

# Catherine G Haase

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## Current Position

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2019- **Assistant Professor, Department of Biology, Austin Peay State University**

## Current Research

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2022- **Evaluating bat box microclimates**

*Funding:* Austin Peay State University Research Support Grant

2021- **Tri-color bat hibernation behavior in non-traditional hibernacula**

*Project collaborators:* Dr. Dana Karelus (Texas Parks and Wildlife)

*Funding:* US Fish and Wildlife Service WNS Conservation Grant (\$147,226 received)

2019- **Changes in the bat community in Fort Campbell, KY**

*Project collaborators:* Fort Campbell Fish and Wildlife

*Funding:* Intergovernmental Support Agreement (\$388,385 received)

## Previous Positions

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2016-2019 Postdoctoral Research Associate, Department of Microbiology, Montana State University

2018 Lecturer, School of Animal and Range Sciences, Hawassa University, Ethiopia

2016 Postdoctoral Research Associate, Department of Geography, University of Florida

2011-2012 Research Associate, Northern Rocky Mountain Science Center, US Geological Survey

2010-2011 Research Associate, Cary Institute of Ecosystem Studies

## Education

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2016 **PhD in Interdisciplinary Ecology, University of Florida**

School of Natural Resources and Environment

Department of Wildlife Ecology and Conservation

2010 **MS in Conservation Biology, SUNY College of Environmental Science and Forestry**

Department of Environmental and Forest Biology

2007 **BS in Wildlife, Unity College**

## Teaching Experience

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2019- **Austin Peay State University**

BIOL 3000 Biological Methods (3 cr) Fall/Spring

BIOL 5700 Topics in Biology: Biostatistics in R (4 cr) Fall/Spring

HON 1045 Foundations in Interdisciplinary Thinking: Science in the Movies (3 cr) Fall

BIOL 3330/3331 Principles of Evolution (4 cr) Fall/Spring

BIOL 4630/4631 & 5630/5631 Mammalogy (4 cr) Fall

BIOL 1110 Principles of Biology (3 cr) Fall

2018 **Hawassa University, Ethiopia**

ARSc 701 Research Methods and Biostatistics in R (3 cr) Fall

2013-2014 **University of Florida**

EVR 2001 Introduction to Environmental Science (1 cr) Fall/Spring

2007-2009 **SUNY College of Environmental Science & Forestry** [*\*as graduate teaching assistant*]  
 EFB 220\* Urban Ecology (3 cr) Fall  
 EFB 484\* Winter Mammalian Ecology (3 cr) Spring  
 EFB 493\* Wildlife Habitats and Population Management (4 cr) Fall  
 EFB 311 Principles of Evolution (3 cr) Spring  
 NSF Undergraduate Mentoring Experience in Biology (6 cr) Summer

## Advising

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**Current Graduate Students** Sarah Zirkle, MS thesis track, *graduate advisor*  
 Sarah Krueger, MS thesis track, *graduate advisor*  
 Trevor Walker, MS thesis track, *graduate advisor*  
 Holly Latta, MS non-thesis track, *committee chair*  
 Connor Hughes, MS thesis track, *committee member*  
 Jocelyn Stalker, MS thesis track, *committee member*  
 Alexis Culley, MS thesis track, *committee member*  
 Jacob Barrett, MS thesis track, *committee member*  
 River Watson, MS thesis track, *committee member*  
 Nathaniel Selleck, MS thesis track, *committee member*  
 Brittney Georgic, MS thesis track, *committee member*  
 Gabriella LeFevre, MS thesis track, *committee member*

**Past Students** Brandon Brown, MS thesis track, *committee member* (2021)  
 Robert Ryan, MS thesis track, *committee member* (2020)  
 Lyranda Thiem, MS thesis track, *committee member* (2020)  
 Molly Richard, MS thesis track, *committee member* (2020)  
 Chelsea Blumbergs, MS non-thesis track, *committee member* (2020)  
 John Hansen, undergraduate, *UREF mentor* (2020)  
 Johnathan Crockarell, undergraduate, *UREF mentor* (2020)

**Current Undergraduate Students** Harrison Rogers  
 Matthew Scott  
 Brylea Abed

## Grants and Fellowships (\$800,189 granted)

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2021 Faculty Research Support Grant (APSU) - \$4,898  
 2021 USFWS White-nose Syndrome Conservation Grant (*as Co-PI*) - \$147,226  
 2021 NFWF Cumberland Plateau-Southern Appalachians Fund (*as Co-PI*) - \$216,616  
 2021 Student Academic Success Initiative (APSU) - \$3,600  
 2021 Robert D. Brown Ecology and Conservation Endowment (APSU) - \$1,400  
 2020 Intergovernmental Support Agreement with the Department of Defense - \$388,385  
 2020 Technology Access Fee (APSU) - \$5,264  
 2020 Undergraduate Research Enrichment Fund (APSU) (*listed as mentor*) - \$6,000  
 2017 NSF Infectious Disease Evolution Across Scales - \$3,000  
 2014-2016 Debra Lowe Fellowship (UF) - \$6000  
 2014-2016 University of Florida Travel grants (UF) - \$4500  
 2012-2015 Grinter Fellowship (UF) - \$5500  
 2010 North American Moose Conference Newcomer's Award - \$1000  
 2009 Sigma Xi Society Research in Need Grant - \$1000  
 2009 Edna B Sussman Foundation Fellowship (SUNY ESF) - \$5800

## Peer-reviewed Publications

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21. McGuire, LP, NW Fuller, **CG Haase**, KA Silas, SH Olson. *In press*. Lean mass dynamics in hibernating bats and implications for energy and water budgets *Physiological and Biochemical Zoology*.
20. McClure, ML, CR Hranac, **CG Haase**, S McGinnis, BG Dickson, DTS Hayman, LP McGuire, CL Lausen, RK Plowright, NW Fuller, SH Olson. *In press*. Projecting the compound effects of climate change and white-nose syndrome on North American bat species. *Climate Change Ecology*.
19. McGuire, LP, NW Fuller, YA Dzal, **CG Haase**, B Klug-Baerwald, KA Silas, RK Plowright, CL Lausen, CKR Willis, SH Olson. 2021. Interspecific variation in evaporative water loss and temperature response, but not metabolic rate, among hibernating bats. *Scientific Reports*.
18. McGuire, LP, NW Fuller, YA Dzal, **CG Haase**, KA Silas, CKR Willis, SH Olson, CL Lausen. 2021. Similar physiology in hibernating bats across broad geographic ranges. *Journal of Comparative Physiology B*.
17. **Haase, CG**, A Yang, K McNyset, J Blackburn. 2021. GARPTools: R software for data preparation and model evaluation of GARP models. *Ecography*.
16. Hranac, CR, **CG Haase**, NW Fuller, ML McClure, JC Marshall, CL Lausen, LP McGuire, SH Olson, DTS Hayman. 2021. What is a winter? Modelling spatial variation in bat host traits and hibernation and their implications for overwintering energetics. *Ecology and Evolution*
15. McClure, ML, **CG Haase**, D Crowley, LP McGuire, NW Fuller, DTS Hayman, CL Lausen, RK Plowright, BG Dickson, SH Olson. 2021. A hybrid correlative-mechanistic approach for modeling and mapping winter distributions of western bat species. *Journal of Biogeography*
14. **Haase, CG**, NW Fuller, YA Dzal, DTS Hayman, CR Hranac, C Lausen, KA Silas, SH Olson, RK Plowright. 2021. Body mass and hibernation microclimate may predict bat susceptibility to white-nose syndrome. *Ecology and Evolution* 1-10
13. McClure, ML, D Crowley, **CG Haase**, LP McGuire, NW Fuller, DTS Hayman, CL Lausen, RK Plowright, BG Dickson, SH Olson (2020) Linking surface and subterranean climate conditions: implications for the study of hibernating bats and other cave dwellers. *Ecosphere* 11(10): 1-17
12. Fuller, NW, LP McGuire, EL Pannkuk, T Blute, **CG Haase**, HW Mayberry, TS Risch, CKR Willis (2020) Disease recovery affected by white-nose syndrome. *Experimental Biology* 223(6):1-12
11. **Haase, CG**, RJ Fletcher, Jr, DH Slone, JP Reid, SM Butler (2020) Traveling to thermal refuges during stressful temperatures leads to foraging constraints in a central-place forager. *Journal of Mammalogy* 101(1): 271-280
10. **Haase, CG**, NW Fuller, CR Hranac, DTS Hayman, LP McGuire, KJO Norquay, KA Silas, CKR Willis, RK Plowright, SH Olson (2019) Incorporating evaporative water loss into bioenergetic models of hibernation to test influence of host and pathogen traits on white-nose syndrome. *PLOS ONE* 14(10): e022231
9. Fuller, NW, **CG Haase**, KA Silas, SH Olson, LP McGuire (2019) First reported case of diphallia in *Corynorhinus townsendii*. *Western North American Naturalist* 79(3): 454-457
8. **Haase, CG**, NW Fuller, CR Hranac, DTS Hayman, SH Olson, RK Plowright, LP McGuire (2019) Bats are not squirrels: revisiting the assumptions of costs of cooling in hibernating mammals. *Journal of Thermal Biology* 81: 185-193
7. Yang, A, JP Gomez, **CG Haase**, KM Proffitt, JK Blackburn (2019) Effects of Brucellosis serological status on physiological conditions and behavioral mechanisms of Southwestern Montana Elk. *Journal of Wildlife Diseases* 55(2): 304-315
6. **Haase, CG**, RJ Fletcher, Jr DH Slone, JP Reid, SM Butler (2017) Landscape complementation revealed through bipartite networks: the Florida manatee. *Landscape Ecology* 32: 1999-2014
5. Slone, DH, SM Butler, JP Reid, **CG Haase** (2017) Timing of warm water refuge use in Crystal River National Wildlife Refuge by manatees—results and insights from Global Positioning System telemetry data. US Geological Survey Open-File Report

4. Hayward, A, M Pajuelo, **CG Haase**, DM Anderson, JF Gillooly (2016) Common metabolic constraints on dive duration in endothermic and ectothermic vertebrates. PeerJ 4: e2569
3. Cross, PC, ES Almborg, **CG Haase**, PJ Hudson, S Maloney, M Metz, A Munn, P Nugent, O Putzeys, DR Stahler, AC Stewart, DW Smith (2016) Energetic costs of range in Yellowstone wolves estimated from infrared thermography. Ecology 97(8): 1938-1948
2. **Haase, CG**, AK Long, JF Gillooly (2016) Energetics of stress: Linking plasma cortisol levels to metabolic rate in mammals. Biology Letters 12(1): 1-4
1. **Haase, CG**, HB Underwood (2013) Integrating thermal constraints into habitat suitability for moose in the Adirondack State Park, NY. Alces 49: 49-64

## Publications in Review

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3. **Haase, CG**, RJ Fletcher, Jr DH Slone, JP Reid, SM Butler. Quality of thermal refuges influences use by the cold intolerant Florida manatee. Submitted to Endangered Species Research. Manuscript ID# ENSR-2022-04-002
2. Lemieux-Labonte, V, J. Pathmanathan, Y Terrat, N Tromas, A Simard, **CG Haase**, C Lausen, CKR Willis, F-J Lapointe. *Pseudogymnoascus destructans* infection impacts the functional metagenome of highly vulnerable *Myotis lucifugus*. Submitted to FEMS Microbial Ecology
1. Campione, A, J Orange, E Dinh, **CG Haase**, R Peters, C Peters, S Wisely, J Blackburn. Thermal stresses, diel movement trends, disease risk, and habitat selection of wild and ranched white-tailed deer in Florida. Submitted to Animals. Manuscript ID# Animals-1279950

## Invited Presentations

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14. Habitat conservation and wildlife connectivity. March 2022. Sustaining Biodiversity course, Austin Peay State University
13. Body mass and hibernation microclimate may predict bat susceptibility to white-nose syndrome. January 2022. Northeast Bat Working Group, virtual
12. The energetic costs of disease: a case study of bioenergetics of white-nose syndrome. April 2021. Department of Biological Sciences Seminar Series, Wright State University, Dayton, OH
11. Energetic costs of disease: a case study of bioenergetics of white-nose syndrome. February 2021. School of Forestry and Wildlife Sciences Seminar Series, Auburn State University, Auburn, AL
10. Current White-nose Syndrome Research. November 2020. Tri-Beta Honor Society Speaker Series, Austin Peay State University, Clarksville, TN
9. Correlated, Random, Brains! What animal movement models can tell us about a zombie apocalypse. November 2019. Honors Biology course, Austin Peay State University, Clarksville, TN
8. The importance of scale: What landscape ecology can teach us about thermoregulation. September 2019. Department of Biology Seminar Series, Murray State University, Murray, KY
7. Careers in Science. November 2019. Tri-Beta Honor Society Speaker Series, Austin Peay State University, Clarksville, TN
6. The importance of scale: What landscape ecology can teach us about thermoregulation May 2019. Department of Biological Sciences Seminar Series, Texas Tech University, Lubbock, TX
5. The energetics of disease: A case study of white-nose syndrome in western bats. March 2019. Department of Microbiology Seminar Series, Montana State University, Bozeman, MT
4. The importance of scale: What landscape ecology can teach us about thermoregulation. February 2019. Department of Biology Seminar Series, Austin Peay State University, Clarksville, TN
3. Energetics of disease. November 2017. Montana State University, Bozeman, MT
2. Some like it hot: Understanding how temperature shapes animal energetics and behavior. September 2017. Women in Science Lecture Series, St Mary's College, IN
1. Understanding manatee behavior in response to temperature. August 2016. The Institute of Learning in Retirement Science Lecture Series, Oak Hammock Retirement Center, Gainesville, FL

## Presentations at Professional Conferences

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21. **Haase, CG**, NW Fuller, YA Dzal, DTS Hayman, CR Hranac, C Lausen, KA Silas, SH Olson, RK Plowright (2021) Body mass and hibernation microclimate may predict bat susceptibility to white-nose syndrome. American Society of Mammalogists Annual Meeting
20. Olson, SH, D Crowley, B Dickson, YA Dzal, NW Fuller, **CG Haase**, DTS Hayman, CR Hranac, EM Johnson, EL Kunkel, CL Lausen, ML McClure, LP McGuire, RK Plowright, KA Silas, CKR Willis (2020) A multi-species evaluation of hibernation physiology and influence on white-nose syndrome risk factors. White-nose Syndrome National Webinar
19. **Haase, CG\***, NW Fuller, YA Dzal, DTS Hayman, CR Hranac, C Lausen, K Silas, LP McGuire, SH Olson, RK Plowright (2020) Adaptations to drier hibernacula mitigate mortality from white-nose syndrome in western bat species. American Society of Mammalogy Conference. Boulder, CO
18. Fuller, NW, **CG Haase**, K Silas, SH Olson, LP McGuire (2019) The hibernation phenotype: interspecific and regional variation of hibernation physiology. North American Society for Bat Research Annual Meeting. Kalamazoo, MI
17. McClure, ML, **CG Haase**, D Crowley, DTS Hayman, CR Hranac, C Lausen, NW Fuller, LP McGuire, RK Plowright, SH Olson (2019) Modeling and mapping western bat hibernaculum suitability before and after *Pd* exposure. North American Society for Bat Research Annual Meeting. Kalamazoo, MI
16. Hranac, CR, **CG Haase**, NW Fuller, JC Marshall, CL Lausen, LP McGuire, SH Olson, DTS Hayman (2019) What is a winter? Addressing data deficiency in model parameters in overwintering bat models. North American Society for Bat Research Annual Meeting. Kalamazoo, MI
15. **Haase, CG**, NW Fuller, YA Dzal, DTS Hayman, CR Hranac, C Lausen, K Silas, LP McGuire, SH Olson, RK Plowright (2019) Estimating susceptibility of western bat species to WNS with the application of bioenergetic disease modeling. Western Bat Working Group. Tulsa, OK
13. **Haase, CG**, NW Fuller, DTS Hayman, CR Hranac, SH Olson, RK Plowright, LP McGuire (2019) Bats are not squirrels: revisiting the costs of cooling in hibernating mammals. Society for Integrative and Comparative Biology. Tampa, FL
13. **Haase, CG**, NW Fuller, DTS Hayman, CR Hranac, SH Olson, RK Plowright, LP McGuire (2018) Bats are not squirrels: revisiting the costs of cooling in hibernating mammals. North American Society for Bat Research. Puerto Vallarta, Mexico
12. Fuller, NW, **CG Haase**, KA Silas, SH Olson, LP McGuire (2018) Implications for white-nose syndrome in western bats. North American Society for Bat Research. Puerto Vallarta, Mexico
11. **Haase, CG**, NW Fuller, DTS Hayman, CR Hranac, LP McGuire, SH Olson, RK Plowright (2018) Modelling the influence of evaporative water loss on hibernation energetics and implications for white-nose syndrome. National White-nose Syndrome Meeting. Tacoma, WA
10. Olson, SH, **CG Haase**, NW Fuller, LP McGuire, DTS Hayman, CR Hranac, ML McClure, D Crowley, RK Plowright, YA Dzal, CKR Willis, EL Kunkel, C Lausen, BJ Klug-Baerwald, KA Silas (2018) A combined empirical and modeling approach to assess the impact of WNS in the West. National White-nose Syndrome Meeting. Tacoma, WA
9. McGuire, LP, NW Fuller, **CG Haase**, KA Silas, SH Olson (2018) Regional variation in hibernation phenotype: *Myotis velifer* hibernation at southern latitudes and implications for white-nose syndrome. Society for Integrative and Comparative Biology. San Francisco, CA
8. **Haase, CG**, NW Fuller, DTS Hayman, CR Hranac, LP McGuire, SH Olson, RK Plowright (2017) Modelling the influence of evaporative water loss on hibernation energetics and implications for white-nose syndrome. North American Society for Bat Research. Knoxville, TN
7. McClure, ML, **CG Haase**, DTS Hayman, CR Hranac, N Justice, B Dickson, SH Olson (2017) Western bat distributions before and after exposure to white-nose syndrome: A hybrid correlative-mechanistic modeling approach. North American Society for Bat Research. Knoxville, TN
6. Hranac, CR, **CG Haase**, YA Dzal, C Lausen, JC Marshall, SH Olson, DTS Hayman (2017) Modeling the impact of white-nose syndrome on two western bat species. Second International Symposium on Infectious Diseases on Bats. Fort Collins, CO

5. **Haase, CG**, RF Fletcher, Jr, DH Slone, JP Reid, SM Butler (2016) Quantifying landscape complementation with bipartite networks and applications to habitat selection. International Association for Landscape Ecologists. Asheville, NC
4. **Haase, CG** and BH Underwood (2010) Integrating thermal cover into habitat models for moose. North American Moose Conference. International Falls, MN
3. **Haase, CG** and BH Underwood (2010) A habitat suitability index model incorporating thermal cover for moose in the Adirondack Park. Northeast Fish and Wildlife Conference. Boston, MA
2. **Haase, CG** and BH Underwood (2010) Characterizing critical thermal environments: applications to habitat suitability for moose. New York Chapter of the Wildlife Society. Alexandria Bay, NY
1. **Haase, CG** and BH Underwood (2009) Characterizing critical thermal environments: applications to habitat suitability modeling for moose. New York Chapter of American Foresters. Syracuse, NY

### **Selected Conference Posters** (\*indicates student under my mentorship)

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15. Walker, TG\*, SC Zirkle\*, SK Krueger\*, G Zirkle, **CG Haase** (2021) Effects of aquatic insect abundance and biomass on bat species diversity. Tennessee Bat Working Group meeting. Virtual.
14. Zirkle, SC\*, SK Krueger\*, TG Walker\*, G Zirkle, **CG Haase** (2021) Summer habitat use and roost-site selection of a recently petitioned bat species. Tennessee Bat Working Group meeting. Virtual.
13. Krueger, SK\*, TG Walker\*, SC Zirkle\*, JM O'Keefe, G Zirkle, **CG Haase** (2021) Impact of white-nose syndrome and local climate on reproduction of female bats in the southeastern United States. Tennessee Bat Working Group meeting. Virtual.
12. Walker, TG\*, SC Zirkle\*, SK Krueger\*, G Zirkle, **CG Haase** (2021) Effects of aquatic insect abundance and biomass on bat species diversity. Tennessee Academy of Sciences Meeting. Cookeville, TN. [*3<sup>rd</sup> place in student competition*]
11. Zirkle, SC\*, SK Krueger\*, TG Walker\*, G Zirkle, **CG Haase** (2021) Summer habitat use and roost-site selection of a recently petitioned bat species. Tennessee Academy of Sciences. Cookeville, TN. [*2<sup>nd</sup> place in student competition*]
10. Krueger, SK\*, TG Walker\*, SC Zirkle\*, JM O'Keefe, G Zirkle, **CG Haase** (2021) Impact of white-nose syndrome and local climate on reproduction of female bats in the southeastern United States. Tennessee Academy of Sciences. Cookeville, TN. [*1<sup>st</sup> place in student competition*]
9. Walker, TG\*, SC Zirkle\*, SK Krueger\*, G Zirkle, **CG Haase** (2021) Effects of aquatic insect abundance and biomass on bat species diversity. The Wildlife Society Annual Meeting. Virtual.
8. Zirkle, SC\*, SK Krueger\*, TG Walker\*, G Zirkle, **CG Haase** (2021) Summer habitat use and roost-site selection of a recently petitioned bat species. The Wildlife Society Annual Meeting. Virtual.
7. Krueger, SK\*, TG Walker\*, SC Zirkle\*, JM O'Keefe, G Zirkle, **CG Haase** (2021) Impact of white-nose syndrome and local climate on reproduction of female bats in the southeastern United States. The Wildlife Society Annual Meeting. Virtual.
6. **Haase, CG**, NW Fuller, DTS Hayman, CR Hranac, LP McGuire, SH Olson, RK Plowright (2018) Modelling the influence of evaporative water loss on hibernation energetics and implications for white-nose syndrome. National White-nose Syndrome Meeting. Tacoma, WA
5. McGuire, LP, NW Fuller, JG Boyles, **CG Haase**, KA Silas, SH Olson (2018) A conceptual framework of hibernation phenotype and interspecific variation in hibernation physiology. National White-nose Syndrome Meeting. Tacoma, WA
4. **Haase, CG**, RF Fletcher, Jr, DH Slone, JP Reid, SM Butler (2015) Influence of spatial patterns of thermal and forage resources on manatee behavioral decisions. Conference on the Biology of Marine Mammals. San Francisco, CA
3. **Haase, CG**, DH Slone, RF Fletcher, Jr, JP Reid, SM Butler (2015) Influence of the spatial distribution of water temperature on manatee behavior. Florida Chapter of the Wildlife Society. Jacksonville, FL
2. **Haase, CG**, DH Slone, JP Reid, RF Fletcher, Jr (2014) Influence of landscape and environmental variables on seasonal home range use of the Florida manatee in the Greater Everglades Region. Gordon Research Conferences: Unifying Scales Across Ecology. Biddeford, ME
1. **Haase, CG**, PC Cross, DW Smith, O Putzeys, P Nugent (2012) Are many wolves ENERGY STAR compliant? Energetic impacts of Sarcocytic mange (*Sarcocptes scabiei*) on gray wolves (*Canis lupus*) in Yellowstone. Ecology and Evolution of Infectious Disease Workshop. Ann Arbor, MI

## Theses

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**Haase, Catherine G** (2016) The effects of the spatial configuration of thermal and forage habitats on behavior of the Florida manatee (*Trichechus manatus latirostris*). PhD Dissertation. School of Natural Resources and the Environment, University of Florida, 110 p.

**Haase, Catherine G** (2010) Characterizing critical thermal environments for moose (*Alces alces*) in the Adirondacks. MS Thesis. Department of Environmental and Forest Biology, SUNY College of Environmental Science and Forestry, 125 p.

## Popular Media (as author)

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"Want to be a Bat Hero this Halloween? Don't Visit the Batcave." *Live Science*, October 29, 2018

"When a Bat Sees Its Shadow: Winter Length Affects Bat Survival." *National Geographic*, April 17, 2018

"Why Bats Are So Good at Gulping Down (Halloween) Prey." *Live Science*, October 25, 2017

## Research Featured in Media

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"Disease threatens to decimate western bats." *Science Daily*, January 22, 2021

"Austin Peay, Fort Campbell partner in white-nose syndrome study." *APSU News*, September 28, 2020

"Post partners with APSU to track endangered bat species." *Fort Campbell Courier*, August 13, 2020

"Saving the bats, one cave at a time." *The New York Times*. February 18, 2019

"Plague marching west: researchers study bats to stop their demise." *The Guardian*, October 18, 2018

"X-Ray: Yellowstone" *Discovery Channel's Curiosity Series* December 2012

"Color-Coded Wolves: Infrared Reveals an Illness among Wolves." *Science World*, September 2012

"Infrared Imaging Helps Save Yellowstone's Wolves." *Wired*, May 2012

## Outreach Activities

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Science on Tap, Austin Peay State University, Clarksville, TN, March 3, 2022

Skype a Scientist at Olathe Virtual Schools, January 24, 2022

Bats in Danger: the impact of WNS, Rancocas Nature Center, NJ, August 12, 2021

Science on Tap, Austin Peay State University, Clarksville, TN, May 5, 2021

Zoom into STEM, Austin Peay State University, Clarksville, TN, January 22, 2021

Skype a Scientist at Zia Elementary School, Albuquerque, NM, May 12, 2020

Skype a Scientist at Lincoln Roosevelt School, Roxbury, NJ, April 29, 2020

Family STEM Night at Moore Magnet Schools, Clarksville, TN, February 27, 2020

Skype a Scientist at Hilton Central Schools, Rochester, NY, November 20, 2019

STEM Night at Bakers Mill Elementary School, Clarksville, TN, October 24, 2019

Hibernation is cool: Using Newton's law of cooling to predict hibernation energetics. 500 Women Scientists Suds and Science Series, Bozeman, MT, June 30, 2019

Careers in science. Washington Township Middle School, Boonton, NJ, December 20, 2018

From moose to manatees. 500 Women Scientists, Bozeman, MT, July 28, 2018

Bats at risk: Current status of white-nose syndrome. Speaking of Nature Series, Rancocas Nature Center, Westhampton Township, NJ, October 17, 2017

Science in Yellowstone. Valleyview Middle School, Denville, NJ, December 22, 2015

## Awards

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2020 Austin Peay Helping Hands Faculty Award

2011 Adirondack Research Consortium Graduate Student Award

2010 SUNY ESF Alumni Association Award

2007 Unity College Wildlife Leadership Award

2005 Maine State Campus Compact Heart and Soul Award

## Professional Contributions

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### **Service to Scientific Community**

- 2022- NASBR representative to the Federal WNS Response Team
- 2021- Sub-committee co-chair, APSU College of STEM Diversity and Inclusion Committee
- 2020- APSU Environmental Health and Safety Advisory University Committee
- 2020- APSU College of STEM Diversity and Inclusion Committee
- 2020- APSU Department of Biology Student Learning Outcomes Assessment Committee
- 2019- Chair, APSU Department of Biology Communications Committee
- 2019- Faculty advisor, Austin Peay State University Chapter of The Wildlife Society
- 2018-2019 Co-director, Bozeman 500 Women Scientists
- 2017 Instructor, R Workshop for Beginners, Montana State University
- 2013-2016 Instructor, R Workshop for Beginners, University of Florida

### **Professional Societies**

- 2020- Tennessee Academy of Science (TAS)
- 2020- Ecological Society of America (ESA)
- 2007- American Society of Mammalogists (ASM)
- 2003- The Wildlife Society (TWS)

### **Working Groups and Society Sections**

- 2020- Southeastern Bat Diversity Network
- 2019- Tennessee Chapter of The Wildlife Society
- 2019- TWS Spatial Ecology & Telemetry Working Group
- 2019- TWS Early Career Professional Working Group
- 2019- TWS College & University Wildlife Education Working Group
- 2016- Western Bat Working Group

### **Reviewer**

Journals: *Alces*, *Animal Behaviour*, *Biodiversity and Conservation*, *Ecography*, *EcoHealth*, *Ecology and Evolution*, *Functional Ecology*, *Herpetologica Integrative and Comparative Biology*, *Journal of Animal Ecology*, *Journal of Mammalogy*, *Journal of Thermal Biology*, *Journal of Wildlife Diseases*, *Mammalia*, *PLOS One*, *Proceedings of the Royal Society B*, *Scientific Reports*

Grants: Bats for the Future Fund (National Fish & Wildlife Foundation), Morris Animal Foundation, Wind Wildlife Research Fund (American Wind Wildlife Institute), Discovery Grants (Natural Sciences and Engineering Research Council of Canada)

### **Software Tools Development**

- GARPTools* An R package for GARP species distribution model evaluation
- batwintor* An R package for computing the metabolic costs of hibernation