

## ANIRUDDHA BELSARE

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## EDUCATION

2008 - 2013 Ph.D., Wildlife Science (focus on Disease Ecology), University of Missouri, Columbia, Missouri, USA (with Dr. Matthew Gompper).  
*Dissertation title:* Disease ecology of free-ranging dogs in central India: Implications for wildlife conservation.

1991-1996 B.V.Sc. & A.H. (Bachelor of Veterinary Science & Animal Husbandry), Bombay Veterinary College, India.

### Short courses

2021 Interactive Web-Based Visualizations and Decision Support Tools in Shiny/R for Quantitative Scientists. Workshop organized by the National Socio-Environmental Synthesis Center (SESYNC).

2018 Winter School on Agent-based Modeling of Social-Ecological Systems, Arizona State University, Tempe, Arizona.

2016 Individual-based (agent-based) modeling at Humboldt State University, Arcata, California.

2015 Designing courses for significant learning. Dee Fink and Associates.

2015 Introduction to Outreach. #SciFund Challenge.

2015 Preparing Future Faculty, Fall 2015 & Spring 2016. University of Missouri, Columbia.

2015 Entering Mentoring workshop series, Spring 2015. University of Missouri, Columbia.

## RESEARCH EXPERIENCE

2021 - current **Associate Academic Research Scientist**, Department of Biology, Emory College of Arts and Sciences, Emory University, Atlanta, GA. I am using an agent-based modeling approach to better understand the complex dynamics of two disease systems: 1) human schistosomiasis (a neglected tropical disease and a major public health concern) and 2) chytridiomycosis (an emerging, globally spreading infectious disease of amphibians and a serious conservation concern). The models will support the design of effective, locally relevant disease mitigation strategies.

**Faculty Affiliate**, Wildlife Biology Program, University of Montana. I continue the chronic wasting disease modeling work in collaboration with University of Montana faculty and State Wildlife Agencies.

## RESEARCH EXPERIENCE (continued)

- 2019 - 2021      **Research Associate**, Boone & Crockett Quantitative Wildlife Center, Michigan State University, East Lansing, MI. I developed new, high-level quantitative tools that provide decision support while addressing the challenges of wildlife conservation. I assessed the impact of alternate harvest strategies on chronic wasting disease spread and persistence in regional white-tailed deer populations.
- 2017 - 2019      **Postdoctoral Fellow**, Center for Modeling Complex Interactions, University of Idaho, Moscow ID, USA.  
Leader, OneHealth Working Group: Collaborative research on host-pathogen systems of public health or conservation concern. a) Canine rabies project (with Dr. Craig Miller, CMCI), b) Leptospirosis modeling project (with Dr. Claudia Munoz-Zanzi, University of Minnesota), and c) Raccoon roundworm management project (with Dr. Matt Gompper, University of Missouri).  
  
Collaborator & Modeler, Modeling Access Grant Project: Bighorn sheep pneumonia modeling project (with Dr. Ryan Long & Dr. Frances Cassirer).  
  
Collaborator, Modeling Access Grant Project: Modeling Stem Cell Behavior for Advancing Novel Tendon Therapies.  
  
Collaborator, Tiger territorial dynamics modeling project (with Dr. Neil Carter, Boise State University; Sep 2017-May 2018).
- 2014 - 2017      **Postdoctoral Fellow**, School of Natural Resources, University of Missouri, Columbia, USA. My research focused on the analysis of wildlife diseases in the state of Missouri. I developed models to understand the spread of chronic wasting disease in white-tailed deer in Missouri and provide a framework for designing effective surveillance strategy.
- 2008 - 2013      Ph.D., Department of Fisheries and Wildlife Sciences, University of Missouri, Columbia, USA. My dissertation research combined ecologic, epidemiologic and model-based investigations to study the disease ecology of free-ranging dogs around a protected area in central India. Specifically, I examined the local and global implications of dog diseases and disease control measures for wildlife conservation.
- 2007 - 2009      Indo-Norwegian project on wildlife-human conflict.  
Rabies as a driver of Human-Wolf conflict and the role of free ranging domestic dogs as carriers of the disease. Maharashtra, India.
- 2006 - 2007      University of Missouri and Rufford Small Grants.  
Fox ecology project and survey of disease prevalence in free-ranging domestic dogs and possible spillover risk for wildlife.
- 2004 - 2006      Maharashtra Forest Department and Wildlife Trust of India, New Delhi. Helping the Maharashtra State Forest Department to rescue or treat endangered wild carnivores.  
[http://www.projectwaghoba.in/docs/athreya\\_rap2004\\_final\\_report.pdf](http://www.projectwaghoba.in/docs/athreya_rap2004_final_report.pdf)
- 2003              Ecollage, Pune and Wildlife Protection Society of India, New Delhi. Study of the man-leopard conflict in the Junnar Forest Division, Pune District, Maharashtra.

## VETERINARY PROFESSIONAL EXPERIENCE

2015	Expert Veterinarian, King Cobra Telemetry Project, Central Kalimantan, Indonesia. Surgically implanted radio-transmitters in two Sumatran Spitting cobras ( <i>Naja sumatrana</i> ) and one Reticulated Python ( <i>Python reticulatus</i> ) (supported by Copenhagen Zoo, Denmark).
2009 - 2010	Curricular Practical Training: After Hours Clinical Crew, Veterinary Medical Teaching Hospital, University of Missouri, Columbia, Missouri, USA.
2001 - 2012	Veterinary Consultant, Maharashtra Forest Department. Provided veterinary support during wildlife emergencies, rescue and treatment of wild animals and birds.
1999 - 2008	Veterinary Practitioner. Owner of private clinic in Pune, India. Medical and surgical treatment of pets (dogs, cats and birds) and livestock in and around Pune city.
2008	Consultant Veterinary Surgeon, King Cobra Telemetry Project, National Geographic Society and Agumbe Rainforest Research Station (with Romulus Whitaker and Matt Goode).
2005 - 2008	Veterinary Consultant, Madras Crocodile Bank Trust, Chennai, India.
2001 - 2004	Veterinary Officer, Rajiv Gandhi Zoological Park & Wildlife Research Center, Pune. Healthcare and management of zoo animals were two main responsibilities. I implemented controlled breeding program' in prolifically breeding species using MGA implants, and also started using transponder microchips for better management of zoo animals.
1996 - 2001	Consultant Veterinarian, Wild Animal Orphanage & Pune Snake Park.

## TEACHING AND MENTORING EXPERIENCE

### Teaching

#### *UKCEH*

2021-2022	Invited speaker for the UK Center for Ecology & Hydrology training course 'One Health, data and models for zoonotic disease management'.
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#### *Purdue University*

2021 (Spring)	Instructor, Readings in Disease Ecology (FNR 59800).
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#### *Michigan State University*

2021	Guest lecturer, Lyman Briggs College. Introductory Biology.
2019, 2020	Guest lecturer, Wildlife Disease Ecology (FW463). Guest lecturer, Wildlife Disease Ecology and Management Veterinary Clerkship (MSU LCS 610).

#### *University of Idaho*

2017-2019	Guest lecturer, Ecology of Terrestrial Vertebrates (WLF314). Guest lecturer, Wildlife Management (WLF492).
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## *TEACHING AND MENTORING EXPERIENCE (continued)*

### *University of Missouri*

2016, 2014 (Fall)	Instructor, Wildlife Disease Ecology (FW 4810/7810): I co-taught this undergraduate/graduate-level course with Dr. Matthew Gompper.
2016 (Spring)	Instructor, Animal Population Dynamics and Management (FW 4500/7500).
2012 - 2014	Instructor, General Biology Laboratory (BIO 1020): Fall 2012, Spring 2013 and Fall 2013, Fall 2014.
2010 (Spring)	Teaching Assistant, Introductory Zoology with Laboratory (FW 1100).

### *State Forest Departments, India*

2005 - 2006	Designed and taught short courses in chemical immobilization of wild animals for forest department personnel and veterinarians from seven states in India. Rufford Small Grants funded this project.
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### *Maharashtra Forest Department, India*

2003 - 2004	Trained five emergency response teams (Maharashtra Forest Department personnel) to better manage human-leopard conflict.
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## **Mentoring**

### *Purdue University*

2021 - current	Serving on the dissertation committee of Jonathan Brooks (Ph.D. candidate, Department of Forestry and Natural Resources).
2019	Served on the dissertation committee of Jacob Peterson (Ph.D. candidate, Department of Forestry and Natural Resources).

### *University of Minnesota*

2015 - 2016	Advised Meghan Mason, a Ph.D. candidate in the School of Public Health, on her agent-based modeling work. I continue to work with her on the Leptospirosis modeling project.
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### *University of Missouri*

2015	Lucy Mills, graduate student in Department of Agricultural Economics. Agent-based model of collective entrepreneurship.
2014	Anna Maness, undergraduate student in Fisheries and Wildlife Science. Raccoon roundworm project.

## **GRANTS, FELLOWSHIPS AND AWARDS**

2022 – 2025	Principal Investigator, Model-informed chronic wasting disease management: Assessing relative risk of chronic wasting disease transmission from public activities. Safari Club International Foundation (\$279,790).
2021 – 2022	Principal Investigator, Modeling Chronic Wasting Disease in Missouri. Missouri Department of Conservation (Subaward through University of Montana \$74,998).

## GRANTS, FELLOWSHIPS AND AWARDS (continued)

2020 - 2023	Project Partner, IndiaZooRisk+: Using OneHealth approaches to understand and co-develop interventions for zoonotic diseases affecting forest communities in India. UK Research and Innovation Global Challenges Research Fund Health and Context Call 2019 (PI Beth Purse).
2019 - 2021	Co-Principal Investigator, Optimizing CWD Surveillance: Regional synthesis of demographic, spatial and transmission-risk factors. Michigan Department of Natural Resources and Michigan State University Joint Wildlife Disease Initiative (\$241,094, PI Krysten Schuler).
2018	Project Director, Canine rabies genome sequencing project. Sudden Opportunity Grant (CMCI, University of Idaho) (\$18000).
2016 - 2021	Co-Principal Investigator, 'Bringing "OneHealth" to rabies research in India: integrating animal ecology, disease ecology, and human health'. Wellcome Trust/ DBT India Alliance Fellowship (\$35,000, PI Abi Vanak).
2013, 2010	Annual Research and Creative Activities Forum, Graduate Professional Council, University of Missouri. 2 <sup>nd</sup> place (2013) and 1 <sup>st</sup> place (2010) in Veterinary Medicine/Medicine/Health Sciences.
2012 - 2013	Conservation Biology Fellowship, University of Missouri (\$3000).
2008 - 2013	G. Ellsworth Huggins Scholarship, University of Missouri (\$29500 per year).
2006	Rufford Small Grant for Nature Conservation (£5000); co-investigator for project titled 'Survey of disease prevalence in free-ranging domestic dogs around the Great Indian Bustard Sanctuary, India (with A. T. Vanak).
2005	Rufford Small Grant for Nature Conservation (£5000) for project titled 'Standardization of procedures required for dealing with wildlife emergencies by training veterinarians and Forest Department personnel in states with high human-wildlife conflicts in India'.

## PUBLICATIONS

1. Owen, J. C., Landwerlen, H., Dupuis, A. P., Belsare, A. V., Sharma, D., Wang, S., Ciota, A.T., and Kramer, L. (2021). Reservoir hosts experiencing food stress alter transmission dynamics for a zoonotic pathogen. *Proceedings of the Royal Society B*, 288: 20210881. <https://doi.org/10.1098/rspb.2021.0881>
2. Mysterud, A., Viljugrein, H., Rolandsen, C. M, and Belsare, A. V. (2021). Harvest strategies for the elimination of low prevalence wildlife diseases. *Royal Society Open Science*, 8: 210124. <https://doi.org/10.1098/rsos.210124>
3. Belsare, A. V., Millspaugh, J.J., Mason, J.R., Sumners, J., Viljugrein, H., and Mysterud, A. (2021). Getting in front of chronic wasting disease: Model-informed proactive approach for managing an emerging wildlife disease. *Frontiers in Veterinary Science*, 7, 1154. doi: 10.3389/fvets.2020.608235
4. Belsare, A. V., & Vanak, A. T. (2020). Modelling the challenges of managing free-ranging dog populations. *Scientific Reports*, 10(1). doi:10.1038/s41598-020-75828-6

# PUBLICATIONS (continued)

5. Belsare, A. V., & Stewart, C. M. (2020). OvCWD: An agent-based modeling framework for informing chronic wasting disease management in white-tailed deer populations. *Ecological Solutions and Evidence*, 1(1), e12017. doi:10.1002/2688-8319.12017
6. Belsare, A. V., Gompper, M. E., Keller, B., Sumners, J., Hansen, L. P., & Millspaugh, J. J. (2020). Size matters: Sample size assessments for chronic wasting disease surveillance using an agent-based modeling framework. *MethodsX*, 7, 100953. doi: <https://doi.org/10.1016/j.mex.2020.100953>
7. Belsare, A. V., Gompper, M. E., Keller, B., Sumners, J. A., Hansen, L. P., & Millspaugh, J. J. (2020). An agent-based framework for improving wildlife disease surveillance: A case study of chronic wasting disease in Missouri white-tailed deer. *Ecological Modelling*, 417, 108919. doi: 10.1016/j.ecolmodel.2019.108919 (**F1000 Prime Recommended Article**).
8. Al-Warid, H. S., Belsare, A. V., Straka, K., Gompper, M. E., & Eggert, L. S. (2018). Genetic polymorphism of *Baylisascaris procyonis* in host infrapopulations and component populations in the Central USA. *Parasitology International*, 67(4), 392–396. doi: 10.1016/j.parint.2018.03.005
9. Richardson, D. J., Leveille, A., Belsare, A. V., Al-Warid, H. S., & Gompper, M. E. (2017). Geographic Distribution Records of *Macracanthorhynchus ingens* (Archiacanthocephala: Oligacanthorhynchidae) from the Raccoon, *Procyon lotor* in North America. *Journal of the Arkansas Academy of Science*, 71(1), 203–205.
10. Al-Warid, H. S., Belsare, A. V., Straka, K., & Gompper, M. E. (2017). *Baylisascaris procyonis* roundworm infection patterns in raccoons (*Procyon lotor*) from Missouri and Arkansas, USA. *Helminthologia*, 54(2), 113–118. doi:10.1515/helm-2017-0011
11. Belsare, A. V., & Gompper, M. E. (2015). To vaccinate or not to vaccinate: Lessons learned from an experimental mass vaccination of free-ranging dog populations. *Animal Conservation*, 18(3), 219–227. doi:10.1111/acv.12162 (**Highlighted article**)
12. Belsare, A. V., & Gompper, M. E. (2015). A model-based approach for investigation and mitigation of disease spillover risks to wildlife: Dogs, foxes and canine distemper in central India. *Ecological Modelling*, 296, 102–112. doi: 10.1016/j.ecolmodel.2014.10.031
13. Vanak, A. T., Belsare, A. V., Uniyal, M., & Ali, R. (2014). Science in the doghouse. *Current Science*, 107(3), 341–342.
14. Belsare, A. V., Vanak, A. T., & Gompper, M. E. (2014). Epidemiology of viral pathogens of free-ranging dogs and Indian foxes in a human-dominated landscape in central India. *Transboundary and Emerging Diseases*, 61(SUPPL1.), 78–86. doi:10.1111/tbed.12265
15. Belsare, A. V., & Vanak, A. T. (2013). Use of Xylazine Hydrochloride–Ketamine Hydrochloride for immobilization of Indian fox (*Vulpes bengalensis*) in field situations. *Journal of Zoo and Wildlife Medicine*, 44(3), 753–755. doi:10.1638/2012-0158r.1
16. Belsare, A. V., & Gompper, M. E. (2013). Assessing demographic and epidemiologic parameters of rural dog populations in India during mass vaccination campaigns. *Preventive Veterinary Medicine*, 111(1–2), 139–146. doi: 10.1016/j.prevetmed.2013.04.003
17. Belsare, A. V., & Athreya, V. R. (2010). Use of Xylazine hydrochloride–Ketamine hydrochloride for immobilization of wild leopards (*Panthera pardus fusca*) in emergency situations. *Journal of Zoo and Wildlife Medicine*, 41(2), 331–333. doi:10.1638/2009-0072R1.1
18. Athreya, V. R., & Belsare, A. V. (2008). Morphometry of leopards from Maharashtra, India. *Cat News*, 48 (Spring).

## PUBLICATIONS (continued)

19. Athreya, V. R., Thakur, S. S., Chaudhuri, S., & Belsare, A. V. (2007). Leopards in human-dominated areas: a spillover from sustained translocations into nearby forests? *Journal of the Bombay Natural History Society*, 104(1), 45–50.
20. Belsare, A. V., Athreya, V. R., Thakur, S. S., & Chaudhuri, S. (2004). Life-long Identification Microchips in Leopards Caught in Conflict Areas in Maharashtra, India. *Cat News*, 41 (Autumn), 10–11.
21. Umrigar, K. D., & Belsare, A. V. (2003). Contraception in a Blackbuck (*Antelope cervicapra*) using melengesterol acetate. *Zoos' Print Journal*, 18(6), 1129. doi: 10.11609/jott.zpj.18.6.1129

## Code and data:

1. Belsare, Aniruddha; Owen, Jennifer (2021, March 11). "AMRO\_CULEX\_WNV" (version 1.1.0). CoMSES Computational Model Library. Retrieved from: <https://doi.org/10.25937/hfcr-bt18>
2. Belsare, Aniruddha, (2021, February 4). anyadoc/ABMDataNorwayReindeerCWD: ABMDataNorwayReindeerCWD (Version V1.0). Zenodo. <http://doi.org/10.5281/zenodo.4501249>
3. Belsare, Aniruddha; Vanak, Abi (2020, August 01). "DOGPOPDY: ABM for ABC planning" (Version 1.0.0). CoMSES Computational Model Library. Retrieved from: <https://doi.org/10.25937/9nge-4s45>
4. Belsare, Aniruddha (2020, April 13). "MIOvPOPsurveillance" (version 1.0.0). CoMSES Computational Model Library. Retrieved from: <https://doi.org/10.25937/fdke-rp28>
5. Belsare, Aniruddha (2019, December 13). "MIOvCWD" (Version 1.0.0). CoMSES Computational Model Library. Retrieved from: <https://doi.org/10.25937/6qeq-1c13>
6. Belsare, Aniruddha, Long, Ryan, Cassirer, E Frances (2019, November 05). "BHSPopDy (Bighorn sheep population dynamics)" (Version 1.2.0). CoMSES Computational Model Library. Retrieved from: <https://doi.org/10.25937/a7fz-tw30>
7. Belsare, Aniruddha (2019, September 18). "MIOvPOP" (version 1.1.0). CoMSES Computational Model Library. Retrieved from: <https://doi.org/10.25937/kv07-3e08>
8. Belsare, Aniruddha, (2019, August 9). anyadoc/FranklinCWDsurveillance\_Rcode: ABM framework output for Franklin County & R code for analysis (Version v.1.0.0). Zenodo. <http://doi.org/10.5281/zenodo.3364607>
9. Belsare, Aniruddha, Gompper, Matthew, Millsbaugh, Joshua J (2019, August 08). "MOOvPOP" (Version 2.1.2). CoMSES Computational Model Library. Retrieved from: <https://doi.org/10.25937/cnex-s628>
10. Belsare, Aniruddha, Gompper, Matthew, Millsbaugh, Joshua J (2019, August 08). "MOOvPOPsurveillance" (Version 2.1.2). CoMSES Computational Model Library. Retrieved from: <https://doi.org/10.25937/8h pz-9y96>
11. Belsare, Aniruddha, Mason, Meghan, Gompper, Matthew, Munoz-Zanzi, Claudia (2019, March 12). "MHMSLeptoDy (Multi-host, multi-serovar Leptospira Dynamics Model)" (Version 1.1.2). CoMSES Computational Model Library. Retrieved from: <https://doi.org/10.25937/zp7k-bq40>
12. Belsare, Aniruddha, Gompper, Matthew (2017, April 04). "DogFoxCDVspillover" (Version 1.1.0). CoMSES Computational Model Library. Retrieved from: <https://doi.org/10.25937/167q-wr96>

## PUBLICATIONS (continued)

### Manuscripts in preparation (available upon request)

1. Belsare, A.V., Mason, M., Gompper, M.E., and Munoz-Zanzi, C. Transmission dynamics of Leptospirosis in impoverished high-density communities: An agent-based model incorporating humans, rodents, dogs and the environment.
2. Gompper, M.E. and Belsare, A.V. Intraguild predation benefits the killing species in communities with shared pathogens.
3. Belsare, A.V. Hematologic and serum biochemistry reference values of wild-caught leopards (*Panthera pardus fusca*) from Maharashtra, India.

### Reports, popular articles, and unpublished materials

1. Belsare, A.V. 2020. Nebulizer therapy with isotonic saline to decrease aerosol transmission of SARS-CoV-2. eLetter in response to Prather, K. A. et al. "Reducing transmission of SARS-CoV-2" published in *Science*.  
<https://science.sciencemag.org/content/early/2020/06/08/science.abc6197/tab-e-letters>
2. Singh, M., I. Malik, W. Dittus, A. Sinha, A. Belsare, S. Walker, S. Molur, B. Wright, J. Lenin & S. Chaudhuri (2019). Action plan for the control of commensal, non-human primates in public places. Submitted to the Ministry of Environment & Forests, Government of India in 2005. *Zoo's Print* 34(11): 1–13.
3. Vanak, A.T. & Belsare, A.V. The street is no place for dogs. *The Hindu*, 3 October 2016.
4. Belsare, A.V. 2013. Diseases of free-ranging dogs: Implications for wildlife conservation in India. *Current Conservation* 7 (4): 3-12.
5. Belsare, A.V. 2012. To Dart or Not To Dart- Demystifying Wild Animal Immobilization. *Conservation India*. (<http://www.conservationindia.org/resources/opinion/to-dart-or-not-to-dart-demystifying-wild-animal-immobilization>)
6. Belsare, A.V. 2011. Rabies: a neglected killer. *Current Conservation* 5 (2): 19-21.
7. Vanak, A.T., Belsare, A.V. and Gompper, M.E. 2007. Survey of disease prevalence in free-ranging domestic dogs and possible spillover risk for wildlife. *Report submitted to the Rufford Small Grants Foundation, UK*. Pp 1-13.
8. Athreya, V.R. and Belsare, A.V. 2007. Human-leopard conflict management guidelines. Kaati Trust, Pune, India.  
([www.projectwaghoba.in/docs/human\\_leopard\\_conflict\\_management\\_guidelines\\_english.pdf](http://www.projectwaghoba.in/docs/human_leopard_conflict_management_guidelines_english.pdf))
9. Belsare, A.V. 2007. An Autobiography (of a leopard). Balbharati Standard 6 textbook: Maharashtra State Bureau of Textbook Production and Curriculum Research, Pune. Pp 88-94. (<https://osf.io/d8t4b>)
10. Athreya, V.R. and Belsare, A.V. 2005. Helping the Maharashtra Forest Department rescue or treat endangered wild carnivores. *Report submitted to the Wildlife Trust of India, New Delhi and the Office of the Chief Wildlife Warden, Maharashtra*.
11. Athreya, V.R., Thakur, S.S., Chaudhuri, S., and Belsare, A.V. 2004. A study of man-leopard conflict in the Junnar forest division, Pune district, Maharashtra. *Report submitted to the Office of the Chief Wildlife Warden, Maharashtra State Forest Department, and the Wildlife Protection Society of India, New Delhi, India*.



## ABSTRACTS AND MEETING PRESENTATIONS

- 2022 Effectiveness of artificial ecological trap for mitigating chronic wasting disease in white-tailed deer (*Odocoileus virginianus*). Annual Meeting of the American Society of Mammalogists, Tucson, Arizona. June 17-21, 2022. (J. Brooks, A. Belsare, J. Caudell, P. Zollner).
- 2020 ZeroBy30? Challenges to eliminating Rabies in India. Poster presented at the World One Health Congress. Oct 30 – Nov3, 2020. (with Abi Vanak, A. Kulkarni, A. Kumar, S. Sapre, N. Panchamiya, I. Banerjee).
- 2020 Decision support tool for CWD management. The Natural Resources Commission, Michigan. June 3, 2020.
- 2020 Modeling effects of deer harvest regulations on CWD. Fish and Wildlife Health Committee, Association of Fish and Wildlife Agencies. North American Wildlife and Natural Resources Conference. March 12, 2020. Omaha, Nebraska.
- 2020 Model-informed CWD Management. Science and Research Committee, Association of Fish and Wildlife Agencies. North American Wildlife and Natural Resources Conference. March 11, 2020. Omaha, Nebraska.
- 2019 Model-informed strategies for chronic wasting disease management. The Wildlife Society & American Fisheries Society 2019 Joint Annual Conference. September 29 – October 3, 2019. Reno, Nevada.
- 2017 Size matters: sample size calculations for harvest-based wildlife disease surveillance using an agent-based framework. 24<sup>th</sup> Annual Conference of The Wildlife Society. September 2017. Albuquerque, New Mexico.
- 2017 Raccoon roundworm intensity distributions across hosts and modeled implications for population management. 24<sup>th</sup> Annual Conference of The Wildlife Society. September 2017. Albuquerque, New Mexico. (with Dr. Matthew Gompper).
- 2017 Host biodiversity and tick-borne disease: Implications for temperate agroforestry (J.R. Falco, A.V. Belsare, M.E. Gompper, S. Jose). 15<sup>th</sup> North American Agroforestry Conference. June 2017. Blacksburg, Virginia.
- 2017 A model-based framework for improving chronic wasting disease surveillance in white-tailed deer populations of Missouri. 40<sup>th</sup> Annual meeting of the Southeast Deer Study Group. February 2017, St. Louis, Missouri.
- 2014 ABM for CWD: An adaptive disease management strategy. 38<sup>th</sup> Annual Midwest Deer & Wild Turkey Study Group Meeting. September 2014. Potosi, Missouri.
- 2010 A potential model framework to investigate disease progression. In: 2010 White-nose Syndrome Symposium: May 2010, Pittsburgh, Pennsylvania. U.S. Fish and Wildlife Service.
- 2007 Capacity building of wildlife managers in dealing with wildlife emergencies. Poster presented in the Annual Meeting of the Society for Conservation Biology, Port Elizabeth, South Africa.

## MEMBERSHIPS AND PROFESSIONAL ACTIVITIES

### Memberships

2020 - current	Wildlife Disease Association
2017 - current	The Wildlife Society
2017 - current	Full member & reviewer, CoMSES Net (Network for Computational Modeling in Social and Ecological Sciences).
2016 - current	Certified EpiCore member. EpiCore is a community of health professionals around the world, providing expertise to verify suspected or rumored disease outbreaks.

### Associate Editor / Subject Editor

2022 - current	Review Editor, Models in Ecology and Evolution (specialty section of Frontiers in Ecology and Evolution).
2014 - current	Journal of Threatened Taxa
2016, 2017	Oecologia Australis

### Grant reviewer

2022	National Science Foundation (Human-Environment and Geographical Sciences Program)
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### Manuscript reviewer <https://publons.com/a/340221>

Acta Theriologica, African Journal of Ecology, Animal Conservation, BMC Veterinary Research, Bulletin of the World Health Organization, Communications Biology, Conservation Science and Practice, Current Science, Ecological Modelling, Ecological Solutions and Evidence, Frontiers in Veterinary Science, Heliyon, Journal of the American Veterinary Medical Association, Journal of Applied Ecology, Journal of Computational Mathematics and Data Science, Journal of Parasitology, Journal of Threatened Taxa, Journal of Wildlife Diseases, Journal of Wildlife Management, Koedoe: Protected Area Science and Management, Mammal Research, PeerJ, Preventive Veterinary Medicine, PLOS Computational Biology, PLOS One, Polar Research, Scientific Reports, Transboundary and Emerging Diseases, Vaccine, Veterinary Medicine & Science, Veterinary Parasitology, Urban Ecosystems, Ursus.

### Meetings / Workshops attended

2020	North American Wildlife and Natural Resources Conference. March 11, 2020. Omaha, Nebraska.
2019	The Wildlife Society & American Fisheries Society 2019 Joint Annual Conference. 29 September – 3 October 2019. Reno, Nevada.
2017	24 <sup>th</sup> Annual Conference of The Wildlife Society. 23 – 27 September 2017. Albuquerque, New Mexico.
2017	40 <sup>th</sup> Annual meeting of the Southeast Deer Study Group. 27 February – 1 March 2017. St. Louis, Missouri.

- 2014 38<sup>th</sup> Annual Midwest Deer & Wild Turkey Study Group Meeting. 9 – 12 September 2014. Potosi, Missouri.
- 2014 Ecology and Evolution of Infectious Disease, 2 – 4 June 2014. 12<sup>th</sup> Annual Conference at Colorado State University, Fort Collins, Colorado.
- 2010 White-nose Syndrome Symposium: 25 – 27 May 2010, Pittsburgh, Pennsylvania.
- 2007 21<sup>st</sup> Annual Meeting of the Society for Conservation Biology. 1 – 5 July 2007. Port Elizabeth, South Africa.