

# John M. Drake

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## CONTACT

Odum School of Ecology  
University of Georgia  
Athens, GA 30602-2202 USA

## APPOINTMENTS

Distinguished Research Professor, University of Georgia (2017 – present)

- Odum School of Ecology (2006 – present)
- Biomedical and Health Sciences Institute (2008 – present)
- Faculty of Infectious Diseases (2008 – present)

Professor, University of Georgia (2016 – 2017)

Keeley Visiting Fellow, Wadham College, Oxford University (Michaelmas term, 2012)

Leverhulme Visiting Professor, Oxford University (2012)

Associate Professor, University of Georgia (2010 – 2016)

Assistant Professor, University of Georgia (2006 – 2010)

Postdoctoral Fellow (2004 – 2006), National Center for Ecological Analysis and Synthesis (Santa Barbara, California)

Adjunct Professor (2003), Bethel College (Mishawaka, Indiana)

## LEADERSHIP

### **Associate Dean for Academic Affairs, Odum School of Ecology, University of Georgia (2017 – present)**

The Associate Dean of Academic Affairs oversees the academic activities of approximately 30 faculty, 75 graduate students, and 175 undergraduates in the Odum School of Ecology (OSE). Duties include strategic planning, oversight of curricular programs, faculty recruitment and appointment, budget development and service as OSE's primary liaison with the Office of the Vice President of Instruction and the Office of International Education.

### **Founding Director, Center for the Ecology of Infectious Diseases, University of Georgia (2016 – present)**

The Center for the Ecology of Infectious Diseases (CEID) is a research unit comprising approximately 55 faculty, postdoctoral associates, and student researchers. The CEID coordinates research activities focused on cross-disciplinary understanding of the biology of infectious diseases at multiple scales with diverse scientific and scholarly methodologies. Duties of the Director include budget development, fundraising, operations, and programming. Key activities of the CEID include facilitating team research, a regular seminar series, design and delivery of workshops and computational clinics, publication of a book series in collaboration with Oxford University Press, and planning and execution of academic events and symposia.

### **Founding Director, Population Biology of Infectious Diseases REU Site, University of Georgia (2012 – present)**

The Population Biology of Infectious Diseases REU Site is an NSF- and NIH-funded nine-week immersive program for undergraduate training in research. The primary goals of the REU program are to promote inclusion, prepare students for graduate school, and train students for research integrating quantitative, data-driven methodology and empirical study. The Director is responsible for securing funding, arranging student housing, selection of student participants, program delivery, collection of data on student outcomes, and reporting to sponsors.

EDUCATION	<p>University of Notre Dame, Indiana USA  <i>Ph.D., Biological Sciences, May 2004 (Advisor: Dr. David M. Lodge)</i></p> <p>University of Notre Dame, Indiana USA  <i>M.A., History and Philosophy of Science, May 2007</i></p> <p>Covenant College, Lookout Mountain, Georgia USA  <i>B.A., Biology, May 1999</i></p>	
RESEARCH INTERESTS	<p><b>Population biology:</b> Ecology of infectious diseases • Evolution of host-parasite interactions • Theoretical epidemiology • Extinction • Biological invasions • Allee effects • Critical phenomena • Niche theory</p> <p><b>Data science:</b> Dynamical modeling • Machine learning • Data mining • Species distribution modeling • Disease risk mapping • Early warning systems</p>	
PROFESSIONAL AFFILIATIONS	American Association for the Advancement of Science (AAAS), American Statistical Association (ASA), Ecological Society of America (ESA), Sigma Xi	
EDITORIAL BOARDS	<p><i>Ecosphere</i> (Associate Editor: 2010 – 2016)</p> <p><i>Ecology Letters</i> (Associate Editor: 2012 – 2016, Senior Editor 2017 – present)</p> <p><i>Proceedings of the Royal Society, Series B</i> (Associate Editor: 2013 – present)</p> <p><i>Ecology &amp; Evolution</i> (Associate Editor: 2013 – 2017)</p> <p><i>Theoretical Ecology</i> (Associate Editor: 2015 – present)</p> <p><i>PLOS Biology</i> (Guest Editor: 2018)</p>	
RESEARCH ARTICLES	<p><b>Drake, J.M.</b>, L. Berec, &amp; A.M. Kramer. 2019. Allee effects. In: Fath, B.D. (editor in chief) <i>Encyclopedia of Ecology</i>, 2nd edition, vol. 3, pp. 613. Oxford: Elsevier.</p>	*Indicates undergraduate or high school author
2018	<p>O'Dea, E.B. &amp; <b>J.M. Drake</b>. Disentangling reporting and disease transmission. <i>Theoretical Ecology</i>. (In press.)</p> <p>Kaul, R., M.V. Evans, C.C. Murdock &amp; <b>J.M. Drake</b>. Spatio-temporal spillover risk of yellow fever in Brazil. <i>Parasites &amp; Vectors</i>. (In press.)</p> <p>Dallas, T.A., B. Han, C. Nunn, A.W. Park, P. Stephens, &amp; <b>J.M. Drake</b>. Host traits associated with species roles in parasite sharing networks. <i>Oikos</i>. (In press.)</p> <p>Evans, M.V., J.C. Shiau, N. Solano, M.A. Brindley, <b>J.M. Drake</b> &amp; C.C. Murdock. Carry-over effects of urban larval environments on the transmission potential of dengue-2 virus. <i>Parasites &amp; Vectors</i>. (In press.)</p> <p><b>Drake, J.M.</b> &amp; R.L. Richards. Estimating environmental suitability. <i>Ecosphere</i> 9:e02373. <a href="http://dx.doi.org/10.1002/ecs2.2373">http://dx.doi.org/10.1002/ecs2.2373</a>.</p> <p>E.B. Laber, N. Meyer, B. Reich, J. Collazo &amp; <b>J.M. Drake</b>. On-line estimation of an optimal treatment allocation strategy for the control of White-nose Syndrome in bats. <i>Journal of the Royal Society, Series C</i>. 67:743-789. <a href="http://doi.org/10.1111/rssc.12266">http://doi.org/10.1111/rssc.12266</a></p> <p>O'Dea, E.B., A.W. Park &amp; <b>J.M. Drake</b>. Estimating the distance to an epidemic threshold. <i>Journal of the Royal Society Interface</i> 15:20180034. <a href="http://dx.doi.org/10.1098/rsif.2018.0034">http://dx.doi.org/10.1098/rsif.2018.0034</a></p> <p>Brett, T.S., E.B. O'Dea, E. Marty, P.B. Miller, A.W. Park, <b>J.M. Drake</b> &amp; P. Rohani. Anticipating epidemic transitions with imperfect data. <i>PLOS Computational Biology</i> 14:e1006204. <a href="http://dx.doi.org/10.1371/journal.pcbi.1006204">http://dx.doi.org/10.1371/journal.pcbi.1006204</a></p>	

Evans, M.V., C. Murdock & **J.M. Drake**. Anticipating emerging arboviruses: What comes after Zika? *Trends in Parasitology* 34:544-547. <http://dx.doi.org/10.1016/j.pt.2018.02.010>

Park, A.W., M.J. Farrell, J.P. Schmidt, S. Huang, T.A. Dallas, P. Pappalardo, **J.M. Drake**, P.R. Stephens, R. Poulin, C.L. Nunn, & T.J. Davies. 2018. Characterizing the phylogenetic specialism-generalism spectrum of mammal parasites. *Proceedings of the Royal Society, Series B* 285:20162613. <http://dx.doi.org/10.1098/rspb.2017.2613>

Dallas, T., M. Krkosek & **J.M. Drake**. Experimental evidence of pathogen invasion threshold. *Royal Society Open Science* 5:171975.

Fisher, M.A., J.E. Vinson, J.L. Gittleman & **J.M. Drake**. 2018. The description and number of undiscovered mammal species. *Ecology & Evolution*. <http://dx.doi.org/10.1002/ece3.3724>

Berec, L., A.M. Kramer, V. Bernhauerova & **J.M. Drake**. 2018. Density-dependent selection on mate search and the evolution of Allee effects. *Journal of Animal Ecology* 87:24-35. <http://dx.doi.org/10.1111/1365-2656.12662>

2017

Noori, N., **J.M. Drake** & P. Rohani. Comparative epidemiology of poliomyelitis transmission around the world. *Scientific Reports* 7:17362. <http://dx.doi.org/10.1038/s41598-017-17749-5>

Miller, P.B., E.B. O'Dea, P. Rohani & **J.M. Drake**. 2017. Forecasting infectious disease emergence subject to seasonal forcing. *BMC Theoretical Biology and Medical Modelling* 14:17. <http://doi.org/10.1186/s12976-017-0063-8>

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**Drake, J.M.** & S.I. Hay. 2017. Monitoring the path to the elimination of infectious diseases. *Tropical Medicine & Infectious Disease* 2:20. <http://dx.doi.org/10.3390/tropicalmed2030020>

Wachsmuth, L.P., C.R. Runyon, **J.M. Drake** & E.L. Dolan. 2017. Do biology students really hate math? Empirical insights into undergraduate life science majors' emotions about mathematics. *CBE – Life Sciences Education* 16:ar49. <http://dx.doi.org/10.1187/cbe.16-08-0248>

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Kramer, A.M., G. Annis, M.E. Wittman, W.L. Chadderton, E.S. Rutherford, D.M. Lodge, L. Mason, D. Beletsky, C. Riseng & **J.M. Drake**. 2017. Suitability of Laurentian Great Lakes for invasive species based on global species distribution models and local habitat. *Ecosphere* 8:e01883. <http://dx.doi.org/10.1002/ecs2.1883>

Dallas, T.A., A.W. Park & **J.M. Drake**. 2017. Predicting cryptic links in host-parasite networks. *PLOS Computational Biology* 13:e1005557. <https://doi.org/10.1371/journal.pcbi.1005557>

\*Schatz, A., A.M. Kramer & **J.M. Drake**. 2017. Accuracy of climate-based forecasts of pathogen spread. *Royal Society Open Science* 4:160975. <http://dx.doi.org/10.1098/rsos.160975>

Evans, M.V., T.A. Dallas, B.A. Han, C.C. Murdock & **J.M. Drake**. 2017. Data-driven identification of potential Zika virus vectors. *eLife* 6:e22053. <http://dx.doi.org/10.7554/eLife.22053>

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Wittmann, M.E., G. Annis, A.M. Kramer, L. Mason, C. Riseng, E.S. Rutherford, W.L. Chadderton, D. Beletsky, **J.M. Drake** & D.M. Lodge. 2017. Refining species distribution model outputs using landscape-scale habitat data: Forecasting Grass Carp and *Hydrilla verticillata* establishment in the Great Lakes Region. *Journal of Great Lakes Research* 43:298-307. <https://dx.doi.org/10.1016/j.jglr.2016.09.008>

Dallas, T., A.W. Park & **J.M. Drake**. 2017. Predictability of helminth parasite host range using information on geography, host traits and parasite community structure. *Parasitology*. 144:200-205. <http://dx.doi.org/10.1017/S0031182016001608>

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Lodge, D.M., P.W. Simonin, S.W. Burgiel, R.P. Keller, J.M. Bossenbroek, C.L. Jerde, A.M. Kramer, E.S. Rutherford, M.A. Barnes, M.E. Wittmann, W.L. Chadderton, J.L. Apriesnig, D. Beletsky, R.M. Cooke, **J.M. Drake**, S.P. Egan, D.C. Finnoff, C.A. Gantz, E.K. Grey, M.H. Hoff, J.G. Howeth, R.A. Jensen, E.R. Larson, N.E. Mandrak, D.M. Mason, F.A. Martinez, T.J. Newcomb, J.D. Rothlisberger, A.J. Tucker, T.W. Warziniack & H. Zhang. 2016. Risk analysis and bioeconomics of invasive species to inform policy and management. *Annual Review of Environment and Resources* 41:453-488. <http://dx.doi.org/10.1146/annurev-environ-110615-085532>

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Kramer, A., J. Ward, F. Dobbs, M. Pierce & **J.M. Drake**. 2016. The contribution of marine aggregate-associated bacteria to the accumulation of pathogenic bacteria in oysters: an agent-based model. *Ecology & Evolution* 6:7397-7408. <http://dx.doi.org/10.1002/ece3.2467>

\*Zarada, K. & **J.M. Drake**. 2016. Time to extinction in deteriorating environments. *Theoretical Ecology*. <http://dx.doi.org/10.1007/s12080-016-0311-2>

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Kramer, A.M., J.T. Pulliam, \*L. Alexander, P. Rohani, A.W. Park & **J.M. Drake**. 2016. Spatial spread of the West Africa Ebola epidemic. *Royal Society Open Science* 3:160294. <http://dx.doi.org/10.1098/rsos.160294>

Han, B., J.P. Schmidt, \*L. Alexander, S.E. Bowden, D.T.S. Hayman & **J.M. Drake**. 2016. Undiscovered bat hosts of filoviruses. *PLOS Neglected Tropical Diseases* 10:e0004815. <http://dx.doi.org/10.1371/journal.pntd.0004815>

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G.M. Vazquez-Prokopec, J.P. Schmidt & R. Poulin. 2016. The macroecology of infectious diseases: A new perspective on global-scale drivers of pathogen distributions and impacts. *Ecology Letters* 19:1159-1171. <http://dx.doi.org/10.1111/ele.12644>

Vinson, J.E., **J.M. Drake**, P. Rohani & A.W. Park. 2016. The potential for sexual transmission to compromise control of Ebola virus outbreaks. *Biology Letters* 12:20151079. <http://dx.doi.org/10.1098/rsbl.2015.1079>

Han, B.A., A.M. Kramer & **J.M. Drake**. 2016. Global patterns of zoonotic disease in mammals. *Trends in Parasitology* 32:565-577. <http://dx.doi.org/10.1016/j.pt.2016.04.007>

R.B. Kaul, A.M. Kramer, F.C. Dobbs & **J.M. Drake**. 2016. Experimental demonstration of Allee effects in microbial populations. *Biology Letters* 12:20160070. <http://dx.doi.org/10.1098/rsbl.2016.0070>

**Drake, J.M.** & A.W. Park. 2016. A model for coupled outbreaks contained by behavior change. Pp. 25-37 in *Mathematical Modeling for Emerging and Re-emerging Infectious Diseases*, G. Chowell & M. Hyman, eds. Springer: New York.

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Han, B., J.P. Schmidt, S. Bowden & **J.M. Drake**. 2015. Rodent reservoirs of future zoonotic diseases. *Proceedings of the National Academy of Sciences USA* 112:7039-7044. <http://dx.doi.org/10.1073/pnas.1501598112>

**Drake, J.M.**, I. Bakach, M.R. Just, S.M. O'Regan, M. Gambhir, & I.C.-H. Fung. 2015. Transmission models of historic Ebola outbreaks: a review. *Emerging Infectious Diseases* 21:1447-1450. [http://wwwnc.cdc.gov/eid/article/21/8/14-1613\\_article](http://wwwnc.cdc.gov/eid/article/21/8/14-1613_article)

**Drake, J.M.** Range bagging: a new method for ecological niche modeling from presence-only data. 2015. *Journal of the Royal Society Interface* 12:20150086. <http://dx.doi.org/10.1098/rsif.2015.0086>

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**Drake, J.M.**, R.B. Kaul, \*L.W. Alexander, S.M. O'Regan, A.M. Kramer, J.T. Pulliam, M.J. Ferrari & A.W. Park. 2015. Ebola cases and health system demand in Liberia. *PLOS Biology* 13:e1002056. <http://dx.doi.org/10.1371/journal.pbio.1002056>

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2014

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2013

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MANUSCRIPTS	<p><b>Drake, J.M.</b>, S.M. O'Regan, V. Dakos, S. Kéfi &amp; P. Rohani. Alternative stable states, tipping points, and early warning signals of ecological transitions. Book chapter. <i>Theoretical Ecology</i>, K. McCann &amp; G. Gellner, eds. Oxford University Press.</p> <p>T. Dallas, A. Gehman, A.A. Aguirre, S.A. Budischak, <b>J.M. Drake</b>, M.J. Farrell, R. Ghai, S. Huang &amp; I. Morales-Castilla. Contrasting latitudinal gradients of body size in helminth parasites and their hosts. Submitted to <i>Global Ecology &amp; Biogeography</i>.</p> <p><b>Drake, J.M.</b>, T.S. Brett, S. Chen, B.I. Epureanu, M.J. Ferrari, É. Marty, P.B. Miller, E.B. O'Dea, S.M. O'Regan, A.W. Park, P. Rohani. The statistical physics of epidemic transitions. Submitted to <i>PLOS Computational Biology</i>.</p> <p><b>J.M. Drake</b>, K. Magori, K. Knoblich, S.E. Bowden &amp; W.I. Bajwa. Force of infection and variation in outbreak size in a multi-species host-pathogen system: West Nile virus in New York City. Book chapter. <i>Population Biology of Vector-borne Diseases</i>, <b>J.M. Drake</b>, M. Bonsall &amp; M.R. Strand, eds. Oxford University Press.</p> <p>Chen, S., E.B. O'Dea, <b>J.M. Drake</b>, &amp; B. Epureanu. Eigenvalues of the covariance matrix as early warning signals for critical transitions in ecological systems. Submitted to <i>Scientific Reports</i>.</p> <p>Ruberti, J., I.B. Arpinar, <b>J.M. Drake</b> &amp; K. Kochut. Detection of Zika virus misinformation on Twitter through chained gradient boosting and descriptive features. Submitted to <i>IEEE Journal of Biomedical and Health Informatics</i>.</p> <p>Dallas, T.A. &amp; <b>J.M. Drake</b>. The dimensionality of the global environment. Submitted to <i>Ecography</i>.</p> <p>Cope, R.C., J.V. Ross, <b>J.M. Drake</b>, T.A. Wittman, E.E. Dyer, T.M. Blackburn, P. West, &amp; P. Cassey. Assessment of range bagging for the prediction of potential invasive ranges. Submitted to <i>Biological Invasions</i>.</p> <p>Zokan, M., R. Kaul, J. Wares &amp; <b>J.M. Drake</b>. Two new species of <i>Chydorus</i> (Branchipoda: Anomopoda: Chydoridae) from the southeastern USA. Submitted to <i>Zootaxa</i>.</p> <p>Maher, S.P., M.E. Wittmann, R. de Triquet, W.L. Chadderton, D.M. Lodge &amp; <b>J.M. Drake</b>. Potential distribution of two species of Asian carp in the contiguous United States. Submitted to <i>Ecology &amp; Evolution</i>.</p> <p>O'Regan, P. Rohani &amp; <b>J.M. Drake</b>. Tipping points in infectious disease dynamics: Transient analysis of seasonal and non-seasonal immunizing infections on the verge of eradication. Submitted to <i>American Naturalist</i>.</p> <p><b>Drake, J.M.</b> Early warning signals of dynamic bifurcation in the emergence of Monkeypox virus. Submitted to <i>Proceedings of the Royal Society, Series B</i>.</p> <p><b>Drake, J.M.</b> Multi-scale evolution of case fatality rate in West Nile virus. <i>Unpublished manuscript</i>.</p>	
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*\*Indicates  
undergraduate  
or high school  
author*

Kramer, A.M. & **J.M. Drake**. Visualization for communication throughout data-intensive research projects. ESA Annual Conference, New Orleans, Louisiana. August 8, 2018. (Invited presentation)

Kaul, R.B., M.V. Evans, C. Murdock & **J.M. Drake**. Spatiotemporal spillover risk of yellow fever in Brazil. General methods for anticipating tipping points in complex systems. ESA Annual Conference, New Orleans, Louisiana. August 7, 2018. (Presentation)

**Drake, J.M.**, P. Rohani, A.W. Park, E.B. O'Dea, E. Marty, P. Miller, T.S. Brett, S. Hall. General methods for anticipating tipping points in complex systems. ESA Annual Conference, New Orleans, Louisiana. August 7, 2018. (Invited presentation)

Chen, S., E.B. O'Dea, **J.M. Drake** & B.I. Epureanu. Eigenvalues of the covariance matrix as early warning signals for critical transitions in epidemiological systems. 2018 MIDAS Network Meeting. April 4, 2018. (Poster)

E.B. O'Dea & **J.M. Drake**. Disentangling reporting and disease transmission using second order statistics. SIAM Southeastern Atlantic Sectional Conference. March 11, 2018. (Presentation)

**J.M. Drake**. Behavior, learning & containment of disease outbreaks. Socioepidemiology Workshop. Mathematical Biosciences Institute, Ohio State University. March 7, 2018. (Presentation)

A.W. Park, **J.M. Drake**, J.E. Vinson, & P. Rohani. Behavior and Ebola: Coupling spatial scales and transmission pathways. Socioepidemiology Workshop. Mathematical Biosciences Institute, Ohio State University. March 8, 2018. (Presentation)

**J.M. Drake**, J.P. Schmidt, A.W. Park, A.M. Kramer, B. Han, & L. Alexander. Dynamic risk mapping of zoonotic spillover. EPIDEMICS 6. November 30, 2017. Sitges, Spain. (Poster)

Kramer, A.M., C. Teitelbaum, A.P. Griffin, & **J.M. Drake**. Linking within- and between-cave scales to understand population dynamics of bats infected by White-nose syndrome. Ecological Society of America. August 11, 2017. (Poster)

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Harris, M. & **J.M. Drake**. Evidence of critical slowing down prior to malaria resurgence in Kericho, Kenya. National Conference on Undergraduate Research. April 6, 2017. (Presentation)

**Drake, J.M.**. Spatial spread of the West Africa Ebola epidemic at two scales. Eastern North American Region International Biometric Society Spring Meeting. March 14, 2017. (Invited presentation)

Schatz, A. & **J.M. Drake**. Ecological applications of informatics. Georgia Informatics Symposium. October 11, 2016. (Poster)



- Kramer, A.M. & **J.M. Drake**. Multi-scale dynamics of white-nose syndrome in North America. NSF Macrosystems PI meeting, Washington D.C. September 29, 2016. (Poster)
- Han, B., **J.M. Drake**, & J.L. Gittleman. Behavioral predictors of zoonotic disease diversity in the Carnivora. Ecological Society of America. August 10, 2016. (Presentation)
- Bowden, S.E. & **J.M. Drake**. Larval competition modifies the thermal niche of vector mosquitoes. Ecological Society of America. August 8, 2016. (Presentation)
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- O'Dea, E.B. & **J.M. Drake**. Estimating the distance to the epidemic threshold. MIDAS Conference, Reston, VA, 23 May 2016. (Poster)
- R. Kaul, S.E. Bowden, L Wachsmuth, E. Dolan & **J.M. Drake**. Population Biology of Infectious Diseases REU Site: Math Majors at the Bench. Ecological Society of America. August 14, 2015. (Poster)
- J.E. Byers, P. Pappalardo, J.P. Schmidt, P.R. Stephens, S. Haas, C. Nunn, **J.M. Drake**, & T. Dallas. What parasite and host traits best explain the geographic range of mammal parasites and diseases? Ecological Society of America, August 11, 2015. (Presentation)
- A.M. Kramer, M. Wittman, G. Annis, W.L. Chadderton, E. Rutherford, L. Mason, D.M. Lodge, & **J.M. Drake**. Predicting habitat suitability for invasive species in the Great Lakes: Combining species distribution models and high resolution aquatic variables. Ecological Society of America, August 13, 2015. (Poster)
- B. Han, J.P. Schmidt, D.T.S. Hayman, S.E. Bowden, & **J.M. Drake**. Machine learning to predict new bat reservoirs of filoviruses: Africa and beyond. Ecological Society of America, August 11, 2015. (Presentation)
- S. Huang, **J.M. Drake**, J.L. Gittleman, & S. Altizer. Parasite diversity and host evolution: A global analysis of carnivores. Ecological Society of America, August 11, 2015. (Presentation)
- L. Berec, A.M. Kramer, **J.M. Drake**, & V. Bernhauerova. Natural selection on mate-finding Allee effects. Ecological Society of America, August 11, 2015. (Presentation)
- J.P. Schmidt, A.W. Park, **J.M. Drake**, & L. Alexander. Identifying triggers of Ebola spillover events using spatio-temporal envelope models. Ecological Society of America, August 11, 2015. (Presentation)
- T. Dallas & **J.M. Drake**. Using niche modeling to detect unobserved interactions in host-parasite networks. Ecological Society of America, August 22, 2015 (Presentation).
- Drake, J.M.**. Plausible parameterization: An approach to fitting weakly identifiable dynamical models. Ecological Society of America. August 13, 2015. (Presentation)
- Kramer, A.M. & **Drake, J.M.**. Multi-scale dynamics of white-nose syndrome in North America. NSF Macrosystems Program, PI meeting. August 4, 2015. (Poster)
- Drake, J.M.**, A. Kramer, L. Alexander, J.T. Pulliam, & A.W. Park. Spatial spread of the West Africa Ebola epidemic at two scales. Society for Mathematical Biology Annual Meeting, July 2, 2015. (Invited presentation)
- Drake, J.M.**, R. Kaul, L. Alexander, S.M. O'Regan, A. Kramer, J.T. Pulliam, M. Ferrari, & A.W. Park. Ebola cases and health system demand in Liberia. John M. Drake. Society for Mathematical Biology Annual Meeting, June 30, 2015. (Invited presentation)

Sean Maher, A.M. Kramer, J.T. Pulliam, K.E. Langwin, A.M. Kilpatrick, W.F. Frick, & **J.M. Drake**. Visiting an old friend: Using recent data to revise expectations of White-nose syndrome spread. American Society of Mammologists. June 2015, Jacksonville. (Presentation)

Kaul, R., A. Smith, **J.M. Drake**. Development of deterministic and stochastic models for a T7 phageE. coli system with vaccination strategy implementation. 13th Ecology and Evolution of Infectious Diseases Annual Conference. May 28, 2015, Athens, Georgia. (Poster)

**Drake, J.M.** Ebola cases and health system demand in Liberia. 13<sup>th</sup> annual conference on Ecology & Evolution of Infectious Diseases (EEID). May 29, 2015. (Keynote Presentation)

**Drake, J.M.** Early warning signals of dynamic bifurcation in the emergence of monkeypox virus. Modeling Infectious Disease Agents Study (MIDAS) Network Meeting. April 28-30, 2015, Atlanta. (Presentation)

\*Miller, P & **J.M. Drake**. 2015. Using the power ratio as an early warning signal to detect critical transitions for disease emergence and eradication. Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics. February 19-21, 2015, Washington D.C. (Presentation)

\*Humphrey, T., T. Dallas, & **J.M. Drake**. 2015. Effects of pH and temperature variability on pathogen development and population survival in *Daphnia*. Emerging Researchers National (ERN) Conference in Science, Technology, Engineering and Mathematics. February 19-21, 2015, Washington D.C. (Presentation)

**Drake, J.M.** Knowledge integration for the environmental sciences. University of Georgia second annual Sustainable Science Symposium. January 23, 2015. (Presentation)

Meyer, N.J., E.B. Laber, K. Pacifici, B.J. Reich, & **J.M. Drake**. An adaptive control strategy for the West Africa Ebola outbreak. Modeling the Spread and Control of Ebola in West Africa – A Rapid Response Workshop. Atlanta, Georgia. January 22, 2015. (Poster)

Meyer, N.J., E.B. Laber, K. Pacifici, B. Reich, & **J.M. Drake**. Adaptive Management Strategies for White-Nose Syndrome. NIPS-14 Workshop: *From Bad Models to Good Policies*. (Poster)

\*Gray, D. & **Drake, J.M.**. 2014. Quantifying the performance of spatial and temporal early warning signals of disease elimination. American Biomedical Research Conference for Minority Students. November 12-15, 2014, San Antonio, TX.

Xu, J., T.L. Wickramaratne, R.P. Keller, **J.M. Drake**, D.M. Lodge, E. Grey, N.V. Chawla & K. Steinhäuser. Improving management of aquatic invasions by integrating shipping network, ecological, and environmental data: Data mining for social good. ACM SIGKDD, New York. August 24-27, 2014. (Presentation)

\*Patel, D., A.M. Kramer, & **J.M. Drake**. Predicting future spread during an outbreak using species distribution models. Ecological Society of America Annual Meeting. Sacramento, California. August 15, 2014. (Poster)

\*Righi, G., & **J.M. Drake**. Developing a model for a natural noise-induced phase transition in *Aphanizomenon flos-aquae*. Ecological Society of America Annual Meeting. Sacramento, California. August 14, 2014. (Poster)

**Drake, J.M.**, W. Bajwa, S.E. Bowden, & K. Magori. Variation in outbreak size during the transition to endemicity: West Nile virus in New York City. Ecological Society of America Annual Meeting. Sacramento, California. August 12, 2014. (Presentation)

Barnum, T., J.T. Wootton, R.J. Bixby, **J.M. Drake**, J.C. Colon-Gaud, D. Stoker,

A. Rugenski, T. Frauendorf, S.J. Connelly, S.S. Kilham, M.R. Whiles, K. Lips. Explaining why grazing mayflies do not functionally compensate for the top-down control of algal communities following disease-driven tadpole declines in a Neotropical stream. Ecological Society of America Annual Meeting. Sacramento, California. August 11, 2014. (Presentation)

Kaul, R.B., A.M. Kramer, F.C. Dobbs, & **J.M. Drake**. Allee effects: Scaling down to the microbial level. Ecological Society of America Annual Meeting. Sacramento, California. August 11, 2014. (Presentation)

Dallas, T., **J.M. Drake**, & M. Krkosek. Thresholds to pathogen invasion: theory + experiment. Ecological Society of America Annual Meeting. Sacramento, California. August 11, 2014. (Presentation)

Bowden, S.E., & **J.M. Drake**. Effects of density dependence and competition on development of larval mosquitoes. Ecological Society of America Annual Meeting, Sacramento, California. August 12, 2014. (Presentation)

Han, B.A., S.E. Bowden, J.P. Schmidt, & **J.M. Drake**. Predicting bat reservoirs of future zoonotic diseases. Ecological Society of America Annual Meeting, Sacramento, California. August 2014. (Presentation)

Dallas, T. & **J.M. Drake**. Costs of resistance and infection in *Daphnia* species exposed to a generalist microparasite. Ecology and Evolution of Infectious Disease Conference. Fort Collins, Colorado. June 3-4, 2014. (Presentation)

Kramer, A.M., G. Annis, M. Wittmann, W.I. Chadderton, E. Rutherford, L. Mason, & **J.M. Drake**. Predicting potential distribution of invasive species using range bagging: golden mussel and killer shrimp in the Great Lakes. Joint Aquatic Sciences Meeting. Portland, Oregon. May 2014. (Presentation)

O'Regan, S.M. & **J.M. Drake**. Early warning signals of disease emergence and leading indicators of elimination. Ecological Society of America, Minneapolis. August 4-9, 2013. (Presentation)

**Drake, J.M.** New computational methods for modeling species potential distributions. Ecological Society of America, Minneapolis. August 4-9, 2013. (Presentation)

Han, B.A. and **J.M. Drake**. Rodent reservoirs of future zoonotic pathogens. Ecological Society of America, Minneapolis. August 4-9, 2013. (Presentation)

Barnum, T.R., **J.M. Drake**, C. Coln-Gaud, A.T. Rugenski, T.C. Frauendorf, S. Connelly, S.S. Kilham, M.R. Whiles, K.R. Lips, and C.M. Pringle. Food web properties persist following amphibian extirpations in a Neotropical stream. Ecological Society of America, Minneapolis. August 4-9, 2013. (Presentation)

Dallas, T. and **J.M. Drake**. The influence of nitrate and pathogen dose on infection dynamics and host traits in a *Daphnia*-microparasite system. Ecological Society of America, Minneapolis. August 4-9, 2013. (Presentation)

Kramer, A.M. M.M. Lyons, F.C. Dobbs, and **J.M. Drake**. Tiny islands: Colonization and extinction of microbial species on marine aggregates. Ecological Society of America, Minneapolis. August 4-9, 2013. (Presentation)

Hackett, E., J. Parker, U. Cote, **J.M. Drake**, S. Hampton, E. Leahey, C. McClain, B. Penders, I. Rafols, S. Rebich Hespanha, L. Sheble, N. Vermueulen, T. Vision. Stumbling in a complex new direction: notes from underwater. Annual Meetings of the Society for Social Studies of Science, San Diego, California. October 2013. (Presentation)

The sensible science working group (Hackett, E., J. Parker, U. Cote, **J.M. Drake**, S. Hampton, E. Leahey, C. McClain, B. Penders, I. Rafols, S. Rebich Hespanha, L. Sheble, N. Vermueulen, T. Vision). Assessing synthesis and synthesis centers. First

Global Meeting of Synthesis Center Directors, Aix en Provence, France. October 2013. (Invited presentation)

Barnum, T., **J.M. Drake**, C. Colon-Gaud, A. Rugenski, T. Frauendorf, S.S. Kilham, M.R. Whiles, K.R. Lips and C.M. Pringle. 2013. Consequences of catastrophic amphibian declines on the food web attributes of a tropical stream. Annual Meeting of the Society for Freshwater Science, Jacksonville, FL. May 19-23, 2013 (Presentation)

Kramer, A.M., J. E. Ward, M. Pierce, F. Dobbs, **J.M. Drake**. Understanding the contribution of marine aggregate-associated bacteria to pathogen load in oysters using an agent-based model. Association for the Sciences of Limnology and Oceanography, Annual Conference, New Orleans, LA. February 2013. (Presentation).

Kramer, A.M., J. E. Ward, M. Pierce, F. Dobbs, **J.M. Drake**. The contribution of marine aggregate-associated bacteria to pathogen load in oysters: an agent-based model. NSF Ecology and Evolution of Infectious Disease PI meeting, Athens, GA. March 16-18, 2013. (Poster)

Maher, S.P., **J.M. Drake**, M.E. Wittmann, R. de Triquet, W.L. Chadderton, D.M. Lodge. 2012. Forecasting the distribution of two species of Asian carp using native and non-native range information. Ecological Society of American, Annual Conference, Portland OR. August 5-10, 2012. (Presentation).

Wittmann, M.E., C.L. Jerde, J.G. Howeth, S.P. Maher, **J.M. Drake**, W.L. Chadderton, A.R. Mahon, C.A. Gantz, R.P. Keller, D.M. Lodge. 2012. Reducing uncertainty in the perceived risk of grass carp (*Ctenopharyngodon idella*) invasion in the Great Lakes: Ploidy, distribution, and ecosystem impact. Ecological Society of American, Annual Conference, Portland OR. August 5-10, 2012. (Presentation).

Kramer, A.M., J.T. Pulliam, S.P. Maher, **J.M. Drake**. 2012. Simplifying networks: Spread of White-nose syndrome in North America. Ecological Society of American, Annual Conference, Portland OR. August 5-10, 2012. (Presentation).

O'Regan, S.M., K. Magori, J.T. Pulliam, M.A. Zokan, R.B. Kaul, H.D. Barton, **J.M. Drake**. 2012. Stochastic fade-out in space: Will microscale disease-induced mortality along geographic corridors inhibit the macroscale spread of White-nose Syndrome? Ecological Society of American, Annual Conference, Portland OR. August 5-10, 2012. (Presentation).

Maher, S. P., T. Pulliam, M. Zokan, S. Bowden, H. Barton, K. Magori, **J.M. Drake**. 2012. Non-diffusive spread of White-nose Syndrome regulated by spatial heterogeneity and Climate. 92nd Annual Meeting of the American Society of Mammalogists. Reno, Nevada. June 22-26, 2012. (Presentation)

**Drake, J.M.** 2012. Early warning of critical transitions in emerging infectious diseases. Endemic and emerging infectious diseases of priority in the Middle East and North Africa Conference sponsored by National Institute of Allergy and Infectious Diseases (NIAID) and CRDF Global, June 18-21, 2012, Istanbul, Turkey. (Plenary presentation).

Kaul, R.B., A.M. Kramer, F.C. Dobbs, **J.M. Drake**. 2012. Allee effects in experimental microbial systems. American Society for Microbiology, June 15-20, 2012, San Francisco, California. (Poster)

Dobbs, F.C. J. E Ward, **J.M. Drake**, R. Hicks, M. M. Lyons, M. Pierce, A. Kramer, X. Zhao. 2012. Microscopic islands: Modeling the theory of island biogeography for aquatic pathogens colonizing organic aggregates. Ecology and Evolution of Infectious Diseases PI Meeting, March 26-28, 2012, Berkeley, California. (Poster)

Lyons, M., D. Kramer, E. Ward, R. Hicks, **J.M. Drake**, F. Dobbs. 2011. Microscopic Islands: the role of organic aggregates in aquatic disease ecology. National Science Foundation Ecology of Infectious Diseases PI Meeting, March 27-28, 2011, Madison,

Wisconsin. (Presentation)

Zokan, M., J. Robinson, J. Wares, **J.M. Drake**. 2011. Cryptic species of Chydorus (Crustacea: Cladocera) in the Southeastern USA Evolution 2011, June 17-21, 2011, Norman, Oklahoma. (Poster)

**Drake, J.M.** 2011. Cost-sensitive machine learning algorithms for invasive species decision support, risk analysis, and policy. US Department of Agriculture, Economic Research Service Program on Economic Impacts of Invasive Species. 17 May 2011. (Presentation)

**Drake, J.M.** 2011. Computational methods for identifying structure in ecological networks. Ecological Society of America Annual Conference, Austin TX. 11 August 2011. (Presentation)

Schmidt, J.P. & **J.M. Drake**. 2011. Rare and pest status among vascular plants: flip sides of the same coin? A preliminary analysis of the native flora of North America. Ecological Society of America Annual Conference, Austin TX. August 7-12, 2011. (Presentation)

Kramer, A.M. & **J.M. Drake**. 2011. Population variance and extinction of two competitors consuming a common resource. Ecological Society of America Annual Conference, Austin TX. August 7-12, 2011. (Presentation)

Bowden, S., **J.M. Drake**, K. Magori, & W. Bajwa. 2011. Statistical prediction of West Nile virus transmission intensity in New York City. Ecological Society of America Annual Conference, Austin TX. August 7-12, 2011. (Presentation)

Zokan, M. & **J.M. Drake**. 2011. Patterns of species diversity in a hyper-rich zooplankton community. Ecological Society of America Annual Conference, Austin TX. August 7-12, 2011. (Poster)

\*Stratmann, T., \*T. O'Sullivan, \*A. Channell, A. Kramer, M. Zokan, A. Silletti, **J.M. Drake**. 2011. Two paths to extinction: effect of deteriorating environments on extinction time and distribution. Ecological Society of America Annual Conference, Austin TX. August 7-12, 2011. (Poster)

Maher, S.P., **J.M. Drake**, A. Guisan, C.F. Randin. 2011. One-class and two-class classification as methods for ecological niche modeling. Ecological Society of America Annual Conference, Austin TX. August 7-12, 2011. (Presentation)

O'Regan, S.M. & **J.M. Drake**. 2011. Transient analysis of an SIR epidemic model. Ecological Society of America Annual Conference, Austin TX. August 7-12, 2011. (Poster)

Barton, H.D., P. Rohani, J.D. Brown, D.E. Stallknecht, and **J.M. Drake**. 2011. Subtype diversity and reassortment potential for avian influenza viruses at a diversity hotspot. Ecological Society of America Annual Conference, Austin TX. August 7-12, 2011. (Presentation)

Kramer, A.M. & **J.M. Drake**. 2011. Stochastic colonization and extinction of microbial species on marine aggregates. NIMBioS Investigative Workshop: Individual-based Ecology of Microbes. National Institute for Mathematical and Biological Synthesis, University of Tennessee, June 2011. (Presentation)

Dobbs, F.C., **J.M. Drake**, R. Hicks, E. Ward, M.M. Lyons, A. Kramer, M. Pierce, X. Zhao. 2011. Microscopic islands: Modeling the theory of island biogeography for aquatic pathogens colonizing organic aggregates. National Science Foundation Ecology of Infectious Diseases PI Meeting, March 27-28, 2011, Madison, Wisconsin. (Poster)

Kramer, A., and **J.M. Drake**. 2011. Mechanistic model of bacterial persistence on marine aggregates. National Science Foundation Ecology of Infectious Diseases PI Meeting, March 27-28, 2011, Madison, Wisconsin. (Poster)

- Drake, J.M.**, K. Magori, \*K. Knoblich, W. Bajwa. 2011. Mapping the force-of-infection of West Nile virus in New York City. National Science Foundation Ecology of Infectious Diseases PI Meeting, March 27-28, 2011, Madison, Wisconsin. (Poster)
- Drake, J.M.** & B.D. Griffen. 2011. Early warning signals of extinction in a deteriorating environment. Gordon Research Conference on Stochastic Physics in Biology. Ventura, California. January 24-28, 2011. (Poster)
- Pacifici, K., **J.M. Drake**, W. Bajwa. 2010. A hierarchical Bayesian spatial model to evaluate the influence of covariates on the spatio-temporal dynamics of West Nile virus in New York City. International Statistical Ecology Conference 2010. University of Kent, Canterbury, Kent, UK. July 6-9, 2010. (Presentation).
- Roche, B., **J.M. Drake**, P. Rohani. 2010. Phylogenetics of influenza viruses: what is the role of environmental transmission. Ecology and evolution of infectious diseases 8th annual workshop and conference. Ithaca, New York. June 2-5, 2010. (Poster).
- Drake, J.M.**, K. Magori, W. Bajwa. 2010. Percolation-like spread of West Nile virus in New York City. International Association of Landscape Ecology, annual conference 2010, Athens, Georgia. (Invited presentation).
- Magori, K., \*K. Knoblich, W.I. Bajwa, **J.M. Drake**. 2010. Spatial variation in WNV vector distribution in NYC. International Association of Landscape Ecology, annual conference 2010, Athens, Georgia. (Invited presentation).
- \*Wong, A., W. Bajwa, **J.M. Drake**. 2010. Habitats of West Nile Virus Competent Mosquitoes: The Effects of Urbanization in New York City. University of Georgia Center for Undergraduate Research Opportunities Annual Conference, Athens Georgia. March 29, 2010. (Poster)
- Kramer, A., E. Vercken, P.C. Tobin, **J.M. Drake**. 2010. Allee effects induce critical area for establishment in gypsy moth invasion. Ecological Society of America, annual conference 2010, Pittsburgh, Pennsylvania. (Presentation).
- Magori, K., C. Michael and **J.M. Drake**. 2010. Multi-modal epidemics in multi-host pathogens. Ecological Society of America, annual conference 2010, Pittsburgh, Pennsylvania. (Presentation).
- Bowden, S., K. Magori, and **J.M. Drake**. 2010. Regional differences in the association between land cover and West Nile virus incidence in humans in the United States. Ecological Society of America, annual conference 2010, Pittsburgh, Pennsylvania. (Poster).
- Drake, J.M.** and B.D. Griffen. 2010. Early warning signals of extinction in deteriorating environments. Ecological Society of America, annual conference 2010, Pittsburgh, Pennsylvania. (Presentation).
- Schmidt, J.P., and **J.M. Drake**. 2010. Cost-sensitive risk assessment for invasive plant species in the United States. Ecological Society of America, annual conference 2010, Pittsburgh, Pennsylvania. (Presentation).
- Drake, J.M.** 2010. How do microcosms tell us about nature? Notes toward a mechanistic understanding of population extinction. Sustainable conservation: bridging the gap between discipline, special conference. Trondheim, Norway, March 15-18, 2010. (Invited presentation.)
- Dobbs, F., **J.M. Drake**, J.E. Ward, R.E. Hicks. 2010. Microscopic islands: Modeling the theory of island biogeography for aquatic pathogens colonizing marine aggregates. NSF Ecology of Infectious Diseases Network Meeting, Atlantic City, New Jersey. March 22-25, 2010 (Poster).
- Magori, K., C. Michael, **J.M. Drake**. Multi-modal Epidemics in Multi-host Pathogens. NSF Ecology of Infectious Diseases Network Meeting, Atlantic City, New Jersey. March 22-25, 2010 (Poster).



**Drake, J.M.** 2010. Patterns in the case fatality rate of West Nile virus in North America: Evidence for directional changes in virulence? NSF Ecology of Infectious Diseases Network Meeting, Atlantic City, New Jersey. March 22-25, 2010 (Invited presentation).

Lyons, M.M., J.E. Ward, H. Gaff, R. Hicks, **J.M. Drake**, F.C. Dobbs. 2010. Theory of island biogeography on a microscopic scale: Are organic aggregates islands for aquatic pathogens? Ocean Sciences, Portland, Oregon. March 24, 2010. (Poster).

**Drake, J.M.**, K. Magori, W. Bajwa. 2009. Percolation-like spread of West Nile virus in New York City. Ecological Society of America, annual conference 2009, Albuquerque, New Mexico. (Presentation).

Magori, K., W. Bajwa, \*S. Bowden, J. Drake. 2009. Decelerating spread of West Nile virus due to percolation in a heterogeneous, urban landscape. Ecology and evolution of infectious diseases 7th annual workshop and conference. Athens, Georgia. May 21-22, 2009. (Poster).

\*Bowden, S., and **J.M. Drake**. West Nile Virus in New York City: Using Birds as an Indicator of Spatio-temporal Distribution. University of Georgia Center for Undergraduate Research Opportunities Symposium, Athens, Georgia. April 6, 2009. (Poster).

**Drake, J.M.**, and W. Bajwa. 2009. Percolation-like spread of West Nile virus in New York City. NSF Ecology of Infectious Diseases Network Meeting, Park City, Utah. March 30-April 2, 2009 (Invited presentation).

**Drake, J.M.** 2009. Shrinking degrees of separation among the world's ports. AAAS, annual conference 2009, Chicago, Illinois. (Invited presentation).

**Drake, J.M.**, K. Magori, W. Bajwa. 2008. Population dynamics of West Nile Virus in New York City (1999-2007). EPIDEMICS - the inaugural conference on infectious disease dynamics. Asilomar Conference Grounds, Monterey, CA December 1, 2008. (Presentation).

Magori, K., **J.M. Drake**, \*S. Bowden, C. Michael, W. Bajwa. Bites in the Big Apple: Ecology of West Nile Virus in New York City. UGA-CDC Collaborative Research Forum, CDC Headquarters, September 4, 2008. (Poster).

Magori, K., J. Drake, \*S. Bowden, C. Michael, W. Bajwa. Bites in the Big Apple: Ecology of West Nile Virus in New York City. EPIDEMICS - the inaugural conference on infectious disease dynamics. Asilomar Conference Grounds, Monterey, CA December 1, 2008 (Poster).

**Drake, J.M.**, and B.D. Griffen. 2008. Extinction in experimental populations: effects of habitat quality, size, and metapopulation configuration. Ecological Society of America, annual conference 2008, Milwaukee, Wisconsin (Presentation).

**Drake, J.M.**, K. Magori, W. Bajwa. 2008. Emerging urban vector-borne disease: West Nile Virus in New York City (1999-2006). Ecology and Evolution of Infectious Diseases Conference 2008, Fort Collins, Colorado. June 5-8, 2008. (Poster).

**Drake, J.M.**, W. Bajwa, and K. Magori. 2008. Emerging urban vector-borne disease: West Nile Virus in New York City (1999-2006). University of Georgia, Global Health Symposium 2008, Athens, Georgia. April 21-22, 2008. (Poster).

\*Shapiro, J. & **J.M. Drake**. 2008. Effects of initial population size and food quality on stochastic population persistence. University of Georgia Center for Undergraduate Research Opportunities Symposium, Athens, Georgia. March 31, 2008. (Poster).

**Drake, J.M.** 2007. West Nile virus in New York City. Ecology of Infectious Disease, PI meeting, Albuquerque, New Mexico. (Poster).

**Drake, J.M.** 2007. Accuracy and uncertainty in environmental niche modeling. Eco-

logical Society of America, annual conference 2007, San Jose, California. (Invited presentation).

**Drake, J.M.,** S. Chew, & S. Ma. 2006. Social learning in emerging epidemics: intervention effectiveness in the 2003 SARS outbreak in Singapore. Ecological Society of America, annual conference 2006, Memphis, Tennessee. (Presentation).

**Drake, J.M.,** T. Knight, & J. Chase. 2005. When management might backfire: density-dependent population dynamics of the invasive biennial *Alliaria petiolata* (Garlic Mustard). Ecological Society of America, annual conference 2005, Montreal, Canada. (Presentation).

**Drake, J.M.,** D.M. Lodge, K.L.S. Drury, A. Blukacz, and N. Yan. 2004. Modeling windows of invasion risk for spiny water flea (*Bythotrephes longimanus*) in North America with a nonhomogeneous birth death process. Ecological Society of America, annual conference 2004, Portland, Oregon. (Presentation).

**Drake, J.M.,** D.M. Lodge. 2004. Global Hotspots of Biological Invasion: Evaluating Options for Ballast Water Management. Presented at American Institute of Biological Sciences, annual conference, Washington D.C. March 2004. (Poster).

**Drake, J.M.** 2004. Risk analysis for invasive species and emerging infectious diseases: concepts and applications. 24th annual Midwest Ecology and Evolution Conference, Notre Dame, Indiana. 7 March 2004. (Presentation).

**Drake, J.M.** 2003. The measurement of biological diversity, 1943-1982. International Society for the History, Philosophy, and Social Studies of Biology biannual conference, Vienna, Austria, July 16-20, 2003. (Presentation).

**Drake, J.M.,** M.A. Lewis, and D.M. Lodge. 2003. Policy Recommendations for Ballast Water Standards. 12th Annual Aquatic Nuisance Species Conference, 2003, Windsor, Ontario. (Presentation).

**Drake, J.M.,** D.M. Lodge and N. Yan. 2002. Allee effects and the success of colonizing species: *Bythotrephes longimanus* in North America. Ecological Society of America, annual conference 2002, Tucson, Arizona. (Presentation).

**Drake, J.M.,** D.M. Lodge, K.L.S. Drury and G. Dwyer. 2002. Predicting invasion success: Deriving standards for ballast water from theoretical models. 11th Annual Aquatic Nuisance Species Conference, 2002, Washington D.C. (Presentation).

**Drake, J.M.,** D.M. Lodge, N. Yan. 2001. Why it takes more than one *Bythotrephes* to cause an invasion. "Risk Assessment for Invasive Species: Perspectives from Theoretical Ecology" a joint workshop of the Ecological Society of America and the Society for Risk Analysis, New Mexico State University, Las Cruces, New Mexico, 21-23 October 2001. (Poster).

**Drake, J.M.,** D.M. Lodge, K.L.S. Drury and G. Dwyer. 2001. Predicting invasion success: Applying probabilistic models of population growth to invading species. International Association of Great Lakes Research annual conference 2001, Green Bay, Wisconsin. (Presentation).

**Drake, J.M.,** D.M. Lodge, K.L.S. Drury and G. Dwyer. 2001. Predicting the success of invading species: applying stochastic models of population growth and the role of Allee effects. Society for Conservation Biology annual conference 2001, Hilo, Hawaii. (Presentation).

INVITED SEMINARS *Tipping points in infectious disease transmission.* University of Georgia, College of Veterinary Medicine, Department of Infectious Diseases. 27 August 2018.

*The ecology of Ebola.* University of Georgia, College of Public Health Global Health Institute. 22 February 2018.

*Infectious disease networks: Data, modeling & prediction.* University of Georgia, Department of Plant Pathology. 24 April 2017.

*Early warning signals of critical transition in ecology and epidemiology.* University of Florida, Department of Wildlife Ecology & Conservation. 27 February 2017.

*Multiscale models of infectious diseases.* University of Georgia, Seminar in Complex Systems. 24 January 2017.

*Early warning signals of tipping points in emerging infectious diseases.* Virginia Tech, Department of Biological Sciences. 7 April 2016.

*The ecology and epidemiology of Ebola.* University of Toronto, Department of Ecology & Evolutionary Biology. 4 December 2015.

*Ebola cases and health system demand in Liberia.* Maxwell A. Bempong lecture in Environmental Biology, Norfolk State University. 20 October 2015.

*Computational botany for invasive species decision support, risk analysis, and policy.* Norfolk State University, Department of Biology. 20 October 2015.

*Spread of White-nose syndrome on a spatial network.* Morehouse College, Biology Department. 30 September 2015.

*The ecology of Ebola.* Keynote lecture, University of Georgia, College of Veterinary Medicine, Department of Infectious Diseases Annual Retreat. 10 April 2015.

*A multi-type branching process model for the transmission of Ebola virus.* RAPIDD Workshop on Ebola Forecasting Approaches, Fogarty International Center, National Institutes of Health, Bethesda, Maryland. 23 March 2015.

*The ecology of Ebola.* Odum School of Ecology, University of Georgia. 27 January 2015.

*Ebola cases and health system demand in Liberia.* US Centers for Disease Control & Prevention, Atlanta, Georgia. 14 January 2015.

*Spread of White-nose syndrome in a heterogeneous spatial network.* Department of Biology, Kennesaw State University. 30 September 2014.

*Early warning signals of emerging infectious diseases.* Georgia Southern University, Epidemiology Department. 12 September 2014.

*Spread of White-nose syndrome on a spatial network.* Grambling State University, Biology Department. 23 January 2014.

*Population biology of infectious diseases.* Philander-Smith College, Division of Natural and Physical Sciences. 24 January 2014.

*Spread of White-nose syndrome on a spatial network.* University of Arkansas Little Rock, Department of Biology. 24 January 2014.

*Tipping points in nature and society.* Moore College (Honors Program), University of Georgia. 30 January 2014

*Early warning signals of critical transitions in infectious disease dynamics.* Georgia Regents University, Department of Biostatistics & Epidemiology. 1 November 2013.

*Early warning signals of critical transitions in infectious disease dynamics.* University of Georgia, Department of Mathematics, Applied Mathematics Seminar series. 7 October 2013.

*Early warning signals of critical transitions in infectious disease dynamics.* Isaac Newton Institute for Mathematics workshop on Infectious Disease Dynamics, Cambridge, UK. 21 August 2013.

*Current problems in forecasting epidemiological transitions.* US Department of Health & Human Services Biomedical Advanced Research and Development Authority, Wash-

ington D.C. 2 May 2013.

*Spread of White-nose syndrome in a heterogeneous spatial network.* University of Liverpool. 6 November 2012.

*Early warning signals of extinction in a deteriorating environment.* University of Sheffield, 17 October 2012.

*Early warning signals of extinction in a deteriorating environment.* Natural Environment Research Council Centre for Ecology & Hydrology (Wallingford, UK). 19 September 2012.

*Spread of White-nose syndrome in a heterogeneous spatial network.* Microsoft Research, Cambridge, UK. 8 June 2012.

*Early warning systems for critical transitions in ecology and epidemiology.* Imperial College London Silwood Park Campus, 31 May 2012.

*Early warning signals of extinction in a deteriorating environment.* University of Helsinki (Metapopulation Research Group), 23 May 2012.

*Early warning systems for critical transitions in ecology and epidemiology.* Oxford University (Center for Mathematical Biology), 27 April 2012.

*Spread of White-nose syndrome in a heterogeneous spatial network.* University of Basel. 12 April 2012.

*Disease and the environment.* National Center for Ecological Analysis and Synthesis (Santa Barbara, California), 2012 NCEAS Symposium on Trends in Ecological Analysis & Synthesis. 22 March 2012. (Invited panelist)

*Spread of White-nose syndrome in a heterogeneous spatial network.* Oxford University (Department of Zoology). 9 March 2012.

*Spread of White-nose syndrome in a heterogeneous spatial network.* University of Cambridge. 5 March 2012.

*Cost-sensitive machine learning algorithms for invasive species decision support, risk analysis, and policy.* US Department of Agriculture, Economic Research Service Program on Economic Impacts of Invasive Species. 17 May 2011.

*Early warning signals of extinction in a deteriorating environment.* University of Guelph (Ontario, Canada). April 12, 2011.

*Computational methods for identifying structure in biological networks.* Washington University. February 15, 2011.

*Early warning signals of extinction in a deteriorating environment.* Washington University. February 14, 2011.

*Early warning signals of extinction in a deteriorating environment.* University of Nebraska-Lincoln. 20 January 2011.

*Mechanistic analogy: How microcosms tell us about nature.* University of South Carolina. 10 December 2010.

*Population dynamics of West Nile virus.* National Center for Emerging and Zoonotic Infectious Diseases, Centers for Disease Control, Atlanta, Georgia. 13 October 2010.

*Early warning signals of extinction in deteriorating environments.* Emory University. 17 September 2010.

*Reaction-diffusion model of biological invasion for species with an Allee effect: Application to ballast water discharge* 1st meeting of NRC Committee on Assessing Numeric Limits for Living Organisms in Ballast Water. 2 June 2010.

*Population dynamics of West Nile virus in New York City* University of Michigan, Center for the Study of Complex Systems. 19 April 2010.

*Cost-sensitive machine learning algorithms for invasive species decision support, risk analysis, and policy: genus level patterns.* US Department of Agriculture, Economic Research Service Program on Economic Impacts of Invasive Species. 22 October 2009.

*Decelerating traveling waves of West Nile virus in a heterogeneous, urban environment.* University of Georgia. 29 September 2009.

*Anomalous patterns of West Nile virus mortality in the US (1999-2007).* University of Georgia (EDGE). 18 September 2009.

*Decelerating traveling waves of West Nile virus in a heterogeneous, urban environment.* University of South Carolina. 12 September 2009.

*Demographic stochasticity and the Daphnia model.* Georgia Tech. 1 October 2008.

*Population dynamics of West Nile virus in New York City (1999-2007).* National Institutes of Health, Fogarty International Center. 11 August 2008.

*Global change and disease distributions: mapping uncertainty.* University of Georgia, 2007 BHSI Spring Symposium: Climate, Ecology and Infectious Disease. 16 April 2007.

*Infectious disease mediated by environmental change: An issue for environmental justice?* University of Georgia, River Basin Center. 9 February 2007.

*Do we need an ecological ethics?* Harvard Forest. 24 July 2006.

*Biological invasions in aquatic ecosystems: Local and global dynamics.* University of North Carolina, Chapel Hill. 13 February 2006.

*Forecasting population fluctuations in ecology and epidemiology: Stochastic phenomena & computational analysis.* Virginia Polytechnic Institute and State University. 9 February 2006.

*Understanding the drivers of population fluctuation and expansion: extinction, invasion, and disease outbreak on landscapes.* Georgia Tech. 27 January 2006.

*Mechanistic and computational approaches to forecasting population fluctuations in ecology and epidemiology.* University of Georgia, Institute of Ecology. 23 January 2006.

*Computational approaches to modeling disease-environment interactions: forecasting malaria dynamics in Africa with support vector machines.* Penn State, Center for Infectious Disease Dynamics. 12 November 2005.

*Local and global dynamics of biological invasions in aquatic ecosystems.* Washington University. 3 November 2005.

*Computational approaches to ecological forecasting: Disease outbreaks and species redistribution.* Washington University. 4 November 2005.

*Modeling the potential distribution of zebra mussels in the United States: pattern recognition and one-class classification.* University of Tennessee, Knoxville, TN. February 4, 2005.

*Ethical considerations: why does it matter?* Lecture Series: Invasive Species and the Public Good, opening forum. Yale School of Forestry and Environmental Studies, New Haven, CT. January 24, 2005.

*Allee effects in invasive species: the discrepancy between models and data.* USDA Interagency Research Forum on Gypsy Moth and other Invasive Species, Annapolis, MD. January 18-21, 2005.

*Extinctions in experimental populations.* National Center for Ecological Analysis and Synthesis, Santa Barbara, CA. October 28, 2004.

*Bythotrephes, ballast water and biological invasions: Population biology and risk anal-*

ysis. McGill University. February 11, 2004.

*How many animals does it take to start an invasion? Population biology for risk analysis of non-indigenous species.* Covenant College. March 28, 2003.

*The measurement of biological diversity, 1943-1982.* Southwest Colloquium in the History and Philosophy of the Life Sciences. Arizona State University. February 21-22, 2003.

*Viable populations and the risk of biological invasion: Tools for managing decisions.* Environmental Risk Assessment Conference, Cleveland State University Center for Environmental Science, Technology & Policy. April 26, 2002.

## GRANTS

National Endowment for the Humanities to C. Saunt, S. Bernardes & **J.M. Drake** (\$278,363, Drake portion: \$7,509), 2018-2021. Title: Mapping the people of early America. NEH.

National Science Foundation to B.A. Han, S.M. O'Regan & **J.M. Drake** (\$2,478,884), 2017-2022. Title: Global patterns, predictors, and their dynamical consequences in zoonotic diseases of mammals. DEB-1717282

University of Georgia President's Interdisciplinary Seed Grant Initiative to **J.M. Drake**, S. Ferreira, & N. Gottdenker (\$109,746), 2017-2019. Title: Mapping the global risk of emerging infectious disease threats.

National Science Foundation to **J.M. Drake** & M. Strand (\$572,256), 2017-2021. Title: REU Site: Population Biology of Infectious Diseases. DBI-1659683

National Science Foundation to V.O. Ezenwa, D. Krause & **J.M. Drake** (\$2,997,107), 2015-2020. Title: NRT-DESE: Interdisciplinary Disease Ecology Across Scales: from byte to benchtop to biosphere. DGE-1545433

National Science Foundation to A.M. Kramer & **J.M. Drake** (\$291,159), 2015-2017. Title: Multiscale dynamics of White-Nose syndrome in North America. EF-1442417

National Institutes of Health to **J.M. Drake**, B. Epureanu, M. Ferrari, A. Park, & P. Rohani (\$3,178,076), 2014-2019. Title: Forecasting tipping points in emerging and re-emerging infectious diseases.

National Institutes of Health to E. Halloran et al. (Drake component: \$180,705), 2014-2019. Title: Center for Statistics and Quantitative Infectious Diseases.

National Institutes of Health to J. Moore et al. (\$1,587,982), 2014-2017. Title: Post-Baccalaureate training in infectious disease research.

National Atmospheric and Oceanic Administration to D.M. Lodge, **J.M. Drake**, et al. (Drake component: \$90,078), 2014-2015. Title: Forecasting spread and bioeconomic impacts of aquatic invasive species from multiple pathways to improve management and policy.

Highlands Biological Station to **J.M. Drake** (\$400) Title: Exploratory study of the inquiline community of *Sarracenia purpurea* in the vicinity of Highlands, NC.

University of Georgia, President's Venture Fund to **J.M. Drake** (\$3,500) Title: Mobile games for public environmental education.

National Science Foundation to **J.M. Drake** and M. Strand (\$283,500 + Supplement \$43,350), 2012-2016. Title: REU Site: Population Biology of Infectious Diseases. DBI-1156707

National Atmospheric and Oceanic Administration to D.M. Lodge, **J.M. Drake**, et al. (Drake component: \$345,057), 2010-2013. Title: Forecasting spread and bioeconomic impacts of aquatic invasive species from multiple pathways to improve management and policy.



National Science Foundation to F. Dobbs, J. Ward, J. Niejako, R. Hicks, T. Holst and **J.M. Drake** (Drake component \$451,706), 2009-2013. Title: Collaborative Research - Microscopic islands: modeling the theory of island biogeography for aquatic pathogens colonizing marine aggregates. EF-0914347

National Science Foundation to P. Rohani, D. Stallknecht, & **J.M. Drake** (\$489,202), 2009-2012. Title: Population ecology of avian influenza viruses. DEB-0917853

James S. McDonnell Foundation to **J.M. Drake** & P. Rohani. (\$449,527), 2008-2013. Title: Evolutionary epidemiology of multi-transmission pathogens in multi-host networks.

US Department of Agriculture to **J.M. Drake** (\$174,337), 2008-2010. Title: Cost-sensitive machine learning algorithms for invasive species decision support, risk analysis, and policy. Cooperative Agreement No. 58-7000-8-0111.

National Science Foundation to **J.M. Drake** (\$578,619), 2007-2010. Title: Emerging urban vector-borne disease: West Nile Virus in New York City (1999-2006). EF-0723601

Great Lakes Protection Fund to D.M. Lodge, J. Feder, H.-C. Chang, M. Ozkan, **J.M. Drake**, and J.A. Andersen (\$1,090,000, Drake component \$195,341), 2006-2009. Title: Risk Assessment and Management of Great Lakes Invasive Species.

Department of Natural Resources to J.P. Schmidt, **J.M. Drake** and R. Carroll. (\$23,831). Title: Economic analyses for ecosystem services and climate change adaptation.

National Science Foundation to **J.M. Drake** (\$19,222). Title: Collaborative research – Microscopic Islands: Modeling the Theory of Island Biogeography for Aquatic Pathogens Colonizing Marine Aggregates. (“Research Opportunity Award” to support collaboration with students and faculty at Bethel College, Indiana, a primarily undergraduate institution)

National Science Foundation to **J.M. Drake** (\$19,162), Spring 2012. Title: Collaborative research – Microscopic Islands: Modeling the Theory of Island Biogeography for Aquatic Pathogens Colonizing Marine Aggregates. (“Research Opportunity Award” to support collaboration with students and faculty at Bethel College, Indiana, a primarily undergraduate institution)

National Science Foundation to **J.M. Drake** (\$32,357), Spring 2011. Title: Collaborative research – Microscopic Islands: Modeling the Theory of Island Biogeography for Aquatic Pathogens Colonizing Marine Aggregates. (“Research Opportunity Award” to support collaboration with students and faculty at Bethel College, Indiana, a primarily undergraduate institution)

National Science Foundation to **J.M. Drake** (\$14,250), Spring 2010. Title: Emerging urban vector-borne disease: West Nile Virus in New York City (1999-2006). (Supplement to provide research opportunities for undergraduates)

University of Georgia, President’s Venture Fund to **J.M. Drake** (\$2,295) Title: Support for a visiting scientist, Elodie Vercken.

National Science Foundation to **J.M. Drake** (\$10,650), Spring 2009. Title: Emerging urban vector-borne disease: West Nile Virus in New York City (1999-2006). (Supplement to provide research opportunities for undergraduates)

National Center for Ecological Analysis and Synthesis to **J.M. Drake** & W. Langford (\$16,900), June 2008. Title: Machine Learning for the Environment (Supplement)

University of Georgia, President’s Venture Fund to **J.M. Drake** (\$1,500) Title: Support to provide research experience for teachers.

National Science Foundation to **J.M. Drake** (\$72,147), Summer 2008. Title: Emerging urban vector-borne disease: West Nile Virus in New York City (1999-2006). (Supplement to perform a study of mosquito feeding preferences) EF-0824507

National Science Foundation to **J.M. Drake** (\$7,000), Spring 2008. Title: Emerging urban vector-borne disease: West Nile Virus in New York City (1999-2006). (Supplement to provide research opportunities for undergraduates)

University of Georgia Research Foundation, Inc. to **J.M. Drake** (\$7,010), 2008-2009. Title: Extinction in deteriorating environments.

University of Georgia Research Foundation, Inc. to **J.M. Drake** (\$7,000), 2007. Title: *Daphnia* longevity in fluctuating environments.

National Center for Ecological Analysis and Synthesis to **J.M. Drake** & W. Langford (\$97,850), 2006-2008. Title: Machine Learning for the Environment.

US Department of Agriculture to T. Knight, J. Chase, K. McCue, & **J.M. Drake** (\$190,069, Drake component \$0), 2005-2006. Title: Population dynamics of density dependent garlic mustard populations.

NSF Doctoral Dissertation Improvement Grant to **J.M. Drake** (\$11,986), Summer 2003 (DEB-0308934). Title: Invasion Risk in the Great Lakes: Estimating Propagule Pressure with Molecular Tools.

JumpStart Grant (University of Notre Dame) to **J.M. Drake** and Jennifer L. Tank (\$1000), Spring 2001 for integrating technology and classroom instruction: General Ecology.

Illinois-Indiana Sea Grant College Program Graduate Fellowship to **J.M. Drake** (\$6000), 2001-2002. Title: How many animals does it take to cause an invasion? Predicting future invaders and deriving standards for ballast water from theoretical models of Allee effects.

EPA Graduate STAR Research Fellowship to **J.M. Drake** (\$102,000), 2001-2004. Title: Predicting the identity and probability of establishment for potential aquatic invaders of the North American Great Lakes: a risk assessment.

#### FELLOWSHIPS & AWARDS

University of Georgia Creative Research Medal (2014); Keeley Visiting Fellowship, Wadham College, Oxford University (2012); University of Georgia, Sarah H. Moss Fellowship (2012); Leverhulme Foundation Visiting Professorship, Oxford University (2012); University of Georgia Excellence in Undergraduate Research Mentoring Faculty Award (2011); National Center for Ecological Analysis and Synthesis, Postdoctoral Fellowship (Summer 2004-Summer 2006); University of Notre Dame, Department of Biological Sciences 2004 Research Achievement Award (2004); Silicon Graphics Inc. (SGI), University of Notre Dame, College of Science Award for Computational Science and Visualization (2004); NSF Graduate Research Fellowship Honorable Mention (2000); Schmitt Research Fellowship (University of Notre Dame; 1999-2003); Phi Theta Kappa (International honor society; 1996); E. Gordon Riley Scholarship (1996); Buffalo Foundation Scholarship (1997); Covenant College Instrumental Music Scholarship (1996-1998); Maryland Saltwater Sportfishermans Association Scholarship (1996-1998); AuSable Institute Fellow (1998); Covenant College Presidential Scholarship (1996-1999); Covenant College McDonald Scholarship (1997-1999); Dean's List (Anne Arundel Community College, 1994-1996; Covenant College, 1996-1999); Eagle Scout Award (1993)

THESES  
DIRECTED

Nicole Solano (PhD, expected 2022)  
Joy Vaz (PhD, expected 2022)  
Michelle Evans (PhD, expected 2020)  
Robbie Richards (PhD, expected 2020)  
Paige Miller (PhD, expected 2020)  
Reni Kaul (PhD, expected 2018)  
Tad Dallas (PhD, University of Georgia, Ecology; 2016)  
    Thesis: *Biotic and Abiotic Factors Influencing Host-Pathogen Dynamics in a Zooplankton-Fungus System*  
Sarah Bowden (PhD, University of Georgia, Ecology; 2016)  
    Thesis: *Trans-boundary Ecosystem Effects on Vector Community Diversity: Implications for Dilution and Amplification in Multi-species Host-Pathogen Systems*  
Kimmy Kellett (PhD, University of Georgia, Ecology; 2015)  
    Thesis: *How Seasonal and Annual Variation in Demography Influence Populations of a Neotropical Milkwood, Asclepias curassavica*  
Marcus Zokan (PhD, University of Georgia, Ecology; 2015)  
    Thesis: *Zooplankton Species Diversity in the Temporary Wetland System of the Savannah River Site, South Carolina, USA*

THESIS  
COMMITTEES

Molly Fisher (PhD, University of Georgia, Ecology; Thesis advisor: J. Gittleman)  
John Vinson (PhD, University of Georgia, Ecology; Thesis advisor: A. Park)  
Chao Song (PhD, University of Georgia, Ecology; Thesis advisor: F. Ballantyne)  
Elise Krueger (PhD, University of Georgia, Ecology; Thesis advisor: F. Ballantyne)  
Joey Ruberti (MS, University of Georgia, Computer Science; Thesis advisor: B. Arpinar, 2016)  
Thomas Barnum (PhD, University of Georgia, Ecology; Thesis advisor: C. Pringle, 2014)  
Krishna Pacifici (MA, University of Georgia, Statistics; Thesis advisor: N. Lazar, 2012)  
Shan Huang (PhD, University of Georgia, Ecology; Thesis advisors: J. Gittleman and S. Altizer, 2012)  
John Robinson (PhD, University of Georgia, Genetics; Thesis advisor: J. Wares, 2011)  
Krishna Pacifici (PhD, University of Georgia, Forestry and Natural Resources; Thesis advisor: M. Conroy, 2011)  
Ken Leonard (PhD, University of Georgia, Ecology; Thesis advisor: M. Bradford, 2010)  
Catherine Bradley (PhD, University of Georgia, Ecology; Thesis advisor: S. Altizer, 2009)

TEACHING

*Senior Seminar (ECOL 4950)*

Fall 2006, Spring 2013

*Population & Evolutionary Ecology (ECOL 8310)*

Fall 2007, Fall 2008, Fall 2009, Fall 2011, Fall 2013

*Introduction to Applied Statistics (ECOL 8990)*

Fall 2007

*Population & Community Ecology (ECOL 4000/6000)*

Fall 2008, Fall 2009, Fall 2010, Fall 2011, Fall 2013, Fall 2014, Fall 2015, Fall 2016,  
Fall 2017

*Data Visualization (ECOL 8990)*

Fall 2008

*Meta-analysis (ECOL 8910)*

Spring 2010

*Time Series Analysis (ECOL 8910)*

Fall 2010

*Nonlinear Time Series Analysis (ECOL 8910)*

Spring 2011

*Quantifying Biodiversity (ECOL 8910)*

Spring 2014

*First Year Odyssey Seminar: Introduction to Mathematical Biology (FYOS 1001)*

Fall 2011

*First Year Odyssey Seminar: The Structure of Scientific Revolutions (FYOS 1001)*

Fall 2013

*First Year Odyssey Seminar: Data Science (FYOS 1001)*

Fall 2016

*First Year Odyssey Seminar: Ecology of Infectious Diseases (FYOS 1001)*

Fall 2017

*First Year Odyssey Seminar: Ebola (FYOS 1001)*

Spring 2017

*Cross-Disciplinary Ecology (ECOL 8030)*

Fall 2014

*Introduction to Computational Statistics (ECOL 8910)*

Spring 2015

*Ecological Niche Theory and Species Distribution Modeling (ECOL 8910)*

Spring 2016

*Multi-scale Modeling (ECOL 8910)*

Spring 2017

*Fundamentals of Disease Biology II (ECOL 8520)*

Spring 2017

## WORKSHOPS

*2<sup>nd</sup> IDEAS Computational Modeling Workshop*, University of Georgia, Athens, Georgia. May 14-16, 2018 (Module 1: Introduction to scientific programming, Instructor)

*9<sup>th</sup> Summer Institute in Statistics and Modeling of Infectious Diseases*, University of Washington, Seattle, Washington. July 10-12, 2017 (Instructor for module “Mathematical models of infectious diseases”)

*1<sup>st</sup> IDEAS Computational Modeling Workshop*, University of Georgia, Athens, Georgia. May 15-17, 2017 (Module 1: Introduction to scientific programming, Instructor)

*1<sup>st</sup> IDEAS Computational Modeling Workshop*, University of Georgia, Athens, Georgia. May 17-19, 2017 (Module 2: Mathematical models of infectious diseases, Instructor)

*8<sup>th</sup> Summer Institute in Statistics and Modeling of Infectious Diseases*, University of Washington, Seattle, Washington. July 11-13, 2016 (Instructor for module “Mathematical models of infectious diseases”)

*7<sup>th</sup> Summer Institute in Statistics and Modeling of Infectious Diseases*, University of Washington, Seattle, Washington. July 6-8, 2015 (Instructor for module “Mathematical models of infectious diseases”)

*6<sup>th</sup> Summer Institute in Statistics and Modeling of Infectious Diseases*, University of Washington, Seattle, Washington. July 7-9, 2014 (Instructor for module “Mathematical models of infectious diseases”)

*5<sup>th</sup> Summer Institute in Statistics and Modeling of Infectious Diseases*, University of Washington, Seattle, Washington. July 8-10, 2013 (Instructor for module “Mathematical models of infectious diseases”)

*Early-warning signals for critical transitions: bridging the gap between theory and practice*, Royal Netherlands Academy of Arts and Sciences (Amsterdam, The Netherlands). October 12, 2012 (Instructor)

*4<sup>th</sup> Summer Institute in Statistics and Modeling of Infectious Diseases*, University of Washington, Seattle, Washington. July 11-13, 2012 (Instructor for module “Mathematical models of infectious diseases”)

*Mathematical Modeling of Infectious Diseases*, Centers for Disease Control & Prevention, Atlanta, Georgia. November 14-18, 2011 (Instructor)

*Ecology and Evolution of Infectious Disease 9th Annual Workshop and Conference*, University of California Santa Barbara, Santa Barbara, California. June 22-25, 2011 (Instructor for ecology workshop)

*3<sup>rd</sup> Summer Institute in Statistics and Modeling of Infectious Diseases*, University of Washington, Seattle, Washington. June 15-17, 2011 (Instructor for module “Mathematical models of infectious diseases”)

*Ecology and Evolution of Infectious Disease 8th Annual Workshop and Conference*, Cornell University, Ithaca, New York. June 6-9, 2010 (Instructor for ecology workshop)

*2<sup>nd</sup> Summer Institute in Statistics and Modeling of Infectious Diseases*, University of Washington, Seattle, Washington. June 13-15, 2010 (Instructor for module “Mathematical models of infectious diseases”)

*Ecology and Evolution of Infectious Disease 7th Annual Workshop and Conference*, University of Georgia, Athens, Georgia. May 17-22, 2009 (Instructor for ecology workshop)

*1<sup>st</sup> Summer Institute in Statistics and Modeling of Infectious Diseases*, University of Washington, Seattle, Washington. June 15-17, 2009 (Instructor for module “Mathematical models of infectious diseases”)

*Environmental Risk Assessment*, Cleveland State University, Center for Environmental Science, Technology and Policy, April 26, 2002 (Instructor for workshop “Using environmental risk analysis to assess and control non-indigenous species invasions”)

MEETINGS &  
SYMPOSIA  
ORGANIZED

*Socioepidemiology*, Mathematical Biosciences Institute, Ohio State University, co-chair (March 5-9, 2018)

*Population Biology of Vector-borne Diseases*, University of Georgia, co-chair (February 24, 2018)

*Allee Effects: Theory and Applications*, an organized oral session at *Ecological Society of America 2015 Annual Conference*, Baltimore, Maryland, co-chair (August 11, 2015)

*Ecological Applications of Machine Learning*, a symposium at *Ecological Society of America 2011 Annual Conference*, Austin, Texas, co-chair (August 7-12, 2011)

*Pathogens in Heterogeneous Landscapes: Consequences of Environmental Variation for Infectious Disease Dynamics and Control*, a symposium at *International Association for Landscape Ecology 2010 Annual Conference*, Athens, Georgia, co-chair (April 8, 2010)

*24th Annual Midwest Ecology and Evolution Conference*, University of Notre Dame, co-chair (March 5-7, 2004)

CONSULTING

Metabiota, 425 California St, San Francisco, CA 94104 (2017)

University of Miami, Environmental Changes and Mosquito-borne Disease in Arid Environments (2010-2015)

Lytmos Group, Inc. 400 SW Longview Blvd., Suite 290, Lee's Summit, MO 64081 (2009)

Eastern Research Group, Inc. 110 Hartwell Avenue, Lexington, MA 02421-3131 (2008)

World Health Organization (2008)

REVIEWING FOR  
JOURNALS

*Acta Tropica*, *American Midland Naturalist*; *American Naturalist*; *Biological Dynamics*; *Biological Invasions*; *Biology Letters*; *BMC Evolutionary Biology*; *Bulletin of Mathematical Biology*, *Canadian Aquatic Invasive Species Network*; *Canadian Journal of Fisheries & Aquatic Sciences*; *Canadian Journal of Forest Research*; *CBE: Life Sciences Education*; *Christian Scholar's Review*; *Conservation Biology*; *Conservation Letters*; *Coral Reefs*; *Diversity*; *Diversity & Distributions*; *Ecohealth*; *Ecosphere*; *Ecography*; *Ecological Applications*; *Ecological Economics*; *Ecological Entomology*; *Ecological Informatics*; *Ecological Modelling*; *Ecological Monographs*; *Ecology*; *Ecology & Society*; *Ecology Letters*; *Ecosystems*; *eLife*; *Environmental & Ecological Statistics*; *Environmental Science & Technology*; *Epidemiology & Infection*; *Evolution*; *Frontiers in Ecology & Environment*; *Global Ecology & Biogeography*; *International Journal of Biostatistics*; *International Journal of Infectious Disease*; *Journal of Animal Ecology*; *Journal of Applied Ecology*; *Journal of Theoretical Biology*, *Journal of the Royal Society Interface*; *Marine Ecology Progress Series*; *Methods in Ecology & Evolution*; *Nature*; *Nature Communications*; *Nature Ecology & Evolution*; *Oecologia*; *Oikos*; *PeerJ*; *Philosophical Transactions of the Royal Society*; *Physical Review X*; *PLOS Biology*; *PLOS Computational Biology*; *PLOS Currents*; *PLOS Medicine*; *PLOS Neglected Tropical Diseases*; *PLOS ONE*; *Population Ecology*; *Proceedings of the National Academy of Sciences*; *Proceedings of the Royal Society Series B*; *Restoration Ecology*; *Science*; *Theoretical Ecology*; *Theoretical Population Biology*; *Transactions of the American Fisheries Society*; *Trends in Ecology & Evolution*; *Weed Research*



REVIEWING FOR PUBLISHERS	Elsevier/Academic Press; Oxford University Press; Princeton University Press; Springer Academic Publishing
REVIEWING FOR FUNDERS	Biotechnology and Biological Sciences Research Council (UK); City University of New York; Fields Institute; French National Research Agency; German Federal Ministry of Education & Research; Israel Science Foundation; Leverhulme Trust; Missouri Life Sciences Research Board; National Aeronautic and Space Administration, Global Climate Change Education Research Program; National Aeronautic and Space Administration, K12 Cooperative Agreements Program; National Environment Research Council (UK); National Oceanic and Atmospheric Administration Great Lakes Environmental Research Laboratory; National Science Foundation (USA); Netherlands Space Office; Royal Society of New Zealand; Swiss National Science Foundation