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EMPLOYMENT

2003 - 2004	<i>Research Fellow</i>	Consortium for Conservation Medicine
2004 – 2008	<i>Sr. Research Scientist</i>	Consortium for Conservation Medicine
2003 – 2009	<i>Adj. Research Scientist</i>	Columbia University
2005 – present	<i>Research Associate</i>	Smithsonian Migratory Bird Center
2008 – present	<i>Research Associate</i>	Consortium for Conservation Medicine
2008 – 2013	<i>Assistant Professor</i>	University of California, Santa Cruz
2014 – present	<i>Associate Professor</i>	University of California, Santa Cruz

EDUCATION

Ph.D. Zoology, University of Wisconsin-Madison, June 2003
Dissertation: “The evolution of resistance to malaria in Hawaiian honeycreepers”
M.S. Mechanical Engineering, Massachusetts Institute of Technology, 1997
Thesis: “Lean Manufacturing Principles: A Comprehensive Framework for Improving Production Efficiency”
B.S. Mechanical Engineering, B.A. Philosophy, University of California, Los Angeles, 1995,
Magna cum laude

HONORS, AWARDS, BOARDS

2008 American Ornithologists Union, Ned K. Johnson Young Investigator’s Award
2009 American Ornithologists Union, Elected Member
2018 Pacific Rim Conservation, Scientific Advisory Council

PUBLICATIONS

(for pdfs see: <http://kilpatrick.eeb.ucsc.edu/>; [Google scholar profile](#); On Web of Science search for: (Kilpatrick, AM NOT (Kilpatrick, Adina M or Kilpatrick, Alastair M))

Graduate Students in or affiliated with my lab are in italics

96. Drees, K.P., J.M. Lorch, S.J. Puechmaille, K.L. Parise, G. Wibbelt, *J.R. Hoyt*, K. Sun, A. Jargalsaikhan, M. Dalannast, J.M. Palmer, D.L. Lindner, *A.M. Kilpatrick*, T. Pearson, P.S. Keim, D.S. Blehert, J.T. Foster. **2017**. Phylogenetics of a Fungal Invasion: Origins and Widespread Dispersal of White-Nose Syndrome. **mBio** 8 (6) e01941-17
95. Gurley, E.S., S.T. Hegde, K. Hossain, H.M.S. Sazzad, M.J. Hossain, M. Rahman, Y. Sharker, H. Salje, M.S. Islam, J.H. Epstein, S.U. Khan, *A.M. Kilpatrick*, P. Daszak, S.P. Luby. **2017**. Convergence of humans, bats, trees, and culture in Nipah virus transmission, Bangladesh. **Emerging Infectious Diseases** 23:1446-53
94. Evans, B.S., *A.M. Kilpatrick*, A.H. Hurlbert, P.P. Marra. **2017**. Dispersal in the urban matrix: Assessing the influence of landscape permeability on the settlement patterns of breeding songbirds. **Frontiers in Ecology and Evolution** 5:63

93. Young, H. S., C. L. Wood, A.M. Kilpatrick, K. D. Lafferty, C. L. Nunn, and J. R. Vincent. 2017. Conservation, biodiversity and infectious disease: scientific evidence and policy implications. **Philosophical Transactions of the Royal Society B-Biological Sciences** 372: 20160124
92. Kilpatrick, A.M., D.J. Salkeld, G. Titcomb, M.B. Hahn. 2017. Conservation of biodiversity as a strategy for improving human health and well-being **Phil. Trans. Roy. Soc. B** 372: 20160131
91. Paull, S.H., D.E. Horton, M. Ashfaq, D. Rastogi, L.D. Kramer N.S. Diffenbaugh, A.M. Kilpatrick. 2017. Drought and immunity determine the intensity of West Nile virus epidemics and climate change impacts **Proc. Roy. Soc. B** 284: 20162078
90. Frick, W.F., *T.L. Cheng*, *K.E. Langwig*, *J.R. Hoyt*, A.F. Janicki, K.L. Parise, J.T. Foster, A.M. Kilpatrick. 2017. Pathogen dynamics during invasion and establishment of white-nose syndrome explain mechanisms of host persistence **Ecology** 98 (3) 624-631
89. *de Wit, L.A.*, B. Tershy, D.A. Croll, K. Newton, D. Spatz, N. Holmes, A.M. Kilpatrick. 2017. Socioeconomic and ecological factors influencing zoonotic diseases transmitted by introduced mammals on islands **Am. J. Tropical Medicine & Hygiene** 96 (3) 749 - 757
88. Kilpatrick, A.M., A.D.M. Dobson, T. Levi, D.J. Salkeld, A. Swei, H.S. Ginsberg, A. Kjemtrup, K.A. Padgett, P.M. Jensen, D. Fish, N.H. Ogden, M.A. Diuk-Wasser. 2017. Lyme disease ecology in a changing world: consensus, uncertainty, and critical gaps for improving control. **Phil. Trans. Roy. Soc. B** 372: 20160117
87. *Langwig, K.E.*, *J.R. Hoyt*, K.L. Parise, Frick, W.F., J.T. Foster, A.M. Kilpatrick. Resistance in persisting bat populations after white-nose syndrome invasion. 2017. **Phil. Trans. Roy. Soc. B** 372 (1712), 20160044
86. *Cheng, T.L.*, H. Mayberry, L.P. McGuire, *J.R. Hoyt*, H. Nguyen, K.L. Parise, J.T. Foster, C.K.R. Willis, A.M. Kilpatrick, W.F. Frick. 2017. Efficacy of a probiotic bacterium to treat bats affected by the disease white-nose syndrome. **J. Applied Ecology** doi: 10.1111/1365-2664.12757
85. Nguyen, D.D., A.V. Melnik, N. Koyamab, X. Lu, M. Schorn, J. Fang, K. Aguinaldo, T.L. Lincecum, M.G. K. Ghequire, V.J. Carrion, *T.L. Cheng*, B.M. Duggan, J.G. Malone, T.H. Mauchline, L.M. Sanchez, A.M. Kilpatrick, J.M. Raaijmakers, R. De Mot, B.S. Moore, M.H. Medema, P.C. Dorrestein. 2016. Indexing the *Pseudomonas* metabolome enabled the discovery of poaeamide B and the bananamides. **Nature Microbiology** 2: 16197
84. Avena, C., L. Parfrey, J. Leffa, H. Archer, W.F. Frick, *K.E. Langwig*, A.M. Kilpatrick, K. Powers, J.T. Foster, V. McKenzie. 2016. Deconstructing the bat skin microbiome: influences of the host and the environment **Frontiers of Microbiology** 7: 1753
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81. Costa, D.P., L. Schwarz, P. Robinson, R.S. Schick, P.A. Morris, R. Condit, D.E. Crocker, A.M. Kilpatrick. 2016. A bioenergetics approach to understanding the population consequences of disturbance: Elephant seals as a model system. **Advances in Experimental Medicine and Biology** 875:161-169

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75. *Janicki, A.F.*, W.F. Frick, A.M. Kilpatrick, K.L. Parise, J.T. Foster, G.F. McCracken. **2015**. Efficacy of Visual Surveys for White-Nose Syndrome at Bat Hibernacula. **PLoS One** 10(7): e0133390
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66. Voyles, J., A.M. Kilpatrick, J.P. Collins, M.C. Fisher, W.F. Frick, H. McCallum, C.K. R. Willis, D.S. Blehert, K.A. Murray, R. Puschendorf, E.B. Rosenblum, B.M. Bolker, T.L. Cheng, K.E. Langwig, D.L. Linder, M. Toothman, M.Q. Wilber, C.J. Briggs. **2015**. Beyond too little, too late: Managing emerging infectious diseases requires international action **Ecohealth** 12 404-7
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57. Bogich, T.L., S. Funk, T.R. Malcolm, N. Chhun, J.H. Epstein, A.A. Chmura, A.M. Kilpatrick, J.S. Brownstein, O.C. Hutchison, C. Doyle-Capitman, R. Deaville, S.S. Morse, A.A. Cunningham, P. Daszak. **2013**. Using network theory for identifying disease outbreaks of unknown origin. **Journal of the Royal Society Interface** 10 20120904

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55. Morales-Betoulle, M.E., N. Komar, N. Panella, D. Alvarez, M.R. López, J.L. Betoulle, S.M. Sosa, M.L. Müller, A.M. Kilpatrick, R.S. Lanciotti, B.W. Johnson, A.M. Powers, C. Córdón-Rosales, Arbovirus Ecology Work Group. **2013**. Ecology of West Nile Virus in a Tropical Ecosystem in Guatemala. **Am J Tropical Medicine & Hygiene** 88(1) 116-126
54. Kilpatrick, A.M., S.E. Randolph. **2012**. Drivers, dynamics, and control of emerging vector-borne zoonotic diseases. **Lancet** 380 (9857) 1946-1955
53. Langwig, K.E., W.F. Frick, J.T. Bried, A.C. Hicks, T.H. Kunz, A.M. Kilpatrick. **2012**. Sociality, density-dependence, and microclimates determine the persistence of populations suffering from a novel fungal disease, white-nose syndrome. **Ecology Letters** 15 (9) 1050-1057
52. Levi, T., A.M. Kilpatrick, M. Mangel, C.C. Wilmers. **2012**. Deer, predators, and the emergence of Lyme disease. **Proceedings of the National Academy of Sciences USA**. 109 (27) 10942–10947
51. Jones, C.J.*, L.P. Lounibos, P.P. Marra, A.M. Kilpatrick* (*corresponding authors). **2012**. Rainfall influences survival of *Culex pipiens* mosquitoes in a residential neighborhood in the mid-Atlantic USA. **Journal of Medical Entomology** 49(3) 467-473
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48. Kunz, T.H., J.T. Foster, W.F. Frick, A.M. Kilpatrick, G.F. McCracken, M.S. Moore, J.D. Reichard, D.M. Reeder, A.H. Robbins. **2011**. White-nose syndrome: an overview of ongoing and future research needs. Pp. 195-209. In: Proceedings of Protection of Threatened Bats at Coal Mines: A Technical Interactive Forum (K.C. Vories, A.H. Caswell, T.M. Price, eds.). USDOJ Office of Surface Mining and Coal Research Center, Southern Illinois University, Carbondale, Illinois.
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40. Vandegrift, K., S.H. Sokolow, P. Daszak, A.M. Kilpatrick (corresponding author). **2010**. Ecology of influenza viruses in a changing world. **Annals of the New York Academy of Science** 1195 (2010) 113–128
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38. Kilpatrick, A.M., C.J. Briggs, P. Daszak. **2010**. The ecology and impact of chytridiomycosis, an emerging disease of amphibians. **Trends in Ecology and Evolution** 25(2) 109-118 (Featured Article)
37. Kilpatrick, A.M., A.P. Dupuis, G.J.J. Chang, L.D. Kramer. **2010**. DNA vaccination of American robins (*Turdus migratorius*) against West Nile virus **Vector-Borne Zoonotic Disease** 10(4) 377-380
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34. Kilpatrick, A.M., C.M. Gillin., P. Daszak. **2009**. Wildlife-livestock conflict: the risk of pathogen transmission from bison to cattle outside Yellowstone National Park. **Journal of Applied Ecology** 46(2) 476-485 (Editor's Choice)
33. Ladeau, S.L., A.M. Kilpatrick, C.A. Calder, P.P. Marra. **2008**. West Nile virus revisited: Consequences for North American ecology. **Bioscience** **58(10)** 937-946
32. Kilpatrick, A.M., Meola, M.A., Moudy, R.M., Kramer, L.D. **2008**. Temperature, viral genetics, and the transmission of West Nile virus by *Culex pipiens* mosquitoes. **PLoS Pathogens** **4(6)** e1000092
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28. Newman, S.H., S. Wright, K., Converse, A.M. Kilpatrick, A.A. Chmura, N. Patel, E. Lammers, P. Daszak. **2007**. Disease associated aquatic bird mortality as an indicator of changing marine ecosystem health: Analysis of a 30-year USA mortality database. **Marine Ecosystem-Progress Series** 352: 299-309

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26. Kilpatrick, A.M., LaDeau, S.L., Marra, P.P. **2007** The ecology and impact of West Nile virus in the Western Hemisphere. **Auk** 124(4):1121–1136
25. Kilpatrick, A.M., L.D. Kramer, M.J. Jones, P.P. Marra, P. Daszak, D.M. Fonseca. **2007**. Genetic influences on mosquito feeding behavior and the emergence of zoonotic pathogens. **Am J Tropical Medicine & Hygiene** 77(4) 667-671
24. Griffing, S.M., A.M. Kilpatrick, L. Clark, P.P. Marra. **2007**. Mosquito landing rates on nesting American robins (*Turdus migratorius*). **Vector-Borne and Zoonotic Diseases** 7(3) 437-443
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22. LaDeau, S.L., A.M. Kilpatrick, P.P. Marra. **2007**. West Nile virus emergence and large-scale declines of North American bird populations. **Nature** (447) 710-713
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20. Kilpatrick, A.M., A.A. Chmura, D.W. Gibbons, R.C. Fleischer, P.P. Marra, P. Daszak. **2006**. Predicting the global spread of H5N1 avian influenza. **Proceedings of the National Academy of Sciences USA** 103 (51) 19368-19373
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18. Kilpatrick, A.M., P. Daszak, M.J. Jones, P.P. Marra, L.D. Kramer. **2006**. Host heterogeneity dominates West Nile virus transmission. **Proceedings of the Royal Society B: Biological Sciences** 273 (1599) 2327-2333
17. Kilpatrick, A.M., L.D. Kramer, M.J. Jones, P.P. Marra, P. Daszak. **2006**. West Nile virus epidemics in North America are driven by shifts in mosquito feeding behavior. **PLoS Biology** 4(4) 606-610
16. Kilpatrick, A.M., P. Daszak, S.J. Goodman, H. Rogg, L.D. Kramer, V. Cedeno, A.A. Cunningham. **2006**. Predicting pathogen introduction: West Nile virus spread to Galápagos. **Conservation Biology** 20 (4): 1224-1231
15. Kilpatrick, A.M., D. LaPointe, C.T. Atkinson, B.L. Woodworth, J.K. Lease, M.E. Reiter, K. Gross. **2006**. Effects of chronic avian malaria (*Plasmodium relictum*) infection on the reproductive success of Hawaii Amakihi (*Hemignathus virens*). **Auk** 123 (3): 764-774
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 10. Kilpatrick, A.M., L.D. Kramer, S. Campbell, E.O. Alleyne, A.P. Dobson, P. Daszak. **2005**. West Nile virus risk assessment and the bridge vector paradigm. **Emerging Infectious Diseases** 11(3) 425-9
 9. Leinwand, I., A.M. Kilpatrick, N. Cole, C.G. Jones, P. Daszak. **2005**. Drivers of Coccidial Infection in Endemic and Introduced Lizards of Mauritius. **Journal of Parasitology** 91(5): 1103-8
 8. Kilpatrick, A.M., Y. Gluzberg, J. Burgett, and P. Daszak. **2004**. A quantitative risk assessment of the pathways by which West Nile virus could reach Hawaii. **Ecohealth** 1(2) 205-209
 7. Marra, P.P., S. Griffing, C.L. Caffrey, A.M. Kilpatrick, R.G. McLean, C. Brand, E. Saito, A.P. Dupuis, L.D. Kramer, R. Novak. **2004**. West Nile virus and wildlife. **Bioscience** 54(5) 393-402
 6. Patz, J.A., P. Daszak, G.M. Tabor, A.A. Aguirre, M. Pearl, J. Epstein, N.D. Wolfe, A.M. Kilpatrick, J. Foufopoulos, D. Molyneux, D.J. Bradley, & Members of the Working Group Land Use Change and Infectious Disease Emergence. **2004**. Unhealthy landscapes: Policy recommendations on land use change and disease emergence. **Environmental Health Perspectives** 112(10): 1092-1098
 5. Hanselmann, R., A. Rodríguez, M. Lampo, L. Fajardo-Ramos, A. A. Aguirre, A.M. Kilpatrick, J. P. Rodríguez, and P. Daszak. **2004**. Presence of an emerging pathogen of amphibians in introduced bullfrogs *Rana catesbeiana* in Venezuela. **Biological Conservation** 120: 115-119
 4. Daszak, P., G.M. Tabor, A.M. Kilpatrick, J. Epstein, R. Plowright. **2004**. Conservation medicine and a new agenda for emerging diseases. **Annals of the New York Academy of Science** 1026: 1-11
 3. Kilpatrick, A.M., A.R. Ives. **2003**. Species interactions can explain Taylor's power law for ecological time series. **Nature** 422: 65-68
 2. Kilpatrick, A.M. **2003**. The impact of thermoregulatory costs on foraging behaviour: a test with American Crows (*Corvus brachyrhynchos*) and eastern grey squirrels (*Sciurus carolinensis*). **Evolutionary Ecology Research** 5: 781-786
 1. Kilpatrick, A.M. **2002**. Variation in growth of brown-headed cowbird (*Molothrus ater*) nestlings and energetic impacts on their host parents. **Canadian Journal of Zoology** 80: 145-153
- Book Review:* Kilpatrick, A.M., T.D. Havlicek, A.R. Ives 2000. An Illustrated Guide to Theoretical Ecology by Ted J. Case, **Quarterly Review of Biology** 75(4) 486-487

PRESS on RESEARCH

(numbers refer to publication # from publications list above)

Television:

ABC News (22,20), Canadian Broadcasting Corporation (20), CBS (18), Discovery Health Hunters Documentary, ABC Earth Documentary

Radio:

NPR(5 times: 53,22,20,17,16), BBC Radio (49,32), EarthSky(34,53), WNYC(49), WAMU(20), CNN Radio(20), KOPT(20), WPKN(8), CBS Radio: Osgood Files(16,8), CBS Radio Chicago (22), CBC Radio (22,72), WCBS (53), Deutschlandfunk (53), Quirks & Quarks (72)

News Services:

Associated Press (22 – with 222 newspapers/news sources publishing the article; 20 - with 169 news sources publishing the article; 34 – with 48 news sources publishing the article), Reuters (22 – with 32 news sources publishing the article; 20 - with 5 news sources publishing the article; 32, with 13 news sources publishing the article)

Peer-based accolades:

Faculty of 1000 Medicine (22, 32), Faculty of 1000 Biology (17, 22, 34, 49, 52), Science Editor's Choice (17), Conservation In Practice (14), J. Applied Ecology Editor's Choice (34)

Periodicals:

New York Times(52,53), National Geographic News(38,35,22,20,18,17), BBC (77), Science(52,22,20,17,16,8), Nature News (72), Nature Reviews Microbiology(17), ScienceNow(53,22,20,17), Science Editor's Choice(17), J. Applied Ecology Editor's Choice (34), JAMA(17,8), Washington Post (22,20,18,17,16), LA Times(22,20,17), Toronto Globe & Mail(22,17), San Francisco Chronicle (32), American Scientist(22,20,17), La Presse(17), Die Zeit(17), New Scientist(35,34,22,20), US News and World Report (49), E-magazine (17,20,22), LiveScience(20), The Daily Green(22), Scientific American(26, 34, 49,52,53), USA Today (53,front page:29), ScienceLine(17,18), Santa Cruz Sentinel (32, 34,49), ScienceDaily (32,49,53), San Jose Mercury News (34,49), Science News (52,53), MSNBC (52), DiscoveryNews(52), Grist (49,32), Texas Climate News (49,32), Earthweek (72), Discovery News (72), CBC.ca (72), Yahoo News (72), EScienceNews (72)

GRANTS >25K**Total - \$18,021,652**

<i>A novel modeling approach for understanding wildlife disease dynamics</i>		Role: co-PI
Australian Research Council	\$414,000	2018-2020
<i>Determining survival strategies for multiple bat species affected by white-nose syndrome</i>		Role: co-PI
US Fish and Wildlife Service	\$177,318	2017-2019
<i>Predicting the evolution of vector-borne disease dynamics in a changing world</i>		Role: co-PI
National Science Foundation	\$2,498,876	2017-2021
<i>Reducing white-nose syndrome impacts through treatment of the environmental reservoir</i>		Role: co-PI
Bat Conservation International/Nature Conservancy	\$42,490	2016-2017
<i>Field trial of a probiotic to protect bats from white-nose syndrome</i>		Role: PI
Bat Conservation International	\$46,000	2015-2016
<i>Field trial of a probiotic to protect bats from white-nose syndrome</i>		Role: PI
US Fish and Wildlife Service	\$49,725	2015-2016
<i>Disease dynamics of white-nose syndrome in an endemic region</i>		Role: Co-PI
US Fish and Wildlife Service	\$154,313	2015-2017
<i>Investigating mechanisms of host tolerance in persisting populations of <i>Myotis lucifugus</i> in the Northeastern USA</i>		Role: Co-PI
US Fish and Wildlife Service	\$29,954	2015-2017

<i>New genomic resources and models for predicting evolving vector-borne disease dynamics in a changing world</i>		Role: Co-PI
National Science Foundation	\$130,000	2015-2016.
<i>Studies of Host-Pathogen Interactions between Geomyces destructans and Bats</i>		Role: Co-PI
US Fish and Wildlife Service	\$236,105	2012-2014
<i>Pre- and Post-White Nose Syndrome Survival of Bats Assessed using Passive Transponders on a Continental Scale</i>		Role: Co-PI
US Fish and Wildlife Service	\$173, 919	2012-2014
<i>Antifungal skin microbes as tools for WNS management</i>		Role: Co-PI
US Fish and Wildlife Service	\$195,536	2012-2014
<i>Modeling anthropogenic effects in the spread of infectious diseases</i>		Role: Co-PI
NIH(NIGMS)/National Science Foundation	\$1,600,000	2011-2015
<i>Wetlands in a Working Landscape: Links Between Landowner Decisions, Climate, Disease Ecology, and Metapopulation Dynamics</i>		Role: Co-PI
National Science Foundation	\$1,250,000	2011-2015
<i>The effect of sociality on transmission and spread of a multi-host pathogen</i>		Role: PI
National Science Foundation	\$1,999,999	2011-2016
<i>The Impact of Climate and Climate Change on West Nile Virus Transmission</i>		Role: PI
National Institute of Health/NIAID	\$2,005,318	2010-2014
<i>Environmental Perturbations and Population Response of the Northern Elephant Seal</i>		Role: Co-PI
Office of Naval Research	\$236,137	2010-2013
<i>A predictive model for of the global spread of H5N1 avian influenza</i>		Role: Co-PI
National Institute of Health/Fogarty International Center	\$150,000	2008-2009
<i>Anthropogenic Drivers of Emerging Infectious Diseases</i>		Role: Co-PI
National Science Foundation	\$749,945	2008-2011
<i>The Ecology, Emergence and Pandemic Potential of Nipah virus in Bangladesh</i>		Role: Co-PI
National Institute of Health/Fogarty International Center	\$2,498,829	2008-2013
<i>Relating Behavior and life functions to populations level effects in marine mammals: An empirical and modeling effort to develop the PCAD model</i>		Role: Co-PI
OGP Exploration & Production Sound and Marine Life	\$1,039,999	2008-2010
<i>Predicting spatial variation in West Nile virus transmission</i>		Role: PI
National Science Foundation/National Institute of Health	\$2,263,188	2006-2011
<i>A Quantitative Risk Assessment of Transmission from Bison and Elk to Cattle</i>		Role: PI
Wilburforce Foundation	\$55,000	2004-2005

POLICY APPLICATIONS OF RESEARCH

- Expert panelist for The Characteristics and Traits of Pandemic Pathogens Working Group. Center for Health Security. 2017.
- Lead author of white paper: A protocol for the development of treatments and management strategies for white nose syndrome. For the US Fish and Wildlife Service, 2014
- Expert panelist for Endangered Species listing for northern long-eared bat (*Myotis septentrionalis*); Publication #53 used in assessment. 2014
- Invited Expert for U.S. Department of Defense (Defense Treat Reduction Agency) and Georgia National Center for Disease Control and Public Health International Technical Meeting on Microbial Ecology of Environmental Pathogens. 2014

- Expert panelist for Endangered Species listing for little brown bat (*Myotis lucifugus*); Publication #53 used in assessment. 2013
- Member of Epidemiological and Ecological Research Working Group of the USFWS White-Nose Syndrome Response Group 2012, 2013
- Contributor to Assessment of Climate Change in the Southwest United States: A Technical Report Prepared for the U.S. National Climate Assessment, for the South West Region 2012
- Invited expert panelist for “Bat Population Monitoring and Modeling Workshop” organized by the USFWS aimed to develop a North American monitoring program for bat populations. April, 2012
- Invited expert panelist to review the state of Massachusetts’ “Arbovirus Surveillance and Response Plan as it pertains to Eastern Equine Encephalitis”, organized by the Massachusetts Department of Public Health, April 2012
- Invited expert for the Institute of Medicine’s Forum on Microbial Threats. 2011.
- Invited Expert Witness for US Intelligence Community conference entitled: “Avian Influenza: Threat to Homeland Security”. Based on Pub. #20. Hosted by the Central Intelligence Agency, Armed Forces Medical Intelligence Center, Defense Intelligence Agency, September 5th, 2007
- Testified before Congress in Congressional hearing entitled “Current Challenges in Combating the West Nile Virus”, October 6, 2004 (Committee on Government Reform, Subcommittee on Energy Policy Natural Resources and Regulatory Affairs)
- Publication #32 used by the U.S. Global Change Research Program in assessment of climate change impacts on human health.
- Publication #20 used by USDA and Government Accountability Office to revise H5N1 avian influenza surveillance/management plans and in a Congressional Research Report for Congress
- Publication #10 used by >6 county health departments in USA, and in Canada’s West Nile virus preparedness and prevention plan
- Publication #17 used in Suffolk County Vector Control & Wetlands Management Long Term & Environmental Impact Plan
- Publication #16 used to enforce aircraft disinsection (killing of hitchhiking insects) in Galapagos, and in IUCN’s development of a long term vision initiative for Galapagos Islands, a World Heritage site.
- Publication #8 used by task force in preventing the introduction of West Nile virus to Hawaii.

EDITORIAL EXPERIENCE

Review Panels for Granting Agencies: NSF (Ecology and Evolution of Infectious Diseases 2009, 2015; Graduate Research Fellowship 2015), NIH (Climate and Health Panel 2014, Vector Biology Panel 2014, Infectious Disease, Reproductive Health, and Asthma/Pulmonary Conditions 2014, Contract Review for Division of Microbiology and Infectious Diseases of NIAID 2014 (invited), International Research in Infectious Diseases, 2016, Genetic Variation and Evolution 2016 (invited), ASCEND Center for Biomedical Research 2016, Ad Hoc Study Section for K Career Awards 2015 (invited), NIGMS SCORE Awards, 2015 (invited),) *Ad hoc reviewer of grants (Agencies):* National Science Foundation (DEB, CAREER awards), NIH, Natural Sciences and Engineering Research Council of Canada, Czech National Science Foundation, Leverhulme Trust, UK Medical Research Council

Editorial Board (Journals) – Ecology (2013-present), Ecological Monographs (2013-present), Ecohealth (2003-pres.), Vector-Borne and Zoonotic Diseases (2010-pres.)

Book reviews (Publishers) - Springer

Award reviewer: Macarthur Award, Packard Fellow

Guest Editor: PLoS Pathogens, PLoS Biology

Journals (198 manuscripts reviewed from 2006-2013, 19 in 2014; 12 in 2015) – Nature, Science, J. American Medical Association, Ecology Letters, PLoS Biology, PNAS, Proceedings of the Royal Society B, Ecology, PLoS Pathogens, Nature Communications, Nature Climate Change, Nature Knowledge, Emerging Infectious Diseases, Conservation Biology, Trends in Ecology and Evolution, PLoS Comp. Biol., American Naturalist, Ecology, Trends in Parasitology, Biological Conservation, PLoS One, Interface, J. Applied Ecology, Ecological Applications, J. Animal Ecology, Frontiers in Ecology and Evolution, Am. J. Tropical Medicine and Hygiene, Future Virology, Vector-borne and Zoonotic Diseases, Molecular Ecology, Parasites and Vectors, Behavioral Ecology, J. Thermal Biology, Acta Theriologica, Journal of Wildlife Diseases, Oikos, Oecologia, Ecohealth, Theoretical Population Biology, Theoretical Biology and Medical Modeling, Functional Ecology, J. of Insect Science, Ibis

MENTORING

Graduate Students

In Progress: Tony Kovach (PhD, UCSC)

Completed: Joseph Hoyt (PhD, UCSC, 2017), Kate Langwig (PhD, UCSC, 2015), Tina Cheng (PhD, UCSC, 2017), Jordan Ruybal (PhD, UCSC, 2016), Katherine McClure (PhD, UCSC, 2017), Will Janousek (MS, UCSC, 2012), Andres Gomez (PhD, Columbia University, '08), Ryan Peters (MS, George Mason University '09), Cathy Tuglus (MS, Columbia University '04)

Undergraduate Students: Michael Kohatsu (BS honors thesis, UCSC, '12), Kile Bigbee (BS, UCSC, '12), Violeta Jimenez (BS honors, Columbia University '06), Alexandria Vickery (BS, honors thesis UCSC, '12)

Post-Docs: Susanne Sokolow (2008-2009); Lisa Schwarz (2008-2011); Kyrre Kausrud (2010-2012); Sara Paull (2013-2015)

CONFERENCE SERVICE, WORKSHOPS, WORKING GROUPS

- Symposium at Ecological Society of America conference. 2016. Advancing Science to Conserve Species Threatened by Disease.
- Invited group leader Biodiversity, Conservation and Infectious Disease. 2015. TRICEM.
- Lead organizer for Ignite session ESA 2014. Theory vs. empiricism in the advancement of science
- NCEAS Working group 2012-2013: Fungal pathogens and disease-induced extinction: Are fungal diseases different?
- Science Committee, Wildlife Disease Association Conference, 2012
- Young Investigators Award Review Panelist, American Society of Tropical Medicine and Hygiene Conference, 2011, 2012, 2013
- Abstract review committee for the Ecohealth 2010 international conference
- Presider for Disease Ecology Session, Ecological Society of America conference 2007
- Judge for Buell/Braun Student presentations, ESA 2007
- Abstract review committee for the Society for Conservation Biology 2004

PRESENTATIONS

Invited talks

- *Georgetown University*. 2017. Climate change, land use, and the ecology of West Nile virus transmission.
- *Zika Workshop UC Berkeley*. 2016. Current state of Zika epidemic modeling
- *University of California, Santa Barbara*. 2016. Host-pathogen interactions: climate, evolution, and management.
- *USFWS White-nose treatment workshop*. 2016. Field trial of *Pseudomonas fluorescens* and chitosan to protect *Myotis lucifugus* from white-nose syndrome
- *Ecological Society of America*. 2016. Management of species threatened by disease: Balancing reductions in extinction risk with impacts on evolutionary rescue.
- *USFWS White-nose treatment workshop*. 2015. A protocol for the development of treatments and management strategies for white nose syndrome.
- *Ecological Society of America*. 2015. Cause vs. correlation in disease ecology: Disentangling the effects of biodiversity on disease from other effects of anthropogenic change
- *Mathematics of Planet Earth: Workshop on Global Change*. 2014. Models and policy in ecology.
- *U.S. Department of Defense (Defense Treat Reduction Agency) and Georgia National Center for Disease Control and Public Health International Technical Meeting on Microbial Ecology of Environmental Pathogens*. 2014. Drivers, dynamics and control of emerging vector-borne diseases.
- *USFWS White-nose workshop*. A protocol for the development of treatments and management strategies for white nose syndrome. For the US Fish and Wildlife Service, 2014
- *USFWS White-nose workshop*. 2014. Mechanisms allowing persistence of remnant populations and actions to conserve bats in epidemic regions
- *UC Davis Interdepartmental Seminar Series*. 2014. Urbanization and vector-borne disease: Drivers of opposing patterns for West Nile virus and Lyme disease
- *UCSC Applied Math and Statistics Department*. 2014. The ecology of West Nile virus
- *Institute of Medicine Forum on Microbial Threats*. 2014. Globalization, Land Use, Global Warming, and the Invasion of West Nile Virus
- *Washington State University*. 2013. Urbanization and vector-borne disease: Drivers of opposing patterns for West Nile virus and Lyme disease
- *Ecological Society of America*. 2013. Urbanization and Disease.
- *University of California, Riverside*. 2013. Urbanization and the ecology of West Nile virus transmission
- *Emory University*. 2012. The ecology and impacts of multi-host pathogens
- *Princeton University*. 2012. Sociality, density-dependence and microclimates determine the persistence of populations suffering from a novel fungal disease, white-nose syndrome.
- *American Ornithologists Union/North American Ornithologists Conference*. 2012. Biodiversity and disease risk: Dilution effect or simply habitat change?

- *USFWS Bat Population Monitoring and Modeling Workshop*. 2012. Predicting and measuring the impact of WNS on bat populations
- *Scientific and Technological Barriers To Global Real Time Risk Assessment of Vector Borne Infections*. 2011. A mathematical framework and research plan for predicting which vector-borne pathogens could cause epidemics in North America
- *NIH Workshop: Emergence and Re-Emergence of Arboviral Infections of Global Health Importance*. 2011. The ecology of West Nile virus
- *University of Colorado, Boulder*. 2011. Land use, super spreaders, and vector borne pathogens: ecological insights to benefit human health and wildlife
- *Ecological Society of America*. 2011. Host traits and their contribution to pathogen amplification.
- *Smithsonian Conservation Biology Institute*. 2011. Urbanization, super spreaders, and the transmission of vector borne pathogens: ecological insights to benefit human health and wildlife
- *Penn State Center for Infectious Disease Dynamics Spring Seminar Series*. 2011. Land use, super spreaders, and vector borne pathogens: ecological insights to benefit human health and wildlife
- *Montgomery County Parks*. 2011. Birds, mosquitoes, and disease: West Nile virus
- *Institute of Zoology, London Zoological Society*. 2010. Host heterogeneity in the transmission of multi-host pathogens: a challenge and an opportunity for control
- *Ecological Society of America*. 2010. Climate and vector-borne disease: From pattern to mechanistic analysis.
- *Ecology and Evolution of Infectious Diseases Grantee Conference*. 2010. Land use, super spreaders, and vector borne pathogens: ecological insights to benefit human health and wildlife
- *NextSpace Coworking and Innovation Seminar Series*. 2010. Birds, Viruses, and Global Change - A Dangerous Combination
- *Montgomery County Parks*. 2009. West Nile virus in the mid-Atlantic.
- *Diversitas Open Science Conference*. 2009. Avian Influenza H5N1: a case study of disease spread via globalization and environmental change.
- *Society for Conservation Biology: National Meeting*. 2009. West Nile virus ecology and impacts on birds.
- *American Ornithologists Union*. 2009. (Keynote Speaker). Birds, viruses, and anthropogenic change - a Molotov cocktail in the making
- *Ecological Society of America*. 2009. Vector feeding and the seasonal transmission of multi-host pathogens.
- *Influenza Break-out Session, Ecology and Evolution of Infectious Diseases Network Meeting*. 2009. Analyzing the global spread of avian influenza.
- *UC Berkeley*. 2009. West Nile virus ecology in a changing world
- *Stanford University*. 2009. The ecology of West Nile virus transmission
- *American Society of Tropical Medicine and Hygiene Conference*. 2008. Local scale patterns of host seeking and feeding and implications for pathogen transmission
- *American Society of Tropical Medicine and Hygiene Conference*. 2008. West Nile Virus Risk Assessment and important vectors in Colorado and the mid-Atlantic

- *Patuxent National Wildlife Refuge*. 2008. West Nile virus transmission across a land use gradient
- *American Ornithologists Union*. 2008. The ecology of West Nile virus impacts on birds
- *Ecology and evolution of infectious diseases conference*. 2008. Quantifying the amplification contribution of hosts for multi-host vector borne pathogens
- *Avian Influenza: A threat to homeland security (sponsored by the CIA/AFMIC/DIA)* 2007. Predicting the spread of H5N1 Avian Influenza
- *Influenza 2007 (Pasteur Institute)* 2007. Predicting the spread of H5N1 Avian Influenza
- *Smithsonian Environmental Research Center*, 2007. Globalization, urbanization, and the ecology of infectious disease.
- *Yale*, 2007. Globalization, urbanization, and the ecology of infectious disease.
- *UC Santa Cruz*, 2007. Mixing models and data to understand the impact of globalization and urbanization on the emergence of infectious diseases
- *North American Ornithological Council*, 2006. West Nile Virus Introduction and Spread: The Role of Vector Feeding Ecology and Avian Population Dynamics
- *CDC West Nile virus Conference*, 2006. Drivers of WNV transmission in a Mid-Atlantic ecosystem
- *Diversitas: International programme of biodiversity Science*, 2005. The impact of West Nile virus on bird communities.
- *Columbia University Fall Seminar Series*, 2005. The ecology of West Nile virus
- *UC Berkeley*, 2004. The ecology and emergence of West Nile virus
- *Society for Conservation Biology*, 2004. The ecology of West Nile virus across an urbanization gradient.
- *Protecting Hawaii and the Pacific from West Nile Virus*, 2004. Pathways for West Nile virus in the Pacific.
- *Building capacity and determining disease threats to endemic Galapagos fauna*, 2004. West Nile virus risk assessment for Galápagos.

Submitted talks

- *Ecological Society of America*. 2017. Relative epidemic potential of Zika, dengue, yellow fever, and chikungunya viruses transmitted by *Aedes aegypti* and *Aedes albopictus* mosquitoes.
- *North American Society for Bat Research*. 2015. Invasion Dynamics of White-Nose Syndrome and Long Term Impacts on Bat Populations
- *North American Society for Bat Research*. 2014. Mechanisms allowing persistence of remnant populations and actions to conserve bats in epidemic regions
- *North American Society for Bat Research*. 2013. Multispecies transmission dynamics of *Geomyces destructans*: Who acquires infection from whom?
- *North American Society for Bat Research*. 2012. Sociality, density-dependence and microclimates determine the persistence of populations suffering from a novel fungal disease, white-nose syndrome.
- *Ecological Society of America*. 2012. Biodiversity and disease risk: Dilution effect or simply habitat change?
- *Ecology and Evolution of Infectious Diseases Grantee Conference*. 2012. Sociality, transmission, and impacts of a virulent fungal pathogen of bats

- *North American Society for Bat Research*. 2011. Predicting impacts of WNS on bat populations.
- *Ecology and Evolution of Infectious Diseases Grantee Conference*. 2011. Vector survival and competence across a land-use gradient
- *American Society of Tropical Medicine and Hygiene Conference*. 2011. Predicting West Nile virus transmission with limited resources
- *American Society of Tropical Medicine and Hygiene Conference*. 2010. Spatial and temporal variation in vector competence of *Culex pipiens* and *Cx. restuans* mosquitoes for West Nile virus
- *American Ornithologists Union*. 2010. Hidden impacts of West Nile virus on small songbirds.
- *American Society of Tropical Medicine and Hygiene Conference*. 2009. Vaccination of wildlife to control zoonotic disease: West Nile virus as a case study
- *The Wildlife Society*, 2009. Wildlife-livestock conflict: the risk of pathogen transmission from bison to cattle outside Yellowstone National Park
- *Ecology and Evolution of Infectious disease*, 2009. Wildlife-livestock conflict: the risk of pathogen transmission from bison to cattle outside Yellowstone National Park
- *CDC West Nile virus conference*, 2009. Predicting West Nile virus transmission with limited resources.
- *American Society of Tropical Medicine & Hygiene*, 2007. Climate, evolution, and the transmission of West Nile virus by mosquitoes.
- *Ecological Society of America*, 2007. Globalization and the spread of pathogens
- *American Society of Tropical Medicine & Hygiene*, 2006. Predicting the transmission of West Nile virus
- *Ecological Society of America*, 2006. The impact of urbanization on West Nile virus transmission
- *International Conference of Emerging Infectious Diseases*. 2006. Super spreaders and feeding shifts in the emergence of West Nile virus
- *American Society of Tropical Medicine & Hygiene*, 2005. West Nile virus transmission across space and time
- *Ecological Society of America*, 2004. The ecology of West Nile virus across an urbanization gradient.
- *International Conference of Emerging Infectious Diseases*, 2004. Assessing West Nile virus risk challenges the bridge vector paradigm.
- *Ecological Society of America*, 2003. The effects of predation on the evolution of resistance to avian malaria in Hawaiian birds.
- *American Ornithologists Union*, 2002. The effect of malaria on the breeding success of Hawaii Amakihi (*Hemignathus virens*).
- *Society for Integrative and Comparative Biology*, 2002. Variation in growth of Brown-Headed Cowbird nestlings and energetic impacts on their host parents.
- *Ecological Society of America Conference*, 2001. Spatial and temporal variation in the per capita strength of competition between two desert annuals.
- *American Ornithologists Union*, 2001. Variation in growth of Brown-Headed Cowbird nestlings and energetic impacts on their host parents.

PROFESSIONAL SOCIETIES

Ecological Society of America (1998-present), American Society of Tropical Medicine & Hygiene (2005-present), American Ornithologists Union (2001-present), American Society of Naturalists (1998-1999), Sigma Xi (1998-2001), Society for Integrative and Comparative Biology (2001-2002), American Society of Mechanical Engineers (1994-1997)