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Degrees:

University of Texas at Austin; PhD in Ecology, Evolution and Behavior; 2013.
Supervising professors: Lauren Meyers and Claus Wilke.
Thesis: Analyses of infectious disease data with attention to heterogeneity.

State University of New York at Geneseo, BS in Biology, 2008.

Employment:

Postdoctoral Research Scholar; University of Georgia; Athens, GA; 2015–present

Postdoctoral Fellow; Georgetown University; Washington, DC; 2013–2015

Peer-reviewed papers:

P. B. Miller, E. B. O'Dea, P. Rohani, and J. M. Drake. Forecasting infectious disease emergence subject to seasonal forcing. Theoretical Biology and Medical Modelling. 6 September 2017.

C. J. Dibble, E. B. O'Dea, A. W. Park, and J. M. Drake. Waiting time to infectious disease emergence. Journal of the Royal Society Interface. 19 October 2016.

E. B. O'Dea, H. Snelson, and S. Bansal. Using heterogeneity in the population structure of U.S. swine farms to compare transmission models for porcine epidemic diarrhoea. Scientific Reports. 7 March 2016.

E. B. O'Dea, K. M. Pepin, B. A. Lopman, and C. O. Wilke. Fitting outbreak models to data from many small norovirus outbreaks. Epidemics. March 2014.

E. B. O'Dea and C. O. Wilke. Contact networks and phylodynamics: How host contact networks shape parasite evolutionary trees. Interdisciplinary Perspectives in Infectious Disease. 2011:238743.

E. B. O'Dea, T. E. Keller, and C. O. Wilke. Does mutational robustness inhibit extinction by lethal mutagenesis in viral populations? PLoS Computational Biology. 10 June 2010.

Papers submitted for review:

T. S. Brett, E. B. O'Dea, É. Marty, P. B. Miller, A. W. Park, J. M. Drake, and P. Rohani. Anticipating epidemic transitions with imperfect data.

S. Chen, E. B. O'Dea, J. M. Drake, and B. Epureanu. Eigenvalues of the covariance matrix as early warning signals for critical transitions in ecological systems.

E. B. O'Dea and J. M. Drake. Disentangling reporting and disease transmission using second order statistics. bioRxiv. doi: 10.1101/234658

E. B. O'Dea, A. W. Park, and J. M. Drake. Estimating the distance to an epidemic threshold. bioRxiv. doi: 10.1101/247734

J. M. Drake, T. S. Brett, M. J. Ferrari, É. Marty, P. B. Miller, E. B. O'Dea, S. Chen, B. I. Epureanu, A. W. Park, S. M. O'Regan, P. Rohani. The statistical physics of epidemic transitions.

Teaching experience:

Guest lecturer on near-critical dynamics for ECOL 8520. UGA. Athens, GA. 25 January 2017.

Teaching assistant for Ecology, Genetics, and Introduction to Computational Biology.

Software developed:

E. B. O'Dea. spaero: Software for Project AERO. `https://cran.r-project.org/package=spaero`

Talks contributed:

E. B. O'Dea and J. M. Drake. Disentangling reporting and disease transmission using second order statistics. Society for Industrial and Applied Mathematics Southeastern Atlantic Sectional Conference. UNC. Chapel Hill, NC. 11 March 2018.

E. B. O'Dea. Identifying Correlates of Pathogen Spatial Spread from Phylogenetic Trees. Center for the Ecology of Infectious Diseases. UGA. Athens, GA. 7 December 2016.

E. B. O'Dea. An R-based approach to global sensitivity anlysis for moments of stochastic models. Computational Ecology & Epidemiology Study Group. UGA. Athens, GA. 3 February 2016.

E. B. O'Dea. Introduction to Docker. Computational Ecology & Epidemiology Study Group. UGA. Athens, GA. 23 September 2015.

E. B. O'Dea. Investigating the transmission pathways of porcine epidemic diarrhea virus (PEDV) using outbreak incidence and virus sequence data. USDA Veterinary Services Simulation and Modeling Seminar Series. Webinar. 20 January 2015.

E. B. O'Dea and S. Bansal. Spreading patterns in the ongoing U.S. Porcine Epidemic Diarrhea Virus outbreak. Friday Biology Seminar at Georgetown University. Washington, DC. 15 November 2013.

E. B. O'Dea and C. Leary. Degree-correlated scale-free networks and epidemics. Undergraduate Biomathematics Day, Niagara Falls, NY. April, 2008. SUNY Geneseo GREAT Day. Geneseo, NY. April 2008.

Posters contributed:

E. B. O'Dea, A. W. Park, and J. M. Drake. Estimating the distance to an epidemic threshold. EEID. UC Santa Barbara, CA. June 2017.

E. B. O'Dea and J. M. Drake. Estimating the distance to the epidemic threshold. MIDAS Network Meeting. Reston, VA. May 2016.

E. B. O'Dea and S. Bansal. Learning patterns of transmission from the U.S. PEDV outbreak. Epidemics. Amsterdam, The Netherlands. November 2013.

E. B. O'Dea and C. Leary. Epidemic dynamics on randomized scale-free networks. The Joint Mathematics Meeting of the MAA and AMS. San Diego, CA. January 2008.

Undergraduate mentoring assignments:

David Schaffer. Localization of the source of an outbreak on weighted and directed networks. Summer 2014.

Sarah Kramer. Estimating effects of risk compensation due to antiviral HIV therapy. Spring 2014.

Yongjun Cho. The impact of population immunity on antigenic drift during large epidemics and small outbreaks. Journal of the Young Investigator. Volume 20. Issue 3. September 2010.

Journals for which I have been a reviewer:

BMC Evolutionary Biology.

Ecosphere.

Genetics.

JSTAT.

PeerJ.

PLoS Neglected Tropical Diseases.

PLoS One.

PLoS Pathogens.

PNAS.

Research interests:

applied statistics, complex networks, disease dynamics, phylogenetics

Honors and awards:

Phi Beta Kappa.

SUNY Geneseo College Honors Program.