

Felicia Keesing

David & Rosalie Rose Distinguished Chair of the Sciences, Mathematics, and Computing

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Education

- 1983-87 B.S., Symbolic Systems, Stanford University, Stanford, CA.
- 1991-97 Ph.D., Integrative Biology, University of California, Berkeley, CA. Thesis: *Ecological interactions among small mammals, large mammals, and vegetation in a tropical savanna of central Kenya*. Advisor: W. Z. Lidicker, Jr.

Selected professional experience

- 2000-2003 Assistant Professor, Bard College, Annandale-on-Hudson, NY.
- 2003-2012 Associate Professor, Bard College, Annandale-on-Hudson, NY.
- 2017-2020 Chair, Program in Biology, Bard College, Annandale-on-Hudson, NY.
- 2012- David & Rosalie Rose Distinguished Chair of the Sciences, Mathematics, and Computing, Bard College, Annandale-on-Hudson, NY.
- 2012- Adjunct Scientist, Cary Institute of Ecosystem Studies, Millbrook, NY.

Selected grants (bold indicates active grants)

- 1995 American Society of Mammalogists Grant-in-Aid of Research. \$1,000.
- 1995 Sigma Xi Grant-in-Aid of Research. \$500.
- 1995 Vice Chancellor's Award for Research, University of California at Berkeley. \$2,500.
- 1997-98 National Geographic Society. "Small mammals: an unexplored component of savanna ecosystems." \$9,840.
- 1998-03 National Science Foundation. "Linking dispersal dynamics of white-footed mice to tree seed predation in a patchy landscape." With R. S. Ostfeld and C. D. Canham. \$450,000.
- 1999-06 National Science Foundation. "CAREER: Investigating biodiversity cascades in an East African savanna". \$500,000.
- 1999-03 National Institutes of Health. "Forecasting Lyme disease risk: the roles of host dispersal and diversity." With R.S. Ostfeld. \$324,000.
- 2000-03 National Science Foundation. "Ecology in context: Research strategies and applications for undergraduates." With A.R. Berkowitz, S.E.G. Findlay, and R.S. Ostfeld. \$164,103.
- 2003-07 National Institutes of Health. "Biodiversity, habitat fragmentation, and Lyme disease risk". With R.S. Ostfeld, K. Schmidt, K. LoGiudice, R. Winchcombe, and H. John-Alder. \$1,600,000.
- 2003-06 National Science Foundation. "Ecology in context: Research strategies and applications for undergraduates." With A.R. Berkowitz, S.E.G. Findlay, and R.S. Ostfeld. \$136,000.
- 2004-05 Doris Duke Charitable Foundation. "Infectious disease ecology: effects of ecosystems on disease and of disease on ecosystems". With R.S. Ostfeld and V. Eviner. \$25,000. Conference support.
- 2004-05 National Science Foundation. "Infectious disease ecology: effects of ecosystems on disease and of disease on ecosystems". With R.S. Ostfeld and V. Eviner. \$30,000. Conference support.
- 2004-05 United States Department of Agriculture. "Infectious disease ecology: effects of ecosystems on disease and of disease on ecosystems". With R.S. Ostfeld and V. Eviner. \$10,000. Conference support.

- 2009-10 National Science Foundation. "DISSERTATION RESEARCH: The effects of removing large herbivores on the ecology of infectious diseases in central Kenya". With R. Dirzo, D. McCauley, and F. Micheli.
- 2006-11 National Science Foundation. "Ecology in context: Research strategies and applications for undergraduates." With A.R. Berkowitz, S.E.G. Findlay, and R.S. Ostfeld.
- 2011-2013 Environmental Protection Agency. "Landscape epidemiology of tick-borne diseases". PI: Ostfeld, with Keesing, Canham.
- 2011-13 University of Illinois. "Tick-borne disease in central Kenya". With B. F. Allan.
- 2008-15 National Science Foundation. "The ecology of *Anaplasma phagocytophilum*: reservoirs, risk, and incidence". \$1,900,000. PI: Keesing, with R.S. Ostfeld, J. Brunner, M. Tibbetts, K. Schmidt, K. LoGiudice.
- 2011-16 National Science Foundation. "REU: Translational ecology: Research strategies and applications for undergraduates." With A.R. Berkowitz, S.E.G. Findlay, and E. Rosi-Marshall.
- 2012-16 Howard Hughes Medical Institute. "Cultivating scientific literacy: a campus initiative." Program Director, with M. Tibbetts, B. Jude, M. Halsey, and P. Pardi. \$800,000.
- 2013-16 National Science Foundation, "CNH: COLLABORATIVE RESEARCH: An ecological trap for parasites and its impacts on human disease risk, nutrition, and income" PIs: B.F. Allan, F. Keesing, G. Daily, S. Polasky, H. Tallis, R.S. Ostfeld. \$1,200,000.
- 2014-17 National Science Foundation. "COLLABORATIVE RESEARCH: Ecological consequences of the effects of a zoonotic pathogen on its reservoir host. With R.S. Ostfeld, M. Levy, and D. Brisson. \$794,000."
- 2016-2017 John Drulle MD Memorial Lyme Fund, "Landscape epidemiology of tick-borne diseases," PIs: R.S. Ostfeld, F. Keesing. (\$15,000).
- 2016-2021 Steven and Alexandra Cohen Foundation. "The Tick Project." With R.S. Ostfeld. (\$5,000,000.)
- 2020-2021 National Science Foundation. "RAPID: Collaborative Research: Quarantined networks and the spread of COVID-19." Co-PI with M. Junge, N. Eikmeier. (\$82,095).
- 2016-2021 National Science Foundation. "REU: Translational ecology: Research strategies and applications for undergraduates." With A.R. Berkowitz, S.E.G. Findlay, and S. LaDeau.**
- 2016-2021 National Science Foundation. "The community ecology of viromes: Virome assembly and pathogen transmission in a changing landscape". With R. S. Ostfeld, K. Vandegrift, P. J. Hudson, A. Kapoor, B. Han, L. Kramer, and F. Keesing. (\$2.35 million.)**
- 2020-2023 National Science Foundation. "OPUS: A synthesis of the effects of biodiversity on plant, animal, and human health." PI. (\$241,000).**

Selected awards, fellowships, honors

- 2019 Elected Fellow, Ecological Society of America
- 2016 Visiting Fellow, Planetary Health Alliance, Center for the Environment, Harvard University
- 2012 David & Rosalie Rose Distinguished Chair in the Sciences, Mathematics, and Computing, Bard College
- 2005 Featured ecologist, "Profiles of Ecologists" series at the annual Ecological Society of America meeting
- 2000 United States Presidential Early Career Award for Scientists and Engineers (PECASE)

Publications

* indicates undergraduate student; ** indicates graduate student; *** indicates high school student

As of December 2020, my H index is 42, based on data in Google Scholar. My i10 index is 69. My two most-cited papers, on both of which I am first author, have 1141 and 1208 citations, as of December 2020.

1. Keesing, F. 1998. Ecology and behavior of the pouched mouse, *Saccostomus mearnsi*, in central Kenya. *Journal of Mammalogy* 79:919-931.

2. Keesing, F. 1998. Impacts of ungulates on the demography and diversity of small mammals in central Kenya. *Oecologia* 116:381-389.
3. Ostfeld, R. S., F. Keesing, C. G. Jones, C. D. Canham, and G. Lovett. 1998. Integrative ecology and the dynamics of species in oak forests. *Integrative Biology* 1:178-186.
4. Keesing, F. and R. S. Ostfeld. 1999. Linking dispersal and population dynamics of white-footed mice to community dynamics in patchy landscapes: a prospectus for research. *Siberian Journal of Ecology*.
5. Keesing, F. 2000. Cryptic consumers and the ecology of an African savanna. *BioScience* 50:205-215.
6. Ostfeld, R.S. and F. Keesing. 2000. Biodiversity and disease risk: the case of Lyme disease. *Conservation Biology* 14(3): 1-7.
7. Ostfeld, R.S. and F. Keesing. 2000. Pulsed resources and generalist consumers. *Trends in Ecology and Evolution* 15: 232-237.
8. Pusenius, J., R.S. Ostfeld, and F. Keesing. 2000. Patch selection and tree seedling predation by resident vs. immigrant meadow voles. *Ecology* 81(11):2951-2956.
9. Ostfeld, R.S. and F. Keesing. 2000. The function of biodiversity in the ecology of vector-borne zoonotic diseases. *Canadian Journal of Zoology* 78:2061-2078.
10. *Metz, M. and F. Keesing. 2001. Dietary preferences of the pouched mouse, *Saccostomus mearnsi*, and their consequences for savanna vegetation. *Biotropica* 33(1):182-187.
11. Keesing, F. and T. Crawford*. 2001. Impacts of density and large mammals on space use by pouched mice (*Saccostomus mearnsi*) in central Kenya. *Journal of Tropical Ecology* 17(3):465-472.
12. Ostfeld, R.S., E. Schaubert, C.D. Canham, F. Keesing, C.G. Jones, and J.O. Wolff. 2001. Effects of acorn production and mouse abundance on abundance and *Borrelia burgdorferi* infection prevalence of nymphal *Ixodes scapularis* ticks. *Vector-Borne and Zoonotic Diseases* 1(1):55-63.
13. Thompson, J., O.J. Reichman, P.J. Morin, G.A. Polis, M.E. Power, R.W. Sterner, C.A. Couch, L. Gough, R. Holt, D. Hooper, F. Keesing, C. Lovell, B.T. Milne, M.C. Molles, D.W. Roberts, and S.Y. Strauss. 2001. Frontiers of ecology. *BioScience* 51(1):15-24.
14. *Shaw, M.T., F. Keesing (corresponding author), and R.S. Ostfeld. 2002. Herbivory on *Acacia* seedlings in an African savanna. *Oikos* 98(3): 385-392.
15. Ostfeld, R.S., F. Keesing, E.M. Schaubert, and K.A. Schmidt. 2002. The ecological context of infectious disease: diversity, habitat fragmentation, and Lyme disease risk in North America. In: A. Aguirre, R.S. Ostfeld, C.A. House, G. Tabor, and M. Pearl, eds. *Conservation medicine: ecological health in practice*. Oxford University Press; New York.
16. *Allan, B.F., F. Keesing (corresponding author), and R.S. Ostfeld. 2003. The effect of habitat fragmentation on Lyme disease risk. *Conservation Biology* 17:267-272.
17. Ewing, H., K. Hogan, F. Keesing, H. Bugmann, A. Berkowitz, L. Gross, J. Oris, and J. Wright. 2003. The role of modeling in undergraduate education. Pages 413-427 in: C.D. Canham and J. Cole, eds., *Models in Ecosystem Science*. Princeton University Press.
18. LoGiudice, K., R.S. Ostfeld, K. Schmidt, and F. Keesing. 2003. The ecology of infectious disease: Effects of host diversity and community composition on Lyme disease risk. *Proceedings of the National Academy of Sciences* 100: 567-571.
19. *Shaw, M., F. Keesing, R. McGrail, and R.S. Ostfeld. 2003. Factors influencing the distribution of larval blacklegged ticks on rodent hosts. *American Journal of Tropical Medicine and Hygiene* 68(4): 447-452.
20. Goheen, J., F. Keesing (corresponding author), B. Allan, D. Ogada, and R.S. Ostfeld. 2004. Net effects of large-mammal exclusion on *Acacia* seedling survival in an East African savanna. *Ecology* 85:1555-1561.
21. Ostfeld, R.S., P. Roy*, W. Haumaier, L. Canter, F. Keesing, and E. Rowton. 2004. Sandfly (*Lutzomyia vexator*) populations in upstate New York: abundance, microhabitat, and phenology. *Journal of Medical Entomology* 41(4): 774-778.
22. Ostfeld, R.S. and F. Keesing. 2004. Oh the locusts sang, then they died. *Science* 306:1488-1489. [Perspective]
23. Ostfeld, R.S., G.E. Glass, and F. Keesing. 2005. Spatial epidemiology: an emerging (or re-emerging discipline). *Trends in Ecology and Evolution* 20:328-336.

24. *O'Reilly, L., D. Ogada, T.M. Palmer, and F. Keesing (corresponding author). 2006. Effects of fire on bird diversity and abundance in an African savanna. *African Journal of Ecology* 44:165-170.
25. Ostfeld, R.S., A. Price*, V. Hornbostel, M. Benjamin, and F. Keesing. 2006. Controlling ticks and tick-borne zoonoses with biological and chemical agents. *BioScience* 56:383-394.
26. Keesing, F., R.D. Holt, and R.S. Ostfeld. 2006. Effects of species diversity on disease risk. *Ecology Letters* 9: 485-498.
27. McCauley, D.M., F. Keesing, T.P. Young, B.F. Allan, and R. Pringle. 2006. Indirect effects of large herbivores on snakes in an African savanna. *Ecology* 87:2657-2663.
28. Dobson, A., I Cattadori, R. Holt, R.S. Ostfeld, F. Keesing, K. Krichbaum, J. Rohr, S.E. Perkins, and P.J. Hudson. 2006. Sacred cows and sympathetic squirrels: the importance of biological diversity to human health. *PLoS Medicine* 3(6) e231.
29. Ostfeld, R.S., C.D. Canham, K. Oggenfuss, R.J. Winchcombe, and F. Keesing. 2006. Climate, deer, rodents, and acorns as determinants of variation in Lyme-disease risk. *PLoS Biology* 4(6) e145.
30. Ostfeld, R.S., F. Keesing, and K. LoGiudice. 2006. Community ecology meets epidemiology: the case of Lyme disease. Pages 28-40 in S. Collinge and C. Ray, eds. *Disease ecology: community structure and pathogen dynamics*. Oxford University Press.
31. *Horobik, V., F. Keesing, and R.S. Ostfeld. 2007. Abundance and *Borrelia burgdorferi*-infection prevalence of nymphal *Ixodes scapularis* ticks along forest-field edges. *EcoHealth*.
32. Ostfeld, R.S. and F. Keesing. 2007. Pulsed resources and community responses: An exploration of factors influencing outcomes. 2007. Pages 30-42 in J.A. Bissonette and I. Storch, eds. *Temporal dimensions of landscape ecology: wildlife responses to variable resources*. Springer, NY, USA.
33. Goheen, J.R., T.P. Young, F. Keesing, and T.M. Palmer. 2007. Consequences of herbivory by native ungulates for the reproduction of a savanna tree. *Journal of Ecology* 95:129-138.
34. Ogada, D.L., M.E. Gadd, R.S. Ostfeld, and F. Keesing. 2008. Impacts of large herbivorous mammals on bird diversity and abundance in an African savanna. *Oecologia* 156: 387-397.
35. McCauley, D.J., F. Keesing, T.P. Young, and K. Dittmar. 2008. Effects of the removal of large herbivores on fleas of small mammals. *Journal of Vector Ecology* 2008 33 (2), 263-268.
36. Keesing, F., R.S. Ostfeld, V.T. Eviner. 2008. Introduction. Pages 1-5 in *Infectious Disease Ecology: Effects of Ecosystems on Disease and of Disease on Ecosystems*, edited by R.S. Ostfeld, F. Keesing and V.T. Eviner. Princeton University Press.
37. Ostfeld, R.S. and F. Keesing. 2008. One acorn at a time: understanding the spread of infectious diseases. *Odyssey Magazine*. February issue, pages 19-21. [Odyssey is "the science magazine for young adventurers, ages 10-16.]
38. Keesing, F. 2008. Introduction to Part I. Pages 9-11 in *Infectious Disease Ecology: Effects of Ecosystems on Disease and of Disease on Ecosystems*, edited by R.S. Ostfeld, F. Keesing and V.T. Eviner. Princeton University Press.
39. Ostfeld, R.S., F. Keesing, and V.T. Eviner. 2008. The ecology of infectious diseases: progress, challenges, and frontiers. Pages 469-482 in *Infectious Disease Ecology: Effects of Ecosystems on Disease and of Disease on Ecosystems*, edited by R.S. Ostfeld, F. Keesing and V.T. Eviner. Princeton University Press.
40. Ostfeld, R.S., F. Keesing, and V. T. Eviner. 2008. *Infectious Disease Ecology: Effects of Ecosystems on Disease and of Disease on Ecosystems*. Princeton University Press.
41. Ostfeld, R.S., M. Thomas, and F. Keesing. 2009. Biodiversity and ecosystem function: perspectives on disease. Pages 209-216 in S. Naeem, D. Bunker, A. Hector, M. Loreau, and C. Perrings, eds. *Biodiversity and Human Impacts*, Oxford University Press.
42. Keesing, F. and R. Ostfeld. 2009. Human ecology through the lens of social ecology. *EcoHealth*. Book review. DOI: 10.1007/s10393-009-0213-5
43. Keesing, F., J. Brunner, M. Killilea, K. LoGiudice, K. Schmidt, H. Vuong, and R.S. Ostfeld. 2009. Hosts as ecological traps for the vector of Lyme disease. *Proceedings of the Royal Society B* 276:3911-3919.
44. Dowling, Z.*, T. Hartwig, E. Kiviat, F. Keesing. 2010. Experimental management of nesting habitat for the Blanding's turtle (*Emydoidea blandingii*). *Ecological Restoration* 28:154-159.

45. Ogada, D. and F. Keesing. 2010. Decline of raptors over a three-year period in Laikipia, Central Kenya. *Journal of Raptor Research* 44 (2), 129-135.
46. Keesing, F., L. Belden, P. Daszak, A. Dobson, D. Harvell, R.D. Holt, P. Hudson, A. Jolles, K. Jones, C. Mitchell, S. Myers, T. Bogich, and R. Ostfeld. 2010. Impacts of biodiversity on the emergence and transmission of infectious diseases. *Nature* 468:647-652.
47. Keesing, F., P. Oberoi*, R. Vaicekonyte*, K. Gowen*, L. Henry*, S. Mount*, L. Serene*, P. Johns, and R.S. Ostfeld. 2011. Effects of garlic mustard (*Alliaria petiolata*) on entomopathogenic fungi. *EcoScience* 18: 164-168.
48. Brunner, Jesse L., Cheney, Laura, Keesing, Felicia, Killilea, Mary, Logiudice, Kathleen, Previtali, Andrea, Ostfeld, Richard S. 2011. Molting success of *Ixodes scapularis* varies among individual blood meal hosts and species. *Journal of Medical Entomology* 48: 860-866.
49. Pringle, R., Todd M. Palmer, Jacob R. Goheen, Douglas J. McCauley, and Felicia Keesing. 2011. Ecological Importance of Large Herbivores in the Ewaso Ecosystem. In N. Georgiadis, editor, *Conserving Wildlife in African Landscapes: Kenya's Ewaso Ecosystem*.
50. Keesing, F. and R.S. Ostfeld. 2012. Disease ecology. In Ingram, J.C., DeClerck, F., Rumbaitis del Rio, C. (Eds.). *Integrating Ecology and Poverty*. 1st Edition., approx. 450 p. 50 illus., Hardcover, ISBN: 978-1-4419-0632-8. Springer.
51. Keesing, F. 2012. What biology education should look like at colleges and universities. Special Report from the Michigan State University *Center for Research in Science and Mathematics Education*.
52. Ogada, D., F. Keesing, and M. Virani. 2012. Dropping dead: causes and consequences of vulture population declines worldwide. *The Year in Ecology and Conservation Biology*.
53. Previtali, A., R. Hanselmann, A. Jolles, F. Keesing, L. Martin, and R. Ostfeld. 2012. Relationship between pace of life and immune responses in wild rodents.
54. Keesing, F., Michelle H. Hersh, Michael Tibbetts, Diana J. McHenry, Shannon Duerr, Jesse Brunner, Mary Killilea, Kathleen LoGiudice, Kenneth A. Schmidt, and Richard S. Ostfeld. "Reservoir Competence of Vertebrate Hosts for *Anaplasma phagocytophilum*." *Emerging Infectious Diseases* 18, no. 12 (2012): 2013.
55. Hersh, Michelle H., et al. Reservoir competence of wildlife host species for *Babesia microti*. *Emerging infectious diseases* 18.12 (2012): 1951.
56. *Vaicekonyte, R. and F. Keesing. 2012. Effects of garlic mustard (*Alliaria petiolata*) removal on re-colonization by entomopathogenic fungi. *Invasive Plant Species Biology and Management*.
57. Keesing, F., and R. S. Ostfeld. "An ecosystem service of biodiversity: the protection of human health against infectious disease." *New Directions in Conservation Medicine* (2012): 56-66.
58. Brunner JL, Duerr S, Keesing F, Killilea M, Vuong H, et al. 2013. An experimental test of competition among mice, chipmunks, and squirrels in deciduous forest fragments. *PLoS ONE* 8(6): e66798. doi:10.1371/journal.pone.0066798.
59. Ostfeld, Richard S., and Felicia Keesing. Effects of host diversity on infectious disease. *Annual Review of Ecology, Evolution, and Systematics* 43, no. 1 (2012): 157-182
60. Keesing, F. 2013. Landscape epidemiology. In *Encyclopedia of Biodiversity*, edited by S. Levin.
61. Ostfeld, R.S. and F. Keesing. 2013. Biodiversity and human health. Pages 357-372 in *Encyclopedia of Biodiversity*, edited by S. Levin. Elsevier, New York.
62. Jeschke, J.M., F. Keesing, and R.S. Ostfeld. 2013. The ecology of novel organisms: invasive species, GMOs, and emerging pathogens. *Ambio* 42:541-548.
63. Keesing, F., B.F. Allan, T.P. Young, and R.S. Ostfeld. 2013. Effects of wildlife and cattle on tick abundance in central Kenya. *Ecological Applications* 23:1410-1418.
64. Ostfeld, R.S. and F. Keesing. 2013. Straw men don't get Lyme disease: response to Wood and Lafferty. *Trends in Ecology and Evolution* 28:502-503.
65. Keesing, Felicia, and T. P. Young. 2014. Cascading consequences of the loss of large mammals in an African savanna. *BioScience* 64: 487-495.

66. Hersh, M.H., R. S. Ostfeld, D. J. McHenry, M. Tibbetts, J. L. Brunner, M. E. Killilea, K. LoGiudice, K. A. Schmidt, F. Keesing. 2014. Co-Infection of blacklegged ticks with *Babesia microti* and *Borrelia burgdorferi* is higher than expected and acquired from small mammal hosts. *PLoS ONE*.
67. Ostfeld RS, Levi T, Jolles AE, Martin LB, Hosseini PR, et al. (2014) Life history and demographic drivers of reservoir competence for three tick-borne zoonotic pathogens. *PLoS ONE* 9(9): e107387. doi:10.1371/journal.pone.0107387.
68. Keesing, Felicia, Diana J. McHenry, Michelle Hersh, Michael Tibbetts, Jesse L. Brunner, Mary Killilea, Kathleen LoGiudice, Kenneth A. Schmidt, and Richard S. Ostfeld. 2014. Prevalence of human-active and variant 1 strains of the tick-borne pathogen *Anaplasma phagocytophilum* in hosts and forests of Eastern North America." *The American journal of tropical medicine and hygiene* 91: 302-309.
69. Levi, T., F. Keesing, K. Oggenfuss, R. S. Ostfeld. 2015. Accelerated phenology of blacklegged ticks under climate warming. *Philosophical Transactions of the Royal Society B*.
70. Ezenwa VO, Prieur-Richard A-H, Roche B, Bailly X, Becquart P, García-Peña GE, et al. 2015. Interdisciplinarity and Infectious Diseases: An Ebola Case Study. *PLoS Pathogens* 11(8): e1004992. doi:10.1371/journal.ppat.1004992.
71. Johnson, P. T., Ostfeld, R. S., & Keesing, F. (2015). Frontiers in research on biodiversity and disease. *Ecology Letters* 18:1119–1133.
72. Keesing, F., & Ostfeld, R. S. 2015. Is biodiversity good for your health? *Science* 349:235-236.
73. Levi, T., Massey, A.L., Holt, R.D., Keesing, F., Ostfeld, R.S. and Peres, C.A., 2016. Does biodiversity protect humans against infectious disease? Comment. *Ecology*, 97(2), pp.536-542.
74. Levi, T., Keesing, F., Holt, R.D., Barfield, M. and Ostfeld, R.S., 2016. Quantifying dilution and amplification in a community of hosts for tick-borne pathogens. *Ecological Applications* 97 (2), 536-542.
75. Keesing, F., 2016. The messy work of saving lions. *BioScience*, p.biw012. [book review]
76. Ostfeld, R.S. and F. Keesing. 2017. Is biodiversity bad for your health? *EcoSphere* 8(3):e01676.
77. Allan, B. H. Tallis, R. Chaplin-Kramer, S. Hockett, G. Kowal, J. Musengezi, S. Okanga, R. S. Ostfeld, J. Schieltz, C. M. Warui, S. A. Wood, F. Keesing. 2017. Can integrating wildlife and livestock enhance the delivery of ecosystem services in central Kenya? *Frontiers in Ecology and the Environment* 15:328-335.
78. Keesing, F., R.S. Ostfeld, T.P. Young, B.F. Allan. 2017. Cattle and rainfall affect tick abundance in central Kenya. *Parasitology* 145:345-354.
79. Robertson, B., R. S. Ostfeld, and F. Keesing. 2017. Trojan females and Judas goats: the use of ecological traps in management. *BioScience* 67:983-994.
80. Fischhoff, I., F. Keesing, and R.S. Ostfeld. 2017. The tick biocontrol agent *Metarhizium brunneum* (= *M. anisopliae*) (strain F52) does not reduce the abundance of non-target arthropods in a suburban landscape. *PloS One*.
81. Keesing, F. and R.S. Ostfeld. 2018. The Tick Project: Testing environmental interventions to prevent tick-borne diseases. *Trends in Parasitology* 34:447-450.
82. Ostfeld, R.S., Dustin Brisson, Kelly Oggenfuss, Jill Devine, Michael Z Levy, F. Keesing. 2018. Effects of a zoonotic pathogen, *Borrelia burgdorferi*, on the behavior of a key reservoir host. *Ecology & Evolution* 8:4074-4083.
83. Ostfeld, R. S., Taal Levi, F. Keesing, Kelly Oggenfuss, Charles D Canham. 2018. Tick-borne disease risk in a forest food web. *Ecology* 99:1562-1573.
84. Fischhoff, I., J. Burtis, F. Keesing, and R.S. Ostfeld. 2018. Tritrophic interactions between a fungal pathogen, a spider predator, and the blacklegged tick. *Ecology and Evolution* DOI: 10.1002/ece3.4271.
85. *Dahan, D., B.A. Jude, R. Lamendella, F. Keesing, and G. Perron. 2018. Exposure to arsenic alters the microbiome of larval zebrafish. *Frontiers in Microbiology* <https://doi.org/10.3389/fmicb.2018.01323>.
86. Keesing, F., R. S. Ostfeld, S. Okanga, S. Hockett, B. R. Bayles, R. Chaplin-Kramer, L. P. Fredericks, T. Hedlund, V. Kowal, H. Tallis, C. M. Warui, S. A. Wood, and B. F. Allan. 2018. Consequences of integrating livestock and wildlife in an African savanna. *Nature Sustainability* 1:566-573.
87. **Welsh, E., F. Keesing, and B. Allan. 2019. Oxpecker (*Buphagus erythrorhynchus*, *B. africanus*) and tick abundances in acaricide-treated livestock areas. *African Journal of Ecology* 57:1-5.
88. ***Ostfeld, J. K., and F. Keesing. 2019. Impacts of large mammals on movements of the pouched mouse (*Saccostomus mearnsi*) in central Kenya. *African Journal of Ecology* 57:2-9.

89. Fischhoff, Ilya, Keesing, F., Pendleton, J., DePietro, D. Teator, M., Duerr, S., Mowry, S., Pfister, A., LaDeau, S., Ostfeld, R.S. 2019. Assessing effectiveness of recommended residential yard management measures against ticks. *Journal of Medical Entomology* 56:1420-1427.
90. Mowry, S., I. Fischhoff, F. Keesing, R.S. Ostfeld. 2019. Predicting larval tick burden on white-footed mice with an artificial neural network. *Ecological Informatics* 52:150-158.
91. Landesman, W.J., Mulder, K., Allan, B.F., Bashor, L.A., Keesing, F., LoGiudice, K. and Ostfeld, R.S. 2019. Potential effects of blood meal host on bacterial community composition in *Ixodes scapularis* nymphs. *Ticks and tick-borne diseases* 10:523-527.
92. Fischhoff, I., F. Keesing, and R.S. Ostfeld. 2019. Risk factors for bites and disease associated with blacklegged ticks: systematic review and meta-analysis. *BMC Infectious Diseases* 19:1-11.
93. Kowal, Virginia A., Sharon Jones, Felicia Keesing, Brian F. Allan, Jennifer M. Schieltz, Rebecca Chaplin-Kramer. 2019. A coupled forage-grazer model predicts viability of livestock production and wildlife habitat at the regional scale. *Scientific Reports* 9:1-11.
94. Ostfeld, RS and F. Keesing. 2020. Planetary Health and infectious disease. Pages 141-164 in *Planetary Health: Protecting Ourselves and Our Future*, edited by S. Myers and H. Frumkin.
95. Ostfeld, RS and F. Keesing. 2020. Species that can make us ill thrive in human habitats. *Nature* 584:346-347. Invited perspective on primary paper.
96. Keesing, F., DJ McHenry, MH Hersh, RS Ostfeld. 2021. Spatial and temporal patterns of the emerging tick-borne pathogen *Borrelia miyamotoi* in blacklegged ticks (*Ixodes scapularis*) in New York. *Parasites & Vectors* 14(1):1-7.
97. Liveris, D., Agüero-Rosenfeld, M.E., Daniels, T.J., Karpathy, S., Paddock, C., Adish, S., Keesing, F., Ostfeld, R.S., Wormser, G.P. and Schwartz, I. 2021. A new genetic approach to distinguish strains of *Anaplasma phagocytophilum* that appear not to cause human disease. *Ticks and Tick-borne Diseases*, p.101659.
98. Keesing, F. and R.S. Ostfeld. 2021. Impacts of biodiversity and biodiversity loss on zoonotic diseases. *Proceedings of the National Academy of Sciences*. Apr 2021, 118 (17) e2023540118; DOI: 10.1073/pnas.2023540118.
99. Bahl, R., Eikmeier, N., Fraser, A., Junge, M., Keesing, F., Nakahata, K., & Reeves, L. (2021). Modeling COVID-19 spread in small colleges. *Plos one*, 16(8), e0255654.
100. Bobe, J. R., Jutras, B. L., Horn, E. J., Embers, M. E., Bailey, A., Moritz, R. L., Keesing, F., Ostfeld, R., ... & Fallon, B. A. 2021. Recent Progress in Lyme Disease and Remaining Challenges. *Frontiers in Medicine*, 1276.
101. Keesing, F. and R.S. Ostfeld 2021. Dilution effects in disease ecology. *Ecology Letters*. <https://doi.org/10.1111/ele.13875>

Selected conference presentations and working groups since 2010

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|------|---|
| 2010 | Hersh, M., M. Tibbetts, M. Strauss, R. Ostfeld, and F. Keesing. Assessing reservoir competence of multiple vertebrate hosts for <i>Babesia microti</i> using real-time PCR Ecology and Evolution of Infectious Diseases meeting, Ithaca, NY, June 2010. |
| 2010 | Hersh, M., M. Tibbetts, M. Strauss, R. Ostfeld, and F. Keesing. Assessing reservoir competence of multiple vertebrate hosts for <i>Babesia microti</i> and other tick-borne pathogens using real-time PCR. NSF/NIH Ecology and Evolution of Infectious Diseases meeting, Atlantic City, NJ, March 2010. |
| 2010 | Does variation in host immune function explain differences in reservoir competence among small mammals? M. A. Previtali, R. Hanselmann, R. S. Ostfeld, F. Keesing, A. E. Jolles, and L. B. Martin II. 95 th Annual Meeting of the Ecological Society of America, Pittsburgh, PA. August 2010. |
| 2010 | Hersh, M., M. Tibbetts, M. Strauss, R. Ostfeld, and F. Keesing. Assessing reservoir competence of multiple vertebrate hosts for <i>Babesia microti</i> and other tick-borne pathogens using real-time PCR. 95 th Annual Meeting of the Ecological Society of America, Pittsburgh, PA. August 2010. |
| 2010 | “Forest fragmentation, biodiversity loss, and Lyme disease risk”, invited panelist at workshop on anthropogenic environmental changes and infectious diseases, Ecological Society of America, Pittsburgh, PA. |
| 2011 | Keesing, F. “Frontiers in conservation medicine”. Invited symposium presentation, 96 th Annual Meeting of the Ecological Society of America, Austin, TX. August 2011. |

- 2011 Prevlitali, A., R. Hanselmann, A. Jolles, L. Martin, F. Keesing, R. Ostfeld. "Effects of host immune strategies on disease risk". Invited symposium presentation, 96th Annual Meeting of the Ecological Society of America, Austin, TX. August 2011.
- 2011 Hersh, M., M. Strauss, M. Tibbetts, R. Ostfeld, F. Keesing. "Reservoir hosts for *Babesia microti*". 96th Annual Meeting of the Ecological Society of America, Austin, TX. August 2011.
- 2012 Keesing, F. Biodiversity and the emergence of infectious diseases. Invited symposium presentation. *Planet Under Pressure* conference, London, UK.
- 2012-2015 Member, Working group on biodiversity and infectious disease, funded by FRNB and BIODIS, Aix-Marseille, France.
- 2012 Hersh, M.H., M.A. Previtalli, S.L. LaDeau, F. Keesing, and R.S. Ostfeld. Effects of variable larval tick burdens on survival of white-footed mice (*Peromyscus leucopus*). 97th Annual Meeting of the Ecological Society of America, Portland, OR, August 2012.
- 2012 Keesing, F., and R.S. Ostfeld. Disease ecology: new conceptual models to facilitate prediction. 97th Annual Meeting of the Ecological Society of America, Portland, OR, August 2012.
- 2013 Plenary presentation: T. Levi with F Keesing, A M Kilpatrick, M Mangel, C C Wilmers, R S Ostfeld. *Trophic cascades and infectious disease*. American Society of Mammalogists Annual Meeting, Philadelphia, PA.
- 2013 Plenary presentation: F. Keesing. *Ecological effects of the loss of large mammals in African savanna ecosystems*. American Society of Mammalogists Annual Meeting, Philadelphia, PA.
- 2015 Participant, working group on "Biodiversity, conservation, and disease", hosted by National Evolutionary Synthesis Center (NESCent), Durham, North Carolina
- 2016 Invited participant, workshop on course-based research experiences. Howard Hughes Medical Institute. Bethesda, Maryland.
- 2017 Invited participant, workshop on undergraduate science education. Howard Hughes Medical Institute. Bethesda, Maryland.
- 2017 Entomological Society of America. Denver, CO. "The Tick Project: Testing environmental interventions to prevent tick-borne diseases in our communities." Invited symposium presentation.
- 2020 Invited speaker. April 2020. Gordon Conference on bacterial spirochetes in Tuscany, Italy. *Canceled*.
- 2020 Keynote speaker. June 2020. Biodiversity and infectious diseases. Singapore. *Canceled*.
- 2020 Connecticut Land Conservation Council. "Pandemics and biodiversity." Invited panelist. [virtual]
- 2021 "Pandemics and biodiversity", *Design and Research for Healthy Communities and Healthcare Facilities*. Invited keynote speaker. [virtual]
- 2021 "Pandemics and biodiversity", II Simpósio Paranaense de Zoologia, Brazil. [virtual]
- 2021 "Key aspects of the ecology of Lyme and other tick-borne diseases", 16th International Conference on Lyme Borreliosis and Other Tick-borne Diseases. [virtual Keynote address]

Invited seminars since 2010

- 2010 "Science 2020: a blueprint for science education in the 21st century". Plenary lecture, Annual Conference on Case Study Teaching in Science. Buffalo, New York.
- 2010 "The Epistemology of Case Studies." Invited workshop leader for participants at the Annual Conference on Case Study Teaching in Science. Buffalo, New York.
- 2010 "Biodiversity and emerging infectious diseases". Invited introductory presentation. Working Group on *Biodiversity and Emerging Infectious Diseases*. Diversitas. London School of Tropical Medicine and Hygiene, London.
- 2010 "Biodiversity loss and infectious diseases: a recipe for risk?". California Academy of Sciences. Invited presentation at conference on "Biodiversity, climate change, and infectious diseases."
- 2011 "Ecoimmunology and disease risk". Invited plenary presentation at symposium on "Bridging the gap between ecoimmunology and disease ecology". Society for Integrative and Comparative Biology, Salt Lake City, UT.
- 2011 "What biology education at colleges and universities should look like". Invited plenary presentation at conference on 21st century biology education, Chicago, IL.

- 2011 “Biodiversity loss and disease: a recipe for risk?”. Invited plenary lecture at meeting of South African Society for Zoology and Parasitology, Cape Town, South Africa.
- 2011 “Biodiversity loss and infectious diseases: a recipe for risk?”. Woods Hole Oceanographic Institute, Woods Hole, MA. October 2011.
- 2012 “Biodiversity loss and infectious diseases”. Cornell University, Ithaca, NY. February 2012.
- 2012 “Ecoimmunology and disease ecology”, invited workshop presentation, NSF-RCN, Ann Arbor, Michigan. May 2012.
- 2012 “Biodiversity and disease: a recipe for risk?”, Stazione Zoologica, Naples, Italy. Invited seminar.
- 2013 “Trophic cascades, resource pulses, and biodiversity loss: the ecology of pathogen amplification.” Center for Infectious Disease Dynamics, Pennsylvania State University.
- 2014 “The ecology of Lyme disease risk”, Center for Science and the Public Good, Ursinus College, PA.
- 2014 “Biodiversity and disease risk”, Biology seminar series, Bard College
- 2015 “Integrating wildlife conservation and human livelihoods in central Kenya”, University of California at Santa Cruz.
- 2016 “The ecology of pathogen amplification: the ecology of three tick-borne pathogens”, University of Illinois at Urbana-Champaign.
- 2016 “The ecology of infectious disease: a case study of three tick-borne diseases”, Center for the Environment, Harvard University.
- 2016 “Consequences of integrating livestock and wildlife in an African savanna ecosystem”. Cary Institute of Ecosystem Studies.
- 2017 “Consequences of integrating livestock and wildlife in an African savanna ecosystem”. Texas A&M University.
- 2017 “Consequences of integrating livestock and wildlife in an African savanna ecosystem”, Bard College Biology Seminar Series.
- 2017 “The ecology of pathogen amplification: the ecology of three tick-borne pathogens”, University of California at Davis.
- 2017 “Consequences of integrating livestock and wildlife in an African savanna ecosystem”, Skidmore College.
- 2018 “The Tick Project”, Bard College Biology Seminar Series.
- 2018 “Integrating livestock and wildlife in an African savanna.” University of South Florida.
- 2019 “Integrating livestock and wildlife in an African savanna.” Indiana University.
- 2019 “Citizen Science: The (re)development of a curriculum.” Cary Institute of Ecosystem Studies.
- 2019 “Connecting the dots.” Russell Sage Colleges annual “Women in Science” lecture. April 2019.
- 2019 “The ecology of tick-borne diseases.” Albany Pine Bush Preserve public seminar series. April 2019.
- 2019 Participant, Women in STEM panel discussion. Dutchess Community College, April 2019.
- 2019 “The Tick Project: Testing environmental interventions to prevent tick-borne diseases.” Pennsylvania State University Center for Infectious Disease Dynamics.
- 2019 “Is biodiversity good for our health?” With R.S. Ostfeld. [Big Biology podcast live](#) at the Cary Institute.
- 2020 “The Tick Project.” University of Nebraska seminar series. February 2020. *Canceled due to travel delays.*
- 2020 “Pandemics and biodiversity”, NASA. [virtual]
- 2020 “Pandemics and biodiversity”, Rockland Sierra Club and associated community groups. May 2020.
- 2020 “Universities and responses to covid-19: Public health.” Panel on COVAID initiative organized by the *Open Society University Network* and the *Tallore Network*. Virtual panel member. May 2020.
- 2020 “Preventing pandemics: why biodiversity matters.” Discussion with R.S. Ostfeld and J. Ginsberg.
- 2020 “Pandemics and biodiversity”, University of Alabama Darden Lecture. [virtual]
- 2021 “Evolutionary perspectives on the ecology of infectious diseases.” Keynote speaker, Darwin Day 2021, University of Oslo. [virtual]

Conferences and symposia organized since 2010

1. “Towards a trait-based disease ecology”. Symposium at the Ecological Society of America, Austin, Texas. August 2011. Co-organized with J. Cronin and C. Webb.
2. “Other tick-borne diseases in the Hudson Valley”, in partnership with the Dutchess County Department of Health.

- June 2011. Workshop for regional health care providers sponsored by the National Science Foundation.
3. "Other tick-borne diseases in the Hudson Valley", in partnership with the Dutchess County Department of Health. April 2009. Workshop for regional health care providers sponsored by the National Science Foundation.
 4. "Disease in ecosystems: Reciprocal interactions between pathogens and ecosystems" (with R. Ostfeld and V. Eviner), Organized Oral Session, Ecological Society of America Annual Meeting, Montreal, Quebec, 2005.
 5. "Infectious Disease Ecology: Effects of Ecosystems on Disease and of Disease on Ecosystems" (with F. Keesing and V. Eviner), Eleventh Cary Conference, Institute of Ecosystem Studies, Millbrook, New York, 2005.
 6. Organizer, Retreat on general education, Mohonk Mountain House. September 2014.
 7. Organizer, Lunch series on general education in the sciences, Bard College. September-October 2014
 8. Organizer, lunch series on laboratory education, Bard College. Spring 2015.
 9. Organizer, retreat on assessment of science courses, Mohonk Mountain House. February 2015.
 10. Organizer, Retreat on assessment, Mohonk Mountain House. February 2016.
 11. Organizer, Lunch series on course revisions in the sciences, Bard College. Winter 2016.
 12. May 2016 – Organizer, retreat on assessment of science courses, Mohonk Mountain House
 13. September 2016 – Organizer, Retreat on assessment, Mohonk Mountain House.
 14. February 2017 – Organizer, Retreat on scientific teaching, Mohonk Mountain House.
 15. June 2017 – Organizer, Retreat on science literacy, Mohonk Mountain House.
 16. September 2017 – Organizer, Retreat on science literacy, Mohonk Mountain House.
 17. March 2020 -- Moderator and organizer, virtual panel on covid-19. Bard College.

Selected Bard College Committee Service since 2010

2010-2016	Member, Advisory Board, Citizen Science, Bard College
2011-13	Environmental and Urban Studies, Member, Steering Committee
2012-13	Chair, Environmental Scientist Search Committee Citizen Science Advisory Committee
2012-13	Citizen Science Director Search Committee
2014-2015	Member, General Education Review Committee, Bard College
2015	Member, Consultative Committee on the Sciences, Smolny College, St. Petersburg State University, Russia
2014-2016	Member, Advisory Board, Center for Civic Engagement, Bard College
2014	Chair, Search Committee, three tenure-track positions in biology, Bard College
2015	Chair, Search Committee, two tenure-track positions in biology, Bard College
2013-2015	Chair, Biology program, Bard College
2017-19	Member, Sustainability Committee, Bard College
2018-19	Member, Steering Committee, Environmental and Urban Studies Program, Bard College
2017-18	Chair, working group on Citizen Science, Bard College.
2017-20	Chair, Biology program, Bard College
2018-20	Member, Presidential Commission on curricular reform, Bard College
2019-20	Academic advisor, all incoming first-year students in biology, Bard College.
2020	Co-founder, <i>Ask-an-expert</i> series on covid-19 at Bard College

Bard College presentations since 2010

2010	"Evolution, Lyme disease, and biodiversity." Lecture at Language and Thinking Rostrum series, Bard College.
2011	"Darwin and 21 st century biology: variation, selection, and common descent". Invited plenary lecture at Language and Thinking Rostrum series, Bard College.
2011	"Chocolate makes you fit, preschool keeps you out of jail, and how to win the Nobel Prize in Economics". Lecture in Language and Thinking series, Bard College.
2012	"Chocolate makes you fit, preschool keeps you out of jail, and how to win the Nobel Prize in Economics." Lecture in Language and Thinking Rostrum series, Bard College.
2014	<i>Mentoring</i> . Bard Works Program, Bard College.

2014	“Maximizing the 80-minute class”. Panel discussion, Center for Faculty and Curricular Development, Bard College.
2014	“Biodiversity and disease risk”, Lifetime Learning Institute, Bard College
2015	“Mentoring”, BardWorks, Bard College
2015	“Lecturing”. Panel discussion, Center for Faculty and Curricular Development, Bard College.
2016	“Mentoring”, BardWorks, Bard College
2017	“Science and politics: science literacy for activists”. Bard College.
2017	“The Tick Project”, Montgomery Place Climate Salon Series, Annandale, NY.
2017	“Science literacy for activists”. Bard College Family Weekend.
2018	“Science and politics: science literacy for activists”. Bard College Citizen Science Program.
2019	“How to plan a meaningful summer.” Bard Biology Fall Seminar Series November 2018.
2020	“How to plan a meaningful summer.” Bard Biology Fall Seminar Series November 2019.
2020	“Pandemics & biodiversity.” Mount Holyoke Microcollege Citizen Science class. June 2020.

Selected other service since 2010

2015	Liaison, Bard College participation in White House STEM Education Summit
2015	External Evaluator, Biology department at liberal arts college
2015	External Evaluator, Biology department at liberal arts college
2016-17	Author, website: “Cultivating science literacy”. Available at http://scienceliteracy.bard.edu/ .
2016-	Author & designer, website: “The Tick Project”. Available at https://www.tickproject.org/ .
2018	Consultant for exhibit development: <i>Outbreak</i> . Smithsonian Museum of Natural History.
2018	Guest Editor, <i>Proceedings of the National Academy of Sciences</i> .
2018-	Member, Tick Advisory Board, NYS Assemblywoman Didi Barrett
2018-19	Chair, Faculty Consultative Committee, Fulbright University Vietnam.
2019	Member, Grant Review Panel, European Union’s BIODIVERSA, May 2019. Krakow, Poland.
2020-	Member, External Faculty Advisory Committee, Fulbright University Vietnam.

Science education, literacy, and pedagogy

- Member, Steering Committee for national conference on *Vision and Change in Undergraduate Biology Education*, organized by the US National Academy of Sciences, American Association for the Advancement of Science, and the National Science Foundation in 2009 and 2013. Gave keynote address synthesizing conference in 2009. Conference led to influential [report](#) published in 2011.
- Principal investigator, project on *Cultivating science literacy: a campus initiative*, funded by the Howard Hughes Medical Institute, a five-year initiative to define and implement education for science literacy of college students. Developed resource website for college and university science faculty, <http://scienceliteracy.bard.edu/>.
- Chair, committee on *Citizen Science*, a common course on science literacy for all Bard College students. Author, with Dr. Phil Pardi, of curriculum materials for two-week course to develop science literacy for all undergraduates using water as a theme.
- Member, advisory panel, Princeton University’s *Summit on STEM Literacy*. Summer 2021.

Selected media since 2010

- November 2011. Coverage of our vulture research is featured in an article in *Science News* about ecosystem consequences of the loss of predators. Link to story: http://www.sciencenews.org/view/feature/id/335410/title/Lopped_Off
- November 2011. American Museum of Natural History features our research in a new video feature at the museum. Bard College laboratory facilities feature prominently as do Bard research staff and a student, Kira Gilman, Class of 2011.
- March 2012. Guest, “Urban wildlife”, National Public Radio’s *Science Friday* show taped at the American Museum of Natural History.

- April 2012. Germany's National Public Radio coverage of London conference talk, available at: <http://www.dradio.de/dlf/sendungen/forschak/1740717/>.
- Op-ed column. *Albany Times Union*. "In movies, in labs, a horror story", by Richard S. Ostfeld and Felicia Keesing. Sunday, November 6, 2011. Available online at: <http://www.timesunion.com/opinion/article/In-movies-in-labs-a-horror-story-2254700.php>
- June 8, 2014. "New study to examine whether mice with Lyme live longer." Poughkeepsie Journal.
- June 20, 2014. Single tick bite can pack double pathogen punch. Science Daily.
- June 20, 2014. "Ticks packing more than one disease in a single bite." Discovery News. Written by Richard Farrell.
- June 21, 2014. "Ticks may cause infection with more than one pathogen, study finds." Daily Digest. No author provided.
- June 22, 2014. "Blacklegged tick bites can hit you hard." Examiner.com. Written by Harold Mandel.
- June 23, 2014. "Ticks can carry double – or triple – whammy, study says." NJ.com. Written by [Kathleen O'Brien](#).
- June 25, 2014. "Single tick bite can pack double pathogen punch." ProHealth.com (from a press release from [Eurekalert](#)).
- September 17, 2014. "Threatened biodiversity and effects on African savannas". *The Academic Minute*.
- September 18, 2014. "Mammal traits amplify tick-borne illness." Infection Control Today. Source: Cary Institute of Ecosystem Studies.
- September 18, 2014. "Small, fast, and crowded: Mammal traits amplify tick-borne illness." Science Daily.
- September 19, 2014. "Abundance of small-fast-living mammals increases risk of tick-borne illness." MedIndia.net. Written by Kathy Jones.
- September 22, 2014. "Mice, shrews are most effective at transferring Lyme disease and anaplasmosis." News-Medical.net.
- September 23, 2014. "Lyme study highlights why small mammals spread disease." Poughkeepsie Journal.
- February 5, 2015. "Opossums aren't nearly as bad as you think." January/February issue of Sporting Classics Daily.com. No author provided.
- February 18, 2015. "Researcher: Ticks carrying Lyme disease are emerging earlier." Associated Press.
- February 18, 2015. "Disease-carrying ticks expand range and emerge earlier in warmer climate." Yale Environment 360. No author provided.
- February 18, 2015. "Study says disease-carrying ticks are emerging earlier." WAMC.com. Written by Allison Dunne.
- February 18, 2015. "Study warns that ticks with Lyme are emerging earlier in spring." Poughkeepsie Journal.
- February 18, 2015. "Climate change's effect on emerging diseases, Lyme disease." Outbreak News Today. No author provided.
- February 18, 2015. "In a warmer world, ticks that spread disease are arriving earlier, expanding their ranges." Science Daily. Source: Cary Institute of Ecosystem Studies.
- February 18, 2015. "In a warmer world, ticks that spread disease are arriving earlier, expanding their ranges." www.nsf.gov. Source: Cary Institute of Ecosystem Studies.
- February 20, 2015. "In a warmer world, ticks that spread disease are arriving earlier, expanding their range." Environmental Research Web. Source: Cary Institute of Ecosystem Studies.
- February 23, 2015. "Tick-borne diseases put us a risk in warming world." Digital Journal.com. Written by Karen Graham.
- February 27, 2015. "In Northeast, weather changes may mean more ticks, earlier." U.S. News & World Report. Written by Randy Dottinga.
- March 14, 2015. "Opossums: Where Lyme disease goes to die." Poughkeepsie Journal.
- March 30, 2015. "Give opossums a break." National Wildlife. Written Michael Lipske.
- April 5, 2015. "Be careful; ticks could be arriving earlier this spring." Danbury News Times. Written by Robert Miller.
- April 8, 2015. "In a warmer world, ticks that spread disease are arriving earlier, expanding their ranges." Poughkeepsie Journal. Associated Press.

- April 27, 2015. "Scientist: Climate warming brings Lyme-carrying ticks out earlier." TimesUnion.com. Written by Claire Hughes.
- April 27, 2015. "Climate warming is leading to earlier spring feeding by blacklegged ticks." Infection Control Today. Source: Cary Institute of Ecosystem Studies.
- April 27, 2015. "Time to move Lyme disease awareness month to April?" HVNN.com. Posted by Kathy Welsh. Source: Cary Institute of Ecosystem Studies.
- April 27, 2015. "Time to move Lyme disease awareness month to April?" www.caryinstitute.org. Source: Cary Institute of
- April 28, 2015. "Climate warming leads to earlier tick season." Environmental News Network. Source: Cary Institute of Ecosystem Studies.
- April 28, 2015. "Time to move Lyme disease awareness month to April?" Health Canal. Source: Cary Institute of Ecosystem Studies.
- May 4, 2015. "Global warming may spread Lyme disease." Scientific American. Written by Brittany Patterson and ClimateWire.
- May 4, 2015. "Tick awareness push could be earlier; Dutchess to hold webinar." WAMC Northeast Public Radio. Written by Allison Dunne.
- May 4, 2015. "Scientists tackle the 'difficult problem' of how warming spreads Lyme disease." ClimateWire. Written by Brittany Patterson.
- May 6, 2015. "Climate change and Lyme disease outbreak: Climate change affecting spread in western countries." HNGN. Written by Rachel Cruz.
- May 15, 2015. "With climate change, ticks marching farther and earlier." Climate Central. Written by Michael Lemonick.
- May 18, 2015: Quoted in "Artificial intelligence joins hunt for human–animal diseases" in Nature. Written by Boer Deng.
- May 20, 2015. Quoted in "Model predicts zoonotic hotspots" The Scientist. Written by Kerry Gens.
- May 23, 2015. "Ticks marching earlier and farther due to warming." Discovery News. Written by Michael Lemonick.
- May 24, 2015. "Climate changes linked to early tick emergence: Study." New Hampshire Voice. Written by Heather Mullett.
- May 30, 2015. "An early start for tick season." Philipstown.info. Written by Brian Cronin.
- Jun 30, 2015. Saving wildlife might be good for your health. Mother Nature Network.
- July 21, 2015. Tick expert: Killing deer, keeping chickens won't cut Lyme risk in Fayetteville. Syracuse.com.
- Aug 25, 2015. The growing global battle against blood-sucking ticks. Nature.com.
- Aug 31, 2015. Biodiversity Limits Disease Outbreaks Among Humans and Wildlife. Earth Island Journal.
- Oct 25, 2015. This year's acorn cascade has hidden impact. Albany Times Union.
- Feb 4, 2016. Roundtable: Should the deer cull be stopped? The Michigan Daily.
- Apr 12, 2016. Major study aims to kill ticks, lower Lyme rates. Poughkeepsie Journal.
- Apr 26, 2016. Tick study eyes 5000 properties in Dutchess. Poughkeepsie Journal.
- Apr 27, 2016. *The Tick Project* comes to Dutchess County. Almanac Weekly.
- Apr 29, 2016. Cary Institute, Bard Receive Grant For Large-Scale Tick Control Study. WAMC.
- May 11, 2016. Lyme prevention under study by Cary. Themillbrookindependent.com.
- May 16, 2016. Garlic mustard: Friend or foe? Nantucket Island Inquirer.
- August 2016. Poughkeepsie Journal. Tick study gets "astonishing" local response.
- December 2016. Pulse of the Planet. Lyme disease – The Tick Project.
- January 2017. Pulse of the Planet. An unsung hero in the prevention of Lyme disease.
- March 2017. Health Medicine Network. Biodiversity not a risk factor for zoonotic disease emergence, say ecologists.
- March 2017. The Medical News. Biodiversity not a risk factor for zoonotic disease emergence, say ecologists.
- March 2017. AARP News. Lyme disease warning.
- March 2017. CNBC. Building a better mouse trap may be the secret to killing disease-carrying ticks.
- March 2017. Huffington Post. Climate change could be increasing the footprint of Lyme disease.

- March 2017. Tech Times. Not just Lyme: Here are other tick-borne diseases to watch out for.
- March 2017. National Public Radio. Forbidding forecast for Lyme disease in the Northeast.
- March 2017. National Public Radio. Beyond Lyme: New tick-borne diseases on the rise in U.S.
- April 2017. NorthJersey.com. 2017 may be a very bad year for Lyme disease.
- April 2017. *Science Friday* with Ira Flatow.
- April 2017. USA Today. Why 2017 may be a very bad year for Lyme disease.
- May 2017. Daily Freeman. Officials warn of potential increase in tick population, agree on steps to combat illnesses, including Lyme disease.
- May 2017. Total Landscape Care. How to: tips on avoiding ticks this summer.
- May 2017. State College News. Lyme disease cases could be worse than ever in 2017.
- May 2017. Livingston County News. Senate passes measures to combat Lyme disease.
- June 2017. National Public Radio "On Point" with Tom Ashbrook. Preventing Lyme (and a new disease) as ticks spread.
- June 2017. Vermont Public Radio. The outsized role of opossums in controlling the tick population.
- June 2017. Santa Fe New Mexican. Our view: getting ready for a ticky season.
- July 2017. WBUR Boston. "Science Shortfall: Why Don't We Know How Best To Fight Ticks And Lyme Disease?"
- July 2017. Lyme disease is sprading, and it's partly this mouse's fault. FiveThirtyEight.
- September 2017. Bennington Banner. "The Outside Story: A plague of ticks: scientists search for solutions."
- October 2017. The Daily Orange. "Experts say mice are primary cause of Lyme disease, not deer."
- October 2017. JSTOR Daily. "Can the acorn crop predict Lyme disease?"
- December 2017. Poughkeepsie Journal. "'Get Ticked Off' by the facts and help combat Lyme".
- January 2018. Albany Times Union. "Battery-killing frigid blast could stymie alien invaders."
- May 2018. CBS New York. "'The Tick Project' aims to reduce tick population."
- May 2018. "On Point" with Tom Ashbrook program about CDC report on vector-borne diseases. National Public Radio. <http://www.wbur.org/onpoint/2018/05/03/tick-borne-diseases-rising>
- July 2018. [Forest ecology shapes Lyme disease risk in the eastern US](#). *Science Daily*.
- April 2019. [Ecological Society of America announces 2019 Fellows](#). *EurekAlert*.
- July 2018. [We have no idea how bad the US tick problem is](#). *Wired*.
- October 2018. Study finds potential benefits of wildlife-livestock coexistence in East Africa. *Phys.org*.
- November 2018. "We are now in the middle of a sixth extinction." *The Irish Times*.
- February 2019. [Livestock act like ghosts of wildlife past](#). *Scientific American*.
- July 29, 2019. [Tick busters on the lookout for Lyme](#). *The New Yorker*.
- August 13, 2019. [The best way to help cows and zebras? Make them live together](#). *Science*.
- January 10, 2020. Mouse Meals Laced With A Vaccine Might Be Key To Slowing Lyme Disease. WBUR Boston.
- January 16, 2020. Featured scientist, Big Biology podcast. [Diluting disease](#).
- February 19, 2020. Bard College professor wins \$241,000 research grant. *Kingston Daily Freeman*.
- March 18, 2020. 'Tip of the iceberg': is our destruction of nature responsible for Covid-19? *The Guardian*.
- March 19, 2020. Ask a professor: Tick Project's Felicia Keesing says that less biodiversity means more diseases. *Hudson Valley One*.
- March 23, 2020. Where Pandemics Come From — and How to Stop Them. *The Revelator*.
- March 24, 2020. Our Growing Food Demands Will Lead to More Corona-like Viruses. *Inside Climate News*.
- March 27, 2020. Biodiversity, infectious diseases & coronavirus. Sojourner Truth radio show with Margaret Prescod. <https://globaljusticeecology.org/new-earth-watch-with-dr-felicia-keesing-on-biodiversity-infectious-diseases-coronavirus/>
- April 11, 2020. Biodiversity loss and wildlife trade are making pandemics like COVID-19 more likely, experts say. *Canadian Broadcasting Corporation*.
- April 20, 2020. When Confronting a Pandemic, We Must Save Nature to Save Ourselves. *Center for American*

Progress.

- April 22, 2020. A New Virus Could Yet Spread From Animals To Humans. Forbes. [Editor's pick.]
- April 27, 2020. Lyme Disease Advice: Protecting Yourself Against Ticks. Next Avenue.
- May 5, 2020. Biodiversity or bust. The ASEAN Post.
- May 7, 2020. Destruction of habitat and loss of biodiversity are creating the perfect conditions for diseases like COVID-19 to emerge. MinnPost.
- May 12, 2020. Bard professors get coronavirus research grant. Kingston Daily Freeman.
- May 13, 2020. Attacks on ecosystem defenders in Latin America continue amid Covid-19. Chinadialogue.
- May 14, 2020. Bard College Professors Are Using NSF Grant For COVID-19 Forecasting Models. WAMC.
- May 28, 2020. Featured guest, Big Blue Marble podcast from Canadian Broadcasting Corporation. <https://bigbluemarble.earth/podcast/natures-backlash-episode-14/>.
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