

Catherine G Haase

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Current Positions

2024- Associate Professor, Department of Biology, Austin Peay State University
2022- Research Associate, Southeastern Grasslands Institute
2023- Board of Directors, North American Society for Bat Research

Previous Positions

2019-2024 Assistant Professor, Department of Biology, Austin Peay State University
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 Assistant, US Geological Survey Northern Rocky Mountain Science Center
2010-2011 Research Assistant, Cary Institute of Ecosystem Studies

Education

2016 **PhD in Interdisciplinary Ecology-Wildlife Ecology and Conservation**, University of Florida
2010 **MS in Conservation Biology**, SUNY College of Environmental Science and Forestry
2007 **BS in Wildlife, minor in Zoology and Environmental Writing**, Unity College

Teaching Experience

2019- **Austin Peay State University**
BIOL 4080/4081 Ecology & Lab (4 cr) Fall/Spring
BIOL 4100/4101 & 5100/5101 Biostatistics & Lab (graduate-level) (4 cr) Spring
BIOL 3000/3001 Biological Methods & Lab (4 cr) Fall/Spring
BIOL 4630/4631 & 5630/5631 Mammalogy & Lab (graduate-level) (4 cr) Fall
BIOL 5700 Topics in Biology: Biostatistics in R (4 cr) Fall/Spring
BIOL 5700 Topics in Biology: Hibernation Ecology (4 cr) Fall
HON 1045 Foundations in Interdisciplinary Thinking: Science in the Movies (3 cr) Fall
BIOL 3330/3331 Principles of Evolution & Lab (4 cr) Fall/Spring

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 and Forestry** (*as graduate 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

Grants and Fellowships (\$2,895,141 granted)

Funded

2023 Intergovernmental Support Agreement with the Department of Defense - \$2,070,232
2022 Animal Welfare Institute Christine Stevens Wildlife Award - \$14,900
2022 APSU Faculty Research Support Grant - \$4,170
2022 APSU Student Academic Success Initiative - \$5,650
2021 APSU Faculty Research Support Grant - \$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 APSU Student Academic Success Initiative (as Co-PI) - \$3,600
2021 Robert D. Brown Ecology and Conservation Endowment - \$1,400
2020 Intergovernmental Support Agreement with the Department of Defense - \$388,385

2020	APSU Technology Access Fee (<i>as Co-PI</i>) - \$5,264
2020	APSU Undergraduate Research Enrichment Fund (<i>listed as mentor</i>) - \$6,000
2017	NSF Infectious Disease Evolution Across Scales - \$3,000
2014-2016	Debra Lowe Fellowship - \$6,000
2014-2016	University of Florida Travel grants - \$4,500
2014-2015	Grinter Fellowship - \$5,500
2010	North American Moose Conference Newcomer's Award - \$1,000
2009	Sigma Xi Society Research in Need Grant - \$1,000
2009	Edna B Sussman Foundation Fellowship - \$5,800

In review

2024	NJ Sea Grant Offshore Wind Research and Monitoring Initiative (<i>as Co-PI</i>) - \$721,379
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Not funded

2023	Bureau of Land Management Headquarters Wildlife Program (<i>as Co-PI</i>) - \$211,726
2023	DoE: Bat Deterrent Technology Development (<i>as Co-PI</i>) - \$742,608
2022	Morris Animal Foundation - \$96,870
2022	USFWS Wildlife Management Institute - \$28,158
2022	Tennessee Valley Authority Conservation Bat Fund - \$148,976
2021	NPS Natural Resource Condition Assessment Program (<i>as Co-PI</i>) - \$28,158
2021	American Wildlife Conservation Foundation - \$1,972

Awards

2024	Austin Peay Richard Hawkins Award for Excellence in Research (<i>college nomination</i>)
2022	Austin Peay Socrates Award for Excellence in Teaching
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
2007	Unity College Peer Tutor Award
2005	Maine Campus Compact Heart and Soul Award

Peer-reviewed Publications (**indicates student*)

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- Lemieux-labonte, V, J Pathmanathan, Y Terrat, N Tromas, C Lausen, A Simard, **CG Haase**, CKR Willis, FJ Lapointe. *In press*. *Pseudogymnoascus destructans* infection impacts the functional metagenome of highly vulnerable *Myotis lucifugus*. *Microbiology Ecology*
 - Williams, SC*, SK Krueger, GA Zirkle, **CG Haase** (2024) Summer roost site selection of a declining bat species. *Mammalian Biology*
 - Krueger*, S, SC Zirkle*, J O'Keefe, G Zirkle, **CG Haase** (2024) White-nose syndrome, winter duration, and pre-hibernation climate impact abundance of reproductive female bats. *PLOS One* 19:e0298515
 - Walker*, R, A Culley*, **CG Haase**, M Thomas, S Brandt, M Floyd, RE Johansen (2024) High conductivity contributes to population isolation of a small-bodied, benthic, headwater specialist fish (Percidae). *Ecology of Freshwater Fishes*. E12769
 - Haase, CG**, RJ Fletcher, Jr DH Slone, JP Reid, SM Butler (2023) Quality of thermal refuges influences use by the cold intolerant Florida manatee. *Endangered Species Research* 51:89-101
 - McGuire, LP, NW Fuller, **CG Haase**, KA Silas, SH Olson (2022) Lean mass dynamics in hibernating bats and implications for energy and water budgets. *Physiological & Biochemical Zoology* 95:317-325
 - McClure, ML, CR Hranac, **CG Haase**, S McGinnis, BG Dickson, DTS Hayman, LP McGuire, CL Lausen, RK Plowright, NW Fuller, SH Olson (2022) Projecting compound effects of climate change and white-nose syndrome on North American bat species. *Climate Change Ecology* 3:100047
 - 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* 11(1):1-9
 - 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* 192:171-181
 - Haase, CG**, A Yang, K McNyset, J Blackburn (2021) GARPTools: R software for data preparation and model evaluation of GARP models. *Ecography* 44(12):1790-1796

11. 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* 11(17):11604-11614
12. 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* 48:2429-2444
13. **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* 11(1):506-515
14. 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
15. 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
16. **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
17. **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
18. 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
19. **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
20. Yang, A, JP Gomez, **CG Haase**, KM Proffitt, JK Blackburn (2019) Effects of Brucellosis serological status on physiological conditions and behavioral mechanisms of Elk. *Journal of Wildlife Diseases* 55(2):304-315
21. **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
22. Slone, DH, SM Butler, JP Reid, **CG Haase** (2017) Timing of warm water refuge use in Crystal River National Wildlife Refuge by manatees. US Geological Survey Open-File Report
23. 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
24. Cross, PC, ES AlMBERG, **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
25. **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
26. **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

1. Wolf, LK, **CG Haase**, P Sprouse, EP Gomex-Ruiz, TE Lacher, Jr. White-nose syndrome steppingstones: suitability of Mexican karst regions to sustain *Pseudogymnoascus destructans* fungus. Submitted to *Wildlife Biology*. Submission ID # WLB-2024-01354.
2. Olson, SH, CM Davy, CL Lausen, YA Dzal, JT Foster, WF Frick, NW Fuller, **CG Haase**, CR Hranac, HE Kretser, S Lieberman, C McCann, ML McClure, C Mormorunni, JC Ray, M Verant, C Walzer, CKR Willis, LP McGuire. Facilitating evolutionary rescue from a wildlife health threat with cross-sectoral strategies: a case study on white-nose syndrome. Submitted to *Ecology and Society*. Manuscript ID# ES-2023-14350

Theses

1. 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.
2. 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.

Invited Presentations

1. Bats in the Balance: Ecophysiological insights on hibernation energetics, disease dynamics, and foraging behavior. April 2024. Vanderbilt University, Nashville, TN
2. Quality of thermal refuges influences use by the cold-intolerant Florida manatee. November 2023. Florida Manatee Forum, Jacksonville, FL
3. The energetic impacts of disease: a case study of white-nose syndrome in southeastern bats. December 2022. Delaware County Institute of Science, Media, PA
4. Habitat conservation and wildlife connectivity. March 2022. Sustaining Biodiversity course, Austin Peay State University, Clarksville, TN
5. The energetic costs of disease: a case study of bioenergetics of white-nose syndrome. February 2022. Fish and Wildlife Research Institute seminar series, Florida Fish and Wildlife Conservation Commission, Gainesville, FL
6. 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
7. 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
8. 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
9. The importance of scale: What landscape ecology can teach us about thermoregulation. September 2019. Department of Biology Seminar Series, Murray State University, Murray, KY
10. 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
11. 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
12. 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
13. Energetics of disease. November 2017. Montana State University, Bozeman, MT
14. Some like it hot: Understanding how temperature shapes animal energetics and behavior. September 2017. Women in Science Lecture Series, St Mary's College, IN
15. 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 (**indicates student*)

1. Van Parys*, D, SC Williams, GA Zirkle, **CG Haase** (2024) Impacts of ecological release and land use change on southeastern bat communities. North American Society for Bat Research Meeting, Guadalajara, Mexico
2. **Haase, CG** (2024) Skype a Scientist: Bringing your research into the digital classroom. North American Society for Bat Research Meeting, Guadalajara, Mexico
3. Crowley, LN*, **CG Haase**, S Leivers, and NW Fuller (2024) Tri-colored bat hibernation and culvert microclimate as drivers of WNS avoidance in Texas. North American Society for Bat Research Meeting, Guadalajara, Mexico
4. Simonis, MC, S Ciarrachi, KE Dyer, M Allira, RF Bernard, MM Chumcal, **CG Haase**, JT Foster, DJ Becker (2024) Extrinsic stressors impact North American bat cellular immunity during reproductive periods. Society for Integrative and Comparative Biology Meeting. Seattle, WA
5. Anderson, EJ*, DG McIlwain*, **CG Haase** (2023) Development of an automated bat box detection system to assess use in response to microclimate. ACM Mid-Southeast Conference. Gatlinburg, TN
6. Gulley, BR*, DJ Van Parys*, **CG Haase** (2023) Altered foraging behavior as a response to increased predator presence in bats. Tennessee Bat Working Group meeting. Knoxville, TN
7. Gulley, BR*, DJ Van Parys*, **CG Haase** (2023) Altered foraging behavior as a response to increased predator presence in bats. North American Society for Bat Research Annual Meeting. Winnipeg, Canada
8. Crowley, LN*, NW Fuller, **CG Haase** (2023) Fungal growth evasion by tri-colored bats in non-traditional hibernacula. National White-nose Syndrome Meeting. Palm Springs, CA
9. Krueger, SK*, SC Zirkle*, JM O'Keefe, G Zirkle, **CG Haase** (2022) Impact of white-nose syndrome and local climate on reproduction of female bats. North American Society for Bat Research Annual Meeting. Austin, TX
10. Walker, TG*, G Zirkle, **CG Haase** (2022) Effects of aquatic insect abundance and biomass on bat species diversity. North American Society for Bat Research Annual Meeting. Austin, TX
11. **Haase, CG**, NW Fuller, YA Dzal, DTS Hayman, CR Hranac*, C Lausen, KA Silas, SH Olson, RK Plowright (2022) Body mass and hibernation microclimate may predict bat susceptibility to white-nose syndrome. Northeast Bat Working Group Annual Virtual Meeting

12. **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
13. 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
14. **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
15. 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
16. 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
17. 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
18. **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
19. **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
20. **Haase, CG**, NW Fuller, 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
21. 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
22. **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
23. 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
24. 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
25. **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
26. 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
27. 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. Symposium on Infectious Diseases on Bats. Fort Collins, CO
28. **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
29. **Haase, CG** and BH Underwood (2010) Integrating thermal cover into habitat models for moose. North American Moose Conference. International Falls, MN
30. **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
31. **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
32. **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)

1. Tomboc, G*, **CG Haase** (2024) Comparative analysis of thermal dynamics of bat bag materials. North American Society for Bat Research Meeting, Guadalajara, Mexico
2. Young, L*, LN Crowley, F Sewell, S Perry, **CG Haase** (2024) Impacts of humidity, substrate, and light on *Pseudogymnoascus destructans* growth. North American Society for Bat Research Meeting, Guadalajara, Mexico
3. Anderson, EJ*, DG McIlwain*, DJ Van Parys*, **CG Haase** (2023) Development of an automated bat box detection system to assess use in response to microclimate. Association for Computing Machinery Meeting.
4. **Haase, CG**, EJ Anderson*, DG McIlwain*, DJ Van Parys* (2023) Development of an automated bat box detection system to assess use in response to microclimate. Tennessee Bat Working Group meeting.
5. Crowley, LN*, NW Fuller, **CG Haase** (2023) Fungal disease evasion in aboveground non-traditional hibernacula. Tennessee Bat Working Group meeting. Knoxville, TN
6. Crowley, LN*, NW Fuller, **CG Haase** (2023) Fungal disease evasion in aboveground non-traditional hibernacula. North American Society for Bat Research Annual Meeting. Winnipeg, Canada
7. **Haase, CG**, EJ Anderson*, DG McIlwain*, DJ Van Parys* (2023) Development of an automated bat box detection system. North American Society for Bat Research Annual Meeting. Winnipeg, Canada
8. 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
9. 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
10. Krueger, SK*, TG Walker*, SC Zirkle*, JM O'Keefe, G Zirkle, **CG Haase** (2021) Impact of white-nose syndrome and climate on reproduction of bats in the southeast. Tennessee Bat Working Group meeting. Virtual
11. Walker, TG*, SC Zirkle*, G Zirkle, **CG Haase** (2021) Effects of aquatic insect abundance and biomass on bat species diversity. Tennessee Academy of Sciences Meeting. Cookeville, TN [*3rd place in student competition*]
12. Zirkle, SC*, SK Krueger*, G Zirkle, **CG Haase** (2021) Summer habitat use and roost-site selection of a recently petitioned bat species. Tennessee Academy of Sciences. Cookeville, TN [*2nd place in student competition*]
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 Academy of Sciences. Cookeville, TN [*1st place in student competition*]
14. 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
15. 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
16. Krueger, SK*, TG Walker*, SC Zirkle*, JM O'Keefe, G Zirkle, **CG Haase** (2021) Impact of white-nose syndrome and climate on reproduction of bats in the southeastern United States. The Wildlife Society Annual Meeting. Virtual
17. Silas, K.A., N.W. Fuller, C.G. Haase, S.H. Olson, L.P. McGuire. 2019. Diphallia in *Corynorhinus townsendii*. North American Society for Bat Research Annual meeting in Kalamazoo, MI, October 23-26, 2019.
18. **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
19. McGuire, LP, NW Fuller, JG Boyles, **CG Haase**, KA Silas, SH Olson (2018) A conceptual framework of hibernation phenotype and interspecific variation in physiology. National White-nose Syndrome Meeting. Tacoma, WA
20. **Haase, CG**, RF Fletcher, Jr, DH Slone, JP Reid, SM Butler (2015) Influence of spatial patterns of thermal and forage resources on manatee behavior. Conference on the Biology of Marine Mammals. San Francisco, CA
21. **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
22. **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
23. **Haase, CG**, PC Cross, DW Smith, O Putzeys, P Nugent (2012) Are mangy wolves ENERGY STAR compliant? Energetic impacts of Sarcoptic mange (*Sarcotes scabiei*) on gray wolves (*Canis lupus*) in Yellowstone. Ecology and Evolution of Infectious Disease Workshop. Ann Arbor, MI

Popular Media (as author)

- "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

Popular Media (featured)

"Austin Peay receives grant to study bats on Fort Campbell." WKRN, October 30, 2023
"Haase picks up long-term IGSA contract to continue APSU's bat research." APSU News, September 20, 2023
"Dr. Catherine G. Haase with the 2022 Christine Stevens Wildlife Award." APSU News, February 27, 2023
"Landscape-scale restoration continues at soak creek farm." TennGreen Land Conservancy, February 6, 2023
"Four bat species in one night." APSU News, August 23, 2022
"Austin Peay graduate student identifies 55,085 insects during bat research." APSU News, April 25, 2022
"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
"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

2024	Bat Biology and Anatomy, Middle College, Clarksville, TN, September 26, 2024 Leadership Clarksville, Austin Peay State University, Clarksville, TN, April 11, 2024 Travelling Science on Tap, Austin Peay State University, Huntsville, AL, March 15, 2024 Science on Tap, Austin Peay State University, Clarksville, TN, February 6, 2024
2023	Bat Biology and Anatomy, Carmel Elementary School, Clarksville, TN, October 6, 2023 Skype a Scientist at Mercury Mine Elementary School, September 14, 2023 Bat Biology and Anatomy, Middle College, Clarksville, TN, August, 31, 2023 What is Science? What's Up Wednesday, Clarksville, TN, February 8, 2023 STEM event with Clarksville home schools, Clarksville, TN, February 27, 2023
2022	Bat week! Customs House Museum, Clarksville, TN, October 29, 2022 Skype a Scientist at Olathe Virtual Schools, January 24, 2022
2021	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
2020	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
2019	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. 500 Women Scientists Suds and Science, Bozeman, MT, June 30, 2019
Pre-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, Rancocas Nature Center, Westhampton Township, NJ, October 17, 2017 Science in Yellowstone. Valleyview Middle School, Denville, NJ, December 22, 2015

Advising and Mentoring

Graduate students – as primary advisor

2023-	Dakota Van Parys
2023-	Ryan Stuart
2022-2024	Leah Crowley
2022-2024	Brandon Gulley
2020-2022	Trevor Walker
2020-2022	Sarah (Zirkle) Williams
2020-2022	Sarah Krueger
2020-2022	Holly Latta (<i>non-thesis track</i>)

Graduate students – as committee member

2024-	Brianna Saylor
2024-	Sienna Solis-Stokes
2024-	Collin Stratton
2024-	Daniel Redwine
2023-	Allison Palmer

2023-	Anna Chess
2023-	Baily Crable
2022-	Jacob Wyco
2020-	Nathan Selleck
2023-2024	Stella Ugobuaku
2022-2024	Patience Oni
2021-2023	Gabrielle LeFevre
2020-2023	Alexis Culley
2020-2023	Jacob Barrett
2020-2023	River Watson
2020-2023	Julie Kastanis
2020-2022	Connor Hughes
2020-2022	Jocelyn Stalker
2019-2021	Brandon Brown
2019-2020	Robert Ryan
2019-2020	Lyranda Thiem
2019-2020	Molly Richard
2019-2020	Chelsea Blumbergs

Undergraduate students – as research mentor

2024-	Alexis Nefe
2024-	Macee Roberts
2024-	Faith Sewell
2024-	James Watts
2023-	Gabrielle Tomboc
2023-	Logan Young
2022-	Casey Kleinhans
2022-2024	Erik Anderson
2022-2023	Drew McIlwain
2021-2023	Dakota Van Parys
2021-2022	Kennedy Beck
2021-2022	Matthew Scott
2021-2022	Harrison Rogers
2020-2021	Jonathan Crockarell
2020-2021	John Hansen

Professional Contributions

Service to Scientific Community

2023-	Board of Directors, North American Society for Bat Research (NASBR)
2018-2019	Co-Director, 500 Women Scientists

Service to the University Community

2024-	Internship Coordinator, APS Department of Biology
2024-	Department Representative, APSU CoSTEM Retention and Tenure Review Committee
2024-	Chair, APSU Department of Biology Handbook Committee
2023-	Co-chair, APSU Department of Biology Student Learning Outcomes Assessment Committee
2020-	APSU Environmental Health and Safety Advisory University Committee
2019-	Faculty advisor, APSU Chapter of The Wildlife Society
2023-2024	Chair, Faculty Search Committee, APSU Department of Biology
2022	Chair, APSU Retention, Tenure, Promotion Policy Review Committee
2021-2022	Sub-committee co-chair, APSU College of STEM Diversity and Inclusion Committee
2020-2023	APSU College of STEM Diversity and Inclusion Committee
2019-2023	Chair, APSU Department of Biology Communications Committee

Workshop Development

2021-2023	Wildlife Field Techniques Workshops, Austin Peay State University
2017	R Workshop for Beginners, Montana State University
2013-2016	R Workshop for Beginners, University of Florida

Professional Society Memberships

2020- Tennessee Academy of Science (TAS)
2016- North American Society for Bat Research (NASBR)
2007- American Society of Mammalogists (ASM)
2003- The Wildlife Society (TWS)

Working Groups and Society Section Memberships

2020- Southeastern Bat Diversity Network
2020- Tennessee Bat Working Group
2019- Tennessee Chapter of The Wildlife Society
2019- TWS Spatial Ecology & Telemetry Working Group
2019- TWS College & University Wildlife Education Working Group
2019-2024 TWS Early Career Professional Working Group
2016-2019 Western Bat Working Group
2016-2019 Montana Bat Working Group
2016-2019 Montana Chapter of The Wildlife Society
2012-2016 Florida Chapter of The Wildlife Society
2007-2010 New York Chapter of The Wildlife Society
2003-2007 Maine Chapter of The Wildlife Society

Reviewer

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

Grants: National Science Foundation (Organismal Response to Climate Change), National Fish & Wildlife Foundation (Bats for the Future Fund), Morris Animal Foundation, Renewable Energy Wildlife Institute (Wind Wildlife Research Fund), Natural Sciences and Engineering Research Council of Canada (Discovery Grants)

Software Tools Development

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