

BRITTANY A. MOSHER

UNIVERSITY OF VERMONT, RUBENSTEIN SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES
WILDLIFE AND FISHERIES BIOLOGY PROGRAM
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PROFESSIONAL APPOINTMENTS

October 2019 – present. Assistant Professor. Rubenstein School of Environment and Natural Resources, Wildlife and Fisheries Biology Program. University of Vermont. Burlington, VT.

January 2020 – present. Faculty, Biological Data Science (BiDS) Program (formerly Quantitative and Evolutionary STEM Training [QuEST]), University of Vermont.

November 2020 – present. Affiliate, Gund Institute for Environment, University of Vermont.

EDUCATION AND TRAINING

2017 - 2019. Postdoctoral Researcher. USGS Amphibian Research and Monitoring Initiative (ARMI) – Patuxent Wildlife Research Center and Pennsylvania State University. Turners Falls, MA.

2017. Postdoctoral Researcher, Conservation Science Partners, Fort Collins, CO.

2012 – 2017. Ph.D., Fish, Wildlife, and Conservation Biology, Colorado State University, Fort Collins, CO.
Dissertation: *Informing the ecology and conservation of amphibians imperiled by chytridiomycosis.*

2009 – 2011. M.S., Fish and Wildlife Management, Montana State University, Bozeman, MT.
Thesis: *Implications of a recent mountain pine beetle outbreak for habitat and populations of birds.*

2005 – 2009. B.S., Magna Cum Laude, Natural Resources, Cornell University, Ithaca, NY.

PUBLICATIONS

Peer-reviewed Publications (†undergraduate, *graduate student, or §postdoctoral associate on my UVM research team; §postdoctoral associate/graduate student who was not my advisee but that I had a large role in mentoring.)

2024

32. J.C. Cook, E. Rosenblatt[§], G. DiRenzo, E.H.C. Grant, **B.A. Mosher**, F. Arce, S. Christensen, R.R. Ghia, M.C. Runge. Cross-sector collaboration reduces SARS-CoV-2 risk in deer. *Accepted at Nature Communications*.
31. L. Pekurny*, E.H. Grant, and **B.A. Mosher**. Predicted occurrence of eastern newts (*Notophthalmus viridescens viridescens*) across the northeastern United States. *Accepted at Herpetologica*.
30. E. Rosenblatt[§], J.D. Cook, G. DiRenzo, E.H.C. Grant, F. Arce, K.M. Pepin, F.J. Rudolph, M.C. Runge, S. Shriner, D.P. Walsh, and **B.A. Mosher**. 2024. Epidemiological modeling of SARS-CoV-2 in white-tailed deer (*Odocoileus virginianus*) reveals conditions for introduction and widespread transmission. *PLoS Computational Biology*, 20(7), e1012263. DOI: <https://doi.org/10.1371/journal.pcbi.1012263>.
29. S. Hoff[†], **B.A. Mosher**, M.B. Watson, L. Johnson, E. Olson, D. O'Dell, C.J. Pendergast, Daniel A Bogan, Carl J Herzog, Wendy C Turner. 2024. Widespread occupancy of the Endangered northern myotis on Northeastern Atlantic Coastal Plain islands. *Endangered Species Research*, 54, 141-153. DOI: <https://doi.org/10.3354/esr01335>.
28. M.C. McEachran, J.A. Harvey, R.O. Mumma[§], M.C. Bletz, C.S. Teitelbaum, E. Rosenblatt[§], J.F. Rudolph, F. Arce, S. Yin, D.J. Prosser, **B.A. Mosher**, G.D. DiRenzo, J.M. Mullinax, J. Couret, M.C. Runge, E.H.

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Grant, J.D. Cook. 2024. Reframing wildlife disease management using decision analysis. *Conservation Biology*, e14284. DOI: <http://doi.org/10.1111/cobi.14284>.

27. Olson, D. H., Grant, E. H. C., Bletz, M., Piovio-Scott, J., Lesbarrères, D., Kerby, J. L., Adams, M.J., Florencia Breitman, M., Christman, M.R., Forzan, M.J., Gray, M.J., Hill, A.J., Koo, M.S., Milenkaya, O., Rebollar, E.A., Rollins-Smith, L.A., Serr, M., Shepack, A., Shirose, L., Sprague, L., Walke, J.B., Warwick, A.R., and **B.A. Mosher**. 2024. Preparing for a Bsal invasion into North America has improved multi-sector readiness. *Frontiers in Amphibian and Reptile Science*, 2, 1347541. DOI: <https://doi.org/10.3389/famrs.2024.1347541>.

26. Grant, E. H. C., **B. A. Mosher**, R. F. Bernard, A. D. Wright & R. E. Russell. 2024. Matching decision support modeling frameworks to disease emergence stages and associated management objectives. *Conservation Science and Practice*, 6(3), e13085. DOI: <https://doi.org/10.1111/csp2.13085>.

25. B. Gerber, **B.A. Mosher**, S.J. Converse, E. Muths, H. Crockett, L.L. Bailey. 2024. Optimal management decisions are robust to unknown dynamics in an amphibian metapopulation plagued by disease. 2024. *Animal Conservation*, 27(1), 65-77. DOI: <https://doi.org/10.1111/acv.12877>.

2023

24. H.W. Despres*, Mills, M.G., Schmidt, M.M. ...**B.A. Mosher** and E.A. Bruce. 2023. Surveillance of Vermont wildlife in 2021–2022 reveals no detected SARS-CoV-2 viral RNA. *Scientific Reports* 13, 14683. DOI: <https://doi.org/10.1038/s41598-023-39232-0>.

23. E. Edwards*, **B.A. Mosher**, T. Pauley, S. Welch, and J. Waldron. 2023. The effect of liming on spring salamander abundance. *The Journal of Wildlife Management*, 87(7), e22475. <http://dx.doi.org/10.1002/jwmg.22475>

22. E.H. Campbell Grant, Amburgey, S. M., Gratwicke, B., Chaves, V. A., Belasen, A. M., Bickford, D., ... **B.A. Mosher**...& Muths, E. 2023. Priority research needs to inform amphibian conservation in the Anthropocene. *Conservation Science and Practice*, e12988. DOI: <https://doi.org/10.1111/csp2.12988>.

21. E.H. Grant, R. Mummah*, **B.A. Mosher**, J. Evans, and G. DiRenzo. 2023. Inferring pathogen presence under sample misclassification and partial observation. *Methods in Ecology and Evolution*. DOI: <https://doi.org/10.1111/2041-210X.14102>.

2022

20. R. Henderson†, **B.A. Mosher**, R. Watters, T. Jal, J. Murdoch. 2022. Human disturbance influences occupancy of red deer in Mongolia. *Mongolian Journal of Biological Sciences*, 20(2), 3-12. DOI: <https://www.biotaxa.org/mjbs/article/view/72427>

19. K. Smalling, **B.A. Mosher**, L.R. Iwanowicz, K.A. Loftin, A. Boehlke, M.L. Hladik, C.R. Muletz-Wolz, N. Cortes-Rodriguez, R. Femmer, and E.H.C. Grant. 2022. Site- and individual-level contamination affects infection prevalence of an emerging infectious disease of amphibians. *Environmental Toxicology and Chemistry*, 41(3): 781-791. DOI: <https://doi.org/10.1002/etc.5291>.

2021

18. **B. A. Mosher**, P. Doherty Jr, J. Atwood, K. Corey, K., & C. Collins. 2021. Evidence of long-term declines in Island Scrub-Jay vital rates. *Avian Conservation and Ecology*, 16(2): 21. DOI: <https://doi.org/10.5751/ACE-01997-160221>.

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17. A.M. Verrilli, N.F. Leibman, A.E. Hohenhaus, and **B.A. Mosher**. 2021. Safety and efficacy of a ribose-cysteine supplement to increase erythrocyte glutathione concentration in healthy dogs. *American Journal of Veterinary Research*, 82(8): 653-658. DOI: <https://doi.org/10.2460/ajvr.82.8.653>.
16. D. Gear, **B.A. Mosher**, K.L.D. Richgels, E.H.C. Grant. 2021. Evaluation of regulatory action and surveillance as preventive risk-mitigation to an emerging global amphibian pathogen *Batrachochytrium salamandrivorans* (Bsal). 2021. *Biological Conservation*, 260: 109222. DOI: <https://doi.org/10.1016/j.biocon.2021.109222>.

2020

15. A. D. Wright, R. F. Bernard, **B. A. Mosher**, K.M. O'Donnell, T. Braunagel, G.V. DiRenzo, J. Fleming, C. Schafer, A.B. Brand, E.F. Zipkin, E.H.C. Grant. 2020. Moving from decision to action in conservation science. 2020. *Biological Conservation*, 249: 108698. <https://doi.org/10.1016/j.biocon.2020.108698>.
14. H.J. Waddle, D.A. Gear, **B.A. Mosher**, E.H.C. Grant, M. Adams, A. Backin, W. Barichivich, A. Brand, G. Bucciarelli, D. Calhoun, T. Chestnut, J. Davenport, A. Dietrich, R. Fisher, B. Glorioso, B. Halstead, M. Hayes, B. Hossack, P. Kleeman, J.A. Lemos-Espinal, J. Lorch, B. McCreary, E. Muths, C. Pearl, K.L.D. Richgels, C. Robinson, M. Roth, J. Rowe, W. Sadinski, B. Sigafus, I. Stasiak, S. Sweet, S. Walls, G. Watkins-Colwell, C.L. White, L. Williams, and M. Winzeler. 2020. *Batrachochytrium salamandrivorans* (Bsal) not detected in an intensive survey of North American amphibians. *Scientific Reports*, 10: 13012. DOI: <https://doi.org/10.1038/s41598-020-69486-x>.
13. E. Muths, B.R. Hossack, E.H. Campbell Grant, D.S. Pilliod, and **B.A. Mosher**. 2020. Effects of snowpack, temperature, and disease on demography in a wild population of amphibians. *Herpetologica Special Issue*, 17 (2): 132-143. DOI: <https://doi.org/10.1655/0018-0831-76.2.132>.
12. **B.A. Mosher**, R.F. Bernard, J.M. Lorch, D.A.W. Miller, K.L.D. Richgels, C.L. White, and E.H.C. Grant. 2020. Successful molecular detection studies require clear communication among diverse research partners. *Frontiers in Ecology and the Environment*, 18(1), 43-51. DOI: <https://doi-org/10.1002/fee.2141>.

2019

11. **B.A. Mosher**, V.A. Saab, M.D. Lerch, M.M. Ellis, and J.J. Rotella. 2019. Forest birds exhibit variable changes during a mountain pine beetle epidemic. *Ecosphere*, 10(12), e02935. DOI: <https://doi-org.ezproxy.uvm.edu/10.1002/ecs2.2935>.
10. R.E. Russell, B.J. Halstead, **B.A. Mosher**, E. Muths, M.J. Adams, E.H.C. Grant, R.N. Fisher, P.M. Kleeman, A.R. Backlin, C.A. Pearl, R.K. Honeycutt, and B.R. Hossack. 2019. Effects of amphibian chytrid fungus on apparent survival of frogs and toads of the western USA. *Biological Conservation*. 236: 296-304. DOI: <https://doi.org/10.1016/j.biocon.2019.05.017>.
9. **B.A. Mosher**, A.B. Brand, A.N.M. Wiewel, D.A.W. Miller, M.J. Gray, D.L. Miller and E. H. C. Grant. 2019. Estimating occurrence, prevalence, and detection of amphibian pathogens: insights from occupancy models. *Journal of Wildlife Diseases*. 55(3): 563-575. DOI: [10.7589/2018-02-042](https://doi.org/10.7589/2018-02-042).

2018

8. **B.A. Mosher**, K.P. Huyvaert, and L.L. Bailey. 2018. Beyond the swab: ecosystem sampling to understand the persistence of an amphibian pathogen. *Oecologia*, 188(1): 319-330. DOI: [10.1007/s00442-018-4167-6](https://doi.org/10.1007/s00442-018-4167-6).
7. B.M. Brost, **B.A. Mosher**, and K.A. Davenport. 2018. A model-based solution for observational errors in clinical studies. *Molecular Ecology Resources*, 18:580-589. DOI: 10.1111/1755-0998.12765.

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6. B.D. Gerber, S.J. Converse, H.J. Crockett, **B.A. Mosher**, E. Muths, and L.L. Bailey. 2018. Identifying species conservation strategies to reduce disease-associated declines. *Conservation Letters*, 11(2): 1-10. DOI: [10.1111/conl.12393](https://doi.org/10.1111/conl.12393).
5. **B.A. Mosher**, L.L. Bailey, and K.P. Huyvaert. 2018. Host-pathogen metapopulation dynamics suggest high elevation refugia for boreal toads. *Ecological Applications*, 28(4): 928-937. DOI: [10.1002/eap.1699](https://doi.org/10.1002/eap.1699).
4. **B.A. Mosher**, L.L. Bailey, B.A. Hubbard, and K.P. Huyvaert. 2018. Making inference using complex occupancy models with an unobservable state. *Ecography*, 41(1): 32-39. DOI: [10.1111/ecog.02849](https://doi.org/10.1111/ecog.02849).
3. K.A. Davenport, **B.A. Mosher**, B.M. Brost, D. Henderson, N. Denkers, A. Nalls, E. McNulty, C. Mathiason, and E. Hoover. 2018. Distinguishing the shedding and detection of chronic wasting disease prions in deer saliva using occupancy modeling. *Journal of Clinical Microbiology*, 56(1): e01243-17. DOI: [10.1128/JCM.01243-17](https://doi.org/10.1128/JCM.01243-17).

2017

2. **B.A. Mosher**, K.P. Huyvaert, T. Chestnut, J.L. Kerby, J.D. Madison, and L.L. Bailey. 2017. Design- and model-based strategies for detecting and quantifying an amphibian pathogen in environmental samples. *Ecology and Evolution*, 7(24): 10952–10962. DOI: [10.1002/ece3.3616](https://doi.org/10.1002/ece3.3616).
1. S.J. Converse, L.L. Bailey, **B.A. Mosher**, W.C. Funk, B.D. Gerber, and E. Muths. 2017. A model to inform management actions as a response to chytridiomycosis-associated decline. *EcoHealth*, 14(S1): 144–S155. DOI: [10.1007/s10393-016-1117-9](https://doi.org/10.1007/s10393-016-1117-9).

Publications Currently in Review or Revision († Undergraduate mentee author, § Graduate student mentee author, § Postdoctoral researcher mentee author)

1. E. Edwards[§], B.A. Mosher, P. Sullivan, and R. Mummah. Eastern Cricket Frog Distribution and Reintroduction Efforts Informed by Wetland Habitat and Overwintering Temperatures. *In review*.
2. D. Gear, M. Adams, A. Backin, W. Barichivich, A. Brand, G. Bucciarelli, D. Calhoun, T. Chestnut, J. Davenport, A. Dietrich, G. DiRenzo, R. Fisher, B. Glorioso, E.H.C. Grant, B. Halstead, M. Hayes, B. Hossack, M. Kain, P. Kleeman, J. Lorch, B. McCreary, D. Miller, **B.A. Mosher**, E. Muths, C. Pearl, C. Robinson, M. Roth, J. Rowe, W. Sadinski, B. Sigafus, I. Stasiak, S. Sweet, H.J. Waddle, S. Walls, G. Watkins-Colwell, L. Williams, M. Winzeler. Pan-Amphibia distribution of the fungal parasite *Batrachochytrium dendrobatidis* varies with species and temperature. *In revision at Ecological Monographs*.
3. E. Rosenblatt[§], J.D. Cook, G.V. DiRenzo, E.H. Campbell Grant, M.C. Runge, and B.A. Mosher. Fomites could determine severity of SARS-CoV-2 outbreaks in low-density white-tailed deer (*Odocoileus virginianus*) populations. *In review*.

Book Chapters

1. B. Gerber, **B.A. Mosher**, D. Martin, T. Chambert, and L. L. Bailey. (2017). Occupancy models. In *A Gentle Introduction to Program MARK* (Chapter 21). Available from phidot.org/software/mark/docs/book.

Research In the News

Groff, L. 2023. “Seeking Spotted Turtles”. Vermont Fish and Wildlife Department Natural Heritage Harmonies Newsletter. Available [here](#).

Putnoi, Joia. 2023. “UVM study swabs white-tailed deer for COVID to better understand virus.” Vermont Public. Available [here](#).

Wildlife Watch. 2022. “Scientists try to spot the rare spotted turtle”. WCAX. Available [here](#).

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AWARDED GRANTS

Over \$4M awarded in total.

- 2023-2028.** National Science Foundation. PI. Drivers of infection outbreaks in a temperature-sensitive host-pathogen system. Collaborators: Grace Direnzo (UMass, Co-PI), Dan Grear (USGS, Co-PI), David Miller (Penn State, Co-PI), Molly Bletz (Penn State, Senior Personnel), Evan Grant (USGS, Senior Personnel). **\$2,600,059, current.**
- 2023-2025.** Lake Champlain Basin Program. PI. The impact of aquatic invasive species mechanical harvesting on Eastern musk turtle (*Sternotherus odoratus*) populations in the Lake Champlain Basin. Collaborators: Matthew Gorton (UVM Ph.D. candidate, co-wrote proposal). Partners: Vermont Fish & Wildlife Department. **\$172,690, current.**
- 2023-2025.** US Geological Survey. PI. Chronic wasting disease management: a proactive decision framework. Collaborators: USGS (Mike Runge, Jon Cook, and Evan Grant). Partners: Vermont Fish and Wildlife Department. **\$167,351, current.**
- 2022-2025.** US Fish and Wildlife Service. Co-PI. Conserving Vermont's spotted turtles: using novel techniques to detect a cryptic species and identify unknown populations. Collaborators: Luke Groff (PI; Vermont Fish & Wildlife Department, Kiley Briggs (Orianne Society). **\$250,000, current.**
- 2023-2025.** Lake Champlain Basin Program. Co-I. Evaluating habitat function in floodplain natural communities of the Lake Champlain Basin to support conservation and restoration prioritization. UVM Collaborators: Elizabeth Doran (PI), Kristen Underwood, Rebecca Diehl, Jed Murdoch. **\$222,949, current.**
- 2022 – 2024.** US Geological Survey. PI. Understanding SARS-CoV-2 spillover risk and predicting infectious disease outbreaks. Partners: USGS (Mike Runge, Jon Cook, and Evan Grant). **\$250,000, current.**
- 2022 – 2024.** Lake Champlain Sea Grant. Co-PI. Shoreline habitat restoration and management to support persistence and recovery of Lake Champlain's diverse turtle community. Collaborators: Jed Murdoch (Co-PI, UVM RSENr). Partners: Lake Champlain Land Trust, Winooski Valley Park District, Vermont Fish & Wildlife Department. **\$150,000, current.**
- 2021 – 2023.** US Geological Survey. Co-PI. Improving management and surveillance decisions related to white nose syndrome by accounting for imperfect detection and misclassification error. Collaborators: Grace Direnzo (UMass), Evan Grant (USGS). Partner: National Wildlife Health Center. **\$201,630, previous.**
- 2020 - 2023.** US Geological Survey. Co-I. Influence of winter ticks on moose demography, habitat selection, and genetic structure in the Northeast U.S. Collaborators: Therese Donovan (UVM/USGS; PI), Jed Murdoch (UVM, Co-I), Stephanie McKay (UVM, Co-I). **\$250,000, previous.**
- 2020 - 2022.** US Geological Survey. PI. Managing forests for resilient vernal pool amphibian populations. PI. **\$85,919, previous.**
- 2019-2021.** UVM Office of the Vice President for Research EXPRESS. PI. The role of temperature in mediating amphibian disease dynamics. **\$3,000, previous.**
- 2019-2021.** US Geological Survey Emerging Diseases Cyclical. Co-I. Re-visiting Bsal risk: how 3 years of pathogen surveillance, research, and regulatory action change invasion risk of the exotic amphibian pathogen *Batrachochytrium salamandrivorans*. Collaborators: Dan Grear (USGS) and Evan Grant (USGS). **\$52,588, previous.**

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SELECTED RESEARCH PRESENTATIONS (*invited presenter, +mentee presenter)

***B.A. Mosher.** Leveraging cross-sector partnerships and student-powered surveillance to prepare for and mitigate the threat of chytridiomycosis in North America. Symposium on Managing Herpetofaunal Diseases at The Wildlife Society, (*upcoming*, October 2024).

+*Scott, R.C., E.H.C. Grant, and **B.A. Mosher.** Assessing disease risk to the spotted salamander (*Ambystoma maculatum*) by ranavirus and the amphibian chytrid fungus (BD). Symposium on Existing and Emerging Health Threats at Northeast Association of Fish and Wildlife Agencies annual meeting. Cape Cod, MA (April 2024).

+Hanrahan, C., N. Barrios-Garcia, **B.A. Mosher**, and J. Murdoch. Estimating coyote diet and predation on threatened shorebirds using DNA metabarcoding on Cape Cod National Seashore. Oral presentation at Northeast Association of Fish and Wildlife Agencies annual meeting. Cape Cod, MA (April 2024).

+Caffrey, E., J. Murdoch, W. Allan, and **B.A. Mosher.** Threats to Northern Diamondback Terrapin nests vary by nesting substrate in Cape Cod, Massachusetts. Oral presentation at Northeast Natural History Conference. Albany, NY (April 2024).

+*Rosenblatt, E.G., J.D. Cook, G. DiRenzo, E.H.C. Grant, F. Arce, K. Pepin, F.J. Rudolph, M.C. Runge, S. Shriner, D. Walsh, **B.A. Mosher.** An assessment of the risk of SARS-CoV-2 spillover and spread in white-tailed deer and potential intervention points. Symposium at The Wildlife Society, Annual National Conference. Louisville, KY (October 2023).

+Edwards E.M., R.O. Mummah, **B.A. Mosher**, P. Sullivan. 2023. Investigating Historical Extirpations and Range Shifts of *Acris* spp. Northeast Natural History Conference. Burlington, VT (April 2023).

+Gorton, M.R., **B.A. Mosher**, and S. Parren. 2023. Do Wildlife Underpasses Reduce Mortality Among Amphibians in Vermont? Oral presentation at International Conference on Ecology and Transportation. Burlington, VT (April 2023).

+Rosenblatt, E.G., J.D. Cook, G. DiRenzo, E.H.C. Grant, F. Arce, K. Pepin, F.J. Rudolph, M.C. Runge, S. Shriner, D. Walsh, **B.A. Mosher.** 2023. "SARS-CoV-2 spillover and spread characteristics in simulated white-tailed deer populations, in wild and captive contexts". U.S. Geological Survey and U.S. Department of Agriculture, APHIS-Wildlife Services Zoonotic Disease Science Exchange. Virtual.

Hyman, O., **B.A. Mosher**, O. Milenkaya, and J. Walke. An experiential learning network driving early detection of emerging amphibian pathogens in North America. Oral presentation at the Integrated Research Challenges in Environmental Biology annual meeting, virtual, (November 2022).

+Gorton, M.R., B.A. Mosher, and S. Parren. 2022. Do Wildlife Underpasses Reduce Mortality Among Amphibians in Vermont? Oral presentation at The Wildlife Society, Spokane, WA (November 2022).

+*Mummah, R. and **B.A. Mosher.** The occupancy modeling framework: fundamentals, advances, and applications to entomology. Oral presentation at the Entomological Society of America meeting. Vancouver, BC (November 2022).

***Mosher, B.A.,** P. Doherty, J. Atwood, K. Corey, C. Collins. Evidence of long-term declines in Island Scrub-Jay vital rates. Oral presentation at the Ecological Society of America conference. Montreal, Canada (August 2022).

+Edwards, E., Sullivan, P., and **B.A. Mosher.** Using species distribution models to inform historical extirpations and range shifts of *Acris* spp. Oral presentation at Northeast Partners in Amphibian and Reptile Conservation annual meeting. Canaan, West Virginia (August 2022).

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[†]Gorton, M., Parren, S., and **B.A. Mosher**. Do wildlife underpasses reduce mortality among amphibians in Vermont? Poster presentation at Northeast Partners in Amphibian and Reptile Conservation annual meeting. Canaan, West Virginia (August 2022).

[†]Rosenblatt, E.G., J.D. Cook, F. Arce, M.C. Runge, E.H.C. Grant, **B.A. Mosher**. Rapid risk assessment of SARS-CoV-2 transmission between humans and white-tailed deer. Vermont Disease Ecology Conference, Norwich University, Northfield, VT. (July 2022)

[†]Pekurny, L. and **B.A. Mosher**. Managing for multiple pathogens simultaneously in complex ecosystems. Oral presentation at The Wildlife Society Annual Conference, virtual. (October 2021)

***Mosher, B.A.**, R. Russell, E.H.C. Grant, K. Alger, R. Bernard, K. Richgels, A.D. Wright. Translating wildlife disease models into viable information for managers. Oral presentation at The Wildlife Society Annual Conference, virtual. (October 2021)

Milenkaya O, **Mosher B.A.**, Walke JB, Hyman O, Greenspan SE, Koo MS, Gear DA, MJ Adams. A Novel Approach to a Novel Pathogen: Student-Powered Surveillance of Batrachochytrium salamandrivorans. Oral presentation at Joint Conference of the Wildlife Disease Association and the European Wildlife Disease Association, virtual. (August 2021)

***Mosher, B.A.** Disease ecology challenges and opportunities. University of Vermont Translational Global Infectious Diseases Research Center (TGIR) Seminar. (January 2021)

***Mosher, B.A.**, P. Doherty, J. Atwood, K. Corey, C. Collins. Temporal symmetry models reveal long-term population declines in the Island Scrub-Jay. Oral presentation at University of Wyoming Department of Zoology & Physiology Seminar Series, virtual. (October 2021)

Mosher, B.A., L.L. Bailey, K.P. Huyvaert, H. Aboulezz, and E. Bergman. No evidence of moose-assisted spread of an amphibian fungal pathogen. Oral presentation at North American Moose Conference, virtual. (December 2021)

Mosher, B.A., D.A.W. Miller, A.D. Wright, and E.H.C. Grant. A case of mistaken identity: estimating multispecies occurrence metrics when pairwise misidentification occurs. Oral presentation at British Ecological Society Annual Conference, virtual. (December 2021)

***Mosher, B.A.** Knowledge co-production yields conservation successes in amphibian disease management. Vermont Agency of Natural Resources Seminar, virtual. (November 2020).

***Mosher, B.A.** A tale of toads: host-pathogen insights inform amphibian disease management. Vermont Center for Ecostudies. Northfield, VT (January 2020).

*Grant, E.H., A.D. Wright, R.F. Bernard and **B.A. Mosher**. Multiple kinds of success in amphibian conservation. Amphibian Conservation in the Anthropocene – Challenges, Priorities & Solutions for the Human Epoch. Otago, New Zealand (January 2020).

***Mosher, B.A.** Accounting for uncertainty: pathogen detection and management of amphibian disease. Amphibian Conservation in the Anthropocene – Challenges, Priorities & Solutions for the Human Epoch. World Congress of Herpetology. Otago, New Zealand (January 2020).

*Ferguson, P. and **B.A. Mosher**. An introduction to the false positive detection problem and model-based approaches to deal with it. Organized session on model-based approaches for addressing false positive detection errors in Fish and Wildlife Studies. American Fisheries Society and The Wildlife Society Joint Conference. Reno, NV (October, 2019).

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*Muths, E. and **B.A. Mosher**. Effects of disease, temperature, and community on demography in a wild population of temperate amphibians (and why the details still matter). Amphibian population declines: 30 years of progress in confronting a complex problem. Montreal, Canada (October 2019).

***Mosher, B.A.** Who's who and what's where: understanding the distributions of imperfectly detected species and communities. Pennsylvania State University Ecology Seminar Series. University Park, PA (October 2018).

Mosher, B.A., R.F. Bernard, J.M. Lorch, D.A.W. Miller, K.L.D. Richgels, C.L. White, E.H.C. Grant. Broadening the conversation: harnessing the full utility of molecular detection methods in disease ecology. The Wildlife Society annual meeting. Cleveland, OH (October 2018).

Mosher, B. A., D. A. W. Miller, A. Wright, and E. H. Campbell Grant. I've made a huge (misidentification) mistake: accounting for detection errors in complex communities. Ecological Society of America annual meeting. New Orleans, LA (August 2018).

Mosher, B. A., D. A. W. Miller, A. Wright, and E. H. Campbell Grant. Pairwise misidentification in community occupancy models. International Statistical Ecology Conference meeting. St. Andrews, Scotland (July 2018).

***Mosher, B. A.** Using an arsenal of tactics to understand amphibian disease dynamics. Oral presentation at the USGS SO Conte Anadromous Fish Research Lab. Turners Falls, MA (November 2017).

***Mosher, B. A.**, L. L. Bailey, E. Muths, and K. P. Huyvaert. Identifying drivers of local extinction in an amphibian-pathogen system using multi-state occupancy models. Oral presentation at an organized symposium at The Wildlife Society annual meeting. Albuquerque, NM (September 2017).

Davenport, K. A., **B. A. Mosher**, and B. M. Brost. Non-random CWD prion shedding in the saliva of white-tailed deer. Oral presentation at the Front Range Student Ecology Symposium. Fort Collins, CO (February 2017).

Mosher, B. A., L. L. Bailey, E. Muths, and K. P. Huyvaert. Identifying drivers of local extinction in an amphibian-pathogen system. Oral presentation at the joint Utah and Colorado/Wyoming chapters of the American Fisheries Society meeting. Grand Junction, CO (February 2017).

Gerber, B., L.L. Bailey, H. Crockett, **B.A. Mosher**, and E. Muths. Conservation decision-making via spatially-explicit metapopulation dynamics of an amphibian-pathogen system. Oral presentation at The Wildlife Society annual meeting. Raleigh, NC (October 2016).

***Mosher B.A.**, K.P. Huyvaert, and L.L. Bailey. Hosts, pathogens, and species occurrence: using occupancy models to make inference in disease systems. Oral presentation at an organized symposium at The Ecological Society of America annual meeting. Baltimore, MD (August 2015).

***Mosher B.A.**, W.E. Lanier, K.P. Huyvaert, and L.L. Bailey. A tale of toads in Rocky Mountain National Park. Science Behind the Scenery Seminar Series. Rocky Mountain National Park, Estes Park, Colorado (July 2015).

Converse S.J., L.L. Bailey, **B.A. Mosher**, E. Muths, and W.C. Funk. Decision analysis and expert judgement: implications for disease risk analysis in reintroductions. Oral presentation at Zoological Society of London Symposium. London, England (May 2015).

Mosher B.A., K.P. Huyvaert, and L.L. Bailey. Evaluating factors that influence amphibian chytrid fungus detection via filtration. Oral presentation at The American Fisheries Society CO/WY Chapter annual meeting. Fort Collins, CO (February 2015).

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Mosher B.A., K.P. Huyvaert, and L.L. Bailey. Confounding of pathogen detection and host presence induces bias in occupancy estimation. Oral presentation at The Wildlife Society national annual conference. Pittsburgh, PA (October 2014)

Mosher B.A., K.P. Huyvaert, and L.L. Bailey. *Bd* and chytridiomycosis in the boreal toads of Rocky Mountain National Park. Invited oral presentation at National Park Service/Colorado State University Wildlife Disease Short Course. Fort Collins, CO (March 2014)

Mosher B.A., K.P. Huyvaert, and L.L. Bailey. Factors influencing boreal toad (*Anaxyrus boreas boreas*) and *Batrachochytrium dendrobatidis* disease dynamics in Colorado. Oral presentation at Boreal Toad Recovery Team Meeting. Fort Collins, CO (February 2013).

ORGANIZED SYMPOSIA

2021. Difficult disease decisions: the role of value-focused thinking and decision analysis in wildlife disease management. Organized by K. Alger and **B.A. Mosher**, annual meeting of The Wildlife Society, virtual conference.

2019. Model-based approaches for addressing false positive detection errors in fish and wildlife studies. Organized by P. Ferguson, **B.A. Mosher**, and D.A.W Miller, annual meeting of The Wildlife Society, Reno, NV.

TEACHING AT THE UNIVERSITY OF VERMONT

Awards

2022. Finalist, University of Vermont Kropesch-Maurice Excellence in Teaching Award.

2021. Recipient, Rubenstein School of Environment and Natural Resources Marcia Caldwell Service-to-Students Award.

Courses

I have taught the following courses as an Assistant Professor in the Rubenstein School of Environment and Natural Resources at the University of Vermont.

WFB 101/2010: Methods in Fisheries and Wildlife (team-taught in a team of 5-7) – 4 credits. 45 students, Fall 2022; 65 students, Fall 2023.

WFB 295/3990: Wildlife Disease Ecology – 3 credits. 45 students, Fall 2022; 45 students, Fall 2024.

HCOL 185: Wildlife Disease Ecology – 3 credits, 20 students, Fall 2021.

NR 103: Ecology, Ecosystems, and Environment (~50% co-instructor) – 3 credits, 120-170 students, Fall 2020 and Fall 2021.

WFB 141/2410: Field Herpetology – 4 credits. 22 students, Spring 2020; 27 students, Spring 2021, 25 students, Spring 2024.

WFB 195/2990: Herpetology – 3 credits. 22 students, Spring 2021; 21 students, Spring 2024.

WFB 224: Conservation Biology (50% co-instructor) – 4 credits, 92 students, Spring 2020.

WFB 174: Principles of Wildlife Management – 3 credits, 76 students, Fall 2019.

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In addition, I have provided guest lectures or panel appearances in the following courses at the University of Vermont:

WFB 095: Introduction to WFB and Forestry – 2021, 2022

HCOL 186: OneHealth – 2021, 2022

NR 103: Ecology, Ecosystems, & Environment – 2022

WFB 224: Conservation Biology – 2022

NR 306: Envisioning a Sustainable Future – 2022, 2024

NCSI 195: Professional Development – 2021

ASCI 191: Wildlife Health and Conservation – 2020

Training

I have taken numerous teaching workshops at the University of Vermont's Center for Teaching and Learning, including: Teach Students How To Learn: Metacognition Is Key, TILting Your Assignments, Teaching Creatively, Not All Active Learning is Created Equal, Transforming Tests Into Alternative Assignments, Metacognition Strategies to Improve Student Learning, and others.

ADDITIONAL TEACHING EXPERIENCE

2019. Co-instructor. Estimating Animal Abundance and Occupancy Workshop (4 days). Smithsonian Mason School of Conservation Biology. (Front Royal, VA) [2020 workshop cancelled due to COVID-19]

2017. Instructor, FW471: Wildlife Data Collection & Analysis. Colorado State University (Todos Santos, MX).

2016. Teaching Assistant, 5 courses, Fish, Wildlife, and Conservation Education Abroad Program. Colorado State University (Todos Santos, MX).

2017, 2015, & 2014. Introductory and Advanced Program MARK Workshop Assistant. Various locations.

2012. Adjunct Instructor, Culinary Mathematics. Culinary Institute of America.

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MENTORING

Graduate students

Current, Reed Scott (Ph.D., RSENr)
Current, Matt Gorton (MS, RSENr)
Current, Anila Kalonia (MS, RSENr)
Current, Annabelle Stanley (Ph.D., RSENr)
Current, Sam Troast (Ph.D., RSENr)
Graduated, Carolyn Hanrahan (MS, RSENr, graduated in Summer 2024)
Graduated, Destini Acosta (MS, RSENr, graduated in Summer 2024)
Graduated, Lindsey Pekurny (MS, RSENr, graduated in Summer 2022)

Postdoctoral researchers

Past, Dr. Riley Mummah (co-advisor, based at UMass, 2021-2023)
Past, Dr. Elias Rosenblatt (2022-2024)

Undergraduate researchers

Current, Grace Rosebrook (RSENr research intern, Summer-Fall 2024)
Graduated, Isaac Conyers (RSENr/Honors College, advisor)
Graduated, Soham Mehta (RSENr/Honors College, committee member)
Graduated, Olivia Biasetti (CALS DUR, committee member)
Graduated, Jess Fish (RSENr, SURF internship, Summer-Fall 2022)
Graduated, Eamon Caffrey (RSENr/Honors College, co-advisor)
Graduated, Lily Grady (RSENr, independent study, Spring 2022)
Graduated, Kayley Dillon (RSENr/Honors College, committee member)
Graduated, Alex Naccarato (RSENr/Honors College, committee member)
Graduated, Nigel Waring (RSENr/Honors College, committee member)
Graduated, Rhiannon Henderson (CALS DUR; co-advisor)

Service on graduate committees

Current, Carlos Amissah (Ph.D., Biology)
Current, Andrew McCracken (Ph.D., Biology)
Current, Caitlin Drasher (Ph.D., RSENr)
Current, Maggie Batton (MS, RSENr)
Current, Elise Edwards (Ph.D., Cornell University)
Current, Maximilian Goldfarb (Accelerated MS, RSENr)
Current, Koryna Boudinot (MS, RSENr)
Current, Ericka Griggs (Ph.D., Biology)
Graduated, Natalia Aristizabal (Ph.D., RSENr/Gund)
Graduated, Raymond Looney (Accelerated MS, CAS)
Graduated, Elias Rosenblatt (Ph.D. RSENr, graduated in Spring 2022)
Graduated, Manali Rege-Colt (Accelerated MS, CAS, graduated in Spring 2022)
Graduated, Meredith Naughton (MS Field Naturalist, graduated in Fall 2021)

Undergraduate advising

~30 undergraduate advisees per year

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Mentorship training

2022. Optimizing Inclusive and Culturally Responsive Mentoring Workshop. University of Vermont.

2021. Mental Health First Aid. National Council for Behavioral Health.

DIVERSITY, EQUITY, & INCLUSION TRAINING

2024. Field Inclusive Social Field Safety Workshop. Field Inclusive.

2024. Supporting students with autism. University of Vermont Rubenstein School.

2023. Inclusive Teaching: Strategies for Promoting Equity in the College Classroom. Book discussion group. University of Vermont Center for Teaching and Learning.

2022. Talking racism in the classroom: How do I get started? University of Vermont Rubenstein School.

2021. Anti-racist Practices for Academic Units. University of Vermont Rubenstein School.

2021. Integrating an Equity Lens into RSENR Courses. University of Vermont Rubenstein School.

2020. Engaging the Elephant: Addressing Religion and Other Worldviews in the Classroom. University of Vermont.

2018. Ensuring Diversity in Peer Review (webinar). Elsevier Researcher Academy.

2018. Using Communication to Promote Diversity, Inclusion and Equity. Ecological Society of America.

2017. Unconscious Bias in STEM: Who, Me?. The Institute for Learning and Teaching. Colorado State University.

2015. ECOL592: Gender and Ethnicity in Science (2-credit class). Colorado State University.

PROFESSIONAL TRAINING

2021. Faculty Fellows for Community-Engaged Learning. University of Vermont. Burlington, VT.

Selected to participate in a cohort-based training to explore high-impact practices related to service-learning in university teaching practices.

2020. National Center for Faculty Diversity and Development Faculty Success Program.

A 12-week, online program that was designed to teach tenure-track and tenured faculty the skills they need to increase both their research and writing productivity while maintaining a healthy work-life balance

2016 – 2017. Sustainability Leadership Fellow, Colorado State University, Fort Collins, CO.

One of 20 early career scientists selected to complete a year-long program in being an effective communicator of science to a variety of audiences including the public and the media.

PROFESSIONAL SERVICE

Service leadership positions

2022 – present. Board Member, University of Vermont Writing and Information Literacy Advisory Board.

2019 – present. IACUC Chair, Student Network for Pathogen Surveillance (SNAPS).

2023 – 2025. Chair-Elect, Chair, and Past-Chair, Biometrics Working Group. The Wildlife Society.

2023-2024. Lead. North American Bsal Technical Advisory Committee.

2022. Graduate Standards Committee, RSENR, University of Vermont (Chair, 2022).

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2020 – 2022. Secretary, Biometrics Working Group. The Wildlife Society.

2019 – 2021. Co-lead, Student Network for Amphibian Pathogen Surveillance (SNAPS).

2017 – 2022. Ascienzo Family Foundation (Board Member).

2017 – 2018 and 2018 - 2019. Board Member, Biometrics Working Group. The Wildlife Society.

Other professional service

2019 – present. Vermont Reptile and Amphibian Scientific Advisory Group (Member).

2019 – present. BSaI Task Force Decision Science Working Group (Member).

2019 – 2022. Graduate Standards Committee, RSENR, University of Vermont (Member).

2019 – 2021. Associate Editor Mentee, *Journal of Applied Ecology*.

2020. Forest Ecosystems Monitoring Cooperative 2020 Conference Steering Committee.

Reviewer for: *Animal Conservation, Biological Conservation, Diseases of Aquatic Organisms, Diversity and Distributions, Ecological Applications, Ecology and Evolution, Forest Ecology and Management, Herpetological Conservation and Biology, Journal of Applied Ecology, Journal of Avian Biology, Journal of Herpetology, Journal of Mammalogy, Oecologia, Scientific Reports, The Condor, US Geological Survey FSP, Viruses.*

Professional society membership: *The Wildlife Society (Working Groups: Ethnic and Gender Diversity, Biometrics, Wildlife Diseases), The British Ecological Society, The Ecological Society of America (Sections: Inclusive Ecology, Statistical Ecology, Disease Ecology), American Ornithological Society, Partners in Amphibian and Reptile Conservation.*

Professional outreach activities

2024. Panel on publishing for UVM RSENR graduate students.

2024. Slimy, scaled, and spectacular: a peek into herpetology in Vermont. Public presentation with graduate students R. Scott and M. Gorton at Burlington City Nature Celebration.

2024. Herpetology career presentation for 3rd grade class at Sustainability Academy, Burlington, VT.

2024. Career presentation for UVM eSTEM.

2024. Building your CV for wildlife-related jobs. Workshop for UVM Wildlife and Fisheries Society.

2022. Preparing for Publication. Panel discussion for UVM QuEST Program.

2022. Strategic Planning for Graduate Students. Presentation for UVM Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS).

2021. Vermont's Herpetofauna. Presentation for Vermont 4H Teen Science Café (virtual).

2020. Spiny softshell turtle nest monitoring volunteer, August – October 2020.

2017 – 2022. Letters to a Pre-Scientist (Volunteer Scientist Pen Pal).

2016 – 2017. Expand Your Horizons Northern Colorado and Wyoming (Steering Committee Member).

REFERENCES

References are available upon request.