

John M. Drake

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APPOINTMENTS	<p>Regents' Professor, University of Georgia (2022 – present)</p> <ul style="list-style-type: none">• Odum School of Ecology (2006 – present)• Biomedical and Health Sciences Institute (2008 – present)• Faculty of Infectious Diseases (2008 – present)• Center for the Ecology of Infectious Diseases (2016 – present)• Institute of Bioinformatics (2024 – present) <p>Distinguished Research Professor, University of Georgia (2017 – 2022)</p> <p>Professor, University of Georgia (2016 – 2017)</p> <p>Associate Professor, University of Georgia (2010 – 2016)</p> <p>Assistant Professor, University of Georgia (2006 – 2010)</p> <p>Postdoctoral Fellow, National Center for Ecological Analysis and Synthesis, Santa Barbara, California (2004 – 2006)</p> <p>Adjunct Professor, Bethel College, Mishawaka, Indiana (2003)</p>
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VISITING APPOINTMENTS	<p>Oliver Smithies Fellow, Balliol College, University of Oxford (2025)</p> <p>Visiting Research Fellow, Pandemic Sciences Institute & Oxford Martin School, University of Oxford (2025)</p> <p>Keeley Visiting Fellow, Wadham College, University of Oxford (Michaelmas term, 2012)</p> <p>Leverhulme Visiting Professor, University of Oxford (2012)</p>
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LEADERSHIP	<p>Associate Dean for Academic Affairs, Odum School of Ecology, University of Georgia (2017–2021)</p> <p>As Associate Dean for Academic Affairs, I provided academic leadership for the Odum School of Ecology (OSE), supporting a community of approximately 35 faculty, 75 graduate students, and 160 undergraduates. My responsibilities included strategic planning, oversight and continuous improvement of curricular programs, faculty recruitment and appointment, and budget development. I also served as OSE's primary liaison to the Office of the Vice President for Instruction and the Office of International Education, ensuring coordination of institutional priorities and academic initiatives across units.</p>
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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 dynamic research hub comprising approximately 130 faculty, postdoctoral associates, student researchers, and staff. As Founding Director, I provide strategic and operational leadership, including budget development, fundraising, program design, and institutional coordination. CEID fosters cross-disciplinary research on the biology of infectious diseases across scales, integrating diverse scientific and scholarly methodologies. Major initiatives under my leadership include facilitation of collaborative team science, a regular seminar series, hands-on workshops and computational clinics, a competitive postdoctoral fellowship program, a co-published

book series with Oxford University Press, and the organization of academic symposia and special events.

Founding Director, Population Biology of Infectious Diseases REU Site, University of Georgia (2012–2020)

The Population Biology of Infectious Diseases REU Site was a nationally competitive, NSF- and NIH-funded nine-week immersive research training program for undergraduates. Designed to promote inclusion, prepare students for graduate education, and train the next generation of scientists in quantitative, data-driven approaches to infectious disease research, the program combined empirical research with rigorous methodological training. As Founding Director, I secured external funding, oversaw participant selection, arranged housing and logistics, coordinated program delivery, evaluated student outcomes, and reported to federal sponsors.

EDUCATION

University of Notre Dame, Indiana USA
Ph.D., Biological Sciences, May 2004 (Advisor: Dr. David M. Lodge)
University of Notre Dame, Indiana USA
M.A., History and Philosophy of Science, May 2007
Covenant College, Lookout Mountain, Georgia USA
B.A., Biology, May 1999

ADMINISTRATIVE
TRAINING

University of Georgia Financial Management and Fundraising for Academic Leaders (2024)
University of Georgia Advanced Leader Program (2023)
University of Florida SEC Certificate in Multicultural Mentoring (2022)
Southeastern Conference Academic Leadership Development Program (June 2019 – May 2020)
University of Georgia, New Department Head Training (2017)

RESEARCH
INTERESTS

Population biology: Ecology of infectious diseases • Evolution of host-parasite interactions • Theoretical epidemiology • Extinction • Biological invasions • Allee effects • Critical phenomena • Niche theory • Zoonotic diseases
Data science: Dynamical modeling • Machine learning • Data mining • Species distribution modeling • Disease risk mapping • Early warning systems

PROFESSIONAL
AFFILIATIONS

American Association for the Advancement of Science (AAAS), Ecological Society of America (ESA), National Association of Science Writers (NASW), Sigma Xi

EDITORIAL
BOARDS

Ecology & Evolution of Infectious Diseases, Series Editor, Oxford University Press (2017 – present)
Ecology & Evolution (Associate Editor: 2013 – 2017)
Ecology Letters (Associate Editor: 2012 – 2016, Senior Editor 2017 – present)
Ecosphere (Associate Editor: 2010 – 2016)
PLOS Biology (Guest Editor: 2018)
PLOS Computational Biology (Guest Editor: 2025)
Proceedings of the National Academy of Sciences USA (Guest Editor: 2021)
Proceedings of the Royal Society, Series B (Associate Editor: 2013 – present)

Theoretical Ecology (Associate Editor: 2015 – 2021)

INSTITUTIONAL
BOARDS

Cary Institute of Ecosystem Studies (2018 – present)
National Center for Ecological Analysis and Synthesis (2014 – 2020)
Highlands Biological Station (Board of Scientific Advisors, 2008 – present)
University of Georgia River Basin Center (2007 – 2021)

SERVICE TO THE
DISCIPLINE

ASM/AGU Colloquium: Climate Change's Impacts on Emerging and Reemerging Infectious Diseases. Washington D.C. (October 9-10, 2025)
PREZODE/WHO Working Group on Quantitative Indicators of Zoonoses Emergence (2023 – 2024)
CDC Pathogen Genomics Centers of Excellence (PGCoE) Response Implementation and Situation Awareness Working Group (2023 – present)
NIH-MIDAS Steering Committee (2019 – 2023, Chair: 2019 – 2021)

SYMPOSIA
ORGANIZED

Ecology & Evolution of Influenza Viruses, University of Georgia, Co-organizer (November 18-19, 2024)
Viral Traits and Infectious Disease Emergence, University of Georgia, Co-organizer (September 9-10, 2024)
Japanese Encephalitis Virus: Emerging Global Threat to Humans & Livestock, University of Georgia, Organizer (October 17-19, 2022)
Infectious Disease Intelligence: Analytics For Outbreak Response, AAAS, Philadelphia, Pennsylvania, Organizer (February 20, 2022)
Infectious Disease Forecasting: Modeling & Machine Learning, AAAS, Seattle, Washington, Organizer (February 15, 2020)
Socioepidemiology, Mathematical Biosciences Institute, Ohio State University, Co-chair (March 5-9, 2018)
Population Biology of Vector-borne Diseases, University of Georgia, Co-organizer (February 24, 2018)
Allee Effects, Ecological Society of America, Co-organizer (August 11, 2014)
Ecological Applications of Machine Learning, 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, International Association for Landscape Ecology 2010 Annual Conference, Athens, Georgia, Co-chair (April 8, 2010)
24th Annual Midwest Ecology & Evolution Conference, Notre Dame, Indiana, Co-chair (2004)

RESEARCH
ARTICLES

2025

Maitner, B., R.L. Richards, B. Carlson, **J.M. Drake** & C. Merow. Flexible methods for species distribution modeling with small samples. *Ecography*. (In press.) ([Preprint](#))

**Indicates
undergraduate
or high school
author*

Drake, J.M., J. Bahl, M.A. Cacciato, A. Ghadami, E. Graeden, B.A. Han, G. Nowak, É. Marty, H. Robertson, P. Rohani, S. Sarkar, G.L. Stott, A. Winter & B.I. Epureanu. 2025. [Leveraging systems-of-systems analysis to strengthen epidemic intelligence for preparedness and response](#). *Health Security* 23:400-410.

*All research
articles peer
reviewed*

Qian, Y., É. Marty, A. Basu, E.B. O'Dea, X. Wang, S. Fox, P. Rohani, **J.M. Drake** & H. Li. 2025. [Physics-informed deep learning for infectious disease forecasting](#). *Journal of the Royal Society Interface* 22:20250379.

Anderson, K.-A., G. Nowak, M. Cacciato, P. Rohani & **J.M. Drake**. 2025. [Understanding influenza vaccination attitudes and behaviors: an assessment of health decision-making preferences](#). *Vaccine* 65:127804.

Ali, A., S. Carver & **J.M. Drake**. 2025. [Reframing transboundary animal diseases: a systems approach](#). *Trends in Parasitology* 41:1003-1018.

Nipa, K.F., M. Mohammed, P.R. Stephens & **J.M. Drake**. 2025. [Theory of infectious disease spillover at an ecological boundary: Impacts of seasonality and cross-boundary movement](#). *Journal of the Royal Society Open Science* 12:250209.

Drake, J.M., É. Marty & A. Sau. 2025. [Scaling of extinction time with habitat size in experimental populations](#). *Ecology Letters* 28:e70178.

Drake, J.M., J.P. Wares, J.E. Byers & J.T. Anderson. 2025. [Two hypotheses about climate change and species distributions](#). *Ecology Letters* 28:e70134.

O'Regan, S.M. & **J.M. Drake**. 2025. [Finite mixture models of superspreading in epidemics](#). *Mathematical Biosciences and Engineering* 22:1081-1108.

Robertson, H., B.A. Han, A.A. Castellanos, G. Stott, R. Zimmerman, D. Rosado, **J.M. Drake** & E. Graeden. 2025. [Understanding ecological systems using knowledge graphs: An application to Highly Pathogenic Avian Influenza](#). *Bioinformatics Advances* 5:vbaf016.

2024

Filion, A., M. Sundaram, J.P. Schmidt, **J.M. Drake** & P.R. Stephens. [Evidence of repeated zoonotic pathogen spillover events at ecological boundaries](#). *Frontiers in Public Health* 12:1435233.

Mathis, S., A.E. Webber, T.M. León, E.L. Murray, M. Sun, L.A. White, L.C. Brooks, A. Green, A.J. Hu, D.J. McDonald, R. Rosenfeld, D. Shemetov, R.J. Tibshirani, S. Kandula, S. Pei, J. Shaman, R. Yaari, T.K. Yamana, P. Agarwal, S. Balusu, G. Gururajan, H. Kamarthi, B.A. Prakash, R. Raman, A.R. Rodríguez, Z. Zhao, A. Meiyappan, S. Omar, P. Baccam, H.L. Gurung, S.A. Stage, B.T. Suchoski, M. Ajelli, A.G. Kummer, M. Litvinova, P. C. Ventura, S. Wadsworth, J. Niemi, E. Carcelen, A.L. Hill, S. Jung, J.C. Lemaitre, J. Lessler, S.L. Loo, C.D. McKee, K. Sato, C. Smith, S. Truelove, T. McAndrew, W. Ye, N. Bosse, T. Liptay, G. Dempsey, W.S. Hlavacek, Y.T. Lin, A. Mallela, Y. Chen, S.M. Lamm, J. Lee, R.G. Posner, A.C. Perofsky, C. Viboud, L. Clemente, F. Lu, A.G. Meyer, M. Santillana, M. Chinazzi, J.T. Davis, K. Mu, A. Pastore y Piontti, A. Vespignani, X. Xiong, M. Ben-Nun, P. Riley, J. Turtle, C. Hulme-Lowe, S. Jessa, V.P. Nagraj, S.D. Turner, D. Williams, A. Basu, **J.M. Drake**, S.J. Fox, G.C. Gibson, E. Suez, E.W. Thommes, M.G. Cojocar, E.Y. Cramer, A. Gerding, A. Stark, E.L. Ray, N.G. Reich, L. Shandross, N. Wattanachit, Y. Wang, M.W. Zorn, M. Al Aawar, A. Srivastava, L.A. Meyers, S. Woody, A. Adiga, B. Hurt, G. Kaur, B.L. Lewis, M. Marathe, S. Venkatramanan, P. Butler, A. Farabow, N. Muralidhar, N. Ramakrishnan, C. Reed, M. Biggerstaff, R.K. Borchering. [Evaluation of FluSight influenza forecasting in 2021-22 and 2022-23 seasons with a new forecasting target: laboratory-confirmed influenza hospitalizations](#). *Nature Communications* 15:6289.

Forna, A., K.B. Weedop, L. Damodaran, N. Hassell, R. Kondor, J. Bahl, **J.M. Drake** & P. Rohani. 2024. [Sequence-based detection of emerging antigenically novel influenza A viruses](#). *Proceedings of the Royal Society, Series B* 291:20240790.

Lopez, V., E.Y. Cramer, R. Pagnano, **J.M. Drake**, et al. 2024. [Challenges of COVID-19 case forecasting in the US, 2020-2021](#). *PLOS Computational Biology* 20:e1011200.

Sundaram, M., M. Dorado, B. Akaribo, A. Filion, B.A. Han, N. Gottdenker, J.P. Schmidt, **Drake, J.M.** & P.R. Stephens. 2024. [Fruit-frugivore dependencies are important in Ebolavirus outbreaks in Sub-Saharan Africa](#). *Ecography* 2024:e06950.

Pfenning-Butterworth, A., L.B. Buckley, **J.M. Drake**, J.E. Farner, M.J. Farrell, A.-L.M. Gehman, E.A. Mordecai, P.R. Stephens, J.L. Gittleman & T.J. Davies. 2024. [Interconnecting global threats: climate change, biodiversity loss, and infectious diseases](#). *Lancet Planetary Health* 8:e270-83.

Dahlin, K.J.-M., S.M. O'Regan, B.A. Han, J.P. Schmidt & **J.M. Drake**. 2024. [Impacts of host availability and temperature on mosquito-borne parasite transmission](#). *Ecological Monographs* 94:e1603.

2023

Drake, J.M., A. Handel, É. Marty, E.B. O'Dea, T. O'Sullivan, G. Righi & A.T. Tredennick. 2023. [A data-driven semiparametric model of SARS-CoV-2 transmission in the United States](#). *PLOS Computational Biology* 19:e1011610.

Liu, Z., J. Clifton, E. Laber, **J.M. Drake** & E.X. Fang. 2023. [Deep spatial Q-learning for infectious disease control](#). *Journal of Agricultural, Biological, and Environmental Statistics* 28:749-773.

Ghadami, A., E.B. O'Dea, **J.M. Drake**, P. Rohani & B.I. Epureanu. 2023. [Anticipating epidemic transitions in metapopulations with multivariate spectral similarity](#). *Nonlinear Dynamics* 111:17605-17615.

Evans, M.V., S. Bhatnagar, **J.M. Drake**, C.C. Murdock, J.L. Rice & S. Mukherjee. 2023. [The mismatch of global narratives and local ecologies in the everyday governance of water access and mosquito control in an urbanizing community](#). *Health & Place* 80:102989.

Drake, J.M., É. Marty, K. Gandhi, M. Welch-Devine, B. Bledsoe, M. Shepherd, L. Seymour, C.C. Fortuin & C. Montes. 2023. [Disasters collide at the intersection of extreme weather and infectious diseases](#). *Ecology Letters* 26:485-489.

Richards, R., L.M. Conner, G. Morris, **J.M. Drake** & V.O. Ezenwa. 2023. [Season and predator identity mediate the effect of predators on parasites in rodents: a test of the healthy herds hypothesis](#). *Oecologia* 201:107-118.

2022

Sundaram, M., B.A. Han, J.P. Schmidt, **J.M. Drake** & P.R. Stephens. 2022. [Traits, phylogeny and host cell receptors predict Ebolavirus host status in African mammals](#). *PLOS Neglected Tropical Diseases* 16:e0010993.

Cramer, E.Y., Y. Huang, Y. Wang, E.L. Ray, M. Cornell, J. Bracher, A. Brennen, A.J. Castero Rivadeneira, A. Gerding, K.H. House, D. Jayawardena, A.H. Kanji, A. Khandelwal, K. Le, V. Mody, V. Mody, J. Niemi, A. Stark, A. Shah, N. Wattanchit, M. Zorn, N.G. Reich & the **US COVID-19 Forecast Hub Consortium**. 2022. [The United States COVID-19 Forecast Hub dataset](#). *Scientific Data* 9:1-15.

A. Ghadami, C.R. Doering, **J.M. Drake**, P. Rohani & B.I. Epureanu. 2022. [Stability and resilience of transportation systems: Is a traffic jam about to occur?](#) *IEEE Transactions on Intelligent Transportation Systems* 23:10803-10814.

Stephens, P.R., M. Sundaram, S. Ferreira, N. Gottdenker, K.F. Nipa, A. Schatz, J.P. Schmidt & **J.M. Drake**. 2022. [Drivers of African filovirus \(Ebola and Marburg\) outbreaks](#). *Vector-borne and Zoonotic Diseases* 22:478-490.

Tredennick, A., E.B. O'Dea, M. Ferrari, A.W. Park, P. Rohani & **J.M. Drake**. 2022. [Anticipating disease re-emergence and elimination: A test of early warning signals using empirically based models](#). *Journal of the Royal Society Interface* 19:20220123.

Taube, J.J.*, P.B. Miller & **J.M. Drake**. 2022. [An open-access database of infectious disease transmission trees to explore superspreader epidemiology](#). *PLOS Biology* 20:e3001685.

Vinson, J.E., R.J. Hall, A.M. Kramer, N. Gottdenker, R. Kaul, L. Chaves & **J.M. Drake**. 2022. [Land reversion and zoonotic spillover risk](#). *Royal Society Open Science* 9:220582.

Evans, M.V. & **J.M. Drake**. 2022. [A data-driven horizon scan of bacterial pathogens at the wildlife-livestock interface](#). *Ecohealth* 19:246-258.

Evans, M.V., S. Bhatnagar, **J.M. Drake**, C.M. Murdock & S. Mukherjee. 2022. [Socio-ecological dynamics in urban systems: an integrative approach to mosquito-borne disease in Bengaluru, India](#). *People & Nature* 4:730-743.

Winner of the *Rachel Carson Prize* from the British Ecological Society.

Cramer, E.Y., E.L. Ray, V. Lopez, ... **J.M. Drake**, ... & N.G. Reich. 2022. [Evaluation of individual and ensemble probabilistic forecasts of COVID-19 mortality in the US](#). *Proceedings of the National Academy of Sciences USA* 119:e2113561119.

Dablander, F, H. Heesterbeek, D. Borsboom & **J.M. Drake**. 2022. [Overlapping time scales obscure early warning signals of the second COVID-19 wave](#). *Proceedings of the Royal Society, Series B* 289:20211809.

O'Dea, E.B. & **J.M. Drake**. 2022. [A semi-parametric, state-space compartmental model with time-dependent parameters for forecasting COVID-19 cases, hospitalizations, and deaths](#). *Journal of the Royal Society Interface* 19:20210702.

Barnum, T.R., J.T. Wootton, R.J. Bixby, **J.M. Drake**, D. Murray-Stoker, C. Colón-Gaud, A.T. Rugenski, T.C. Frauendorf, S. Connelly, S.S. Kilham, M.R. Whiles, K.R. Lips & C.M. Pringle. 2022. [Mechanisms underlying lack of functional compensation by insect grazers after tadpole declines in a Neotropical stream](#). *Limnology & Oceanography* 67:S198-S210.

2021

Richards, R.L., **J.M. Drake** & V. Ezenwa. 2021. [Do predators keep prey healthy or make them sicker? A meta-analysis](#). *Ecology Letters* 25:278-294.

Miller, P.B., S. Zalwango, R. Galiwango, R. Kakaire, J. Sekandi, L. Steinbaum, **J.M. Drake**, C.C. Whalen & N. Kiwanuka. 2021. [Association between tuberculosis in men and social network structure in Kampala, Uganda](#). *BMC Infectious Diseases* 21:1023.

Majewska, A., T. Huang, B.A. Han & **J.M. Drake**. 2021. [Predictors of zoonotic potential in helminths](#). *Philosophical Transactions of the Royal Society* 376:20200356.

Stephens, P.R., N. Gottdenker, A. Schatz, J.P. Schmidt & **J.M. Drake**. 2021. [Characteristics of the 100 largest modern zoonotic disease outbreaks](#). *Philosophical Transactions of the Royal Society* 376:20200535.

Li, X., A. Ghadami, **J.M. Drake**, P. Rohani & B.I. Epureanu. 2021. [Mathematical model of the feedback between global supply chain disruption and COVID-19 dynamics](#). *Scientific Reports* 11:15450.

Han B.A., A.A. Castellanos, J.P. Schmidt, I.R. Fischhoff & **J.M. Drake**. 2021. [The ecology of zoonotic parasites in the Carnivora](#). *Trends in Parasitology* 37:1096-1110.

Republished as: Han B.A., A.A. Castellanos, J.P. Schmidt, I.R. Fischhoff & **J.M. Drake**. 2022. [La ecología de los parásitos zoonóticos en Carnivora](#). *Magna Scientia UCEVA* 2:30-47.

Lodge, E.K.*, A. Schatz & **J.M. Drake**. 2021. [Protective population behavior change in outbreaks of emerging infectious disease](#). *BMC Infectious Diseases* 21:577.

Rakotonanahary, R.J.L., H. Andriambolamanana, E.M. Raza-Fanomezananahary, B. Razafinjato, V. Ramanandraitsiory, F. Ralaivavikoa, A. Tsirinomen'ny Aina, L. Rahajatiana, L. Rakotonirina, J. Haruna, L.F. Cordier, M.B. Murray, G. Cowley, D. Jordan, M.A. Krasnow, P.C. Wright, T.R. Gillespie, M. Docherty, T. Loyd, M. Evans, **J.M. Drake**, C.N. Ngonghala, M. Rich, S. Popper, A.C. Miller, F.A. Ihantamalala, A. Randrianambinina, B. Ramiandrisoa, E. Rakotozafy, A. Rasolofomanana, M.C.A. Vololoniaina, B. Andriamihaja, A. Garchitorena, J. Rakotonirina, A. Mayfield, K.E. Finnegan & M.H. Bonds. 2021. [Integrating health systems and science to respond to COVID-19 in a model district of rural Madagascar](#). *Frontiers in Public Health* 9:654299.

Republished as: Rakotonanahary, R.J.L., H. Andriambolamanana, E.M. Raza-Fanomezananahary, B. Razafinjato, V. Ramanandraitsiory, F. Ralaivavikoa, A. Tsirinomen'ny Aina, L. Rahajatiana, L. Rakotonirina, J. Haruna, L.F. Cordier, M.B. Murray, G. Cowley, D. Jordan, M.A. Krasnow, P.C. Wright, T.R. Gillespie, M. Docherty, T. Loyd, M. Evans, **J.M. Drake**, C.N. Ngonghala, M. Rich, S. Popper, A.C. Miller, F.A. Ihantamalala, A. Randrianambinina, B. Ramiandrisoa, E. Rakotozafy, A. Rasolofomanana, M.C.A. Vololoniaina, B. Andriamihaja, A. Garchitorena, J. Rakotonirina, A. Mayfield, K.E. Finnegan & M.H. Bonds. 2022. [Integrating health systems and science to respond to COVID-19 in a model district of rural Madagascar](#). Pp. 45-54 in Sokolow, S.H., K.A. Murray, G. De Leo, M. Barry & D. Lopez-Carr, eds. *Planetary Health Impacts of Pandemic Coronaviruses*. Lausanne: Frontiers Media SA. doi: 10.3389/978-2-83250-006-4.

Sánchez, C., J. Ventkatachalam-Vaz & **J.M. Drake**. 2021. [Spillover of zoonotic pathogens: A review of reviews](#). *Zoonoses & Public Health* 68:563-577.

Evans, M.V., M.H. Bonds, L.F. Cordier, **J.M. Drake**, F. Ihantamalala, J. Haruna, A.C. Miller, C.C. Murdock, M. Randrianamanambtsoa, E.M. Raza-Fanomezananahary, B.R. Razafinjato, A.C. Garchitorena. 2021. [Socio-demographic, not environmental, risk factors explain fine-scale spatial patterns of diarrheal disease in Ifanadiana, rural Madagascar](#). *Proceedings of the Royal Society, Series B* 288:20202501.

Hackett, R., E. Leahey, J. Parker, I. Rafols, S. Hampton, U. Corte, **J.M. Drake**, B. Penders, L. Sheble, N. Vermeulen & T. Vision. 2021. [Do synthesis centers synthesize? A semantic analysis of diversity and performance](#). *Research Policy* 50:104069.

Evans, M.V., **J.M. Drake**, L. Jones & C.M. Murdock. 2021. [Assessing temperature-dependent competition between two invasive mosquito species](#). *Ecological Applications* 31:e02334.

Drake, J.M., K. Dahlin, P. Rohani & A. Handel. 2021. [Five approaches to the suppression of SARS-CoV-2 without intensive social distancing](#). *Proceedings of the Royal Society, Series B* 288:20203074.

Drake, J.M., K. Magori, K. Knoblich*, S.E. Bowden & W.I. Bajwa. 2021. [Force of infection and variation in outbreak size in a multi-species host-pathogen system: West Nile virus in New York City](#). Pp. 69-81 in *Population Biology of Vector-borne Diseases*, J.M. Drake, M. Bonsall & M.R. Strand, eds. Oxford University Press.

2020

- Evans, M.V., A. Garchitorena, R.J.L. Rakotonanahary, T. Ramiadantsoa, **J. M. Drake**, B. Andriamihaja, J. Rakotonirina, E. Rajaonarifara, C.N. Ngonghala, B. Roche & M.H. Bonds. 2020. [Reconciling model predictions with low reported cases of COVID-19 in Sub-Saharan Africa: Insights from Madagascar](#). *Global Health Action* 13:1816044.
- O'Regan, S.M., E.B. O'Dea, P. Rohani & **J.M. Drake**. 2020. [Transient indicators of tipping points in infectious diseases](#). *Journal of the Royal Society Interface* 17:20200094.
- Teitelbaum, C., C. Amoroso, S. Huang, T.J. Davies, J. Rushmore, **J.M. Drake**, P. Stephens, J. Byers, A. Majewska & C. Nunn. 2020. [A comparison of diversity estimators applied to a database of host-parasite associations](#). *Ecography* 43:1316-1328.
- Han, B.A., S.M. O'Regan, J.P. Schmidt & **J.M. Drake**. 2020. [Integrating data mining and transmission theory in the ecology of infectious diseases](#). *Ecology Letters* 23:1178-1188.
- Bock, S.L., R.H. Lowers, T.R. Rainwater, E. Stolen, **J.M. Drake**, P.M. Wilkinson, S. Weiss, B. Back, L. Guillet & B.P. Parrott. 2020. [Spatial and temporal variation in nest temperatures forecasts sex ratio skews in a crocodilian with environmental sex determination](#). *Proceedings of the Royal Society, Series B* 287:20200210.
- Harris, M.*, S.I. Hay, & **J.M. Drake**. 2020. [Early warning signals of malaria resurgence in Kericho, Kenya](#). *Biology Letters* 16:20190713.
- Brett, T., M. Ajelli, Q. Liu, M. Krauland, W. van Panhuis, A. Vespignani, **J.M. Drake** & P. Rohani. 2020. [Detecting critical slowing down in high-dimensional epidemiological dynamics](#). *PLOS Computational Biology* 16:e1007679.
- Drake, J.M.**, S.M. O'Regan, V. Dakos, S. Kéfi & P. Rohani. 2020. [Alternative stable states, tipping points, and early warning signals of ecological transitions](#). Book chapter. *Theoretical Ecology*, K. McCann & G. Gellner, eds. Oxford University Press.
- Walker, J.*, N. Kittur, S. Binder, J. Castleman, **J.M. Drake**, C. Campbell, C. King, & D. Colley. 2020. [Environmental predictors of Schistosomiasis persistent hotspots following mass treatment with praziquantel](#). *American Journal of Tropical Medicine & Hygiene* 102:328-338.

2019

- Schmidt, J.P., S. Maher, **J.M. Drake**, T. Huang, M.J. Farrell, & B.A. Han. 2019. [Ecological indicators of mammal exposure to Ebolavirus](#). *Philosophical Transactions of the Royal Society* 374:20180337.
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J.M. Drake. [Vaccine effectiveness in the Omicron wave.](#) (February 1, 2022)

J.M. Drake. [Are undiscovered viruses protecting Africa from Covid-19?](#) (November 30, 2021)

J.M. Drake. [Why you should consider getting a Covid-19 booster shot.](#) (November 29, 2021)

J.M. Drake. [What we know about the Omicron variant.](#) (November 28, 2021)

J.M. Drake. [Was Covid-19 a black swan event?](#) (November 11, 2021)

J.M. Drake. [Can future epidemics be predicted?](#) (October 28, 2021)

J.M. Drake. [Is fighting Ebola the new normal in the Democratic Republic Of The Congo?](#) (October 27, 2021)

J.M. Drake. [Global vulnerability to emerging diseases of livestock.](#) (October 12, 2021)

J.M. Drake. [Why the Delta variant is filling up hospitals.](#) (August 30, 2021)

J.M. Drake. [Airborne transmission of SARS-CoV-2 is evolving.](#) (August 26, 2021)

J.M. Drake. [Why the discovery of Marburg virus in West Africa is a concern.](#) (August 25, 2021)

J.M. Drake. [Why you should be vaccinated even if you've already had Covid-19.](#) (August 19, 2021)

J.M. Drake. [CDC infectious disease forecasting center to be led by veteran scientists.](#) (August 18, 2021)

J.M. Drake. [What you need to know about the outbreak of Delta variant SARS-CoV-2 in Provincetown, Massachusetts.](#) (July 31, 2021)

J.M. Drake. [CDC's recommendation that staff and students wear masks in K-12 schools is spot on.](#) (July 28, 2021)

J.M. Drake. [How many people do we need to vaccinate against SARS-CoV-2? Just about everybody.](#) (July 28, 2021)

J.M. Drake. [Can we insure against future pandemics?](#) (July 21, 2021)

J.M. Drake. [Making sense of SARS-CoV-2 variants.](#) (July 16, 2021)

J.M. Drake. [Epidemic analytics is more than just forecasting.](#) (June 18, 2021)

J.M. Drake. [Three misconceptions about herd immunity.](#) (June 9, 2021)

J.M. Drake. [Was Covid-19 a failure of policy or a failure of information?](#) (May 30, 2021)

J.M. Drake. [What happened to the flu?](#) (May 26, 2021)

J.M. Drake. [What is infectious disease intelligence and why it matters.](#) (May 25, 2021)

J.M. Drake. [How "Digital Contact Tracing" reduced Covid-19 cases in the UK by 20%.](#) (May 21, 2021)

J.M. Drake. [The effects of Covid-19 on global food security.](#) (May 17, 2021)

J.M. Drake. [Why Lyme disease is increasing in North America.](#) (April 30, 2021)

J.M. Drake. [The risk of Covid-19 is greater than blood clots from the Johnson & Johnson vaccine.](#) (April 30, 2021)

J.M. Drake. [New variants and breakthrough infection.](#) (April 27, 2021)

J.M. Drake. [What is planetary health?](#) (April 22, 2021)

J.M. Drake. [How long does immunity to SARS-CoV-2 last?](#) (April 15, 2021)

J.M. Drake. [Now we know: Covid-19 vaccines prevent asymptomatic infection, too.](#) (March 29, 2021)

J.M. Drake. [Variant strains, reinfection, and the diminishing possibility of achieving full herd immunity in the US.](#) (March 26, 2021)

J.M. Drake. [Covid-19 and the science of reinfection.](#) (March 25, 2021)

J.M. Drake. [Is Ebola endemic in humans?](#) (March 18, 2021)

J.M. Drake. [To prevent future pandemics the US should invest in "Real-Time Research".](#) (March 17, 2021)

J.M. Drake. [What are mathematical models of Covid-19?](#) (February 28, 2021)

J.M. Drake. [Is Ebolavirus spillover becoming more common.](#) (February 24, 2021)

J.M. Drake. [Not one, but two outbreaks of Ebola threaten to erupt in Sub-Saharan Africa.](#) (February 15, 2021)

J.M. Drake. [CDC says schools could reopen soon.](#) (February 13, 2021)

J.M. Drake. [Super Bowl parties could expose this many people to SARS-CoV-2.](#) (February 6, 2021)

J.M. Drake. [Will the Super Bowl be a "Super Spreader" for Covid-19?](#) (January 30, 2021)

J.M. Drake. [What happens after we reach herd immunity?](#) (January 29, 2021)

J.M. Drake. [The coronavirus variant that has taken over Great Britain is also more deadly.](#) (January 21, 2021)

J.M. Drake. [How we see data and how we act: Lessons from the Covid-19 pandemic.](#) (January 13, 2021)

J.M. Drake. [The psychological trauma of Covid-19.](#) (January 5, 2021)

J.M. Drake. [The science behind London's Christmas lockdown.](#) (December 19, 2020)

J.M. Drake. [How deadly is Covid-19?](#) (December 17, 2020)

J.M. Drake. [A view of Covid-19 from the front lines.](#) (December 16, 2020)

J.M. Drake. [Genomic epidemiology reveals how the Boston superspreading event seeded Covid-19 around the US.](#) (December 14, 2020)

J.M. Drake. [The real cause of America's third wave of Covid-19.](#) (December 7, 2020)

J.M. Drake. [How you should be looking at Covid-19 data.](#) (November 30, 2020)

J.M. Drake. [Epidemic models are instruments, not oracles.](#) (November 26, 2020)

J.M. Drake. [Visualizing Covid-19 deaths in the US.](#) (November 20, 2020)

J.M. Drake. [The top six things the Biden administration should do about science and technology.](#) (November 10, 2020)

J.M. Drake. [What you need to know about the swine flu detected in Canada.](#) (November 6, 2020)

J.M. Drake. [What is "One Health"?](#) (October 31, 2020)

J.M. Drake. [Is this going to be a bad year for the flu?](#) (October 28, 2020)

J.M. Drake. [Let's stop talking about social distancing.](#) (October 26, 2020)

J.M. Drake. [Face masks could prevent 50 million Covid-19 cases in the US.](#) (October 9, 2020)

J.M. Drake. [Why Covid-19 isn't just a bad version of the flu.](#) (October 6, 2020)

J.M. Drake. [As many as 60 million Americans may have had a coronavirus infection, but that's a long way from herd immunity.](#) (September 26, 2020)

J.M. Drake. [Pandemic awareness: Scientists reflect on the first moments of Covid-19.](#) (September 25, 2020)

J.M. Drake. [New study analyzes the risk of catching Covid-19 while flying.](#) (September 23, 2020)

J.M. Drake. [Interventions meant to slow the spread of Covid-19 have all but stopped the flu.](#) (September 21, 2020)

J.M. Drake. [You're a Covid-19 survivor — How long will your immunity last?](#) (September 15, 2020)

J.M. Drake. [Protecting against airborne transmission of Covid-19.](#) (September 4, 2020)

J.M. Drake. [Risky work: SARS-CoV-2 infections among frontline health care workers.](#) (September 1, 2020)

J.M. Drake. [Is Covid-19 airborne?](#) (August 31, 2020)

J.M. Drake. [Two studies show how to control the spread of coronavirus.](#) (August 28, 2020)

J.M. Drake. [Ebola is erupting in the western forests of the Democratic Republic of the Congo.](#) (August 24, 2020)

J.M. Drake. [The science behind campus coronavirus outbreaks.](#) (August 21, 2020)

J.M. Drake. [The science of campus reopening: Can testing students work?](#) (August 17, 2020)

J.M. Drake. [Don't take a gap year because of the Covid-19 pandemic.](#) (July 24, 2020)

J.M. Drake. [Coronavirus deaths are surging: what happens next?](#) (July 18, 2020)

J.M. Drake. [The case for universal face masks to curb the spread of Covid-19.](#) (July 16, 2020)

J.M. Drake. [Four reasons why coronavirus cases are increasing but deaths aren't — yet.](#) (July 8, 2020)

J.M. Drake. [Why ecologists study infectious diseases and what we can learn about public health by studying nature.](#) (July 7, 2020)

INTERVIEWS

[Athens News Matters: UGA Expert Breaks Down Theories Behind Bird Flu Spread](#) (March 15, 2025)

[Athens News Matters: How Big of a Problem Could Monkeypox Be?](#) (June 12, 2022)

[Athens News Matters: A New COVID Variant Could be on the Horizon](#) (March 18, 2022)

[WSB Atlanta, Georgia \(750 AM, 95.5 FM\).](#) (December 6, 2021)

[Athens News Matters: Dr. John Drake Discusses the New Omicron Variant of COVID-19](#) (December 3, 2021)

[Athens News Matters: COVID Case Numbers Fall - Is There a Light at the End of the Tunnel?](#) (September 24, 2021)

[WSB Atlanta, Georgia \(750 AM, 95.5 FM\).](#) (August 31, 2021)

[WSB Atlanta, Georgia \(750 AM, 95.5 FM\).](#) (August 4, 2021)

[Athens News Matters: A Special COVID Panel](#) (July 23, 2021)

[GPB News](#) (June 16, 2021)

[WSB Atlanta, Georgia \(750 AM, 95.5 FM\).](#) (May 28, 2021)

[WSB Atlanta, Georgia \(750 AM, 95.5 FM\).](#) (May 25, 2021)

[Newsday.](#) BBC World Service, London, UK. (August 27, 2020)

[Discussion of COVID-19 models for AZ, FL, OH, and TX.](#) The Daily Beast. (August 13, 2020)

[Community Forum.](#) WXAG 92.7 FM and 1470 AM, Athens, Georgia. (July 9, 2020)

[Discussion of Biosurveillance Subsequent to COVID-19.](#) The Economist. (July 7, 2020)

[Athens News Matters: What You Should Know about COVID-19 Modeling.](#) WUGA 91.7 and 94.5, Athens, Georgia. (June 26, 2020)

[News Now with Bryan Nehman.](#) WBAL 101.5, Baltimore, Maryland. (June 25, 2020)

[The Finch. Episode 8.](#) (May 11, 2020)

[Debriefing the Briefing with Major Garrett.](#) (May 7, 2020)

[SEC Universities: Fourteen on the 14th](#) (April 14, 2020)

[Big Biology. Episode 38: Coronavirus](#) (March 17, 2020)

[Interview with Ron Holt, CEO & Founder, Two Maids & A Mop Franchising.](#) (March 16, 2020)

[Classic City Science. Critical slowing down.](#) WUGA 91.7 and 94.5, Athens, Georgia. (January 13, 2019)

[Classic City Science. Predicting emerging diseases with AI.](#) WUGA 91.7 and 94.5, Athens, Georgia. (December 30, 2018)

[Al Jazeera America](#) (January 18, 2015)

[Public Radio Exchange: Open Access: Generation Open](#) (December 16, 2014)

BBC World Service - Science in Action (September 10, 2010)

GRANTS &
CONTRACTS

Swine Health Information Center to **J.M. Drake** (\$5,000), 2024-2025. Title: Japanese Encephalitis Virus Information Sharing Network Website. Role: Principal investigator.

National Science Foundation to **J.M. Drake** (\$298,354), 2024-2026. Title: OPUS: Synthesizing theory and data in the ecology of zoonotic diseases: A multi-system perspective. DEB-2426740. Role: Principal investigator.

University of Georgia Office of Instruction to **J.M. Drake**, S. Carver, M. Cacciatore & O. Ginn. (\$20,000), 2024-2025. Title: Perception and preparedness: A multi-disciplinary inquiry-based longitudinal study of healthcare seeking behaviors before, during and after a pandemic. Role: Principal investigator.

Bill & Melinda Gates Foundation to A. Winter, **J.M. Drake**, & M. Ferrari (\$548,838), 2023-2025. Title: Assessing global measles outbreak risk via classification methods. Role: Co-investigator.

Swine Health Information Center to **J.M. Drake** (\$10,000), 2023-2024. Title: Japanese Encephalitis Virus Information Sharing Network Website. Role: Principal investigator.

Kansas State University to **J.M. Drake** (\$371,550), 2023-2026. Developing a Japanese Encephalitis Virus (JEV) Spatial Interaction Model. Role: Principal investigator.

Swine Health Information Center to **J.M. Drake** (\$5,000), 2022-2023. Title: Japanese Encephalitis Virus Information Sharing Network Website. Role: Principal investigator.

US Centers for Disease Control to J. Bahl, M.S. Alabady, M.A. Anderson, **J.M. Drake**, K.G. Emerson, T.C. Glenn, E.K. Lipp, L. Liu, P. Rohani, S. Sanchez & A. Winter (\$18,383,130), 2022-2027. Title: CAPE - Center for Applied Pathogen Epidemiology. CDC 000000000031828. Role: Co-investigator.

National Science Foundation to **J.M. Drake**, P. Rohani, G. Nowak, B. Epureanu & B. Han (\$1,000,000), 2022-2024. Title: PIPP Phase I: Heterogeneous model integration for infectious disease intelligence. NSF DEB-2200158. Role: Principal investigator.

Swine Health Information Center to **J.M. Drake** (\$40,000), 2021-2022. Title: Pathogenic bacterial modeling. Role: Principal investigator.

Centers for Disease Control and Prevention to J. Bahl, P. Rohani, A. de Groot & **J.M. Drake** (\$732,271), 2021-2023. Title: A genomics-based system to predict the seasonal influenza virus evolution and epidemic dominance. Role: Co-investigator.

National Institutes of Health to K. Dahlin & **J.M. Drake** (\$9,939), 2021-2022. Title: Evaluating responses to COVID-19 transmission on university campuses. Role: Co-investigator.

National Institutes of Health to S.M. Tompkins, P. Rohani, A.W. Park, J. Kissinger, A. Handel, J. Bahl & **J.M. Drake** (\$91,775,618), 2020-2024. Title: Center for Influenza Disease and Emergence Research (CIDER). Role: Senior personnel.

Centers for Disease Control and Prevention to J. Bahl, P. Rohani, L. Moise, A. de Groot & **J.M. Drake** (\$732,271), 2019-2021. Title: A genomics-based system to predict seasonal influenza virus evolution and epidemic dominance. 75D30121C11990. Role: Co-investigator.

University of Georgia Teaming for Interdisciplinary Research Pre-Seed Program to **J.M. Drake**, K. Gandhi, M. Welch-Devine, B. Bledsoe, M. Shepherd, L. Seymour, & E. Marty (\$3,500), 2020-2021. Title: Disasters colliding: The epidemiology of severe weather events. Role: Principal investigator.

National Science Foundation to **J.M. Drake**. (\$199,917), 2020-2022. Title: RAPID: Dynamical modeling of COVID-19. NSF DEB-2027786. Role: Principal investigator.

*Total amount
awarded to
Drake:
\$13,564,647*

*Total
collaborative
funding:
\$137,942,646*

National Science Foundation to A. Kramer & **J.M. Drake**. (\$200,000), 2020-2022. Title: RAPID Collaborative proposal: Spatial dynamics of COVID-19 NSF DEB-2028136. Role: Principal investigator.

National Institutes of Health to P.R. Stephens, **J.M. Drake**, S. Ferreira, N.L. Gottdenker, & J.P. Schmidt (\$2,468,355), 2020-2025. Title: Spillover of Ebola and other filoviruses at ecological boundaries. NIH-NIAID R01AI156866. Role: Co-investigator.

Centers for Disease Control and Prevention to J. Bahl, P. Rohani & **J.M. Drake** (\$659,708), 2019-2021. Title: Integrated system to forecast dominant influenza virus in seasonal epidemics. 75D30119C06826. Role: Co-investigator.

National Science Foundation to **J.M. Drake**, N.L. Gottdenker, J.P. Schmidt & S. Tanner (\$1,599,933), 2019-2023. Title: CNH2-L: Social and ecological determinants of multi-host vector-borne infections in dynamic tropical landscapes. Role: Principal investigator.

National Science Foundation to A. Roess and S. Lahm (\$2,487,071; sub-award to Drake: \$330,199), 2018-2022. Title: Ecology of MERS-CoV in Camels, Humans, and Wildlife in Ethiopia. DEB-1816064. Role: Co-investigator.

National Endowment for the Humanities to C. Saunt, S. Bernardes & **J.M. Drake** (\$278,363, Drake portion: \$7,509), 2018-2023. Title: Mapping the people of early America. NEH. Role: Co-investigator.

National Science Foundation to B.A. Han, S.M. O'Regan & **J.M. Drake** (\$2,478,884; sub-award to Drake: \$25,612), 2019-2025. Title: Global patterns, predictors, and their dynamical consequences in zoonotic diseases of mammals (INTERN supplement). DEB-1717282. Role: Co-investigator.

National Science Foundation to B.A. Han, S.M. O'Regan & **J.M. Drake** (\$2,478,884; sub-award to Drake: \$1,099,576), 2017-2025. Title: Global patterns, predictors, and their dynamical consequences in zoonotic diseases of mammals. DEB-1717282. Role: Co-investigator.

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. Role: Principal investigator.

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

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. Role: Co-investigator.

National Science Foundation to A.M. Kramer & **J.M. Drake** (\$308,244), 2015-2017. Title: Multi-scale dynamics of White-Nose syndrome in North America. EF-1442417. Role: Co-investigator.

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. Role: Principal investigator.

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

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. Role: Principal investigator.

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

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

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. Role: Principal investigator.

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. Role: Co-investigator.

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. Role: Co-investigator.

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

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. Role: Principal investigator.

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. Role: Principal investigator.

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. Role: Principal investigator.

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. Role: Co-investigator.

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. Role: Co-investigator.

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). Role: Principal investigator.

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). Role: Principal investigator.

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). Role: Principal investigator.

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). Role: Principal investigator.

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

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). Role: Principal investigator.

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

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

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. Role: Principal investigator.

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). Role: Principal investigator.

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

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

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

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. Role: Co-investigator.

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. Role: Principal investigator.

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. Role: Principal investigator.

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. Role: Principal investigator.

TECHNICAL
PRESENTATIONS &
PUBLISHED
ABSTRACTS

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. Role: Principal investigator.

Forna, A., A. Sbarra, S. Takahashi, **J.M. Drake**, S. Truelove, W.J. Moss, M.J. Ferrari & A.K. Winter. A dynamic machine learning framework for predicting measles outbreak risk. *EPIDEMICS 10*. San Diego, CA. November 30 – December 3, 2025. (Poster)

Drake J.M. Critical, noise-induced, and hybrid transitions in biological populations. Evolutionary Demography Society 2025. Pembroke College, Oxford. September 22 - 24, 2025. (Presentation)

Drake, J.M., G. Nowak, M.A. Cacciatore & K.-A. Anderson. Empirical and theoretical synthesis of attitudes toward routine and pandemic vaccination. International Pandemic Sciences Conference 2025. June 30 - July 1, 2025. (Poster)

Drake, J.M. Predicting the global distribution of mosquito-borne arboviruses using machine learning. 74th Annual International Conference on Diseases in Nature Communicable to Humans. June 17, 2025. (Presentation)

Drake, J.M. Meso-scale infectious disease modeling. Charting Complexity. London, UK. June 10 - 12, 2025. (Presentation)

Drake, J.M. A framework for modelling the spread of transboundary animal diseases. Livestock, Environment and People (LEAP) Conference. University of Oxford, Oxford UK. April 8, 2025. (Presentation)

Forna, A., L. Damodaran, C. Gunning, N. Kannan, J. Bahl, P. Rohani & **J.M. Drake**. From sequences to predictions: FluEmbed reveals antigenic evolution in influenza A virus using protein language modeling. Ecology & Evolution of Infectious Diseases. University of Georgia, Athens, GA. November 18-19, 2024. (Poster)

Forna, A., A. Sbarra, S. Takahashi, M.J. Ferrari, **J.M. Drake** & A. Winter. Machine learning to predict country-specific measles outbreaks. Precision One Health Symposium. University of Georgia, Athens, GA. November 7, 2024. (Poster)

Rohani, P., V. Felix, & **J.M. Drake**. Forecasting influenza with ensembles of seasonal models. Options XII for the Control of Influenza. Brisbane, Australia. September 29 – October 2, 2024. (Presentation)

Drake, J.M., A. Ali, M. Atia, C. Ayele, L. Carruth, M. Dejene, S. Lahm, S. Melaku, M. Mann, M. Mueller, A. Roess, S. Thapa, J. Wildemann. Risk factors for the emergence of MERS-CoV in the camel economy of Ethiopia. Ecological Society of America. Long Beach, California. August 4-9, 2024. (Poster)

Ali, A. & **Drake, J.M.**. Quantifying the impact of transboundary animal diseases. Ecology & Evolution of Infectious Diseases. Stanford University. June 24-27, 2024. (Poster)

Drake, J.M., V. Felix & P. Rohani. Forecasting influenza with ensembles of seasonal models. Ecology & Evolution of Infectious Diseases. Stanford University. June 24-27, 2024. (Poster)

Robertson, H., E. Graeden, A. Castellanos, D. Rosado, **J.M. Drake** & B.A. Han. Understanding ecological systems using knowledge graphs. Global Health Security 2024. Sydney, Australia. June 18-21, 2024. (Presentation)

Willoughby, A.R., S.M. Altizer & **J.M. Drake**. National park buildings modify species interactions of ringtails (*Bassariscus astutus*) across the food web. American Society of Mammalogists. Boulder, Colorado. June 7-11, 2024.

**Indicates
undergraduate
or high school
author*

Drake, J.M., É. Marty, L. Seymour, A. Daws, K.J.K. Gandhi, M. Welch-Devine, B. Bledsoe, M. Shepherd, C.C. Fortuin & C. Montes. [Social vulnerability and prior exposure to environmental disasters affect COVID-19 health outcomes](#). EPIDEMICS 9. November 28, 2023. (Poster)

Robertson, H., E. Graeden, A. Castellanos, D. Rosado, P. Das, **Drake, J.M.** & B. Han. Knowledge graphs for scalable data integration: A case study of Highly Pathogenic Avian Influenza (HPAI). MIDAS. Atlanta, Georgia. October 29-31, 2023. (Poster)

Kelly, S., A. Ghadami, **Drake, J.M.** & B. Epureanu. Unveiling key factors in disease transmission through explainable AI. MIDAS. Atlanta, Georgia. October 29-31, 2023. (Poster)

Drake, J.M. & P. Rohani. Forecasting influenza with ensembles of linear models. MIDAS. Atlanta, Georgia. October 29-31, 2023. (Poster)

Sarkar, S., P. Rohani & **Drake, J.M.** Theory of behavior-induced tipping points in the transmission of infectious diseases. MIDAS. Atlanta, Georgia. October 29-31, 2023. (Poster)

Drake, J.M. Spatial interaction models for the spread of emerging diseases. Ecological Society of America. August 7, 2023. (Poster)

Torres, P. **J.M. Drake**. Defining and mapping emerging and re-emerging infectious diseases. 71st Annual International Conference of the Wildlife Disease Association. Athens, Georgia. July 29 - August 4, 2023. (Presentation)

Willoughby, A., **J.M. Drake** & S. Altizer. Tourist-provided resources modify small mammal diet, infection, and behavior in a National Park. 71st Annual International Conference of the Wildlife Disease Association. Athens, Georgia. July 29 - August 4, 2023. (Presentation)

Stephens, P.R., ... & **J.M. Drake**. Frugivory, *Ficus* distribution, and *Ebolavirus* spillover in Sub-Saharan Africa. Evolution. Albuquerque, New Mexico. June 21-25, 2023. (Presentation)

Smith, J., C.J. Miciano, J. Taube*, P. Miller, A. Hill, S. Shrestha & **J.M. Drake**. Characterizing and comparing individual-level heterogeneity in transmission of infectious disease outbreaks. Society for Epidemiologic Research, Portland, Oregon. June 14-16, 2023. (Presentation)

Drake, J.M., É. Marty, L. Seymour, A. Daws, K.J.K. Gandhi, M. Welch-Devine, B. Bledsoe, M. Shepherd, C.C. Fortuin & C. Montes. Interacting natural disasters: extreme weather & epidemics. Ecology & Evolution of Infectious Diseases. University Park, Pennsylvania. May 22-25, 2023. (Poster)

Forna, A., J. Bahl, **J.M. Drake** & P. Rohani. From sequences to surprises: NIAViD (Novel Influenza A Virus Detector) reveals antigenic transitions in Influenza A virus. Ecology & Evolution of Infectious Diseases. University Park, Pennsylvania. May 22-25, 2023. (Poster)

Drake, J.M. Heterogeneous model integration for infectious disease intelligence. National Science Foundation, Predictive Intelligence for Preventing Pandemics (PIPP) Kickoff Meeting. November 8, 2022. (Presentation)

Drake, J.M. Path to a spread model for JEV in North America. Special symposium: Japanese Encephalitis Virus: Emerging global threat to humans & livestock. University of Georgia. October 18, 2022. (Presentation)

Sundaram, M., B. Han, J.P. Schmidt, **J.M. Drake** & P. Stephens. Traits, phylogeny and host cell receptors predict Ebolavirus host status among African mammals. Evolution 2022. June 24-28, 2022. (Presentation)

Willoughby, A.R., S. M. Altizer & **J.M. Drake**. Tourist-provided resources modify

rock squirrel (*Otospermophilus variegatus*) behavior, diet, and parasite communities. American Society of Mammalogy. June 20, 2022. (Poster)

Vinson, J.E., N.L. Gottdenker, L.F. Chaves, **J.M. Drake** & R.J. Hall. Land-use and host density impacts on parasite transmission. Ecology & Evolution of Infectious Diseases, Atlanta, Georgia, June 3-9, 2022. (Poster)

Willoughby, A.R., S. M. Altizer & **J.M. Drake**. Tourist-provided resources modify rock squirrel (*Otospermophilus variegatus*) behavior, diet, and parasite communities. Ecology & Evolution of Infectious Diseases, Atlanta, Georgia, June 3-9, 2022. (Poster)

Dahlin, K., **J.M. Drake**, B. Han & S.M. O'Regan. Exploring the role of host traits on the transmission of mosquito-borne pathogens in wildlife populations. Virtual Joint Mathematics Meetings. April 7, 2022. (Presentation)

Drake, J.M. Infectious disease intelligence: The science of predicting pandemics. ORAU 2022. Annual Meeting of the Oak Ridge Associated Universities Council of Sponsoring Institutions. March 7, 2022. (Invited presentation)

O'Sullivan, T., A.M. Kramer, R. Merrill, S.M. O'Regan, E. McIntyre, D. Ndungi & **Drake, J.M.** Modeling the 2018-2020 Ebola outbreak: Insights into determinants of geographic spread. EPIDEMICS-8. December 1, 2021. (Presentation)

Drake, J.M., A. Handel, A. Tredennick, E.B. O'Dea & E. Marty. Forecasting and scenario analysis of SARS-CoV-2 transmission with a semiparametric model. EPIDEMICS-8. November 30, 2021. (Poster)

Dablander, F., H. Heesterbeek, D. Borsboom & **J.M. Drake**. Overlapping Time Scales Obscure Early Warning Signals of the Second COVID-19 Wave. Interacting Tipping Elements in the Natural and Social Components of the Earth System Workshop, Bad Belzig, Germany, August, 2021. (Poster)

Dablander, F., H. Heesterbeek, D. Borsboom & **J.M. Drake**. Overlapping Time Scales Obscure Early Warning Signals of the Second COVID-19 Wave. Ignite Talk at the Interacting Tipping Elements in the Natural and Social Components of the Earth System Workshop, Bad Belzig, Germany, August, 2021. (Presentation)

Drake, J.M., A. Handel, A. Tredennick, E.B. O'Dea & E. Marty. Forecasting and scenario analysis of SARS-CoV-2 transmission with a semiparametric model. SIAM Conference on Applications of Dynamical Systems (DS21). May 27, 2021. (Invited presentation)

Ghadami, A., G. Li, **J.M. Drake**, P. Rohani & B. Epureanu. Feedback between Covid-19 dynamics and supply chain disruptions affects outbreak outcomes. May 11, 2021. (Presentation)

*Taube, J.C., P. Miller & **J.M. Drake**. An open-access database of infectious disease transmission trees to explore superspreader epidemiology. MIDAS Annual Conference. May 12, 2021. (Poster)

Drake, J.M., A. Handel, E.B. O'Dea & E. Marty. Forecasting and scenario analysis of SARS-CoV-2 transmission with a semiparametric model. MIDAS Annual Conference. May 13, 2021. (Presentation)

Kramer, A.M. & **J.M. Drake**. Multi-scale dynamics of white-nose syndrome in North America. NSF Macrosystems PI Meeting. January 13-14, 2021. (Presentation)

Drake, J.M., T.S. Brett, B.I. Epureanu, M.J. Ferrari, É. Marty, P.B. Miller, E.B. O'Dea, A.W. Park & P. Rohani. Dynamics of epidemic transitions. EPIDEMICS 2019, Charleston, South Carolina. December 3, 2019. (Poster)

*Taube, J.C., P.B. Miller & **J.M. Drake**. Who infected whom? Creating a database of transmission trees for comparative outbreak analysis. EPIDEMICS 2019, Charleston, South Carolina. December 3, 2019. (Poster)

Drake, J.M. Analytics for anticipating and responding to infectious disease outbreaks. *Pandemic Prediction and Forecasting Science & Technology Working Group*. September 10, 2019. (Invited presentation)

Drake, J.M. Analytics for anticipating and responding to infectious disease outbreaks. *2019 Global Health Summit – One Health in Action*. American Veterinary Medical Association Convention, Washington D.C. August 5, 2019. (Invited presentation)

Drake, J.M. AEROnaut: software for data-driven interactive analysis of epidemic transitions. 2019 MIDAS Network Meeting. May 21, 2019. (Presentation)

Bock, S., R. Lowers, T. Rainwater, P. Wilkinson, E. Stolen, S. Weiss, **J.M. Drake** & B. Parrott. Ecological drivers of nest temperature variation in the American alligator: predicting the impact of future climatic scenarios. Oral Presentation. Palmetto Alligator Research and Management Symposium. April 19, 2019. (Presentation)

Han, B.A., S.P. Maher, **J.M. Drake** & J.P. Schmidt. Optimizing surveillance for Ebola virus spillover across space, seasons, and species. American Geophysical Union. December 10, 2018. (Presentation)

Miller, P.B., *K. Houck, C.C. Whalen & **J.M. Drake**. Modeling age-targeted interventions for tuberculosis in India. National Science Foundation National Research Traineeship annual meeting, Washington D.C. September 2018. (Poster)

Richards, R.L., E.A. Archie, **J.M. Drake** & V.O. Ezenwa. Spatial structure in disease transmission across a community: Using species distribution models to map wildlife disease. ESA Annual Conference, New Orleans, Louisiana. August 8, 2018. (Presentation)

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)

*Krishnaswamy, A. & **J.M. Drake**. Outbreak spreading: Using gradient boosting machines to predict the chance an incipient outbreak will spread. University of Georgia Center for Undergraduate Research Opportunities Symposium. April 9, 2018. (Presentation)

*Harris, M. & **J.M. Drake**. Spatial early warning signals of malaria elimination in Haiti. University of Georgia Center for Undergraduate Research Opportunities Symposium. April 9, 2018. (Presentation)

E.B. O'Dea, T.S. Brett, **J.M. Drake**, A.W. Park, E. Marty, P. Miller, P. Rohani. Pros and cons of slowing-down based indicators of infectious disease emergence and eradication. MIDAS Network Meeting. Bethesda, Maryland. April 4, 2018.

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. Socioepidemi-

ology 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)

Kaul, R.B., G. Righi, & **J.M. Drake**. Noise-induced catastrophic change in ecology. Ecological Society of America. August 10, 2017. (Presentation)

Drake, J.M., J.P. Schmidt, A.W. Park, A.M. Kramer, B. Han & L. Alexander. Early warning systems for spillover of zoonotic pathogens. Ecological Society of America. August 9, 2017. (Presentation)

Park, A.W., M.J. Farrell, J.P. Schmidt, S. Huang, T. Dallas, P. Pappalardo, **J.M. Drake**, P.R. Stephens, R. Poulin, C.L. Nunn, & T.J. Davies. Characterizing parasite generalism illuminates patterns of host-parasite associations. Ecological Society of America. August 7, 2017. (Presentation)

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)

Miller, P.B. & **J.M. Drake**. Early warning signals for detection of emerging infectious diseases in the presence of seasonality and varying rates of emergence. MIDAS Conference, Reston, VA, 23 May 2016. (Poster)

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 phage-E. 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. 13th 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 Math-

ematics. 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. Colón-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 Hespánha, 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 Hespánha, 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. Phylodynamics 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. Ecological 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, Montréal, 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 1620, 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
& LECTURES

Cognitive and behavioral heterogeneity in vaccination decisions: Integrating survey data and transmission models. Pandemic Sciences Institute, University of Oxford. November 28, 2025.

Agency and preference: Attitudes toward vaccination and epidemic risks. Delivered as the *Oliver Smithies Lecture* at Balliol College, University of Oxford. November 27, 2025.

Behavioral foundations for modeling vaccination and the dynamics of infectious diseases. University of Manchester. November 21, 2025.

Empirical foundations for a theory of emerging infectious diseases in a globalized world. University of Manchester, Seminars in the Mathematics of Life Science. November 20, 2025.

Globalization, global change, and emerging infectious diseases. Oxford Martin School, University of Oxford. November 18, 2025.

Attitudes toward routine and pandemic vaccination: Implications for disease dynamics. Centre for Mathematical Modelling of Infectious Diseases, London School of Hygiene and Tropical Medicine. October 30, 2025.

Attitudes toward routine and pandemic vaccination: Implications for disease dynamics. MRC Centre for Global Infectious Disease Analysis, Imperial College London. October 21, 2025.

Global patterns in emerging and re-emerging pathogens. School of Biodiversity, One Health & Veterinary Medicine, University of Glasgow. October 16, 2025.

The science of bird flu: How a rare deadly virus became a global epizootic. UGA@Oxford, Trinity College, University of Oxford. July 28, 2025.

Noise, nonlinearity, and collapse: Rethinking ecological tipping points. University of Oxford. June 19, 2025.

Ecology of a pandemic: Interpreting the ongoing panzootic of highly pathogenic avian influenza. Delivered as the *Oliver Smithies Lecture* at Balliol College, University of Oxford. June 5, 2025.

Spatial interaction models for the spread of species and diseases. Department of Biology, University of Oxford. June 2, 2025.

Growth, globalization, and emerging infectious diseases. London Infection and Ecology Network. Royal Veterinary College, London. April 30, 2025.

Resilience in ecological systems: Triggers, drivers, and the role of noise. Keynote presentation at [Resilience in Complex Systems: Insights Across Disciplines](#). Institute for Advanced Studies, University of Amsterdam. April 16, 2025.

Three ecological thoughts for infectious disease intelligence. Pandemic Sciences Institute, University of Oxford. January 23, 2025.

Anticipating the potential introduction of Japanese encephalitis virus into the United States. Department of Clinical Infection, Microbiology & Immunology, University of Liverpool. January 15, 2025.

Modeling in disease ecology. Scoping workshop: ARS Geospatial and Environmental Epidemiology Research Unit, Mississippi State University. May 21, 2024.

Anticipating tipping points in nature and society. Covenant College. January 18, 2024.

Modeling and analytics for infectious disease intelligence. Department of Biology, Georgia Tech. October 19, 2023.

Predictive modeling for wastewater-based infectious disease surveillance. Committee on Community Wastewater-based Infectious Disease Surveillance. National Academies of Sciences, Engineering, and Medicine. October 6, 2023.

Ecosystems and planetary health. China-U.S. Scientific Engagement: Sustainability and Planetary Health—Key Issues and Possible Solutions, National Academies of Sciences, Engineering, and Medicine, Irvine, California, June 20, 2023. ([Workshop summary](#))

Early warning signals for infectious disease intelligence. Department of Civil & Environmental Engineering, Massachusetts Institute of Technology. May 3, 2023.

Modeling and analytics for infectious disease intelligence. Data-Driven Approaches to Prevent the Next Pandemic Distinguished Speaker Series. School of Public Health and Hariri Institute for Computing and Computational Science and Engineering, Boston University. May 2, 2023.

Real-time compartmental modeling for decision support during outbreaks of novel pathogens. International Forum on Ecology & Evolution of Avian Influenza. March 21, 2023.

Patterns in emerging pathogens of livestock. Symposium on Global Change at the Nexus of Climate, Biodiversity, and Disease. Peter Wall Institute for Advanced Study, University of British Columbia, Vancouver. August 8, 2022.

State of the art in infectious disease modeling. MITRE Corporation. April 19, 2022.

UGA 2022 Charter Lecture. University of Georgia, April 12, 2022.

Early warning signals of emerging infectious diseases. Harvard University, February 4, 2022.

The macroecology of epidemics. Washington State University, School of Biological Sciences. February 7, 2022.

Semi-automated modeling of COVID-19 in the United States. University of Georgia, Statistics Club, State Botanical Garden of Georgia. April 15, 2021.

Semi-automated modeling of COVID-19 in the United States. Huntington University,

Smith Lecture. March 26, 2021.

Semi-automated modeling of COVID-19 in the United States. Imperial College London, Silwood Park. March 4, 2021.

Modeling COVID-19 forecasts for the US by state. The University of Texas at Austin. November 18, 2020.

National Summit – epidemiological modeling and prediction. National Summit on the Science and Technology of Epidemiological Modeling and Prediction. November 12, 2020.

Forecasting emerging infectious diseases: ensuring the U.S. is best positioned to respond to public health threats. Federal Staffers Retreat. September 1, 2020.

Stochastic dynamical model of SARS-CoV-2 transmission in the US. MIDAS Webinar Series. July 31, 2020.

Discussion with undergraduates. UGA Coronavirus Working Group. June 11, 2020.

Ask me anything. UGA Coronavirus Working Group. June 8, 2020.

Critical transitions in ecology and epidemiology. Cary Institute, Millbrook, New York. November 7, 2019.

Behavior, learning & containment of disease outbreaks. University of Georgia, College of Public Health (Pudong CDC Delegation). January 23, 2019.

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

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

Risk analysis for emerging infectious diseases. University of Georgia, College of Public Health (Pudong CDC Delegation). October 26, 2017.

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

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

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

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

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

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

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

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

The ecology of Ebola. Keynote lecture, University of Georgia, College of Veterinary Medicine, Department of Infectious Diseases Annual Retreat. April 10, 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. March 23, 2015.

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

2015.

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

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

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

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

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

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

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

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

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

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

Current problems in forecasting epidemiological transitions. US Department of Health & Human Services Biomedical Advanced Research and Development Authority, Washington D.C. May 2, 2013.

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

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

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

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

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

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

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

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

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

Spread of White-nose syndrome in a heterogeneous spatial network. Oxford University

(Department of Zoology). March 9, 2012.

Spread of White-nose syndrome in a heterogeneous spatial network. University of Cambridge. March 5, 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. May 17, 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. January 20, 2011.

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

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

Early warning signals of extinction in deteriorating environments. Emory University. September 17, 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. June 2, 2010.

Population dynamics of West Nile virus in New York City University of Michigan, Center for the Study of Complex Systems. April 19, 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. October 22, 2009.

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

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

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

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

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

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

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

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

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

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

February 9, 2006.

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

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

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

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

Computational approaches to ecological forecasting: Disease outbreaks and species re-distribution. Washington University. November 4, 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 analysis. 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.

FELLOWSHIPS & AWARDS

*Oliver Smithies Fellow, Balliol College (2025); *Fellow of the Ecological Society of America (2020); Southeastern Conference Academic Leadership Development Program Fellow (2019); *Fellow of the American Association for the Advancement of Science (2018); 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

**Indicates
national or
international
significance*

(1996); Buffalo Foundation Scholarship (1997); Covenant College Instrumental Music Scholarship (1996-1998); Maryland Saltwater Sportfisherman's 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

Nicholas Adam (PhD, expected 2028)

Abdul Ali (PhD, expected 2028)

Anna Willoughby (PhD, expected 2026)

Joy Vaz (MS, University of Georgia, Ecology; 2021)

Thesis: *Parasite, Host, and Environmental Traits Predict the Zoonotic Risk of Protozoan Parasites*

Reni Kaul (PhD, University of Georgia, Ecology; 2021)

Thesis: *Bringing Theory to Life: Noise-induced Transitions*

Robbie Richards (PhD, University of Georgia, Ecology; 2021)

Thesis: *The Effects of Predators on Parasites in their Prey*

Paige Miller (PhD, University of Georgia, Ecology; 2020)

Thesis: *Social Structure, Contact Networks, and Spread of Respiratory Infections*

Michelle Evans (PhD, University of Georgia, Ecology; 2020)

Thesis: *An Integrative Approach to Mosquito-borne Disease in Urban Areas*

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 currassavica*

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

Ying Qian (PhD, University of Georgia, Biomedical Engineering; Thesis advisor: H. Li.)

Katie Schroeder (PhD, University of Georgia, Ecology; Thesis advisor: A. Strauss)

Ishaan Dave (PhD, University of Georgia, Department of Epidemiology & Biostatistics; Thesis advisor: M. Hallow, 2023)

Deven Gokhale (PhD, University of Georgia, Ecology; Thesis advisor: P. Rohani, 2022)

John Vinson (PhD, University of Georgia, Ecology; Thesis advisor: A. Park, 2020)

Molly Fisher (PhD, University of Georgia, Ecology; Thesis advisor: J. Gittleman, 2018)

Chao Song (PhD, University of Georgia, Ecology; Thesis advisor: F. Ballantyne, 2018)

Elise Krueger (MS, University of Georgia, Ecology; Thesis advisor: F. Ballantyne, 2018)

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)

EXTERNAL THESES REVIEWED Subhendu Bhandary (PhD, Indian Institute of Technology Ropar; Thesis advisor: P. Dutta, 2023)

POSTDOCTORAL ASSOCIATES

Kerri-Ann Anderson (2024 - 2025)	Eamon O'Dea (2015 - 2021)
Mozzamil Mohammed (2024 - 2025)	Chris Dibble (2015 - 2016)
Anurag Sau (2022 - 2024)	Kimmy Kellett (2015)
Sukanta Sarkar (2022 - 2024)	Niles Johnson (2012)
Alpha Forna (2021 - 2026)	Barbara Han (2011 - 2014)
Kaniz Fatema Nipa (2021 - 2022)	Suzanne O'Regan (2011 - 2013)
Kyle Dahlin (2020 - 2023)	John Robinson (2011)
John Vinson (2020 - 2022)	Heather Barton (2010 - 2012)
Cecilia Sánchez (2020)	Sean Maher (2010 - 2011)
Andrew Tredennick (2018 - 2019)	Krisztian Magori (2007 - 2009)
Elijah Carter (2016 - 2018)	Blaine Griffen (2007 - 2008)

TEACHING

Senior Seminar (ECOL 4950)
Fall 2006, Spring 2013, Spring 2022, Spring 2023, Spring 2024

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, Fall 2018, Fall 2019, Fall 2022

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, Fall 2018, Fall 2019, Fall 2020, Fall 2021, Fall 2022, Fall 2023, Fall 2024

First Year Odyssey Seminar: Pandemic Science (FYOS 1001)
Spring 2022

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 I (ECOL 8510)
Fall 2020

Fundamentals of Disease Biology II (ECOL 8520)
Spring 2017

Interdisciplinary Problem-solving in Infectious Disease Ecology (ECOL 8530)
Spring 2020, Spring 2021

Computational Workshop (ECOL 8540)
Summer 2017, Summer 2018, Summer 2019, Summer 2020

Global Change and Emerging Infectious Diseases (ECOL 2300)
Spring 2023

GradFIRST (GRSC 7001)
Spring 2023, Fall 2023, Fall 2024

Statistical Reasoning (ECOL 8910)
Fall 2024

Vertically Integrated Projects for Research (VIPR 2601)
Fall 2024, Spring 2025, Fall 2025, Spring 2026

Ecology (ECOL 3500)
Spring 2026

WORKSHOPS

Bridging Theory and Practice in Infectious Disease Modelling: From Data to Policy, Center for Mathematical and Epidemiological Research, Blantyre, Malawi (online), December 18, 2025 (Instructor for module “Data, parameter estimation, and model fitting”)

Bridging Theory and Practice in Infectious Disease Modelling: From Data to Policy, Center for Mathematical and Epidemiological Research, Blantyre, Malawi (online), December 18, 2025 (Instructor for module “How to write a scientific paper: Fifteen steps”)

MIDAS Trainee Network, Research Storytelling Series III. September 25, 2025 (“How to write a strong manuscript”)

Division of Global Migration Health, US Centers for Disease Control & Prevention, Atlanta, Georgia. January - August, 2024 (“Data science for decision-makers”)

Center for Surveillance, Epidemiology, and Laboratory Services, US Centers for Disease Control & Prevention, Atlanta, Georgia. January 4 - March 17, 2022 (“Mathematical models of infectious diseases”)

National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, US Centers for Disease Control & Prevention, Atlanta, Georgia. August 9-13, 2021 (“Mathematical models of infectious diseases”)

11th Summer Institute in Statistics and Modeling of Infectious Diseases, University of Washington, Seattle, Washington. July 8-10, 2019 (Instructor for module “Mathematical models of infectious diseases”)

3rd IDEAS Computational Modeling Workshop, University of Georgia, Athens, Georgia. May 13-15, 2019 (Module 1: Introduction to scientific programming, Instructor)

3rd IDEAS Computational Modeling Workshop, University of Georgia, Athens, Georgia. May 15-17, 2019 (Module 2: Mathematical models of infectious diseases, Instructor)

10th Summer Institute in Statistics and Modeling of Infectious Diseases, University of Washington, Seattle, Washington. July 9-11, 2018 (Instructor for module “Mathematical models of infectious diseases”)

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

9th 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”)

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

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

8th 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”)

7th 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”)

6th 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”)

5th 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)

4th 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)

3rd 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)

2nd 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)

1st 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”)

PUBLIC ACTIVITIES & OUTREACH Webinar, “Modeling Infectious Diseases of Poultry”, Georgia Poultry Laboratory Network, UGA’s Poultry Diagnostic Research Center (October 21, 2024)

CEID In-Person Meeting, “Infectious Diseases of Poultry”, Elanco, Georgia Poultry Laboratory Network, UGA’s Department of Poultry Science, UGA’s Poultry Diagnostic Research Center (August 20, 2024)

CEID In-Person Meeting, “Infectious Diseases Intelligence: The Science of Predicting Pandemics”, Encephalitis International (July 18, 2024)

Webinar, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, Merck Animal Health (May 23, 2024)

CEID In-Person Meeting, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, Ceva Animal Health (May 14, 2024)

Webinar, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, U.S. Poultry & Egg Association (March 28, 2024)

Lecture to students, “Medical impacts of climate change”, Gwinnett School of Mathematics, Science, and Technology (March 20, 2024)

Continuing Education Unit, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, Georgia Pest Control 2024 Spring Vector Management Academy (March 13, 2024)

Webinar, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, Encephalitis International (March 12, 2024)

Webinar, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, Ceva Animal Health (February 27, 2024)

Webinar, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, USDA APHIS (February 13, 2024)

Webinar, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, Rollins Pest Control (February 6, 2024)

Webinar, “Modeling & Analytics for Infectious Disease Intelligence”, Georgia Institute of Technology (October 19, 2023)

Webinar, “Future of Data Analysis, Visualization, & Integration in Wastewater Surveillance”, NAS Committee on Community Wastewater-based Infectious Disease Surveillance (October 6, 2023)

Webinar, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, Atlanta Braves (April 10, 2023)

Webinar, “Meso-scale Infectious Disease Modeling”, Global Infectious Disease Intelligence Consortium (March 28, 2023)

Webinar, “Spillover Risk of Pathogenic Bacteria from Wild Mammals into Pigs”, Swine Health Information Center (September 22, 2022)

Webinar, “Developing a Japanese Encephalitis Virus (JEV) Spatial Spread Model for Industry”, Global Infectious Disease Intelligence Consortium (July 18, 2022)

Presentation, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, Boehringer Ingelheim Global Innovation Team, University of Georgia Innovation Hub (July 13, 2022)

Webinar, “Deep Dive into Spatial Interaction Models”, Environmental Health Institute, Singapore (July 11, 2022)

Webinar, “Deep Dive Into Spatial Interaction Models”, Global Infectious Disease Intelligence Consortium (July 11, 2022)

Webinar, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, Kleinfelder (May 5, 2022)

Webinar, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, Atlanta Braves (May 2, 2022)

Webinar, “State of the Art in Infectious Disease Modeling”, Global Infectious Disease Intelligence Consortium (February 16, 2022)

Webinar, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, Center for Global Health Innovation (February 14, 2022)

Webinar, “Pluralistic Modeling of Infectious Diseases,” Global Infectious Disease Intelligence Consortium (February 3, 2022)

Webinar, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, Delta Airlines (January 12, 2022)

Panelist, “[Preventative Warning Systems For Infectious Diseases: Bridging Public & Environmental Health](#)”, University College London Warning Research Centre (December 7, 2021)

Webinar, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, University College of London, Warrington Research Centre (December 7, 2021)

Webinar, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, Deloitte (December 6, 2021)

Webinar, “Estimate the Spillover Risk of Pathogenic Bacteria from Wild Mammals into Pigs”, Swine Health Information Center (December 3, 2021)

Webinar, “Infectious Disease Intelligence: The Science of Predicting Pandemics”, Moderna (October 26, 2021)

Webinar, “Infectious Disease Intelligence: Predicting the Next Pandemic”, Kimberly-Clark (August 5 & September 2, 2021)

Webinar, “A Data-Driven Horizon Scan of Potential Bacterial Pathogens of Livestock”, Swine Health Information Center (July 30, 2021)

Webinar, “A Data-Driven Horizon Scan of Potential Bacterial Pathogens of Livestock”, Swine Health Information Center (March 26, 2021)

Webinar, “[Infectious Disease Intelligence: Predicting the Next Pandemic](#)”, University Industry Demonstration Partnership (March 24, 2021)

Webinar, “How the CEID Can Assist the Georgia Restaurant Association”, Georgia Restaurant Association (March 12, 2021)

Webinar, “A Data-Driven Horizon Scan of Potential Bacterial Pathogens of Livestock”, Swine Health Information Center (March 4, 2021)

Panelist, “Data-Intensive Machine Learning and Modeling for Pandemic Preparedness”, NSF Workshop on Predictive Intelligence for Pandemic Prevention (February 16-17, 2021)

Webinar, “A Data-Driven Horizon Scan of Potential Bacterial Pathogens of Livestock”, Boehringer Ingelheim Animal Health (February 11, 2021)

Webinar, “Global Infectious Disease Intelligence Consortium Webinar”, The National Restaurant Association (December 3, 2020)

Panelist, “Model Capabilities,” Summary Report of the National Summit on the Science and Technology of Epidemiological Modeling and Prediction (December 2020)

Webinar, “Infectious Disease Models: How They Can Assist the Refrigerated Foods Association”, Refrigerated Foods Association (November 18, 2020)

Webinar, “Introduction to the Odum School of Ecology and the Center for the Ecology of Infectious Diseases”, Aflac (November 17, 2020)

Webinar, “Global Infectious Disease Intelligence Consortium Roundtable Discussion”, Charley and Sons & The Kraft Group (October 22, 2020)

Webinar, “Introduction to the Odum School of Ecology and the Center for the Ecology of Infectious Diseases”, Delta Airlines (October 2 & November 5, 2020)

Panelist, [COVID-19 Town Hall with Jonathan Wallace](#) (September 29, 2020)

Discussion, “COVID-19 and Its Impact on the Port Authority of New York and New Jersey”, Port Authority of New York and New Jersey (September 15, 2020)

Panelist, “Diversity and inclusion in the Odum School of Ecology”, UGA Odum School of Ecology 50:10 Celebration (January 13, 2018)

Presentation, “Disease ecology in the Odum School of Ecology”, UGA Odum School of Ecology 50:10 Celebration (January 13, 2018)

Public lecture, “Mining Ecosystem Data for Prediction of Infectious Disease Outbreaks: The State of our Science”, *Association of Ecosystem Research Centers and American Institute of Biological Sciences: Science Briefing for Policymakers*, Washington D.C. (October 24, 2017)

Public lecture, “Infectious diseases on a changing planet: How ecology drives epidemics”, Reynolds Plantation, Greensboro, Georgia (July 16, 2015)

TEDxUGA, “What Jenga Can Teach Us About Epidemics”, Athens, Georgia (March 16, 2015)

Panelist, “A Conversation about Ebola” public discussion at the UGA Health Sciences Campus (September 25, 2014)

APHIS-2006-0011 Importation of Plant for Planting; Establishing a Category of Plant for Planting Not Authorized for Importation Pending Pest Risk Analysis, Public Comment (with R. Keller, D. Finnoff, & D. Lodge) (October 2009)

Letter of support to Paul Stolen and Minnesota Department of Natural Resources regarding Risk and Consequence Analysis Focused on Biota Transfers Potentially Associated with Surface Water Diversions Between the Missouri River and Red River Basins by Greg Linder et al. (March 21, 2006)

APHIS-2005-0020 Proposed rules 7 CFR Part 319 – Nursery Stock Regulations, Public Comment (with R. Keller, J. Bossenbroek, & D. Lodge) (April 2004)

Increase Your Leadership on Global Warming, open letter to California Governor Schwarzenegger and California legislators from California scientists, signatory (March 2005)

USDA040371 Noxious Weeds; Notice of Availability of Petitions To Regulate Caulerpa, Public Comment (with J. Bossenbroek & R. Keller) (December 2004)

Scientists Statement: Restoring Scientific Integrity in Policy Making, signatory (September 2004)

USCG200110486 Standards for Living Organisms in Ship’s Ballast Water Discharged in U.S. Waters, Public Comment (with D. Lodge) (December 2003)

Scientists’ Call to Action on Invasive Species: Gifts To The Nation, signatory (November 2003)

Not in Our Name Statement of Conscience, signatory (November 2002)