

Jonathan Trevor Vannatta

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Department of Biological Sciences
Purdue University
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Education

Ph.D., Purdue University, July 2016 – present, Disease / Ecosystem / Theoretical Ecology. Adviser: Dr. Dennis Minchella.

Thesis title: Community and Ecosystem Level Implications of Helminth Parasitism.

M.Sc., University of Minnesota, 2016, Integrated Biosciences / Wildlife Disease. Adviser: Dr. Ron Moen.

B.Sc., University of Wisconsin - La Crosse, 2012, Biology major, Chemistry minor. Highest honors.

Positions

Graduate Research Assistant, Purdue University, July 2016 – present

Designed and completed original research in the fields of disease, ecosystem, and theoretical ecology.

Graduate Research Assistant, University of Minnesota – Duluth, 2013-2016

Designed and completed original research on snail distribution and parasitic infection. Assisted with various projects including bat telemetry and detection, National Park climate change adaptation research, American marten den and rest site classification, deer-moose habitat interactions, moose browse surveys, and deer trapping.

Temporary Natural Resources Specialist Ecological Services, Minnesota DNR, August 2013

Assisted in small mammal trapping using Sherman live traps, pitfall cone traps, and snap traps. Daily work included setting transects, collecting specimens, specimen identification, and preservation.

Climate Change Research in California, University of Wisconsin – La Crosse, summer 2012

Assisted in the clipping and sorting of mountain prairie plant species to analyze hypothetical precipitation changes associated with climate change. Functional groups were identified, dried, and weighed to examine their biomass in differing precipitation plots.

BioScience Aide, Upper Midwest Environmental Science Center of the USGS, summer 2011

Studied the effects of *Pseudomonas* toxin on non-target mussel species. Duties included building experimental apparatuses, maintenance of bighead carp, and hazardous waste disposal.

Awards and honors

Waser Fellowship in Ecology and Evolutionary Biology (2021)

ASP Marc Dresden Student Travel Grant (2019)

Best all-around presentation, Annual Midwestern Conference of Parasitologists 71 (2019)

Herrick Award for best poster presentation, Annual Midwestern Conference of Parasitologists 71 (2019)

Yeunkyong Woo Achieve Excellence Travel Award (2019)

Graduate Student Summer Research Grant (2018)

Alton A. Lindsey Graduate Fellowship in Ecology (2017)

Frederick N. Andrews Fellowship (2016)

P.T. Gilham Scholarship (2016)

Honorable mention: Best oral presentation, Annual Midwestern Conference of Parasitologists 68 (2016)

Swenson College of Science and Engineering Travel Grant (2015) and Integrated Biosciences Travel Grant (2015)

Alces Newcomer's Travel Award (2015)

Research

Publications

- Vannatta, J. T.** and D. J. Minchella. *In review*. The influence of parasitism on producers and nutrients in mesocosm ecosystems. *Ecology and Evolution*.
- Carpenter, S. A., **J. T. Vannatta**, and D. J. Minchella. *In review*. Host exposure history and priority effects impact the development and reproduction of a dominant parasite. *Journal of Animal Ecology*.
- Vannatta, J. T.** *In review*. Helminth infection in a suburban ungulate population is driven more by age than landscape variables. *Urban ecosystems*.
- Ezenwa, V. O., D. J. Civitello, B. T. Barton, D. J. Becker, M. Brenn-White, A. T. Classen, S. L. Deem, Z. E. Johnson, S. Kutz, M. Malishev, R. M. Penczykowski, D. L. Preston, **J. T. Vannatta**, and A. M. Koltz. *Accepted*. Infectious diseases, livestock and methane: an impending vicious cycle? *Trends in Ecology and Evolution*.
- Vannatta, J. T.**, T. Knowles, D. J. Minchella, and A. M. Gleichsner. 2020. The road not taken: host infection status influences parasite host-choice. *Journal of Parasitology*, 106, 1-8
- Vannatta, J. T.** and D. J. Minchella. 2018. Parasites and their impact on ecosystem nutrient cycling. *Trends in Parasitology* 34, 452-455
- Vannatta, J.T.** and R. Moen. 2016. Giant liver fluke and moose: just a fluke? *Alces* 52, 117-139
- Van der Waal, K.L., S.K. Windels, B.T. Olson, **J.T. Vannatta**, and R. Moen. 2015. Landscape influence on spatial patterns of meningeal worm and liver fluke infection in white-tailed deer. *Parasitology* 142, 706-718

Invited talks / workshops

- Living Earth Collaborative working group.** 2018-2019. Quantifying Effects of Parasites on Ecosystem Nutrient Cycling. Washington University in St. Louis, Missouri, USA.

Presentations

- Vannatta, J. T.**, D. J. Minchella, and S. Orlofske. 2020. Use it before you lose it: A quantitative exploration of host reproduction and disease for the undergraduate classroom. American Society of Parasitologists: Parasite Hour. Oral.
- Vannatta, J. T.** and D. J. Minchella. 2019. Throwing shade: Parasitism impacts surface vegetation, periphyton, and nutrients in mesocosm ecosystems. Ecological Society of America 2019. Oral.
- Vannatta, J. T.** and D. J. Minchella. 2019. Parasitism influences producers and nutrients in mesocosm ecosystems. 93rd Annual Meeting of the American Society of Parasitologists. Oral.
- Carpenter, S., **J. T. Vannatta**, and D. J. Minchella. 2019. Imperfect Timing: Influence of Infection Maturity on Co-Infection Success with a Dominant Competitor. 93rd Annual Meeting of the American Society of Parasitologists. Poster.
- Vannatta, J. T.**, T. Knowles, D. J. Minchella, and A. M. Gleichsner. 2019. The Road not Taken: Host Infection Status Influences Parasite Host-Choice. 93rd Annual Meeting of the American Society of Parasitologists. Poster.
- Vannatta, J. T.** and D. J. Minchella. 2019. Use it before you lose it: Incorporating fecundity compensation into population and infection dynamics. Annual Midwestern Conference of Parasitologists 71. Poster. *Herrick award for best poster (\$300)*.
- Vannatta, J. T.**, T. Knowles, D. J. Minchella, and A. M. Gleichsner. 2019. Picky parasites? Parasites detect the infection status of potential hosts. Annual Midwestern Conference of Parasitologists 71. Oral. *Portion of the Best Presentation award (\$250)*.
- Vannatta, J. T.** and D. J. Minchella. 2019. Liver-ing the dream: Analyzing spatial patterns of helminth infection using deer livers and fecal pellets. Annual Midwestern Conference of Parasitologists 71. Oral. *Portion of the Best Presentation award (\$250)*.
- Vannatta, J. T.** 2019. Mud, Math, and Monsters: Your Ecosystem on Parasites. Purdue Ecology and Evolutionary Biology EcoLunch Series. Oral.
- Vannatta, J. T.** and D. J. Minchella. 2019. Examining host-parasite relationships across biological scales. Next Generation Scholars Event. Poster.

- Vannatta, J. T.** and R. Moen. 2017. Helminth Coinfection and Landscape Patterns in a Suburban Ungulate Population. 92nd Annual Meeting of the American Society of Parasitologists. Oral.
- Vannatta, J. T.** and R. Moen. 2016. Giant liver fluke in moose: Just a fluke? 50th North American Moose Conference/Workshop and 8th International Moose Symposium. Poster.
- Vannatta, J. T.** and R. Moen. 2016. Giant liver fluke and thin-necked bladderworm from hunter-harvested white-tailed deer: Coinfection and landscape patterns. Annual Midwestern Conference of Parasitologists 68. Oral. *Honorable mention: LaRue Award (\$100).*
- Vannatta, J. T.** and R. Moen. 2016. Giant liver fluke in North American cervids: Just a fluke? Annual Midwestern Conference of Parasitologists 68. Poster.
- Vannatta, J. T.** 2016. From Moose to Mollusks: The Giant Liver Fluke Parasite in Minnesota. Thesis Defense Lecture. Oral.
- Vannatta, J. T.** and R. Moen. 2016. Inferring Snail-Plant and Snail-Habitat Associations Using Ordination. The Heart of the Continent Science Symposium. Oral.
- Vannatta, J. T.** and R. Moen. 2016. Liver Flukes and Minnesota's Moose. Natural Resources Research Institute, University for Seniors Lecture Series. Oral.
- Vannatta, J. T.** and R. Moen. 2016. *Fascioloides magna* and *Taenia hydatigena* from Hunter Harvested White-tailed deer. Minnesota Chapter of the Wildlife Society Annual Meeting. Oral.
- Vannatta, J. T.** and R. Moen. 2016. Snail-Trematode Habitat Associations in Northeastern Minnesota. Minnesota Chapter of the Wildlife Society Annual Meeting. Poster.
- Vannatta, J. T.** and R. Moen. 2016. Morphological Variation in four Minnesota Lymnaeid snails. Minnesota Lake Superior Watershed Stream Science Symposium II. Poster.
- Vannatta, J. T.** and R. Moen. 2015. Lymnaeid snails and trematode cercariae from northeastern Minnesota. Superior National Forest Research Slam. Oral.
- Vannatta, J. T.** and R. Moen. 2015. Lymnaeid Snails of North America: Distribution and Susceptibility to Giant Liver Fluke. The Wildlife Society 22nd Annual Conference. Poster.
- Vannatta, J. T.** and R. Moen. 2015. Life Cycle Parameters Affecting Giant Liver Fluke Infection in Deer and Moose. 49th Annual North American Moose Conference and Workshop. Oral.
- Vannatta, J. T.** and R. Moen. 2015. Giant Liver Fluke Infection and Intermediate Host Habitat around Duluth, MN, USA. 2015. 49th Annual North American Moose Conference and Workshop. Poster
- Vannatta, J. T.**, K. L. Van der Waal, and R. Moen. 2015. Factors Determining Giant Liver Fluke Infection in White-tailed Deer and Moose. 2015 Joint Annual Meeting Minnesota and Wisconsin Chapters of the Wildlife Society. Poster.
- Vannatta, J.T.** and R. Moen. 2014. Moose Use of Water, Wetland Cover Types, and Surrounding Areas from GPS Collar Data. Minnesota Lake Superior Watershed Stream Science Symposium I. Poster.

Professional Memberships

American Society of Parasitologists

Annual Midwestern Conference of Parasitologists

Ecological Society of America

Society for Freshwater Science

Teaching / Mentoring

Graduate Teaching Assistant, Purdue University, 2017 – present

Undergraduate courses taught:

BIOL 12100, Diversity, Ecology, and Behavior. 2017, 2018, 2020

BIOL 11500, Biology Resource Seminar. 2017, 2018, 2020 (*Instructor of record*)
BIOL 20600, Biology for Elementary School Teachers. 2018
BIOL 28600, Introduction to Ecology and Evolution. 2019

Graduate Teaching Assistant, University of Minnesota – Duluth, 2013-2015

Undergraduate courses taught:

BIOL 1011, General Biology I. 2013, 2014.
BIOL 1012, General Biology II. 2014.
BIOL 3701, Animal Diversity. 2015.
BIOL 4764, Mammalogy. 2015.

Guest Lecturer

Purdue University

BIOL 59500, Ecology, *Title*: Nutrient Cycling, Productivity, and Communities
BIOL 59500, Ecology, *Title*: Ecosystem Ecology (+ parasites)
BIOL 28600, Introduction to Ecology and Evolution, *Title*: Parasitism
BIOL 28600, Introduction to Ecology and Evolution, *Title*: Biogeochemical cycles

University of Minnesota – Duluth

BIOL 4764, Mammalogy, *Title*: The "Insectivora," Macroscelidea, Scandentia, and Dermoptera.
BIOL 4764, Mammalogy, *Title*: Parasites and Disease

Undergraduate Research Mentees

Bailey Pyle, Project – The duality of snail: snail coinfection as both a first and second intermediate host.

Awards: (2019) McAtee Award for undergraduates in Ecology; (2020) Cable-Silkman fellowship for undergraduates in Parasitology

Ao Yu, Project – Saltwater intrusion alters parasite prevalence and reproductive output

Hannah Melchiorre, Project – Impact of antibiotic contamination on host-parasite interactions.

Awards: (2018) McAtee Award for undergraduates in Ecology

Annabell Davis, Project – Impact of fecundity compensation on offspring success.

Awards: (2019) Cable-Silkman fellowship for undergraduates in Parasitology

Sara Carpenter, (Graduated 2019) Project - Imperfect timing: Influence of infection maturity on coinfection success.

Awards: (2017) McAtee Award for undergraduates in Ecology; (2018) Cable-Silkman fellowship for undergraduates in Parasitology

Thomas Knowles, (Graduated 2018) Project - The Road Not Taken: Host Infection Status Influences Parasite Host Choice.

Awards: (2017) Cable-Silkman fellowship for undergraduates in Parasitology

Engagement

Publications and interviews

Vannatta, J. T. 2017. It Takes Guts: Examining Disease Risk and Coinfection Using Hunter Harvested Deer. The Wildlife Society - Wildlife Disease Working Group Newsletter, *The Vector* 10 (4), 2-3

Vannatta, J.T. and R. Moen. 2016. Distribution of Lymnaeid Snail Hosts of the Giant Liver Fluke in Northeastern Minnesota. *NRRI Technical Report No. NRRI/TR-2016/03*

Minnesota Public Radio interview (2015): <http://www.mprnews.org/story/2015/08/11/bcst-moose-population>

KBJR 6 interview (2015). NRRI researcher looks at liver fluke impact on deer and moose.

NRRI Now interview (2015): 'Fluke' of Nature <http://www.nrri.umn.edu/sites/nrri.umn.edu/files/2015springsummerfinalsm.pdf> Page 7.

Vannatta, J. T. "Parasites, the unseen world of the Northland." *Duluth Budgeteer News*, Sept. 28th 2014 82(39):B2. Print.

Volunteer and education activities

Volunteer Academic Adviser, University of Minnesota – Duluth, fall 2013

Assisted new freshmen navigating Biology major requirements and course selection.

Assistant Speech Coach, Owatonna High School, November 2012 - June 2013

Coached high school students in researching and presenting creative and informational public speeches in a competitive setting.

Classroom Education Assistant, Wilson Elementary School, September 2012 – June 2013

Assisted in the teaching of 2nd and 4th grade classrooms. Activities changed daily and unpredictably.

Teaching and community project in rural Zanzibar, Tanzania, African Impact, June 2012-August 2012

Assisted in the education of adults 16 - 32 years of age and children 3 - 7 years of age. Work included creating and teaching lesson plans on English grammar. Various community projects were also included.

Various activities with local grade schools including: Skype a Scientist, Frankfort High School Science Fair mentor, Next Generation Scholars, Partners in Education, University of Minnesota – Duluth Science Day, The NE MN Regional Science Fair/ American Indian Science and Engineering Fair, Service Learning Projects, and Mammalogy lab demonstrations.

Professional service

Reviewer for:

Alces: A Journal Devoted to the Biology and Management of Moose
Ecology and Evolution
Frontiers in Ecology and Evolution
Helminthologia
Oecologia
Parasitology
Trends in Parasitology

World-wise intercultural competency certificate

Lectureship Committee: American Society of Parasitologists

Graduate Selected Speaker committee: Purdue Ecology and Evolutionary Biology group

Symposium committee: Annual Midwestern Conference of Parasitologists (2016)

References

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