# John R **Foster**

PhD Candidate

*Department of Earth and Environment, Boston University*

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## EDUCATION

Ph.D., Earth and Environment, *Boston University* — Expected 2022

M.S., Microbiology, *Colorado State University* — 2017

B.S., Fish, Wildlife, and Conservation Biology, *Colorado State University* — 2012

## RESEARCH POSITIONS

Department of Earth and Environment, *Boston University* — 2016-present

- Graduate Research Fellow
  – Advisor: Michael C. Dietze
  – Disease ecology and near-term forecasting of tick-borne disease in the US.

The Arthropod-borne and Infectious Disease Laboratory, *Colorado State University* — 2016-2017

- Graduate Laboratory Researcher
  – Advisor: Brian Foy
  – Mechanisms of mosquito resistance to insecticides

Wildlife Health Laboratory, *Colorado Parks and Wildlife* — 2013-2016

- Wildlife Disease Research Crew Leader — 2015-2016
- Wildlife Disease Research Technician — 2013-2014
  – Advisor: Dan Tripp
  – Efficacy testing of a novel vaccine protecting prairie dogs from the plague

*Bat Conservation International* — 2012

- Wildlife Field Technician
  – Management strategies to mitigate migrating bat fatalities at wind farms

## TEACHING

Teaching Fellow, *Boston University* — 2018

- Introduction to Quantitative Environmental Modelling: Ran the computer lab associated with the lectures. Taught students the basics of coding in R and how to build various models for environmental science (population, flux, univariate and multivariate regression, optimization, and uncertainty propagation). Led lab with a review of the lecture material and R tips/tricks for completing each lab. Taught students debug models/code. Presented lectures on graphical analysis of population equilibrium and earth system models.

Instructor, Near-term Ecological Initiative Summer Course, *Boston University* — 2018-2020

- Short course on the principles of ecological forecasting, helped with the hands-on R activities including: Introduction to JAGS, state-space modelling, data assimilation, model assessment, and decision support.

## PUBLICATIONS

### In Prep

**John R. Foster**, Shannon L. LaDeau, Rick Ostfeld, Michael C. Dietze. "Evaluation of vital rates of the Lyme disease vector (*Ixodes scapularis*) over a 10-year period in eastern New York."

**John R. Foster**, Shannon L. LaDeau, Rick Ostfeld, Michael C. Dietze. "Hindcasting as a tool for model validation and selection for two populations: black-legged ticks (*Ixodes scapularis*) and white-footed mice (*Peromyscus leucopus*)."

**John R. Foster**, Shannon L. LaDeau, Brian Allan, Rick Ostfeld, Michael C. Dietze. "Within and among species survival analysis of the major vectors of tick-borne disease in the United States."

### In Review

Michelle C. Kondo, Steven Prince, Shannon LaDeau, **John R. Foster**, Wayne Zipperer, Emily York. "Human Health in the Wildland Urban Interface." US Forest Service National Assessment on the Wildland Urban Interface – Human Health Chapter

K. J. Farrell, K. C. Weathers, S. H. Sparks, J. A. Brentrup, C. C. Carey, M. C. Dietze, **J. R. Foster**, K. L. Grayson, J. H. Matthes, M. D. SanClements. "Training the next generation of macrosystems scientists requires both interpersonal and technical skills." Frontiers in Ecology and Environment (2020)

### 2019

Chilinh Nguyen; Meg Gray; Timothy A. Burton; Soleil L Foy; **John R. Foster**; Alex Lazr Gendernalik; Claudia Rackert; Haoues Alout; Michael C. Young; Broox Boze; Gregory D. Ebel; Brady Clapsaddle; Brian D. Foy: "Evaluation of a novel West Nile virus transmission control strategy that targets *Culex tarsalis* with endectocide-containing blood meals." PLoS Negl Trop Dis (2019). DOI: 10.1371/journal.pntd.0007210

### 2018

Michael C. Dietze, Collin Averill, **John R. Foster**, Kathryn Wheeler. 2018. "Ecological Forecasting." Oxford Bibliographies. DOI: 10.1093/OBO/9780199830060-0205

## PRESENTATIONS

Tempest D. McCabe and **John R. Foster**. "Predicting Town-level Cases of Lyme Disease in Southern Maine: Can we do it, and What Does it Tell Us?" Poster. American Geophysical Union Annual Meeting. December 12, 2019.

**John R. Foster**, "Efforts into the near-term iterative forecasting of the tick population at the Cary Institute of Ecosystem Studies." Talk. Cary Institute of Ecosystem Studies. September 10, 2019.

**John R. Foster**; LaDeau, Shannon L.; Ostfeld, Rick; Dietze, Michael C. "Near-term iterative forecasting of tick and small mammal populations to predict Lyme disease risk in the Northeastern U.S." Talk. Ecological Society of America Annual Meeting. August 13, 2019, 8:00-8:20.

**John R. Foster**; Dietze, Michael C.; Averill, Colin; Bhatnagar, Jennifer M.; LaDeau, Shannon L.; Weathers, Kathleen C.; Werbin, Zoey R.; Wheeler, Kathryn I.; Zarada, Katherine A. "Cross-forecast synthesis and cyberinfrastructure in Near-term ecological forecasting" Lightning Talk. Ecological Forecasting Initiative Conference. May 14, 2019.

**John R. Foster**, LaDeau, Shannon; Dietze, Michael C. "Forecasting the abundance of the Lyme disease vector in Millbrook, NY." Talk. Department of Earth and Environment Graduate Student Seminar Series. April 12, 2019.

Taylor C. Clarkson, Jasmine Donkoh, Jacob I. Meyers, **John R. Foster**, Tereza Magalhaes, Lyndsey Gray, Brian D. Foy. "Generating mosquitocidal antibodies in rabbits immunized with neuronal antigens from Anopheles gambiae." Poster. American Society of Tropical Medicine and Hygiene Annual Meeting. October 31, 2018, 12:00-1:45.

**John R. Foster**, Shannon L. LaDeau, Michael C. Dietze. "Predicting the Lyme disease vector (*Ixodes scapularis*) from small mammals and the weather: A Bayesian approach." Poster. 15th International Conference on Lyme Borreliosis and Other Tick-Borne Diseases. September 13, 2018, 12:00-2:00.

**John R. Foster**, Shannon L. LaDeau, Michael C. Dietze. "Predicting the Lyme disease vector (*Ixodes scapularis*) from small mammals and the weather: A Bayesian approach." Contributed Talk. Ecological Society of America Annual Meeting. August 8, 2018, 10:40-11:00.

## FUNDING

**2019** Millbrook Garden Club Scholarship $1,500

## SERVICE

Earth and Environment Graduate Student Association 2017–2020

- Vice Chair 2019 - 2020

- Graduate Representative 2017-2019
- Chair, Professional Development Committee 2017-2019