

Office

Department of Biology
Western Kentucky University
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Email: Michael.Stokes@wku.edu

Education

B.Sc. in Biology, Chemistry minor, from The University of Missouri at Kansas City, 1986

M.A. in Biology, specialty of Systematics and Ecology, from the University of Kansas, 1990
Thesis: "Nest Site Selection in Sympatric Populations of Prairie Voles and Cotton Rats"

Ph.D. in Biology, specialty of Systematics and Ecology, University of Kansas, 1994
Dissertation: "Effects of Weather and Climate on Populations of Small Mammals: Implications for Climatic Change"

Professional positions

- 1984 Assistant, Physics Department, Longview Community College, Lee's Summit, Missouri
- 1987-88 Research Assistant, Department of Systematics and Ecology, University of Kansas
- 1988- 1994 Curatorial Assistant, Division of Mammals, Museum of Natural History, University of Kansas
- 1989-1994 Freelance personal computer systems consulting
- 1994- 1995 Postdoctoral associate, Division of Mammals, Museum of Natural History, University of Kansas, data management software development and curation
- 1994-1995 Computer consulting, University of Kansas Medical Center, Information Technology, University of Kansas
- 1995-2001 Assistant Professor, Wildlife Ecology, Department of Biology, Western Kentucky University. Responsible for teaching, directing student research and conducting research in ecology of terrestrial vertebrates.

- 1998-2002 Director, Center for Biodiversity Studies, Applied Research and Technology Program of Distinction, Western Kentucky University
- 2002-2008 Associate Professor, Department of Biology, Western Kentucky University
- 2003-2006 Chair, Graduate Program, Department of Biology, Western Kentucky University
- 2008-current Professor, Department of Biology, Western Kentucky University
- 2014- 2018 Professor, School of Natural Resources and the Environment, University of Arizona, Associate (adjunct) Status
- spring 2023 Acting Chair, Department of Biology, Western Kentucky University
- 2023-current co-Director, WKU Green River Preserve

Honorary positions/awards

- 2016 WKU University Faculty Mentoring Award
- 2015 Faculty award for public service, Ogden College of Science and Engineering, WKU.
- 2012 Honorary Guardsman, Commonwealth of Kentucky Department of Military Affairs, Kentucky National Guard

Teaching Experience

- 1987, 1989-1993 Graduate Teaching Assistant, Principles of Biology Laboratory, Division of Biological Sciences, University of Kansas
- 1988-1994 Occasional instructor, Division of Public Education, Museum of Natural History, University of Kansas
- 1991 Instructor, Biostatistics, Department of Biology, University of Missouri at Kansas City
- 1993-1994 Field/Applied Biology, Division of Biological Sciences, University of Kansas
Responsible for developing and organizing a field biology experience as an adjunct to the undergraduate biology core course (1000 students/semester).
Duties included teaching components such as Field Ecology, Natural History, and Computational Biology as well as the establishment of a permanent experimental and interpretive natural area for the course.
- 1993 Tutor, Biostatistics
- 1994-1995 Software Training Specialist, KU Medical Center, Kansas City, and Information

Technology Services, University of Kansas. Job duties included developing and teaching seminars on computer usage and providing computational consulting to personnel at the KU Medical Center and the KU main campus.

1995-current Assistant Professor, Associate Professor, Professor, Department of Biology, Western Kentucky University. I have taught Zoology, Human Anatomy and Physiology, Mammalogy, Ecology, Ecological Methods, Advanced Ecology, Population Ecology, Wildlife Ecology and Management, African Wildlife Management, Socioecological Conservation, Human-Wildlife Conflict, International Wildlife Management and Policy, Biostatistics and seminar courses.

Professional Societies

Kentucky Academy of Science
The Wildlife Society

Field Experience

1986-current Midwestern and Southeastern United States; live-trapping and collecting small mammals, birds, and fish for ecological and systematic applications.

1989 Alaska; small mammal sampling.

1989-90 Oaxaca, Mexico; field survey of small mammals, birds, reptiles, and arthropods in collaboration with investigators from the Instituto de Biología and Facultad de Ciencias of the Universidad Nacional Autónoma de México

1995-present Field studies in Kentucky, including a variety of rodents and bats

2002-present Teaching course in wildlife handling and immobilization, South Africa

2002 Wildlife/conservation GIS, Smithsonian Conservation Research Center, Virginia

2004-present Research in SE Kenya, South Africa

Peer-reviewed publications while at WKU (*=WKU student or former student coauthor)

Rooney, B., ...Bell, Emma*,...**Stokes, Michael**...SNAPSHOT USA 2019–2023: The first five years of data from a coordinated camera trap survey of the United States. Submitted to *Global Ecology and Biogeography* July, 2024.

Shamon, Hila, Roi Maor, Michael V. Cove, Roland Kays, Jessie Adley, Peter D. Alexander, David N. Allen...**Michael K. Stokes**..., et al. 2024. "SNAPSHOT USA 2021: A Third Coordinated National Camera Trap Survey of the United States." *Ecology* 105(6): e4318. <https://doi.org/10.1002/ecy.4318>.

Wade, S.*, C. Spencer and **M. Stokes**. 2017. An SEM image reference guide to hairs of twelve species of large African mammals. *Mammalia*. 82(1):12-2 | DOI: <https://doi.org/10.1515/mammalia-2016-0053>.

DeCaro, D.* and **M. Stokes**. 2013. Public Participation and Institutional Fit: A Social-Psychological Perspective. *Ecology and Society* 18(4):article 40

Kimwele, Karisa, **Stokes**, Junga, Hanotte, Skilton and McElroy. 2012. DNA species surveillance: Monitoring bushmeat poaching and trading in Kenya using partial cytochrome b gene. *African Journal of Biotechnology* 11(78):14276-14286.

Stokes, M. 2012 Population Ecology at Work: Managing Game Populations. *Nature Education Knowledge* 3(5):5

Stokes, M. 2010. An Introduction to Managing Wild Game Populations. *Nature Education Knowledge* 1(10):7.

*DeCaro, D. and **M. Stokes**. 2008. Social Psychological Principles of Community-Based Conservation and Conservancy Motivation: Attaining Goals within an Autonomy-Supportive Environment. *Conservation Biology* 22(6):1443-1451.

*Murphy, M., **Stokes, M. K.**, *Cummins, T., and *B. Bacon. 2004. Effects of small herbivores on a grassland undergoing restoration. Pp 100-110 in S. Foré, ed. *Proceedings of the North American Prairie Conference*. TSU Press.

Stokes, M. K., N. A. Slade, and S. M. Blair. 2001. Influences of weather and moonlight on activity patterns of small mammals: a biogeographical perspective. *Canadian Journal of Zoology* 79:966-972.

Previous peer-reviewed publications

Stokes, M. K. 1995. Refuge site selection in sympatric *Microtus ochrogaster* and *Sigmodon hispidus*. *Journal of Mammalogy* 76(1).

Stokes, M. K. 1995. Review of Handbook of Mammals of the South-Central States. *Prairie Naturalist* 27(4):247-248.

Stokes, M. K., and N. A. Slade. 1994. Drought-induced Cracks in the Soil as Refuges for Small Mammals: an Unforeseen Consequence of Climate Change. *Conservation Biology* 8:577-580.

Other publications

Stokes, M. K. 2007 Biodiversity and Biotech: WKU and University of Nairobi cooperate to expand service learning and research opportunities in Kenya. *The Leading Edge (WKU ARTP Newsletter)* 15(1): 2-3.

- Stokes, M. K.** 2004. The Center for Biodiversity Studies collaborates with the University of Nairobi. *The Leading Edge* (WKU ARTP Newsletter) 6(4):2-4.
- Stokes, M. K.** 2004. WKU's Biology Department Developing a Cooperative Agreement with University of Kenya. *The Leading Edge* (WKU ARTP Newsletter) 4(1):2-3.
- Stokes, M. K.** 1992. OS/2 2.0, IBM's new OS. *Bulletin of the Ecological Society of America*. 73(4).
- Stokes, M. K.** 1999. Kentucky's Center for Biodiversity Studies at Western Kentucky University. *The Lady-Slipper*, 14:1, 7-8.
- Stokes, M. K.** 1998. Grassland: The History, Biology, Politics, and Promise of the American Prairie. *Journal of Wildlife Management* .
- Stokes, M. K.** 1994. A key to selected trees of the Robinson Nature Trail. Pages 171-175 in Armitage, K. B., and G. R. Pisani. Laboratory Exercises for Biology 106. University of Kansas.
- Stokes, M. K.** 1994. A key to selected trees of the KU campus. Pages 179-182 in Armitage, K. B., and G. R. Pisani. Laboratory Exercises for Biology 106. University of Kansas.
- Stokes, M. K.** 1993. Minitab 8 and Minitab 8 Extended Version (review). *Bulletin of the Ecological Society of America*. 74(2).

Presentations while at WKU. Unless otherwise noted, first author is presenter (*=student or former student author or coauthor).

- 2022 *Isabella McIntosh and Michael Stokes. Variation in maple sap sugar content. REACH presentation, WKU.
- 2019 *Tithe Ahmed, **Michael Stokes**, and Paul Allin. Unmanned aerial vehicles and multispectral sensors for locating invasive species. Kentucky Academy of Science Annual Conference.
- 2018 *Christopher Banotai, **Michael Stokes** and Craig Spencer. Selection of seeds and seedlings of four tree species by South African bushveld savanna rodents. Annual Conference of the Ecological Society, Portland, OR.
- 2018 *Christopher Banotai, Whitney Walker, Brooke A. Barber, Craig Spencer & **Michael Stokes**. Selection of seeds and seedlings of four tree species by South African bushveld savanna rodents. Southern African Wildlife Management Association annual conference, Limpopo, South Africa.

- 2018 Melissa J. Merrick, John L. Koprowski, Craig Spencer, **Michael Stokes** & Paul M. R. R. Allin (presenter). Development of a classified vegetation land cover model for Balule Nature Reserve, South Africa. Southern African Wildlife Management Association annual conference, Limpopo, South Africa.
- 2017 *Christopher Banotai, **Michael Stokes** and Craig Spencer. Selection of seeds and seedlings of four tree species by South African bushveld savanna rodents. Annual Conference of the Ecological Society, Portland, OR.
- 2016 *Shelby Wade, **Michael Stokes**, Craig Spencer. Diets of apex predators in a period of drought throughout the Balule Nature Reserve, Hoedspruit, South Africa. Midwest Ecology and Evolution Conference, Oxford, Ohio.
- 2014 *Whitney Walker, *Brooke Barber, **Michael Stokes**, John Koprowski, Craig Spencer. Influence of rodents on four ecologically important tree species in decline in South Africa. Annual conference of The Wildlife Society. Pittsburgh.
- 2013 **Michael Stokes**, *Rachel Beyke, *John Clark, Craig Spencer. Spatially Explicit Habitat Modeling For Black Rhino Reintroduction. Presented by Rachel Beyke at the annual Wildlife Society Conference, Milwaukee, WI.
- 2013 *John Clark, *Rachel Beyke, **Michael Stokes**, Craig Spencer, Stefan Bosman. Forage and Human Impact Analysis of a Reintroduced Black Rhino (*Biceros bicornis*) Population. Midwest Ecology and Evolution Conference. Notre Dame.
- 2012 *Molly DuVall, **Michael Stokes**, Bruce Schulte, Mark Cambron, *Shilo Felton. Testing the Effects of a Wildlife Detering 'Scarecrow' Device on the Feeding Behavior of Crop-Raiding, African Ungulate Species and African Crested Porcupine. International Wildlife Management Congress, Durban, South Africa.
- 2011 *Kasaine, Simon, **Stokes, M.K.** Kentucky Academy of Science Annual Conference, Kentucky Academy of Science, Murray, KY. "Spatial distribution and economic consequences of human-elephant conflict in Kenya."
- 2010 *Filiatreau, L. M., **Stokes, M. K.** Kentucky Academy of Science Annual Conference, Kentucky Academy of Science, Bowling Green, KY, "Assessing Social Benefits of Rainwater Harvesting in Southern Kenya".
- 2010 *Combs, S. Presenter & Author, *Goebel, K., **Stokes, M. K.** Kentucky Academy of Science annual conference, Kentucky Academy of Science, "Effects of Glyphosate and Imazapic on Germination of Native Warm-season Plants in a Greenhouse Environment".
- 2010 *Colonna, C., **Stokes, M. K.** Kentucky Academy of Science annual conference, Kentucky Academy of Science, Bowling Green, KY, "Human-wildlife Conflict on Small, Subsistence Farms in Kenya".

- 2010 *Rowland, R., **Stokes, M. K.**, , Kentucky Academy of Science annual conference, Kentucky Academy of Science, Bowling Green, KY, "Not All Seeds Are Created Equal: A Study on Food Choice".
- 2010 *Mantooth, A. M., **Stokes, M. K.**, Schulte, B. A. Kentucky Academy of Science annual conference, Kentucky Academy of Science, Bowling Green, KY, "The Effects of Lion Roars, Banging Pots, and Rhino Snorts on Blesbok and Buffalo Behavior".
- 2009 *Mahan, Margaret M. **Michael Stokes**. Ecological Investigation of Vertebrate Utilization of Termitaria in the Tsavo Region of Kenya. Kentucky Academy of Science Conference.
- 2009 Daday, G. K., Smith, D. C., **Stokes, M. K.**, Kimwele, C., SSS Conference, Southern Sociological Society, New Orleans, LA, "The Influence of Community Interactional Capacity on Human-Wildlife Conflict Mitigation Strategies in Southeastern Kenya".
- 2008 *DeCaro, Daniel and **Michael Stokes**. Motivational and Social Justice Framework: Lessons from Community-Based Conservation. Society for the Psychological Study of Social Issues annual conference in Chicago.
- 2007 *Jones, Natalie; *Smith, Bradley; *Sutton, Bridget; Kimwele, Charles; McElroy, Doug; and **Stokes, Michael**. Assessment of the bushmeat trade in southeastern Kenya. Presented by me at the international conference of the Society for Conservation Biology, Port Elizabeth, South Africa
- 2007 *Jones, Natalie; Daday, Gerhard; **Stokes, Michael**; and Kimwele, Charles. Questioning conservation: social surveys in conservation biology as tools to determine the potential of community-based ecotourism efforts. Society for Conservation Biology, Port Elizabeth, South Africa
- 2006 *Jones, Natalie; *Smith, Bradley; Kimwele, Charles; **Stokes, Michael**; and McElroy, D. Assessing bushmeat availability in Kenya's rural and urban markets. American Society of Mammalogists Conference.
- 2005 Kimwele, C. N., Wambwa, E., **Stokes, M.** and D. McElroy. Molecular forensic identification of East African wildlife game species. Society of Comparative and Integrative Biology. Presented by D. McElroy
- 2005 *Leslie Beavin, Charles Kimwele, **Michael Stokes**, and Doug McElroy. Molecular identification of illegally poached game meat in Kenya. Kentucky Academy of Science conference.
- 2005 Molecular identification of illegal game meat utilization in commercial outlets in East Africa – Nairobi case study. *Bradley Smith, Charles Kimwele, *Leslie Beavin, **Michael Stokes**, Doug McElroy. Kentucky Academy of Science conference.

- 2005 Jones, Natalie, C. Kimwele, **M. Stokes**, and D. McElroy. Bush meat utilization by Kasigau Butcheries. Kentucky Academy of Science conference. Presented by my student, Natalie Jones.
- 2002 **Stokes, M.**, *Murphy, M., *Cummins, T. and *B. Bacon. Effects of small herbivores on barrens restoration. North American Prairie Conference.
- 2002 *Bacon, B., *Murphy, M. *Cummins, T., and **M. Stokes**. Effects of small herbivores on barrens restoration. American Society of Mammalogists Annual Conference
- 1999 *Marshall, J. and **M. Stokes**. Effects of landfill cap age on small mammal populations. WKU Sigma Xi conference.
- 1999 **Stokes, M.** and *J. Armstrong. Karst hydrology and the selective use of ephemeral karst lake ecosystems by bats in early spring. Annual meeting of the American Society of Mammalogists.
- 1998 *Marshall, J. and **Stokes, M.** Effects of spatial patterning of restoration burns on small mammal density and dispersal. Student presentation. Biennial convention of Tri-Beta, San Diego
- 1998 *Armstrong, J. and **Stokes, M.** Ecology of Ephemeral Karst Lakes. Biennial convention of Tri-Beta, San Diego
- 1998 *Armstrong, J. and **Stokes, M.** Use of ephemeral Karst Lakes by vertebrates. Kentucky Academy of Sciences.
- 1998 **Stokes, M.** and *J. Marshall. Effects of spatial patterning of restoration burns on small mammal density and dispersal. Annual meeting of the American Society of Mammalogists.
- 1997 **Stokes, M.** Faunal responses to restoration burning of limestone barrens in the Southeastern United States. Annual meeting of the American Society of Mammalogists.
- 1997 *Armstrong, J. and **Stokes, M.** Ecology of Ephemeral Karst Lakes. Annual Meeting of the Kentucky Academy of Science
- 1997 *Marshall, J. and **Stokes, M.** Responses of small mammal density and dispersal to burns in isolated grasslands. Annual Meeting of the Kentucky Academy of Science
- 1997 *Berkovsky, E. and **Stokes, M.** Effects of burning on invertebrate density and diversity. Annual Meeting of the Kentucky Academy of Science

Presentations before coming to WKU

- 1994 **Stokes, M.** Effects of weather and climate on populations of small mammals. Annual

meeting of the American Society of Mammalogists.

- 1989 **Stokes, M.** Nest site selection by Microtus ochrogaster and Sigmodon hispidus. Annual meeting of the American Society of Mammalogists.
- 1990 **Stokes, M.** A multivariate model of nest site selection by Sigmodon and Microtus. Prairie States Ecology Conclave.
- 1990 **Stokes, M.** Nest site selection among sympatric species of rodents in northeastern Kansas: a multivariate model. Annual meeting of the American Society of Mammalogists.
- 1991 **Stokes, M.** The future role of remote sensing in Ecology. Prairie States Ecology Conclave.
- 1992 **Stokes, M.** The effects of weather on probabilities of capture of small mammals. Annual meeting of the American Society of Mammalogists.

Invited presentations (*=student/former student coauthor)

- 2018 **Stokes, M.**, Daday, G. and D. DeCaro*. Sociological and Psychological Models Can Be Used to Assess Community-Based Solutions to Human-Wildlife Conflict, with Examples From Africa. Leadoff talk in a special symposium, "Grassroots Community Engagement: A Critical Tool for Global Wildlife Conservation". Annual conference of The Wildlife Society, Cleveland, Ohio
- 2013 BREAD: Development of Automated Systems to Increase Crop Yield by Reducing Group Foraging Intensity by Crop Pests. **Michael Stokes**, Bruce Schulte, Mark Cambron, Simon Kasaine*. Fourth Annual BREAD Conference. Bill and Melinda Gates Foundation, Seattle, WA.
- 2012 **Michael Stokes**. Learning to adapt: student-driven wildlife research in Africa. University of Arizona, School of Natural Resources and the Environment.
- 2012 **Michael Stokes**. Learning to adapt: student-driven wildlife research in Africa. Truman State University.
- 2012 **Michael Stokes** and Nancy Rice. Project-based study abroad in Africa. First Annual Kentucky Study Abroad Conference
- 2011 BREAD: Development of Automated Systems to Increase Crop Yield by Reducing Group Foraging Intensity by Crop Pests. **Michael Stokes**, Bruce Schulte, Mark Cambron, Simon Kasaine*, Anna Mantooth*, Christopher Colonna*, Charles Kimwele. Second Annual BREAD Conference. Bill and Melinda Gates Foundation, Seattle, WA.
- 2010 **Michael Stokes**, Bruce Schulte, Mark Cambron, Charles Kimwele. Development of Automated Systems to Increase Crop Yield by Reducing Group Foraging Intensity by

- Crop Pests First Annual BREAD conference, National Science Foundation, Washington, D.C.
- 2006 GPS workshop, Kenya Wildlife Service, Wildlife Protection Unit, Tsavo National Park
- 2005 Using GPS to aid desnaring efforts. University of Nairobi, Kenya
- 2004 Population Viability Analysis. University of Nairobi, Kenya
- 2001 Kentucky, the prairie state. Murray State University
- 1999 **Michael Stokes.** Biodiversity of Kentucky. Training seminar for annual training meeting of the Kentucky Division of Parks
- 1999 **Michael Stokes.** The WKU Center for Biodiversity Studies. Kentucky Biodiversity Council.
- 1998 Virtual Science. Inaugural meeting of the Commonwealth Virtual University
- 1997 Biology and the Commonwealth Virtual University. Kentucky Higher Education Computing Conference
- 1996 Unveiling of the new ASM WWW site. Annual meeting of the American Society of Mammalogists, Grand Forks, ND
- 1995 The role of environmental diversity in ecological research in the Ozarks. Northeastern State University, Oklahoma
- 1995 Interactive research on the World-Wide Web. Combined annual meeting of the Kentucky and Tennessee Academies of Science
- 1994 Diversity as a unifying concept in biology. Davidson College, North Carolina
- 1994 Concepts of scale in ecology. Fort Hays State University, Kansas

External Grants, Contracts and Submissions (I am PI unless otherwise noted)

- 2018 Protecting the protectors--investigating utility of micro-UAVs for wildlife protection units. National Geographic Society. Not funded.
- 2017 Collaborative Research: RUI: NSF DEB Role of rodents in structuring threatened African savanna communities. **Michael Stokes, PI**, John Koprowski co-PI. Invited full proposal based upon accepted pre-proposal. Collaborative with University of Arizona. \$403,794 (WKU). Not funded.

- 2017 UAVs for individual rhino monitoring, protecting the protectors. Submitted to Sea World & Busch Gardens. **Michael Stokes, PI.** \$15,437. Not funded.
- 2016 Rodents as drivers of vegetation change: Influence of rodents on seed predation and seed dispersal of dominant trees of the African savanna. John Koprowski, PI, **Michael Stokes, co-PI.** NSF preproposal. Not funded.
- 2016 Testing an innovative, landscape scale LoRaWAN IoT rhino monitoring network. Michael Stokes, PI. US Fish and Wildlife Service. \$79,619. Not funded.
- 2016 Expanding the success of a unique antipoaching program—the Black Mambas of Balule. Tony Paquin, PI, **Michael Stokes, co-PI.** US Fish and Wildlife Service. \$49,932. Not funded.
- 2015 Effects of rodents on tree species of conservation concern in southern African savanna. Michael Stokes PI. Phoenix Zoo. \$2991. Not funded.
- 2015 A controlled experiment on the effect of study abroad experiences on retention and long term success in the STEM disciplines. Phil Lienesch, PI, **Michael Stokes**, Bruce Schulte, Roger Murphy, Tony Paquin, co-PIs. \$2M. Not funded.
- 2015 Rodents as drivers of vegetation change: Influence of rodents on seed predation and seed dispersal of dominant trees of the African savanna. NSF DEB preproposal. Not funded.
- 2014 Influence of rodents on seed predation and seed dispersal of ecologically and economically important tree species in South Africa. KY EPSCoR REG. \$24379. Not funded.
- 2013 A controlled experiment on the effect of study abroad experiences on retention and long-term success in the STEM disciplines. NSF IUSE. Philip Lienesch, PI, **Michael Stokes**, Bruce Schulte, Roger Murphy, Tony Paquin, co-PIs. \$2.6 M. Not funded.
- 2012 US Fish and Wildlife Service Optimizing black rhino conservation and breeding on private tourist reserves. Not funded. \$48,729.
- 2010 BREAD: Development of Automated Systems to Increase Crop Yield by Reducing Group Foraging Intensity by Crop Pests. **Michael Stokes**, PI, Bruce Schulte, co-PI. National Science Foundation. \$455,000. (3 years + 2-year extension)
- 2004 NPS contracts ca. \$85,000
- 2004 NSF EPSCoR REG grant \$25,000.

- 2002-2003 Multiple National Park Service Contracts totalling ca. \$50,000
- 1999 Kentucky Biodiversity Council. \$1,000 curation grant to Center for Biodiversity Studies
- 1998 PI, Kentucky Academy of Science Research Grant 'Ecology of ephemeral karst lakes', \$13,000
- 1997 Grant from the Kentucky State Nature Preserves Commission 'Restoration ecology of the Raymond Athey Barrens'. \$6,466
- 1996 NSF KY EPSCoR REG grant, \$15,000

Awarded Internal Grants, WKU only.

- 2023 FUSE. Influence of prescribed burns and megaherbivores on small mammal communities in the South African bushveld. Natalie Heath, student PI.
- 2023 FUSE. Effects of Burns on Ruminant Nutrition Quality in South African Grasses. Promise Willhite, student PI.
- 2018 FUSE. Use of UAV-based multispectral imagery to locate invasive species and characterize habitat. Tithe Ahmed, student PI. I am research advisor.
- 2017 RCAP. Development of agricultural UAV technology for conservation and ecology. \$12,724.
- 2016 IFUSE Analysis of Seed Caching in Balule Nature Reserve, South Africa by Smith's Bush Squirrel (*Paraxerus cepapi*) and Its Effects On The Decline of Large Tree Species. Samuel Culton, student PI. I am research advisor.
- 2016 OCSE QTAG
- 2014 IFUSE Prey Selection by Apex Predators in Balule Nature Reserve, South Africa. Shelby Wade, student PI. I am research advisor.
- 2013 RCAP Influence of rodents on recruitment of ecologically and economically important tree species in decline in South Africa. Collaborative and matching with University of Arizona. \$7200.
- 2013 IFUSE Rock mice, tree squirrels, and acacia rats influence in South Africa on seed dispersal of ecologically and economically important tree species destruction. Brooke Barber, student PI. I am research advisor.

- 2013 IFUSE Rock mice, tree squirrels, and acacia rats influence in South Africa on seed dispersal of ecologically and economically important tree species destruction. Whitney Walker, student PI. I am research advisor.
- 2011 RCAP Ecology of a founder population of reintroduced black rhino (*Diceros bicornis*). \$16,000.
- 2011 FUSE Foraging Analysis of Reintroduced Black Rhinoceros (*Biceros dicornis*). John Clark, student PI. I am research advisor. Completed Honor's thesis.
- 2011 FUSE Eastern Black Rhino Home Range Activity Based on Human Disturbances. Rachel Beyke, student PI. I am research advisor. Completed Honor's thesis.
- 2010 WKU Summer Faculty Research grant \$6,000
- 2010 WKU Regular Faculty Scholarship award \$3,000
- 1997 Summer Research Fellowship, WKU, \$5,000
- 1997 President's Special Grant, WKU, \$3,000
- 1997 Faculty Research Grant, WKU, \$1,000
- 1997 Instructional Technology Grant, WKU, \$7,500.
- 1996 Summer Research Fellowship, WKU, \$5,000
- 1996 President's Special Grant, WKU, 2 @ \$3,000
- 1996 Instructional Technology Grant, WKU, \$11,000
- 1995 Faculty Research Grant, Office of Graduate Studies and Research, WKU, \$4,000

Consulting

- 2004 Hart County water project, endangered species analysis for Water Management Services, Inc.
- 2000 Commonwealth Technology, Inc. Endangered species preliminary assessment for Kentucky Trimodal Transpark project
- 1998-03 Data management and networking. EPA Region IV Technical Assistance Center for Water Quality
- 1999-00 Endangered species habitat evaluation. ATC Associates, Inc.

1999 Endangered species habitat evaluation. Water Services Management, Inc.
1999 Development of online database. Kentucky State Nature Preserves Commission

1998 Endangered species habitat evaluation. Coldwell Banker Realty

Current research interests

- Effects of biophysical, geophysical, and climatological environmental changes on the structure of wildlife populations and communities
- Comparative wildlife management, wildlife conservation in East Africa and South Africa
- Restoration of native North American grasslands
- Psychological underpinnings of conservation behavior