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Education

Ph.D. Environmental Science, Policy & Mang., University of California, Berkeley, CA 2005
B.A., Environmental Science, University of Virginia, Charlottesville, VA 1998

Research Experience

Wildlife Health Researcher, U.S. Geological Survey 2005-present
Faculty Affiliate, Montana State University 2006-present
Graduate Student Researcher, U.C. Berkeley 1999-2005

Publications

In review

Brandell, E, E. S. Almberg, P. C. Cross, A. Dobson, D. Smith and P. Hudson (2020). "The invasion, dynamics, and consequences of infectious diseases in Yellowstone wolves". In: *Yellowstone Wolves: Two Decades of Science and Discovery*. Ed. by D. Smith, D. MacNulty and D. R. Stahler. Chicago: University of Chicago.

Cotterill, G. G, P. C. Cross, J. A. Merkle, J. D. Rogerson, B. M. Scurlock and J. T. Du Toit (2020). "Parsing the effects of management efforts and environmental drivers on a chronic wildlife disease". In: *Journal of Applied Ecology* In Review, pp. 000-000.

Cross, P, D. J. Prosser, A. M. Ramey, E. M. Hanks and K. M. Pepin (2020). "Confronting models with data: The challenges of estimating disease spillover". In: *Philosophical Transactions of the Royal Society B: Biological Sciences* In review, pp. 000-000.

Kamath, P. L, K. Manlove, E. F. Cassirer, P. C. Cross and T. E. Besser (2020). "Genetic structure of *Mycoplasma ovipneumoniae* informs pathogen spillover dynamics between domestic and bighorn sheep in the western United States". In: *Scientific Reports* In review, pp. 000-000.

Manlove, K, L. M. Sampson, B. Borremans, R. Miller, K. Pepin, T. Besser and P. Cross (2020). "A management-centered approach to modeling pathogen spillover risk at the wildlife-livestock interface". In: *Philosophical Transactions of the Royal Society B: Biological Sciences* In review, pp. 000-000.

Rayl, N. D, J. A. Merkle, K. M. Proffitt, E. S. Almberg, J. D. Jones, J. A. Gude and P. C. Cross (2020). "Elk migration influences the risk of disease spillover in the Greater Yellowstone Ecosystem". In: *Journal of Animal Ecology* In review, pp. 000-000.

Sokolow, S. H, N. Nova, K. Pepin, A. J. Peel, K. Manlove, P. C. Cross, D. J. Becker, R. K. Plowright, J. R. Pulliam, H. McCallum and G. A. De Leo (2020). "Ecological interventions to prevent and manage zoonotic pathogen spillover". In: *Philosophical Transactions of the Royal Society B: Biological Sciences* In Review.

2019

Manlove, K, M. Branan, R. S. Miller, E. F. Cassirer, K. Baker, D. Bradway, S. Sweeney, K. L. Marshall, P. C. Cross and T. E. Besser (2019). "Risk factors and productivity losses associated with *Mycoplasma ovipneumoniae* infection in United States domestic sheep operations". In: *Preventative Veterinary Medicine*

168, pp. 30-38. DOI: [10.1016/j.prevetmed.2019.04.006](https://doi.org/10.1016/j.prevetmed.2019.04.006). URL: <https://www.sciencedirect.com/science/article/pii/S0167587718304446>.

Rayl, N. D, K. M. Proffitt, E. S. Almberg, J. A. Merkle, J. H. Jones, J. A. Gude and P. C. Cross (2019). "Modelling Elk-to-Livestock Transmission Risk to Predict Hotspots of Brucellosis Spillover". In: *Journal of Wildlife Management* 00.00, pp. 000-000. DOI: [10.1002/jwmg.21645](https://doi.org/10.1002/jwmg.21645).

Wijeyakulasuriya, D, E. Hank, B. Shaby and P. Cross (2019). "Extreme value based methods for modeling elk yearly movements". In: *Journal of Agricultural, Biological and Environmental Statistics* 24.1, pp. 73-91. DOI: [10.1007/s13253-018-00342-2](https://doi.org/10.1007/s13253-018-00342-2).

2018

Astorga, F, S. Carver, E. S. Almberg, G. R. Sousa, K. Wingfield, K. D. Niedringhaus, P. Van Wick, L. Rossi, Y. Xie, P. Cross, S. Angelone, C. Gortázar and L. E. Escobar (2018). "International meeting on sarcoptic mange in wildlife, June 2018, Blacksburg, Virginia, USA". In: *Parasites & Vectors* 11, p. 449. ISSN: 1756-3305. DOI: [10.1186/s13071-018-3015-1](https://doi.org/10.1186/s13071-018-3015-1).

Brennan, A, E. M. Hanks, J. A. Merkle, E. K. Cole, S. R. Dewey, A. B. Courtemanch and P. C. Cross (2018). "Examining speed versus selection in connectivity models using elk migration as an example". In: *Landscape Ecology* 33.6, pp. 955-968. ISSN: 0921-2973 1572-9761. DOI: [10.1007/s10980-018-0642-z](https://doi.org/10.1007/s10980-018-0642-z).

Cotterill, G. G, P. C. Cross, E. K. Cole, R. K. Fuda, J. D. Rogerson, B. M. Scurlock and J. T. du Toit (2018). "Winter feeding of elk in the Greater Yellowstone Ecosystem and its effects on disease dynamics". In: *Philos Trans R Soc Lond B Biol Sci* 373.1745, p. 20170093. ISSN: 1471-2970 (Electronic) 0962-8436 (Linking). DOI: [10.1098/rstb.2017.0093](https://doi.org/10.1098/rstb.2017.0093). URL: <https://www.ncbi.nlm.nih.gov/pubmed/29531148>.

Cotterill, G. G, P. C. Cross, A. D. Middleton, J. D. Rogerson, B. M. Scurlock and J. T. du Toit (2018). "Hidden cost of disease in a free-ranging ungulate: brucellosis reduces mid-winter pregnancy in elk". In: *Ecol Evol* 8.22, pp. 10733-10742. ISSN: 2045-7758 (Print) 2045-7758 (Linking). DOI: [10.1002/ece3.4521](https://doi.org/10.1002/ece3.4521). URL: <https://www.ncbi.nlm.nih.gov/pubmed/30519402>.

Cross, P. C, F. T. van Manen, M. Viana, E. S. Almberg, D. Bachen, E. E. Brandell, M. A. Haroldson, P. J. Hudson, D. R. Stahler and D. W. Smith (2018). "Estimating distemper virus dynamics among wolves and grizzly bears using serology and Bayesian state-space models". In: *Ecol Evol* 8.17, pp. 8726-8735. ISSN: 2045-7758 (Print) 2045-7758 (Linking). DOI: [10.1002/ece3.4396](https://doi.org/10.1002/ece3.4396). URL: <https://www.ncbi.nlm.nih.gov/pubmed/30271540>.

Haggerty, J. H, K. Epstein, M. Stone and P. C. Cross (2018). "Land Use Diversification and Intensification on Elk Winter Range in Greater Yellowstone: Framework and Agenda for Social-Ecological Research". In: *Rangeland Ecology & Management* 71.2, pp. 171-174. ISSN: 15507424. DOI: [10.1016/j.rama.2017.11.002](https://doi.org/10.1016/j.rama.2017.11.002).

Huyvaert, K. P, R. E. Russell, K. A. Patyk, M. E. Craft, P. C. Cross, M. G. Garner, M. K. Martin, P. Nol and D. P. Walsh (2018). "Challenges and Opportunities Developing Mathematical Models of Shared Pathogens of Domestic and Wild Animals". In: *Vet Sci* 5.4. ISSN: 2306-7381 (Electronic) 2306-7381 (Linking). DOI: [10.3390/vetsci5040092](https://doi.org/10.3390/vetsci5040092). URL: <https://www.ncbi.nlm.nih.gov/pubmed/30380736>.

Manlove, K, C. M. Aiello, P. Sah, B. Cummins, P. J. Hudson and P. C. Cross (2018). "The ecology of movement and behavior: A saturated tripartite model for describing animal contacts". In: *Proceedings of the Royal Society B: Biological Sciences* 285, p. 20180670. DOI: [10.1098/rspb.2018.0670](https://doi.org/10.1098/rspb.2018.0670).

Merkle, J. A, P. C. Cross, B. M. Scurlock, E. K. Cole, A. B. Courtemanch, S. R. Dewey and M. J. Kauffman (2018). "Linking spring phenology with mechanistic models of host movement to predict disease transmission risk". In: *Journal of Applied Ecology* 55, pp. 810-819. ISSN: 00218901. DOI: [10.1111/1365-2664.13022](https://doi.org/10.1111/1365-2664.13022).

2017

Benavides, J. A, D. Caillaud, B. M. Scurlock, E. J. Maichak, W. H. Edwards and P. C. Cross (2017). "Estimating loss of *Brucella abortus* antibodies from age-specific serological data in elk". In: *EcoHealth* 14, pp. 234-243.

DOI: [10.1007/s10393-017-1235-z](https://doi.org/10.1007/s10393-017-1235-z).

Brennan, A, P. C. Cross, K. Portacci, B. M. Scurlock and W. H. Edwards (2017). "Shifting brucellosis risk in livestock coincides with spreading seroprevalence in elk". In: *PLoS One* 12.6, p. e0178780. DOI: [10.1371/journal.pone.0178780](https://doi.org/10.1371/journal.pone.0178780). URL: <https://www.ncbi.nlm.nih.gov/pubmed/28609437>.

Cassirer, E. F, K. R. Manlove, E. S. Almberg, P. L. Kamath, M. Cox, P. Wolff, A. Roug, J. Shannon, R. Robinson, R. B. Harris, B. J. Gonzales, R. K. Plowright, P. J. Hudson, P. C. Cross, A. Dobson, et al. (2017). "Pneumonia in bighorn sheep: Risk and resilience". In: *The Journal of Wildlife Management*. ISSN: 0022541X. DOI: [10.1002/jwmg.21309](https://doi.org/10.1002/jwmg.21309).

Maichak, E. J, B. M. Scurlock, P. C. Cross, J. D. Rogerson, W. H. Edwards, B. Wise, S. G. Smith and T. J. Kreeger (2017). "Assessment of the *Brucella abortus* Strain 19 ballistic vaccination program in elk on winter feedgrounds of Wyoming, USA". In: *Wildlife Society Bulletin* 41.1, pp. 70-79. DOI: [10.1002/wsb.734](https://doi.org/10.1002/wsb.734).

Manlove, K. R, E. F. Cassirer, R. K. Plowright, P. C. Cross and P. J. Hudson (2017). "Contact and contagion: Bighorn sheep demographic states vary in probability of transmission given contact". In: *Journal of Animal Ecology* 86, pp. 908-920. DOI: [10.1111/1365-2656.12664](https://doi.org/10.1111/1365-2656.12664).

National Academies of Sciences, E. and Medicine (2017). *Revisiting Brucellosis in the Greater Yellowstone Area*. Washington, DC: The National Academies Press, p. 209. ISBN: 978-0-309-45831-3. DOI: [10.17226/24750](https://doi.org/10.17226/24750). URL: <https://doi.org/10.17226/24750>.

Pepin, K. M, S. L. Kay, B. D. Golas, S. S. Shriner, A. T. Gilbert, R. S. Miller, A. L. Graham, S. Riley, P. C. Cross, M. D. Samuel, M. B. Hooten, J. A. Hoeting, J. O. Lloyd-Smith, C. T. Webb and M. G. Buhnerkempe (2017). "Inferring infection hazard in wildlife populations by linking data across individual and population scales". In: *Ecology Letters* 20.3, pp. 275-292. DOI: [10.1111/ele.12732](https://doi.org/10.1111/ele.12732).

Sah, P, S. Leu, P. C. Cross, P. J. Hudson and S. Bansal (2017). "Unraveling the disease consequences and mechanisms of modular structure in animal social networks". In: *Proceedings of the National Academy of Science of the United States of America* 114.16, pp. 4165-4170. DOI: [10.1073/pnas.1613616114](https://doi.org/10.1073/pnas.1613616114).

Toit, J. du, P. Cross and M. Valeix (2017). "Weaving wildlife into a framework for rangeland resilience". In: *Rangeland Systems: Processes, Management and Challenges*. Ed. by D. Briske. Springer, pp. 395-428. DOI: [10.1007/978-3-319-46709-2](https://doi.org/10.1007/978-3-319-46709-2).

2016

Almberg, E. S, P. C. Cross, P. J. Hudson, A. P. Dobson, D. W. Smith and D. R. Stahler (2016). "Infectious diseases of wolves in Yellowstone". In: *Yellowstone Science* 24.1, pp. 47-49. URL: www.nps.gov/yell/learn/ys-24-1-infectious-diseases-of-wolves-in-yellowstone.htm.

Cross, P. C, E. S. Almberg, C. G. Haase, P. J. Hudson, S. K. Maloney, M. C. Metz, A. J. Munn, P. Nugent, O. Putzeys, D. R. Stahler, A. C. Stewart and D. W. Smith (2016). "Energetic costs of mangle in Yellowstone wolves estimated from infrared thermography". In: *Ecology* 97.8, pp. 1938-1948. DOI: [10.1890/15-1346.1](https://doi.org/10.1890/15-1346.1).

Ebinger, M. R, M. A. Haroldson, F. T. van Manen, C. M. Costello, D. D. Bjornlie, D. J. Thompson, K. A. Gunther, J. K. Fortin, J. E. Teisberg, S. R. Pils, P. J. White, S. L. Cain and P. C. Cross (2016). "Detecting grizzly bear use of ungulate carcasses using global positioning system telemetry and activity data". In: *Oecologia* 181.3, pp. 695-708. ISSN: 1432-1939 (Electronic) 0029-8549 (Linking). DOI: [10.1007/s00442-016-3594-5](https://doi.org/10.1007/s00442-016-3594-5).

Kamath, P, J. Foster, K. Drees, C. Quance, G. Luikart, N. Anderson, P. Clarke, E. Cole, W. Edwards, J. Rhyhan, J. Treanor, R. Wallen, S. Robbe-Austerman and P. Cross (2016). "Genomics reveals historic and contemporary transmission dynamics of a bacterial disease among wildlife and livestock". In: *Nature Communications* 7, p. 11448. DOI: [10.1038/ncomms11448](https://doi.org/10.1038/ncomms11448).

Leach, C, C. Webb and P. Cross (2016). "When environmentally persistent pathogens transform good habitat into ecological traps". In: *Royal Society Open Science* 3, p. 160051. DOI: [10.1098/rsos.160051](https://doi.org/10.1098/rsos.160051).

Manlove, K. R, J. G. Walker, M. E. Craft, K. P. Huyvaert, M. B. Joseph, R. S. Miller, P. Nol, K. A. Patyk, D. O'Brien, D. P. Walsh and P. C. Cross (2016). "'One Health' or three? Publication silos among the one health disciplines". In: *PLoS Biology* 14.4, p. e1002448. DOI: [10.1371/journal.pbio.1002448](https://doi.org/10.1371/journal.pbio.1002448).

Manlove, K, E. F. Cassirer, P. C. Cross, R. K. Plowright and P. J. Hudson (2016). "Disease introduction is associated with a phase transition in bighorn sheep demographics". In: *Ecology* 97.10, pp. 2593-2602. DOI: [10.1002/ecy.1520](https://doi.org/10.1002/ecy.1520).

2015

Almberg, E. S, P. C. Cross, A. P. Dobson, D. W. Smith, M. C. Metz, D. R. Stahler and P. J. Hudson (2015). "Social living mitigates the costs of a chronic illness in a cooperative carnivore". In: *Ecology Letters* 18.7, pp. 660-7. DOI: [10.1111/ele.12444](https://doi.org/10.1111/ele.12444).

Brennan, A, P. C. Cross and S. Creel (2015). "Managing more than the mean: using quantile regression to identify factors related to large elk groups". In: *Journal of Applied Ecology* 52, pp. 1656-1664. ISSN: 00218901. DOI: [10.1111/1365-2664.12514](https://doi.org/10.1111/1365-2664.12514).

Cole, E. K, A. M. Foley, J. M. Warren, B. L. Smith, S. R. Dewey, D. G. Brimeyer, W. S. Fairbanks, H. Sawyer and P. C. Cross (2015). "Changing migratory patterns in the Jackson elk herd". In: *Journal of Wildlife Management* 79.6, pp. 877-886. DOI: [10.1002/jwmg.917](https://doi.org/10.1002/jwmg.917).

Cross, P. C, E. J. Maichak, J. D. Rogerson, K. M. Irvine, J. D. Jones, D. M. Heisey, W. H. Edwards and B. M. Scurlock (2015). "Estimating the phenology of elk brucellosis transmission with hierarchical models of cause-specific and baseline hazards". In: *Journal of Wildlife Management* 79.5, pp. 739-748. DOI: [10.1002/jwmg.883](https://doi.org/10.1002/jwmg.883).

Foley, A. M, P. C. Cross, D. A. Christianson, B. M. Scurlock and S. Creel (2015). "Influences of supplemental feeding on winter elk calf:cow ratios in the southern Greater Yellowstone Ecosystem". In: *Journal of Wildlife Management* 79.6, pp. 887-897. DOI: [10.1002/jwmg.908](https://doi.org/10.1002/jwmg.908).

Gorsich, E. E, V. O. Ezenwa, P. C. Cross, R. G. Bengis and A. E. Jolles (2015). "Context-dependent survival, fecundity and predicted population-level consequences of brucellosis in African buffalo". In: *Journal of Animal Ecology* 84.4, pp. 999-1009. DOI: [10.1111/1365-2656.12356](https://doi.org/10.1111/1365-2656.12356).

Sepulveda, M, K. Pelican, P. Cross, A. Eguren and R. Singer (2015). "Fine-scale movements of rural free-ranging dogs in conservation areas in the temperate rainforest of the coastal range of southern Chile". In: *Mammalian Biology* 80.4, pp. 290-297. ISSN: 16165047. DOI: [10.1016/j.mambio.2015.03.001](https://doi.org/10.1016/j.mambio.2015.03.001).

2014

Benavides, J. A, P. C. Cross, G. Luikart and S. Creel (2014). "Limitations to estimating bacterial cross-species transmission using genetic and genomic markers: inferences from simulation modeling". In: *Evolutionary Applications* 7.7, pp. 774-87. DOI: [10.1111/eva.12173](https://doi.org/10.1111/eva.12173).

Brennan, A, P. C. Cross, M. D. Higgs, W. H. Edwards, B. M. Scurlock and S. Creel (2014). "A multi-scale assessment of animal aggregation patterns to understand increasing pathogen seroprevalence". In: *Ecosphere* 5.10, p. art138. ISSN: 2150-8925. DOI: [10.1890/es14-00181.1](https://doi.org/10.1890/es14-00181.1).

Hand, B. K, S. Chen, N. Anderson, A. Beja-Pereira, P. C. Cross, M. Ebinger, H. Edwards, R. A. Garrott, M. D. Kardos, M. Kauffman, E. L. Landguth, A. Middleton, B. Scurlock, P. J. White, P. Zager, et al. (2014). "Sex-biased gene flow among elk in the Greater Yellowstone Ecosystem". In: *Journal of Fish and Wildlife Management* 5.1, pp. 124-132. ISSN: 1944-687X. DOI: [10.3996/022012-jfwm-017](https://doi.org/10.3996/022012-jfwm-017).

Jones, J. D, M. J. Kauffman, K. L. Monteith, B. M. Scurlock, S. E. Albeke and P. C. Cross (2014). "Supplemental feeding alters migration of a temperate ungulate". In: *Ecological Applications* 24.7, pp. 1769-1779. DOI: [10.1890/13-2092.1](https://doi.org/10.1890/13-2092.1).

Kamath, P. L., D. Elleder, L. Bao, P. C. Cross, J. H. Powell and M. Poss (2014). "The population history of endogenous retroviruses in mule deer (*Odocoileus hemionus*)". In: *Journal of Heredity* 105.2, pp. 173-87. DOI: [10.1093/jhered/esto88](https://doi.org/10.1093/jhered/esto88).

Manlove, K. R., E. F. Cassirer, P. C. Cross, R. K. Plowright and P. J. Hudson (2014). "Costs and benefits of group living with disease: a case study of pneumonia in bighorn lambs (*Ovis canadensis*)". In: *Proc Biol Sci* 281.1797, p. 20142331. DOI: [10.1098/rspb.2014.2331](https://doi.org/10.1098/rspb.2014.2331).

Viana, M., R. Mancy, R. Biek, S. Cleaveland, P. C. Cross, J. O. Lloyd-Smith and D. T. Haydon (2014). "Assembling evidence for identifying reservoirs of infection". In: *Trends in Ecology & Evolution* 29.5, pp. 270-9. DOI: [10.1016/j.tree.2014.03.002](https://doi.org/10.1016/j.tree.2014.03.002).

2013

Brennan, A., P. C. Cross, D. E. Ausband, A. Barbknecht and S. Creel (2013). "Testing automated howlind devices in a wintertime wolf survey". In: *Wildlife Society Bulletin* 37.2, pp. 389-393. DOI: [10.1002/wsb.269](https://doi.org/10.1002/wsb.269).

Brennan, A., P. C. Cross, M. Higgs, J. P. Beckman, R. W. Klaver, B. Scurlock and S. Creel (2013). "Inferential consequences of modeling rather than measuring snow accumulation in studies of animal ecology". In: *Ecological Applications* 23.3, pp. 643-653. DOI: [10.1890/12-0959.1](https://doi.org/10.1890/12-0959.1).

Bright, P. R., H. T. Buxton, L. S. Balistrieri, L. B. Barber, F. H. Chapelle, P. C. Cross, D. P. Krabbenhoft, G. S. Plumlee, J. M. Sleeman, D. E. Tillitt, P. L. Toccalino and J. R. Winton (2013). *USGS Environmental Health Science Strategy â€œ Providing Environmental Health Science for a Changing World*. U.S. Geological Survey. URL: <https://pubs.er.usgs.gov/publication/ofr20121069>.

Cassirer, E. F., R. K. Plowright, K. R. Manlove, P. C. Cross, A. P. Dobson, K. A. Potter, P. J. Hudson and A. White (2013). "Spatio-temporal dynamics of pneumonia in bighorn sheep". In: *Journal of Animal Ecology* 82, pp. 518-528. ISSN: 00218790. DOI: [10.1111/1365-2656.12031](https://doi.org/10.1111/1365-2656.12031).

Cross, P. C., D. Caillaud and D. M. Heisey (2013). "Underestimating the effects of spatial heterogeneity due to individual movement and spatial scale: infectious disease as an example". In: *Landscape Ecology* 28.2, pp. 247-257. DOI: [10.1007/s10980-012-9830-4](https://doi.org/10.1007/s10980-012-9830-4).

Cross, P. C., T. Creech, M. Ebinger, K. Manlove, K. Irvine, J. Henningsen, J. Rogerson, B. Scurlock and S. Creel (2013). "Female elk contacts are neither frequency nor density dependent". In: *Ecology* 94.9, pp. 2076-2086. DOI: [10.1890/12-2086.1](https://doi.org/10.1890/12-2086.1).

Cross, P. C., E. Maichak, A. Brennan, B. Scurlock, J. Henningsen and G. Luikart (2013). "An ecological perspective on *Brucella abortus* in the western United States". In: *Rev sci tech Off int Epiz* 32.1, pp. 79-87.

Joseph, M. B., J. R. Mihaljevic, A. L. Arellano, J. G. Kueneman, D. L. Preston, P. C. Cross and P. T. J. Johnson (2013). "Taming wildlife disease: bridging the gap between science and management". In: *Journal of Applied Ecology* 50, pp. 702-712. ISSN: 00218901. DOI: [10.1111/1365-2664.12084](https://doi.org/10.1111/1365-2664.12084).

Plowright, R., K. Manlove, E. F. Cassirer, P. C. Cross, T. Besser and P. Hudson (2013). "Use of exposure history to identify patterns of immunity to pneumonia in bighorn sheep (*Ovis canadensis*)". In: *PLoS ONE* 8.4, p. e61919. DOI: [10.1371/journal.pone.0061919.g001](https://doi.org/10.1371/journal.pone.0061919.g001).

Powell, J. H., S. T. Kalinowski, M. D. Higgs, M. R. Ebinger, N. V. Vu and P. C. Cross (2013). "Microsatellites indicate minimal barriers to mule deer *Odocoileus hemionus* dispersal across Montana, USA". In: *Wildlife Biology* 19, pp. 102-110. DOI: [10.2981/11-081](https://doi.org/10.2981/11-081).

2012

Almberg, E. S., P. C. Cross, A. P. Dobson, D. W. Smith and P. J. Hudson (2012). "Parasite invasion following host reintroduction: a case study of Yellowstone's wolves". In: *Philosophical Transactions of the Royal Society B: Biological Sciences* 367.1604, pp. 2840-2851. DOI: [10.1098/rstb.2011.0369](https://doi.org/10.1098/rstb.2011.0369).

Creech, T, P. C. Cross, B. Scurlock, E. Maichak, J. Rogerson, J. Henningsen and S. Creel (2012). "Effects of low-density feeding on elk-fetus contact rates on Wyoming feedgrounds". In: *Journal of Wildlife Management* 76.5, pp. 877-886. DOI: [10.1002/jwmg.331](https://doi.org/10.1002/jwmg.331).

Cross, P. C, T. G. Creech, M. R. Ebinger, D. M. Heisey, K. Irvine and S. Creel (2012). "Wildlife contact analysis: emerging methods, questions, and challenges". In: *Behavioral Ecology and Sociobiology* 66.10, pp. 1437-1447. DOI: [10.1007/s00265-012-1376-6](https://doi.org/10.1007/s00265-012-1376-6).

Forristal, V. E, S. Creel, M. Taper, B. Scurlock and P. C. Cross (2012). "Effects of supplemental feeding and aggregation on fecal glucocorticoid metabolite concentrations in elk". In: *Journal of Wildlife Management* 76.4, pp. 694-702. DOI: [10.1002/jwmg.312](https://doi.org/10.1002/jwmg.312).

Plowright, R. K, P. C. Cross, G. M. Tabor, E. S. Almberg, L. Bienen and P. J. Hudson (2012). "Anthropogenic change and conservation medicine". In: *New Directions in Conservation Medicine: Applied Cases of Ecological Health*. Ed. by A. Aguirre, R. S. Ostfeld and P. Daszak. New York: Oxford University Press. Chap. 8, pp. 111-121.

Ryan, S. J, P. C. Cross, J. Winnie, C. Hay, J. Bowers and W. M. Getz (2012). "The utility of normalized difference vegetation index for predicting African buffalo forage quality". In: *Journal of Wildlife Management* 76.7, pp. 1499-1508. DOI: [10.1002/jwmg.407](https://doi.org/10.1002/jwmg.407).

2011

Almberg, E. S, L. D. Mech, P. C. Cross, D. W. Smith, J. Sheldon and R. Crabtree (2011). "Infectious disease in Yellowstone National Park's canid community". In: *Yellowstone Science* 19.2, pp. 16-25. URL: pubs.er.usgs.gov/publication/70044063.

Almberg, E, P. C. Cross, C. Johnson, D. Heisey and B. Richards (2011). "Modeling routes of chronic wasting disease transmission: Environmental prion persistence promotes deer population decline and extinction". In: *PLoS ONE* 6.5, p. e19896. DOI: [10.1371/journal.pone.0019896](https://doi.org/10.1371/journal.pone.0019896).

Bai, Y, P. C. Cross, L. Malania and M. Kosoy (2011). "Isolation of *Bartonella capreoli* from elk". In: *Veterinary Microbiology* 148.2-4, pp. 329-32. DOI: [10.1016/j.vetmic.2010.09.022](https://doi.org/10.1016/j.vetmic.2010.09.022).

Ebinger, M. R, P. C. Cross, R. L. Wallen, P. J. White and J. Treanor (2011). "Simulating sterilization , vaccination , and test-and-remove as brucellosis control measures in bison". In: *Ecological Applications* 21.8, pp. 2944-2959. DOI: [10.1890/10-2239.1](https://doi.org/10.1890/10-2239.1).

LaBeaud, A, P. Cross, W. Getz and C. King (2011). "Rift Valley Fever Virus infection in African Buffalo (*Syncerus caffer*) herds in rural South Africa: Evidence of interepidemic transmission". In: *American Journal of Tropical Medicine and Hygiene* 89.4, pp. 641-646. DOI: [10.4269/ajtmh.2011.10-0187](https://doi.org/10.4269/ajtmh.2011.10-0187).

Serrano, E, P. C. Cross, M. Beneria, A. Ficapal, J. Curia, X. Marco, S. Lavin and I. Marco (2011). "Decreasing prevalence of brucellosis in red deer through efforts to control disease in livestock". In: *Epidemiology and infection* 139.10, pp. 1626-1630. DOI: [10.1017/S0950268811000951](https://doi.org/10.1017/S0950268811000951).

2010

Almberg, E, P. C. Cross and D. Smith (2010). "Persistence of canine distemper virus in the Greater Yellowstone Ecosystem's carnivore community". In: *Ecological Applications* 20.7, pp. 2058-2074. DOI: [10.1890/09-1225.1](https://doi.org/10.1890/09-1225.1).

Cross, P. C, E. Cole, A. Dobson, W. H. Edwards, K. L. Hamlin, G. Luikart, A. Middleton, B. Scurlock and P. White (2010). "Probable causes of increasing elk brucellosis in the Greater Yellowstone Ecosystem". In: *Ecological Applications* 20.1, pp. 278-288. DOI: [10.1890/08-2062.1](https://doi.org/10.1890/08-2062.1).

Cross, P. C, M. Ebinger, V. Patrek and R. Wallen (2010). "Brucellosis in cattle, bison, and elk: Management conflicts in a society with diverse values". In: *Knowing Yellowstone: Science in America's First National Park*. Ed. by J. Johnson. Boulder, CO: Taylor Trade Publishing, pp. 81-94.

Cross, P. C., D. Heisey, B. Scurlock, W. H. Edwards, M. Ebinger and A. Brennan (2010). "Mapping brucellosis increases relative to elk density using hierarchical Bayesian models". In: *PLoS ONE* 5.4, p. e10322. DOI: [10.1371/journal.pone.0010322](https://doi.org/10.1371/journal.pone.0010322).

Heisey, D. M., E. E. Osnas, P. C. Cross, D. O. Joly, J. A. Langenberg and M. W. Miller (2010a). "Linking process to pattern: estimating spatiotemporal dynamics of a wildlife epidemic from cross-sectional data". In: *Ecological Monographs* 80.2, pp. 221-240. ISSN: 0012-9615. DOI: [Doi 10.1890/09-0052.1](https://doi.org/10.1890/09-0052.1). URL: :/WOS:000277652800003.

Heisey, D., E. E. Osnas, P. C. Cross, D. Joly, J. A. Langenberg and M. Miller (2010b). "Rejoinder: sifting through model space". In: *Ecology* 91.12, pp. 3503-3514. DOI: [10.1890/10-0894.1](https://doi.org/10.1890/10-0894.1).

Polansky, L., G. Wittemyer, P. C. Cross, C. Tambling and W. M. Getz (2010). "From moonlight to movement and synchronized randomness: Fourier and wavelet analyses of animal location time series data". In: *Ecology* 91.5, pp. 1506-1518. DOI: [10.1890/08-2159.1](https://doi.org/10.1890/08-2159.1).

Wittekindt, N., A. Padhi, S. Schuster, J. Qi, F. Zhao, L. Tomsho, L. Kasson, M. Packard, P. C. Cross and M. Poss (2010). "Lymph node meta-transcriptomics: exploring the host microbiome". In: *PLoS ONE* 5.10, p. e13432. DOI: [10.1371/journal.pone.0013432](https://doi.org/10.1371/journal.pone.0013432).

2009

Bar-David, S., I. Bar-David, P. C. Cross, S. Ryan, C. Knechtel and W. M. Getz (2009). "Methods for assessing movement path recursion with application of African buffalo in South Africa". In: *Ecology* 90.9, pp. 2467-2479. DOI: [10.1890/08-1532.1](https://doi.org/10.1890/08-1532.1).

Cross, P. C., J. Drewe, V. Patrek, G. Pearce, M. D. Samuel and R. Delahay (2009). "Wildlife population structure and parasite transmission: Implications for disease management". In: *Management of Disease in Wild Mammals*. Ed. by R. Delahay, G. C. Smith and M. R. Hutchings. Tokyo: Springer. Chap. 2, pp. 9-30.

Cross, P. C., D. Heisey, J. A. Bowers, C. T. Hay, J. Wolhuter, P. Buss, M. Hofmeyr, A. Michel, R. Bengis, T. Bird, I. Whyte, J. Du Toit and W. M. Getz (2009). "Disease, predation and demography: assessing the impacts of bovine tuberculosis on African buffalo by monitoring at individual and population levels". In: *Journal of Applied Ecology* 46, pp. 467-475. DOI: [10.1111/j.1365-2664.2008.01589.x](https://doi.org/10.1111/j.1365-2664.2008.01589.x).

Maichak, E., B. Scurlock, J. Rogerson, L. Meadows, A. Barbknecht, W. H. Edwards and P. C. Cross (2009). "Effects of management, behavior, and scavenging on risk of brucellosis transmission in elk of western Wyoming". In: *Journal of Wildlife Diseases* 45.2, pp. 398-410. DOI: [10.7589/0090-3558-45.2.398](https://doi.org/10.7589/0090-3558-45.2.398).

Oosthuizen, W., P. Cross, J. Bowers, C. Hay, M. Ebinger, P. Buss, M. Hofmeyr and E. Z. Cameron (2009). "Effects of chemical immobilization on survival of African buffalo in the Kruger National Park". In: *Journal of Wildlife Management* 73.1, pp. 149-153. DOI: [10.2193/2008-071](https://doi.org/10.2193/2008-071).

Wolhuter, J., R. Bengis, B. Reilly and P. C. Cross (2009). "Clinical demodicosis in African Buffalo (*Syncerus caffer*) in the Kruger National Park". In: *Journal of Wildlife Diseases* 45.2, pp. 502-504. DOI: [10.7589/0090-3558-45.2.502](https://doi.org/10.7589/0090-3558-45.2.502).

2008

Conner, M. C., M. Ebinger, J. A. Blanchong and P. C. Cross (2008). "Infectious disease in cervids of North America: Data, models, and management challenges". In: *Annals of the New York Academy of Sciences* 1134, pp. 146-172. DOI: [10.1196/annals.1439.005](https://doi.org/10.1196/annals.1439.005).

Hay, C. T., P. C. Cross and P. J. Funston (2008). "Trade-offs between predation and foraging explain sexual segregation in African buffalo". In: *Journal of Animal Ecology* 77, pp. 850-858. DOI: [10.1111/j.1365-2656.2008.01409.x](https://doi.org/10.1111/j.1365-2656.2008.01409.x).

Winnie, J. J., P. C. Cross and W. M. Getz (2008). "Habitat quality and heterogeneity influence distribution and behavior in African Buffalo (*Syncerus caffer*)". In: *Ecology* 89.5, pp. 1457-1468. DOI: [10.1890/07-0772.1](https://doi.org/10.1890/07-0772.1).

2007

Conner, M. M, J. Gross, P. C. Cross, M. D. Samuel, D. McKinnon and M. Miller (2007). *Scale-dependent approaches to modeling spatial epidemiology of chronic wasting disease*. Utah Division of Wildlife Resources. URL: <http://wildlife.utah.gov/diseases/cwd/e-book/>.

Cross, P. C, W. H. Edwards, B. Scurlock, E. Maichak and J. Rogerson (2007). "Effects of management and climate on elk brucellosis in the Greater Yellowstone Ecosystem". In: *Ecological Applications* 17.4, pp. 957-964. DOI: [10.1890/06-1603](https://doi.org/10.1890/06-1603).

Cross, P. C, P. L. Johnson, J. O. Lloyd-Smith and W. M. Getz (2007). "Utility of R_0 as a predictor of disease invasion in structured populations". In: *Journal of the Royal Society Interface* 4, pp. 315-324. DOI: [10.1098/rsif.2006.0185](https://doi.org/10.1098/rsif.2006.0185).

Cross, P. C. and G. Plumb (2007). "Wildlife health initiatives in Yellowstone National Park". In: *Yellowstone Science* 15.2, pp. 4-7. URL: <http://www.nps.gov/yell/planyourvisit/yellsci-issues.htm>.

Getz, W. M, S. Fortmann-Roe, P. Cross, A. Lyons, S. Ryan and C. Wilmers (2007). "LoCoH: nonparametric kernel methods for constructing home ranges and utilization distributions". In: *PLoS ONE* 2.2, p. e207. DOI: [10.1371/journal.pone.0000207](https://doi.org/10.1371/journal.pone.0000207).

Hines, A, V. O. Ezenwa, P. C. Cross and J. Rogerson (2007). "Effects of supplemental feeding on gastrointestinal parasite infection in elk (*Cervus elaphus*): Preliminary observations". In: *Veterinary Parasitology* 148.3-4, pp. 350-355. DOI: [10.1016/j.vetpar.2007.07.006](https://doi.org/10.1016/j.vetpar.2007.07.006).

2006

Cross, P. C. and W. M. Getz (2006). "Assessing vaccination as a control strategy in an ongoing epidemic: Bovine tuberculosis in African Buffalo". In: *Ecological Modelling* 196, pp. 494-504. DOI: [10.1016/j.ecolmodel.2006.02.009](https://doi.org/10.1016/j.ecolmodel.2006.02.009).

Getz, W. M, J. O. Lloyd-Smith, P. C. Cross, S. Bar-David, P. L. Johnson, T. C. Porco and M. S. Sánchez (2006). "Modeling the invasion and spread of contagious disease in heterogeneous populations". In: *Disease Evolution: Models, Concepts and Data Analyses*. Ed. by Z. Feng, U. Dieckmann and S. A. Levin. Vol. 71. AMS-DIMACS, pp. 113-144. ISBN: 978-1-4704-4028-2.

Michel, A. L, R. G. Bengis, D. F. Keet, M. Hofmeyr, L. M. de Klerk, P. C. Cross, A. E. Jolles, D. Cooper, I. J. Whyte, P. Buss and J. Godfroid (2006). "Wildlife tuberculosis in South African conservation areas: Implications and challenges". In: *Veterinary Microbiology* 112.2-4, pp. 91-100. DOI: [10.1016/j.vetmic.2005.11.035](https://doi.org/10.1016/j.vetmic.2005.11.035).

2005

Cross, P. C, J. O. Lloyd-Smith and W. Getz (2005). "Disentangling association patterns in fission-fusion societies using African buffalo as an example". In: *Animal Behavior* 69.2, pp. 499-506. DOI: [10.1016/j.anbehav.2004.08.006](https://doi.org/10.1016/j.anbehav.2004.08.006).

Cross, P. C, J. O. Lloyd-Smith, P. L. Johnson and W. M. Getz (2005). "Duelling timescales of host mixing and disease recovery determine disease invasion in structured populations". In: *Ecology Letters* 8, pp. 587-595. DOI: [10.1111/j.1461-0248.2005.00760.x](https://doi.org/10.1111/j.1461-0248.2005.00760.x).

Lloyd-Smith, J. O, P. C. Cross, C. J. Briggs, M. Daugherty, W. M. Getz, J. Latta, M. S. Sanchez, A. B. Smith and A. Swei (2005). "Should we expect population thresholds for wildlife disease?" In: *Trends in Ecology & Evolution* 20.9, pp. 511-519. DOI: [10.1016/j.tree.2005.07.004](https://doi.org/10.1016/j.tree.2005.07.004).

2004

Cross, P. C, J. O. Lloyd-Smith, J. Bowers, C. Hay, M. Hofmeyr and W. M. Getz (2004). "Integrating association data and disease dynamics in a social ungulate: bovine tuberculosis in African buffalo in the Kruger National Park". In: *Annales Zoologici Fennici* 41, pp. 879-892. URL: <http://www.jstor.org/stable/23736148>.

Macandza, V, N. Owen-Smith and P. C. Cross (2004). "Forage selection by African buffalo (*Syncerus caffer*) through the dry season in two landscapes of the Kruger National Park". In: *South African Journal of Wildlife Research* 34.2, pp. 113-121.

2003

Caron, A, P. C. Cross and J. du Toit (2003). "Ecological implications of bovine tuberculosis in African Buffalo herds". In: *Ecological Applications* 13.5, pp. 1338-1345. DOI: [10.1890/02-5266](https://doi.org/10.1890/02-5266).

Grey Literature

Rayl, ND, Proffitt, KM, Almberg, ES, Merkle, JA, Jones, JH, Gude, JA & Cross, PC. 2018 Modelling elk-to-livestock transmission risk to identify hotspots of brucellosis spillover. pp. 1-56, Montana Fish, Wildlife and Parks.

Ebinger, MR & PC Cross. 2008. Surveillance for brucellosis in Yellowstone bison: The power of various strategies to detect vaccination effects. National Park Service, Mammoth, WY, YCR-2008-04. 69 pages.

Databases

van Manen, F.T., Smith, D.W., Haroldson, M.A., Stahler, D.R., Almberg, E.S., Whitman, C.L., and Cross, P.C., 2018, Canine distemper virus antibody titer results for grizzly bears and wolves in the Greater Yellowstone Ecosystem 1984-2014: U.S. Geological Survey data release, <https://doi.org/10.5066/P96E4UCK>.

Merkle, JA, PC Cross, BM Scurlock, EK Cole, AB Courtemanch, SR Dewey, MJ Kauffman, and KE Szcudronski, 2017, Elk movement and predicted number of brucellosis-induced abortion events in the southern Greater Yellowstone Ecosystem (1993-2015): U.S. Geological Survey data release, <https://doi.org/10.5066/F7474803>.

Brennan, A., Courtemanch, A.B., Cole, E.K., Dewey, S.R., and Cross, P.C., 2018, Elk GPS collar data from National Elk Refuge (2006-2015): U.S. Geological Survey data release, <https://doi.org/10.5066/F7FF3RNW>.

Cross, PC, DM Heisey, JA Bowers, CT. Hay, J Wolhuter, P Buss, M Hofmeyr, A Michel, R Bengis, T Bird, IJ Whyte, JT Du Toit, and WM Getz. 2009. Buffalo herd tracking with VHF and GPS data. <http://www.Movebank.org>.

Cross PC, Heisey DM, Bowers JA, Hay CT, Wolhuter J, Buss P, Hofmeyr M, Michel AL, Bengis RG, Bird TLF, Du Toit JT, Getz WM (2008) Data from: Disease, predation and demography: assessing the impacts of bovine tuberculosis on African buffalo by monitoring at individual and population levels. Dryad Digital Repository. <http://dx.doi.org/10.5061/dryad.5hh3h>

Gorsich EE, Ezenwa VO, Cross PC, Bengis RG, Jolles AE (2015) Data from: Context-dependent survival, fecundity, and predicted population-level consequences of brucellosis in African buffalo. Dryad Digital Repository <http://dx.doi.org/10.5061/dryad.p6678>.

Students

- Gavin Cotterill. In progress. Managing disease in the supplemental feeding grounds of Wyoming. Utah State University. Co-supervisor: JT Du Toit
- Ellen Brandell. In progress. Disease impacts on wolves in Yellowstone National Park. Penn State University. Co-supervisor: PJ Hudson
- Angela Brennan. 2014. Broad-scale determinants of elk aggregation and brucellosis seroprevalence. Montana State University. Co-supervisor: S Creel.
- Tyler Creech. 2011. Heterogeneity in the fine-scale contact patterns of elk as determined by proximity collars. Montana State University. Co-supervisor: S Creel

- Victoria Forristal (formerly Patrek). 2009. Masters. Fat but not happy: The Effects of Supplemental Feeding on Stress Hormone Levels in Elk. Montana State University. Co-supervisors: M Taper, S Creel
- Craig Hay. 2006 Choice of Social environment of male buffalo (*Syncerus caffer*) in the Kruger National Park, South Africa. Tshwane University of Technology. South Africa. Co-supervisor: P Funston
- Chris Oosthuizen. 2006. Honour's thesis: Chemical immobilization of African buffalo (*Syncerus caffer*) in Kruger National Park: Evaluating effects on survival and reproduction. University of Pretoria. South Africa. Co-supervisor: E Cameron

Field Supervisor

- Manlove, K. 2017. Penn State University. Supervisor: PJ Hudson
- Almberg, ES. 2015. The Invasion, Dynamics, and Impacts of Infectious Disease in Yellowstone's Wolf Population. Penn State University. Supervisor: PJ Hudson
- Bowers, JA. 2006. Master's thesis: Feeding patch selection of African Buffalo (**Syncerus caffer caffer()*) in the central region of the Kruger National Park. Tshwane University of Technology. South Africa
- Tania Bird. 2004. Master's thesis: Influence of bovine tuberculosis (*Mycobacterium bovis*) on condition and reproductive success of females African buffalo (*Syncerus caffer*) in Kruger National Park. University of Pretoria. South Africa
- Shane Abeare. 2004. Master's thesis: Dry season habitat and patch selection by African buffalo herds: test of a new home range estimator. University of Pretoria. South Africa
- Valerio Macandza. 2002. Master's thesis: Forage selection by African buffalo in the late dry season in two landscapes. Witwatersrand University. South Africa
- Alex Caron. 2001. Master's thesis: Ecological implications of bovine tuberculosis in African Buffalo. University of Pretoria. South Africa

Teaching

- Data Analysis and Multi-level / Hierarchical Modeling in Ecology (1 credit) Fall 2009. MSU.
- Modeling Infectious Disease (3 day workshop) 2009. Univ. of Montana.
- EcoLunch Seminar (1 credit) Fall 2008. MSU.
- Plant-Disease Invasion Seminar (informal graduate seminar). Fall 2006. MSU.
- Wildlife Ecology (4 credits with lab) Spring 2005. Co-Lecturer UC Berkeley.
- Disease Ecology (1 credit) 2004. Co-supervised graduate seminar on disease ecology, UC Berkeley
- Modeling Infectious Disease (1 week short-course) 2001. Univ. of Witwatersrand, South Africa
- Diseases of the GYE. 1 lectures per year for an introductory class on the GYE. MSU.
- Disease Ecology. 2 lectures per year for upper-level ecology students. MSU
- Philosophy of Science. 2007. 2 classes. MSU.

Grants/Awards

- USGS Performance Award (2016-2012, 2010-2007)
- USDA grant to Univ of Washington, \$96,000 Livestock-wildlife disease modeling 2016
- USGS Grade Promotion
- MT FWP cooperative agreement \$45,000 Cattle disease risk assessment. 2015
- USGS, PI \$ 133,000 Greater Yellowstone ecosystem disease research.
- NIMBioS Workshop (Co-PI) ~\$60,000 2013
- NSF Dissertation Improvement Grant (Co-PI) \$19,343
- USGS, PI \$ 98,000 Greater Yellowstone ecosystem disease research
- USGS Powell Center Grant, Co-PI (declined) 2012
- USGS, PI \$75,000, Disease effects on Yellowstone Wolves.
- USFWS, PI \$45,000, Elk space-use of the National Elk Refuge.
- Morris Animal Foundation, Co-PI \$ 75,000.

- USGS Best Paper in Biology 2011
- USGS Grade Promotion
- NSF-NIH Ecology of Infectious Disease Program, co-PI \$1,971,033, 2010
- USGS, PI \$75,000, Park Oriented Biological Support Grant
- USGS, PI \$39,000, Modeling environmental transmission of Chronic Wasting Disease 2009
- USGS, Co-PI \$320,000, Global Climate Change Initiative 2008
- Co-PI \$112,180, Wyoming Livestock-Wildlife Disease Initiative
- Co-PI \$281,000, Wyoming Game and Fish Department: Tracking elk movements.
- USGS, Co-PI \$750,000 with Mary Poss (Penn State): Viral tracking of mule deer and elk. 2007
- NPS, PI \$10,000: Brucellosis in Yellowstone National Park 2006
- USGS, PI \$210,000 for chronic wasting disease research. 2005
- NSF-NIH Ecology of Infectious Disease Grant. \$1.8 million. Initiated, co-authored, and developed the research program with Dr. Wayne Getz. 1999

Invited Presentations

- Glasgow University Ecology Seminar, Glasgow, UK. 2017
- University of California at Berkeley, Wildlife Seminar
- Plenary, 12th Western States and Provinces Deer and Elk Workshop. Sun Valley, ID.
- Center for Infectious Disease Dynamics, Penn State University.
- Utah State University Ecology Seminar. Logan, UT 2016
- UCLA Ecology Seminar, Los Angeles, CA.
- Patuxent USGS Seminar.
- Georgetown Ecology Seminar, Washington, D.C.
- 50th Anniv. Mammal Research Institute, South Africa
- K-5 science and technology night, Bozeman MT.
- MT Conservation Biology Evening Lecture, Bozeman MT 2015
- The National Academy of Sciences, Washington DC
- Wildlife Society Meeting, Winnipeg, Canada 2014
- Ecology Seminar, University of Sherbrooke, Canada
- NIH Rocky Mountain Lab, Hamilton MT
- 18th Congreso Chileno de Medicina Veterinaria, Santiago, Chile
- Dept. Seminar, Univ. Catolica, Valdivia, Chile
- Public Talk, Emerging wildlife pandemics, Menlo Park, CA
- Steering Committee & Speaker. Foreign Animal Disease, Shepardsstown WV 2013
- Interagency Bison Management Plan Meeting. Chico MT
- European Conservation Biology Meeting, Glasgow UK 2012
- Wildlife disease management workshop, Penn State Univ. 2011
- Ecology and Evolution of Infectious Disease Meeting, Santa Barbara.
- Invited Participant, RAPPID-NIH Movement and Mosquito-Transmitted Diseases Meeting, Washington D.C.
- Invited Keynote, Berryman Institute Biennial Meeting, Logan UT. 2010
- Invited Participant, RAPPID-NIH Movement and Mosquito-Transmitted Diseases Meeting, Washington D.C.
- Kopriva Lecture [Invited] MSU College of Arts and Science, Bozeman, MT 2009
- Dept. Seminar, Colorado State University, Fort Collins, CO
- 10th Biennial Conference of Research on the Colorado Plateau Speaker, ESA,

Service

- Associate Editor, Ecological Applications ongoing
- Northern Yellowstone Cooperative Wildlife Working Group.
- Chair, USGS Animal Use and Care Committee for NOROCK.

- Reviewer of the USDA Cattle Fever Tick Eradication Program. 2018-2019
- Associate Editor, Journal of Wildlife Management 2015-2017
- National Academy of Science Panel Member: Revisiting Brucellosis in the GYE
- Dept. Homeland Security IPT for outbreak response and assessment tools. 2016
- Red Wolf Recovery Implementation Team, USFWS. 2014
- Participant, Wildlife Conservation Society Wildlife Health Program, Internal Strategic Workshop for future research.
- Steering Committee, Group Leader & Speaker. Foreign Animal Disease National Preparedness Workshop. USGS/DHS/USDA/CDC. 2013
- Member Environmental Health Strategic Science Planning Team 2011
- Co-coordinator & originator, NIH & DHS RAPIDD Working group on cross-species transmission. 15 participants
- Participant, NIH & DHS RAPIDD Working group on movement and mosquito-borne diseases.
- USGS representative. Northern Rockies NEON committee.
- Organizer, Greater Yellowstone Brucellosis Research Meeting (2 days), 60 participants, 27 speakers, Bozeman MT 2009
- Participant, Dept. of Interior Avian Influenza Preparedness workshop, Madison WI
- Participant, Yellowstone National Park Science Agenda Workshop, Bozeman MT
- Steering Committee, Yellowstone National Park Wildlife Health Program Meeting. 2007
- Participant, USDA workshop: The Science of Surveillance, Control and Eradication of Catastrophic Diseases in Wildlife, Pinagree Park CO
- Participant, Disease and conservation of mammals, Conservation International 2006
- USGS representative. Greater Yellowstone Interagency Brucellosis Committee 2005-8

Reviewer

Journals (since 2004): Nature, Ecol App, J Anim Ecol, J App Ecol, Proc Roy Soc B, Phil Trans Roy Soc, Biol Letters, Cons Bio, Biol Cons, Anim Cons, Biodiv Cons, Behavior, Envi Cons, J Wildl Dis, Wildl Bio, PLoS ONE, EcoHealth, J Theo Bio, SA J Wildl Res, Ann Zoo Fennici, Ecol Mod, USGS FSP, USGS Study Plans

Funding Agencies: National Science Foundation, Wildlife Conservation Society, Wellcome Trust, Biotechnology and Biological Sciences Research Council UK, Natural Environment Research Council UK, South African National Research Foundation, Alberta Prion Research Institute, National Institutes of Health

Press and Outreach

- [Naturally Speaking](#) 2017
- [Bozeman Daily Chronicle](#) 2016
- [The Economist](#) 2015
- [NSF Science 360](#) 2015
- The Wildlife Professional 2015
- New Zealand Herald 2013
- [Discovery Channel](#): Curiosity X-Ray Yellowstone 2012
- [Wired Magazine](#) 2012
- [Science World Scholastic Magazine](#) 2012
- Yellowstone Wolf Citizen Science Webpage: <www.yellowstonewolf.org>

References

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Phone: (307) 367-4347ext224 Email: bscurlock@wyo.gov

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