilson Journal of Ornithology* 118, 107-108: [Link](#)
- Fokidis H.B., S.C. Brandebura and T.S. Risch. 2005. Distributions of bats in bottomland hardwood forests of the Arkansas Delta region. *Journal of the Arkansas Academy of Science* 59, 74-79: [Link](#)
- Fokidis, H.B., and T.S. Risch. 2005. The use of nest boxes to sample arboreal vertebrates. *Southeastern Naturalist* 4, 447–458: [Link](#)
- Broussard, D.R, G.R. Michener, T.S. Risch, and F. S. Dobson. 2005. Somatic senescence: evidence from female Richardson’s ground squirrels. *Oikos* 108, 591-601: [Link](#)
- Robinson, T.J., L.M. Siefferman, and T.S. Risch. 2004. A quick, inexpensive trap for use with nest boxes. *North American Bird Bander* 29, 115-116: [Link](#)
- Risch, T.S., and S.C. Loeb. 2004. Monitoring interactions between Red-cockaded Woodpeckers and southern flying squirrels. Pages 504–505 in R. Costa and S. J. Daniels, editors. Blaine, Washington, USA: [Link](#)
- Fokidis, H.B., N.A. Schable, C. Hagen, T.C. Glenn, and T.S. Risch. 2004. Characterization of microsatellite DNA loci for the southern flying squirrel (*Glaucomys volans*). *Molecular Ecology Notes* 3, 616-618: [Link](#)
- Broussard, D.R., T.S. Risch, F.S. Dobson, and J.O. Murie. 2003. Senescence and age-related reproduction of female Columbian ground squirrels. *Journal of Animal Ecology* 72, 212-219: [Link](#)
- Brady, M.J., T.S. Risch, and F.S. Dobson. 2000. Availability of nest sites does not limit population size of southern flying squirrels. *Canadian Journal of Zoology* 78, 1144-1149: [Link](#)
- Risch, T.S., and F.C. Rohwer. 2000. Effects of parental quality and egg size on growth and survival of Herring Gull chicks. *Canadian Journal of Zoology* 78, 967-973: [Link](#)
- Dobson, F.S., T.S. Risch, and J.O. Murie. 1999. Increasing returns in the life history of Columbian ground squirrels. *Journal of Animal Ecology* 68, 73-86: [Link](#)

- Brisbin I.L., Jr. and T.S. Risch. 1997. Primitive dogs, their ecology and behavior: unique opportunities to study the early development of the human-canine bond. *Journal of the American Veterinary Medical Association* 210, 112-1126: [Link](#)
- Risch, T.S., and M.J. Brady. 1996. Trap height and capture success of arboreal mammals: Evidence from southern flying squirrels (*Glaucomys volans*). *American Midland Naturalist* 136, 346-351: [Link](#)
- Risch, T.S., F.S. Dobson, and J.O. Murie. 1995. Is mean litter size the most productive? A test with Columbian ground squirrels. *Ecology* 76, 1643-1654: [Link](#)

PUBLICATIONS editor reviewed

- Neupane, D., R.L. Johnson, and T.S. Risch. 2014. Temporal and spatial patterns of human-elephant conflict in Nepal. Pp. 856-888 in 2013 International Elephant & Rhino Conservation & Research Symposium Proceedings. August 26 -30, 2013. Pittsburgh Zoo & PPG Aquarium. 1511p: [Link](#)
- Connior, M.B., I. Guenther, T.S. Risch. 2009. *Graptemys geographica* geographic distribution. *Herpetological Review* 40, 110: [Link](#)
- Connior, M.B., I. Guenther, T.S. Risch. 2009. *Lampropeltis calligaster calligaster* diet. *Herpetological Review* 40, 98: [Link](#)
- Connior, M.B., I. Guenther, and T.S. Risch. 2007. *Scaphiopus hurterii* geographic distribution. *Herpetological Review* 38, 478: [Link](#)
- Connior, M.B., I. Guenther, and T.S. Risch. 2007. *Terrapene carolina triunguis* geographic distribution. *Herpetological Review* 38, 480: [Link](#)
- Connior, M.B., I. Guenther, and T.S. Risch. 2007. *Coluber constrictor flaviventris* geographic distribution. *Herpetological Review* 38, 485: [Link](#)
- Connior, M.B., I. Guenther, and T.S. Risch. 2007. *Elaphe guttata emoryi* geographic distribution. *Herpetological Review* 38, 486: [Link](#)

INSTITUTIONAL GRANTS FOR WHICH I SERVE AS PI

1. Risch, T.S. CASE: Center for Advanced Surface Engineering. Arkansas Economic Development Commission, NSF EPSCoR. 2018-2021. \$668,789.
2. Risch, T.S. Preserving Groundwater Quality. US Department of Agriculture. 2018-2021. \$1,233,500.

3. Risch, T.S. Computational Methods for Integrative Agriculture. US Department of Agriculture. 2018-2021. \$ 282,591.
4. Risch, T.S. DART: Data Analytics that are Robust and Trusted. Arkansas Economic Development Commission, NSF EPSCoR. 2021-2023. \$356,251.
5. Risch, T.S. Agricultural Goods and Services. US Department of Agriculture. 2018-2023. \$453,215.
6. Risch, T.S. and J. Hankins. USFWS American Red Wolf Recovery Challenge. 2021-2022. \$50,000.

GRANTS (bolded names indicate mentees - students, postdocs)

1. Rolland V., T.S. Risch and R.W. Perry. Distribution and Day Roost Preferences of Eastern Small-footed Bats (*Myotis leibii*) in the Ouachita Mountains. Arkansas Game and Fish Commission 2018-2021. \$66,323.
2. Risch, T.S. Distribution and Status of Indiana Bats. US Forest Service, Ozark-Saint Francis National Forest. 2018-2022. \$213,700.
3. **Doty, A.C.**, T.S. Risch, and A.D. Wilson. Understanding the Link between Volatile Organic Compounds and Torpor Patterns: An Approach for the Early Detection of White-Nose Syndrome. FightWNS. 2017-2018. \$5,000.
4. Risch T.S. Habitat selection of northern long-eared bats between hibernation emergence and summer roost network establishment in northern Arkansas. Arkansas Game and Fish Commission. 2017. \$40,214.
5. Risch T.S. and P. Moore. Aerial Tracking of Female Indiana Bats during the Spring Migration. US Fish and Wildlife Service. 2017. \$25,124.
6. Risch, T.S. Investigations of New Technologies for the Early-detection and Control of White-nose Syndrome in Bat Hibernacula. Key Collaborator: Dr. A. Dan Wilson, USDA-Forest Service, Southern Hardwoods Laboratory (Stoneville, MS). US Forest Service. 2016-2019. \$147,847.
7. Risch, T.S. White-nose response at Buffalo National River, National Park Service. 2014-2017. \$36,000.
8. Risch, T.S. Distribution and Status of Indiana Bats. US Forest Service, Ozark-Saint Francis National Forest. 2014-2018. \$463,574.

9. Risch, T.S., V. Rolland, and T. Klotz. T&E Species Inventory: Status and Habitat of Indiana Bats. U.S. Fish and Wildlife Service. 2014 - 2016. \$65,210.
10. Risch, T.S., and V. Rolland. Home range and habitat use of foraging gray bats in northern Arkansas. Arkansas Game and Fish Commission. 2013-2016. \$122,802.
11. Risch, T.S., **E.L. Pannkuk**, B.J. Savary, and D.F. Gilmore. White-Nose Syndrome: Pathogenicity of *Geomyces destructans* and the Role of Secreted Extracellular Enzymes in Host/Pathogen Ecology. Arkansas Game and Fish Commission. 2013-2015. \$70,936.
12. Risch T.S., R.J. Johnson, and **D. Neupane**. Genetic study of Asian elephant (*Elephas maximus*) herds in eastern Himalayan region. United States Fish and Wildlife Service, Asian Elephant Conservation Fund (ASE-0578). 2012-2013. \$49,997.
13. Risch, T.S. Biochemical and Biomechanical Effects of *Geomyces* Protease Activity on Chiropteran Integument. SURF Undergraduate Research Fellowship (Student, Cheyenne Gerdes). 2012. \$4,000.
14. Risch, T.S. Environmental Protection Agency Greater Research Opportunities Fellowship. 2010 (Student, Amy Whistle Fischer). \$42,000.
15. Risch T.S. ASU Single Turbine Study Plan. United States Fish and Wildlife Service. 2011-2013. \$40,000.
16. Risch, T.S., and **E.L Pannkuk**. Lipid Analysis of Arkansas Bat Integument, Fungal Fatty Acid Metabolism, and Control of White-nose Syndrome in Arkansas. Arkansas Game and Fish Commission. 010-2012. \$42,790.
17. Risch, T.S., and R.S. Grippo. Planning Grant for the George Harp Environmental Field Station. National Science Foundation (NSF#1034724). 2010-2013. \$23,151.
18. Bayless. M., T.S. Risch, D.A. Saugey, D.B. Sasse, and N. Hollenbach. Conserving Rafinesque's Big-eared Bats and Southeastern Myotis Roosting Habitat in Arkansas. 2010-2012. Arkansas Game and Fish Commission. \$72,332.
19. Pratte, J.M., J.L. Bouldin, and T.S. Risch. NSF Research Experiences for Undergraduates: Research Internships in Science of the Environment. (NSF#DBI-0552608). 2009-2011. \$388,945.

20. Risch, T.S., and **E.L. Pannkuk**. Fungal Digestion of Chiropteran Integument. National Speleological Society. 2009-2010. \$5,800.
21. Risch, T.S. Mist-Netting Surveys for Endangered Bats. US Forest Service, Ozark-Saint Francis National Forest. 2008-2013. \$51,670.
22. Bouldin, J.L., A.A. Grippo, J.T. Kennon, C.A. Miller, and T.S. Risch. NSF Division of Graduate Education. GK-12 Environmental Sciences and Molecular Biosciences in the Natural State. (NSF#0809317). 2008-2013. \$2,242,587.
23. Risch, T.S. A Mist-survey of Bats in the Donaldson Point Conservation Area with Emphasis on Potential Roost Trees. Missouri Department of Conservation. 2008. \$6,000.
24. Risch, T.S. Are Brighter Bluebirds More Defensive? SURF Undergraduate Research Fellowship (Student, Kelli Freeman-Nelson). 2008. \$2,650.
25. Risch, T.S. Mist-Netting Surveys for Endangered Bats. US Forest Service, Ozark-Saint Francis National Forest. 2007. \$41,500.
26. Risch, T.S. ASU Bluebird Project – Focusing on Education, Conservation and Ecological Research. Arkansas State University. Scholarly Activity Initiative Fund. 2007-2008. \$3,000.
27. Risch, T.S. Watchable Wildlife, AGFC/ASU Bluebird Project. Arkansas Game and Fish Commission. 2007-2008. \$5,000.
28. Risch, T.S. Arkansas State University Bluebird Project. Kays Foundation. 2007-2008. \$9,022.
29. Risch, T.S. Home Range, Dispersal, and Survival of the Ozark Pocket Gopher. Arkansas Game and Fish Commission. 2006-2009. \$59,794.
30. Risch, T.S. Does Brightness in Male American Kestrels Affect the Quality of Food Items Brought to Females and Nestlings? Surf Undergraduate Research Fellowship. 2005. \$2,400.
31. Risch, T.S. Roosting Ecology of Male Indiana Bats. Arkansas Game and Fish Commission. 2003-2006. \$12,000.
32. Risch, T.S. Ecology of Male Indiana Bats during the Swarming Period. US Forest Service, Ozark-Saint Francis National Forest. 2003-2007. \$36,500.

33. Risch, T.S. Experimental Study of the Timing of Reproduction in Eastern Bluebirds. Arkansas State University, Scholarly Activity Initiative Fund. 2004. \$7,870.
34. Risch, T.S. Response of Wildlife Habitat to Prescribed Burning. US Forest Service, Ouachita National Forest. 2003-2007. \$24,190.
35. Risch T.S. Do Snake Skins Deter Predation of Great Crested Flycatcher Nests? An Artificial Nest Experiment. Surf-Silo Undergraduate Research Fellowship. 2004. \$2,900.
36. Risch T.S. Distribution and Abundance of the Rafinesque Big Eared Bat and Southeastern Bat in the Mississippi Delta and Gulf Coastal Plain of Arkansas. Arkansas Game and Fish Commission. 2004-2007. \$50,000.
37. Risch, T.S., M. Srivatsan, and J. L. Farris. Assessing the benefits of Genetically Modified Crops: Using Small Mammal Models. Arkansas Biological Institute. 2004. \$75,000.
38. Bednarz, J. C., T.S. Risch, and J. M. Loutsch. Vector Ecology of the West Nile Virus. Arkansas Biological Institute. 2004. \$230,000.
39. Risch, T.S. Assessing Roost Habitat Conditions for Three Endangered Bat Species Buffalo National River, Arkansas. National Park Service. 2004-2010. \$23,000.
40. Bednarz, J.C., T.S. Risch, and J. M. Loutsch. Vector Ecology of the West Nile Virus. Arkansas Biological Institute. 2003. \$120,000.
41. Risch, T.S. and J.L. Farris. Assessing the benefits of Genetically Modified Crops: Using Small Mammal Models. Arkansas Biological Institute. 2003. \$104,819.
42. Risch, T.S. An Experimental Study of the Nesting Ecology & Life History of Eastern Bluebirds. Arkansas State University, Scholarly Activity Initiative Fund. 2003. \$8,384.
43. Risch, T.S., S.C. Loeb, and R. C Chesser. Impacts of Southern Flying Squirrels on Nesting Behavior of Red-Cockaded Woodpeckers. U.S. Department of Energy: National Environmental Research Park Directive. 1997-1998. \$16,620.
44. Risch, T.S. (Advisor F.S. Dobson). A Test of Optimization Hypotheses in *Glaucomys volans*. National Science Foundation: Dissertation Research Grant. 1996-1997. \$10,000.

45. Risch, T.S. Reproductive and Behavioral Ecology of Southern Flying Squirrel. Savannah River Ecology Laboratory, Research Fellowships. 1992-1998. \$109,500.
46. Risch, T.S. American Society of Mammalogists, Grant-in-Aid of Research. Experimental Test of Optimization Hypotheses. 1996. \$855.
47. Risch, T.S. Significance of Litter Size in Small Mammals. American Museum of Natural History, Theodore Roosevelt Memorial Fund. 1996. \$994.
48. Risch, T.S. Loop Readers as a Technique for Automated Data Collections in Studies of Animal Populations. U.S. Department of Energy: Set-Aside Research Program. 1996. \$2,200.
49. Risch, T.S. Significance in Litter Size and Cost of Reproduction in Small Mammals. Sigma Xi Grants-in-aid of Research. 1995. \$400.
50. Risch, T.S. Significance in Litter Size and Cost of Reproduction in Small Mammals. American Society of Mammalogists, Grant-in-Aid of Research. 1994. \$950.
51. Risch, T.S. Breeding Ecology of Colonial Waterbirds. Maryland Ornithological Society Research Grant. 1990. \$475.

TEACHING EXPERIENCE

- | | |
|------------|--|
| 2001- 2022 | Arkansas State University: Wildlife Investigative Techniques, Scientific Methods and Research Design, Evolution, Zoology, Comparative Physiology, Mammalogy, Neotropical Bat Ecology, Conservation of Neotropical Mammals, Human Dimensions of Wildlife Conservation, Animal Physiology, Comparative Behavior, Field Dendrology, Biological Sciences, Advanced Evolution, and Marine Mammals |
| 1998-2001 | Instructor in Zoology: Auburn University, Auburn, Alabama
Ecology, Evolution & Systematics, Animal Biology, and Physiology |
| 1991-1993 | Graduate Teaching Assistant: Physiology
Auburn University, Auburn, Alabama |
| 1988-1991 | Lecturer in Biology: Anatomy and Physiology, and General Biology
Frostburg State University, Frostburg, Maryland |
| 1989 | Lecturer in Biology: Anatomy and Physiology
Allegheny Community College, Cumberland, Maryland |

1984-1986

Undergraduate Teaching Assistant: Organisms and Evolution, and Animal Physiology, Stockton State College, Pomona, NJ