

KAY E. HOLEKAMP

Curriculum Vitae

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WEBSITES

<https://www.holekamplab.org/>
<http://msuhyenas.blogspot.com/>

EDUCATION

Ph.D. University of California (1983) Berkeley, California

A.B. (Cum Laude, with High Honors) (1973) Smith College, Northampton,
Massachusetts

PROFESSIONAL APPOINTMENTS

University Distinguished Professor, Department of Integrative Biology (formerly Zoology),
Michigan State University East Lansing, Michigan (1999-present)

Director, Ecology, Evolution, and Behavior Program,
Michigan State University, East Lansing, Michigan (2009-2020)

Associate Professor, Department of Zoology, Michigan State University
East Lansing, Michigan (1995-1999)

Adjunct Curator of Mammals, Michigan State University Museum
East Lansing, Michigan (1993-Present)

Assistant Professor, Department of Zoology, Michigan State University
East Lansing, Michigan (1992-1995)

Research Assistant Professor, Department of Psychology,
Michigan State University, East Lansing, Michigan (1991-1992)

Research Associate, Department of Ornithology and Mammalogy,
California Academy of Sciences, San Francisco, California (1987-1991)

N.R.S.A. Postdoctoral Fellow in the Department of Biology,
University of California, Santa Cruz, California (1983-86)

Supervisor of undergraduate research in Behavioral Ecology, Department of Biology,
University of California, Santa Cruz, California (1984-87)

Teaching Assistant, University of California, Berkeley, California (1977-81)

Research Assistant, University of California, Berkeley, California (1978-81)

Amazon River guide and interpreter, Parador Ticuna
Leticia, Amazonas, Colombia (1973-74)

Keeper, Small Mammal Division and Children's Zoo, St. Louis Zoo.
St. Louis, Missouri (1969, 1970, 1971, 1972)

HONORS AND AWARDS

Recipient of the Distinguished Animal Behaviorist Award from the Animal Behavior Society (a lifetime achievement award and the Society's highest honor) (2019)

Graduate School Outstanding Faculty Mentor Award (Inaugural), Michigan State University (2017)

Elected to Honorary Membership in the American Society of Mammalogists (the Society's highest honor) (2016)

Inducted as a Fellow of the American Academy of Arts and Sciences (2015)

Recipient of the Smith College Medal, Smith College, Northampton, MA (2013)

Elected as a Fellow, American Association for the Advancement of Science (2013)

Named University Distinguished Professor, Michigan State University (2009)

College of Natural Science Distinguished Faculty Award, Michigan State University (2007)

University Distinguished Faculty Award, Michigan State University (2006)

C. Hart Merriam Award for outstanding research in mammalogy from the American Society of Mammalogists (2005)

Elected as a Fellow of the Animal Behavior Society (2001)

College of Natural Science Outstanding Academic Advisor Award, Michigan State University (2001)

Teacher-Scholar Award, Michigan State University (1998)

Teacher-Scholar Award, College of Natural Science at Michigan State University (1997)

Recipient of Distinguished Teaching Award, University of California, Berkeley (1982)

Election to Phi Beta Kappa (1973)

Election to Sigma Xi (1973)

GRANTS AND FELLOWSHIPS

NSF Grant IOS1949911 (9/1/20-6/30/23) "OPUS: CRS - The evolutionary ecology of the spotted hyena." Principal Investigator: Kay E. Holekamp. Amount: \$253,232.

Human Frontier Science Program Grant No. RGP0051/2019: (12/1/2019-11/30/2024) "Communication and the coordination of collective behavior across spatial scales in animal societies" Principal Investigator: Ariana Strandburg-Peshkin. Co-PIs: Kay E. Holekamp, Marta Manser, Benjamin Hirsch, Marie Rosch. Amount: \$1,350,000 (MSU portion \$340,000).

NSF Grant OISE1853934 (International Research Experience for Students) (7/1/2019-6/30/2024) "IRES Track I: Behavioral ecology of African carnivores." Principal Investigator: Kay E. Holekamp. Amount: \$305,017.

NSF Grant IOS 1755089 "Selection for general intelligence by novel environments" 3/1/2018 – 2/29/2024. Principal Investigator: Kay E. Holekamp. Co-PIs: Elise F. Zipkin & D. Zach Hambrick. Amount: \$678,441.

Morris Animal Foundation Award 012910-00001 Pastoralist communities as a potential source of *Toxoplasma gondii* infection in a wild carnivore and effects on host behavior and survival." (10/15/2019 – 10/14/2021). Principal Investigator: Kay E. Holekamp. Amount: \$100,000. (Proposal written & submitted by Zach Laubach for postdoctoral support).

NSF Grant OISE 1556407 (International Research Experience for Students) (7/1/2016-6/30/2020) "IRES: Behavioral ecology of African carnivores." Principal Investigator: Kay E. Holekamp. Amount: \$249,999.

NSF Grant DEB 1353110 (1 April, 2014-31 March, 2020) "LTREB RENEWAL: Fitness consequences of pleiotropic androgen effects in free-living mammals." Principal Investigator: Kay E. Holekamp; Co-PIs: Jacinta Beehner & Kim Scribner. Amount: \$450,000.

NSF Grant OIA 0939454 (Science and Technology Centers) (1 August, 2015-July 31, 2022) "BEACON: An NSF Center for the Study of Evolution in Action - Renewal" Principal Investigator: Erik Goodman; CO-PIs: Kay E. Holekamp, Richard E. Lenski, Charles A. Ofria, and Robert T. Pennock. Amount: \$22,500,000.

Lakeside Foundation award (2016) "Causes and consequences of altered predator communities in the Masai Mara National Reserve." December, 2015. Principal Investigator: Kay E. Holekamp. Amount: \$50,000.

NSF Doctoral Dissertation Improvement Grant (IOS-Animal Behavior) to Zachary M. Laubach: Early social experience and epigenetic mediation of adult phenotypes. 6/1/2017 - 5/31/2019. Amount: \$20,151.

NIH Grant Number: 1R01GM105042 (2013-2017) "The Role of Emotion and Communication in Cooperative Behavior." Principal Investigator: Risto Miikkulainen; Co-PI: Kay E. Holekamp. Amount: \$1,257,029. MSU subcontract for Holekamp portion: \$437,087.

NSF Grant OISE-1260768 (International Research Experience for Students) (2013-2016) "IRES: Behavioral ecology of African carnivores." Principal Investigator: Kay E. Holekamp. Amount: \$250,000.

NSF Grant IOS 1121474 (Animal Behavior) (August 2011-July 2016) "Mediation of rank-related maternal effects on males throughout the lifespan" Principal Investigator: Kay E. Holekamp; Co-PIs: Barbara L. Lundrigan and Kim T. Scribner. Amount: \$560,000.

NSF Grant OIA 0939454 (Science and Technology Centers) (August, 2010-July, 2015) "BEACON: An NSF Center for the Study of Evolution in Action" Principal Investigator: Erik Goodman; CO-PIs: Kay E. Holekamp, Richard E. Lenski, Charles A. Ofria, and Robert T. Pennock. Amount: \$24,999,149.

NSF Grant IOS 0819437 (Organism-Environment Interactions) (2008-2013) "LTREB: Fitness consequences of pleiotropic androgen effects in free-living mammals." Principal Investigator: Kay E. Holekamp; Co-PIs: Jeffrey A. French, Stephen E. Glickman and Kim T. Scribner. Amount: \$465,000.

NIH Grant 2T32MH070343-06. "The Integrative Neurobiology of Social Processes." (2004-2014) Principal Investigator: M. Breedlove. Holekamp was one of eight training faculty.

NSF Grant IOS 0965840 (International Research Experience for Students) (2010-2012) "IRES: Behavioral ecology of African carnivores." Principal Investigator: Kay E. Holekamp. Amount: \$150,000.

NSF Grant IOB 0920505 (Animal Behavior) (2009-2012) "A Symbiotic Approach to the Study of Animal Communication." Principal Investigator: Kevin R. Theis; Co-PIs: Kay E. Holekamp and Thomas Schmidt. Amount: \$480,000.

Discretionary Funding Initiative award from the Vice President for Research and Graduate Studies at Michigan State University (2011-2012) "Maternal rank effects on males after dispersal." Principal Investigator Kay E. Holekamp Amount: \$75,000.

NSF Grant IOS 0809914 (Neural Systems) (2008-2010) "SGER: Support of research involving captive spotted hyenas." Principal Investigator: Stephen E. Glickman; Co-PIs: Kay E. Holekamp, Nancy G. Forger and Geert J. deVries. Amount: \$200,000.

NSF Grant IOB 0618022 (Animal Behavior) (2006-2010) "Exploring the roles of competition and constraint in the evolution of mammalian behavior." Principal Investigator: K.E. Holekamp; Co-PIs: Barbara L. Lundrigan, Miriam Zelditch, and Kim T. Scribner. Amount: \$616,182.

Army Research Office award for ARO Proposal No.54320-LS-II, Agreement No.W911NF-08-1-0310. "Novel Mechanisms of Pathogen Resistance." 1 November 2008- 31 July 2009. Principal Investigator: Kay E. Holekamp; Co-PIs: Linda Mansfield and Stephen E. Glickman Amount: \$50,000.

Research Fellowship from the John Simon Guggenheim Memorial Foundation (2006). Amount \$38,000.

IRGP award from the Office of the Vice President for Research and Graduate Studies at Michigan State University (2005-2006) "Frontal Cortex and Social Complexity: A Comparative Study using Computed Tomography." Principal Investigator: Sharleen Sakai, CO-PIs: Kay E. Holekamp & Barbara L. Lundrigan. Amount: \$75,000.

NSF Grant IBN 0343381 (Animal Behavior) (2004-2007) "Mammalian behavioral development under contrasting regimes of interspecific competition" Principal Investigator: Kay E. Holekamp; Co-PIs: Laura Smale and Jeffrey A. French. Amount: \$425,000.

NSF Grant IBN 0113170 (LTREB: Animal Behavior) (2001-2006) "Integrated study of behavioral and morphological development in free-living carnivores" Principal Investigator: Kay E. Holekamp; Co-PIs: Barbara L. Lundrigan and Kim T. Scribner. Amount: \$304,850.

NSF Grant IBN 9906445 (Animal Behavior) (1999-2003: current) "Mammalian sibling rivalry" Principal Investigator: Kay E. Holekamp; Co-PIs: Laura Smale, Stephen E. Glickman, and Jeffrey A. French. Amount: \$410,000.

International Studies Program, Michigan State University (1998): Development of new field course in Kenya entitled "The Behavioral Ecology of African mammals." \$7,000.

NSF Grant IBN 9630667 (Animal Behavior) (1996-2000) "The evolution of intelligence in response to social complexity." Principal Investigator: Kay E. Holekamp; Co-PIs: Laura Smale, and Marlene Zuk. Amount: \$215,000.

Searle Scholarship (1994-98) \$180,000.

David and Lucille Packard Fellowship for Science and Engineering (1993-1999) \$500,000.

NSF Grant IBN 9309805 (Animal Behavior) (1993) "Rank and reproduction in free-living spotted hyenas." Principal Investigator Kay E. Holekamp, CO-PI: Laura Smale. Amount \$240,000.

NSF Grant BNS 9021461 (Animal Behavior) (1990) "Coalitions, dispersal, and mating in free-living spotted hyenas, *Crocuta crocuta*." Principal Investigator: Kay E. Holekamp; Co-PIs: Laura Smale, and Laurence G. Frank. Amount: \$276,000.

Charles A. Lindbergh Fund Grant (1989) Amount \$10,580.

NSF Grant BNS 8706939 (Psychobiology) (1987) "Behavioral development in spotted hyenas, *Crocuta crocuta*." Principal Investigator: Kay E. Holekamp; Co-PI: Laurence G. Frank. Amount: \$180,000.

National Research Service Award Postdoctoral Fellowship from the National Institutes of Health (1983)

Bache Fund Grant from the National Academy of Sciences (1982)

Grant from the Lerner-Gray Fund for Marine Research of the American Museum of Natural History (1982; declined)

Sigma Xi Grant-in aid-of-research (1979)

NSF Doctoral Dissertation Improvement Grant (BNS 80-20080) (1979)

American Association of University Women Graduate Fellowship (1979)

U. C. Chancellor's Patent Fund Research Grant (1979)

Phi Beta Kappa Scholarship (1978)

NSF Graduate Fellowship (1974)

PEER-REVIEWED PUBLICATIONS (total = 206)

Jensen, F. H., Strandburg-Peshkin, A., Gersick, A.S., Lehmann, K. D. S., **Holekamp, K.E.** & Johnson, M.P. (In prep) GPS-synchronized sound, movement and location-logging tags for investigating acoustic communication in distributed animal societies. *Methods in Ecology and Evolution*.

Montgomery T.M., Lehmann, K.D.S., Gregg, S., Keyser, K., McTigue, L.E., Beehner, J.C., & **Holekamp, K.E.** (In review) Determinants of hyena participation in risky collective action. *Nature Communications*.

Rojas, C. A., **Holekamp, K.E.**, Jasso, M. V., Souza, V., Koehler, C., Eisen, J.A., Theis, K.R. (In revision) Taxonomic, genomic, and functional variation in the gut microbiomes of wild spotted hyenas across two decades of study. *mSystems*.

Cavalieri, C.N., McElhinny, T.L., **Holekamp, K.E.** & Lundrigan, B.L. (In review) Geographic variation in spotted hyena skull size; empirical evidence for the energetic equivalence rule. *Journal of Mammalogy*.

Strauss, E.D., Jensen, F.H., Gersick, A.S., Thomas, M., Johnson, M. P., **Holekamp, K.E.** & Strandburg-Peshkin, A. (In review) Daily ranging and den usage patterns structure fission-fusion dynamics and social associations in spotted hyenas. *Behavioral Ecology and Sociobiology*.

Sarkar, A., Harty, S., Chafkin, J., Habig, R., Creel, S., **Holekamp, K.E.**, & Josephs, R.A. (In revision after review) Social ecophysiology and the biology and structure of mammalian social status. *Biological Reviews*.

Curren, L.J., Sawdy, M.A., Scribner, K.T., Lehman, K.D.S. & **Holekamp, K.E.** (2022) Endurance rivalry among male spotted hyenas: what does it mean to “endure”? *Behavioral Ecology*.

Lehmann, K.D.S., Jensen, F.H., Gersick, A.S., Strandburg-Peshkin, A., & **Holekamp, K.E.** (2022) Long-distance vocalizations of spotted hyenas contain individual, but not group, signatures. *Proceedings of the Royal Society, London B*. 289: 20220548. <https://doi.org/10.1098/rspb.2022.0548>

Laubach, Z.M., **Holekamp, K.E.** Izzuddin M. Aris, I.M., Natalie Slopen, N. & Perng, W. (2022) Applications of conceptual models from lifecourse epidemiology in ecology and evolutionary biology. *Biology Letters*. 18:20220194. <https://doi.org/10.1098/rsbl.2022.0194>

Johnson-Ulrich, L., Johnson-Ulrich, Z. & **Holekamp, K.E.** (2022) Natural conditions and adaptive functions of problem-solving in the Carnivora. *Current Opinion in Behavioral Sciences*. In press

Spagnuolo, O.S.B., Lemerle, M., **Holekamp, K.E.**, & Wiesel, I. (2022) The value of individual identification in studies of free-living hyenas and aardwolves. *Mammalian Biology*. In press.

McCormick, S.K., **Holekamp, K.E.**, Smale, L., Weldele, M.L., Glickman, S.E. & Place, N.J. (2022) Sex differences in the spotted hyena. In *Sex Differences in Brain and Behavior* (C. L. Jordan & S.M. Breedlove, Eds). Cold Spring Harbor Press, Cold Spring Harbor, NY. In press

Smith, J.E. & **Holekamp, K.E.** (2022) Behavioral strategies and morphological adaptations contributing to hunting success in the spotted hyena. In *Social Strategies of Carnivorous Mammalian Predators* (edited by Srinivasan, L.B., and B. Würsig) Springer Nature Publishers, Switzerland. In press

Greenberg, J.R., Montgomery, T.M., **Holekamp, K.E.**, & Beehner, J.C. (2022) Effects of drying method and prey hair content on fecal steroid hormone concentrations in predatory mammals. *Journal of Mammalogy*. 103(2): 394–406.

Marsh, CJ, Sica, YV, Burgin, CJ, Dorman, WA, Anderson, RC, del Toro Mijares, I, Vigneron, JG, Barve, V., Dombrowik, VL, Duong, M., Guralnick, R, Hart, JA, Maypole, JK, McCall, K, Ranipeta, A, Schuerkmann, A, Torselli, MA, Lacher, T, Mittermeier, RA, Rylands, AB, Wes Sechrest, W, Wilson, DE, Abba, AM, Urioste, LFA, Arroyo-Cabrales, J, Astúa, D, Baker, A, Braulik, G., Braun, JK, Brito, J, Busher, PE, Burneo, SF, Camacho MA, Cavallini, P, Chiquito, E, Cook, JA, Cserkés, T, Csorba, G, Soto, EC, da Cunha Tavares, V, Davenport, TRB, Deméré, T, Denys, C, Dickman, CR, Eldridge, M, Fernandez-Duque, E, Francis, CM, Frankham, G, Franklin, W, Freitas, T, Friend, T, GadsbyEL, Garbino, G, Gaubert, P, Giannini, N, Giarla, T, Gilchrist, JS, Gongora, J, Goodman SM, Gursky-Doyen, S, Hackländer, K, Hafner, MS, Hawkins, M, Helgen, KM, Heritage, S, Hinckley, A, Hintsche, S, **Holekamp, KE**, Honeycutt, RL, Huffman BA, Humle, T, Hutterer, R, Ulargui, CI, Jackson, S, Janecka, J, Janecka, M, Jenkins, P, Juškaitis, R, Juste, J, Kays, R, Kilpatrick, CW, Kingston, T, Koprowski, JL, Krystufek, B, Lavery, T, Lee, T, Leite, YLR, Novaes, RLM, Lim, BK, Lisovsky, A, López-Antoñanzas, R, López-Baucells, A, MacLeod, CD, Maisels, FG, Mares, MA, Marsh, H, Mattioli, S, Meijaard, E, Ara Monadjem, A, Morton, B, Musser, G, Nadler, T, Norris, RW, Ojeda, A, Garza, NO, Pardiñas, UFJ, Patterson, B, Pavan, A, Pennay, M, Pereira, C, Prado, J, Queiroz, HL, Richardson, M, Riley, EP, Rossiter, S, Rubenstein, DI, Ruelas, D, Salazar-Bravo, J, Schai-Braun, S, Schank, CJ, Schwitzer, C, Sheeran, LK, Shekelle, M, Shenbrot, G, Soisook, P, Solari, S, Southgate, R, Superina, M, Taber, AB, Talebi, M, Taylor, P, Thong, VD, Ting, N, T, Tirira, DG, Tsang, S, Turvey, ST, Raul Valdez, R, Van Cakenberghe, V, Veron, G, Wallis, CJ, Wells, R, Whittaker, D, Williamson, EA, Wittemyer, G, John Woinarski, J, Zinner, D, Upham, N., & Jetz, W. (2022) Expert range maps of global mammal distributions harmonised to three taxonomic authorities. *Journal of Biogeography*.00:1-14. DOI: 10.1111/jbi.14330

Montgomery, T.M., Greenberg, J.R., Gunson, J L., John, K., Laubach, Z.M., Nonnamaker, E., Person, E.S., Rogers, H., Ronis, E., Smale, L., Steinfield, K., Strong, R., **Holekamp, K.E.** & Beehner, J.C. (2022) Measuring salivary cortisol in wild carnivores. *Hormones and Behavior*. 137: 105082. <https://doi.org/10.1016/j.yhbeh.2021.105082>

McCormick, S.L., & **Holekamp, K.E.** (2022) Aggressiveness and submissiveness in spotted hyenas: one trait or two? *Animal Behavior*. <https://doi.org/10.1016/j.anbehav.2022.01.012>

Laubach, Z. M., Gering, E., Yang, E., Montgomery, T.M., Getty, T. & **Holekamp, K.E.** (2022) Associations between *Toxoplasma gondii* infection and steroid hormone levels in spotted

hyenas. *International Journal for Parasitology*. 17: 53–59.
<https://doi.org/10.1016/j.ijppaw.2021.11.007>

McCormick, S.K., **Holekamp, K.E.**, Smale, L., Weldele, M.L., Glickman, S.E. & Place, N.J. (2021) Sex differences in spotted hyenas. *Cold Spring Harbor Perspectives in Biology*. DOI: 10.1101/cshperspect.a039180

Laubach, Z.M., Greenberg, J.R., Turner, J.W., Tracy Montgomery, T.M., Sawdy, M. A., Pioon, M.O. Smale, L., Cavalcante, R., Padmanabhan, K.R., Lalancette, C., vonHoldt, B., Faulk, C.D., Dolinoy, D. C., **Holekamp, K.E.**, Perng, W. (2021) Early-life social experience affects offspring DNA methylation and later life stress phenotype. *Nature Communications*. 12:4398
Published 20 July, 2021. DOI 10.1038/s41467-021-24583-x

Ilany, A., **Holekamp, K.E.** & Akcay, E. (2021) Rank-dependent social inheritance determines social network structure in spotted hyenas. *Science*. 373: 348-352. On the cover of the July 16 issue, 2021.

Brown, A.K., **Holekamp, K.E.** & Strauss, E.D. (2021) Infanticide by females is a leading source of juvenile mortality in a large social carnivore. *American Naturalist*. 198 (5): 642-652. DOI:10.1086/716636.

Johnson-Ulrich, L., Yirga, G., Strong, R.L., & **Holekamp, K.E.** (2021) The effect of urbanization on innovation in spotted hyenas. *Animal Cognition*. Published 9 March 2021. DOI: 10.1007/s10071-021-01494-4.

Gering, E., Laubach, Z.M., Weber, P., Hussey, G.S., Lehmann, K.D.S., Montgomery, T.M., Turner, J.W., Perng, W., Pioon, M.O., **Holekamp, K.E.** & Getty, T. (2021) *Toxoplasma gondii* infections are associated with costly boldness toward felids in a wild host. *Nature Communications*. 12, Article number: 3842. Published 22 June, 2021.

Rojas, C.A., Ramírez-Barahona, S.A., **Holekamp, K.E.** & Theis, K. R. (2021) Host phylogeny and host ecology structure the mammalian gut microbiota at different taxonomic scales. *Animal Microbiome*. 3: 33. <https://doi.org/10.1186/s42523-021-00094-4>.

Turner, J. W., Alec L. Robitaille, Bills, P.S., & **Holekamp K. E.** (2021) Early life relationships matter: Social position during early life affects fitness among female spotted hyenas. *Journal of Animal Ecology* 90:183-202. DOI: 10.1111/1365-2656.13282

Farr, M.T., Green, D.S., **Holekamp. K. E.** & Zipkin, E.F. (2021) Integrating distance sampling and presence-only data to estimate abundance. *Ecology*. 102: e03204.

Rajagopalan, P., **Holekamp, K.E.** & Miikkulainen, R. (2020) Evolution of Complex Coordinated Behavior. *IEEE CEC 2020*, Paper number E-24645. Won the best paper award at CEC 2020.

Holekamp, K.E. & Strauss, E.D. (2020) Reproduction within a hierarchical society from a female's perspective. *Integrative and Comparative Biology*. 60: 753–764.
<https://doi.org/10.1093/icb/icaa068>

Orr, T.J., Burns, M., Hawkes, K., **Holekamp, K.E.**, Hook, K.A., Josefson, C.C., Kimmitt, A.A., Lewis, A. K., Lipshutz, S. E., Lynch, K.S., Sirot, L.K., Stadtmauer, D. J., Staub, N.L., Wolfner, M.F., & Hayssen, V. (2020) It takes two to tango: including a female perspective in reproductive biology. *Integrative and Comparative Biology*. 60 (3): 796-813.

Johnson-Ulrich, L., **Holekamp, K. E** & Hambrick, Z.D. (2020) Innovative problem-solving in wild hyenas is reliable across time and contexts. *Scientific Reports*. 10:13000.
DOI: <https://doi.org/10.1038/s41598-020-69953-5>.

Spagnuolo, O.S.B., Jarvey, J.C., Battaglia, M.J., Laubach, Z.M., Miller, M.E., **Holekamp, K.E.** & Bourgeau-Chavez, L.L. (2020) Mapping Kenyan grassland heights across large spatial scales with combined optical and radar satellite imagery. *Remote Sensing* 12, 1086; doi:10.3390/rs12071086

Strauss, E.D., Skizuka, D. & **Holekamp, K.E.** (2020) Juvenile rank acquisition is associated with fitness independent of adult rank. *Proceedings of the Royal Society B*. 287: 20192969.
<http://dx.doi.org/10.1098/rspb.2019.2969>

Califf, K.J., Green, D.S., Wagner, A.P., Scribner, K.T., Beatty, K., Wagner, M.E. & Holekamp, K. E. (2020) Genetic relatedness and space-use in two populations of striped hyenas (*Hyaena hyaena*). *Journal of Mammalogy*, 101(2):361–372, gyz165, <https://doi.org/10.1093/jmammal/gyz165>

Rojas, C. A., **Holekamp, K.E.**, Winters, A.D. & Theis, K.R. (2020) Microbiota vary among body sites, and are affected by host sex and age, in wild spotted hyenas. *FEMS Microbiology*, Vol. 96, No. 2 doi: 10.1093/femsec/fiaa007

Turner, J. W., LaFleur, R., Richardson, A. & **Holekamp, K. E.** (2020) Risk-taking in free-living spotted hyenas is associated with anthropogenic disturbance, predicts survivorship, and is consistent across experimental contexts. *Ethology*. 126: 97–110.
doi: 10.1111/eth.12964

Rajagopalan, P., **Holekamp, K.E.** & Miikkulainen, R. (2019) Factors that affect the evolution of complex cooperative behavior. *The 2019 Conference on Artificial Life (ALIFE)*. MIT Press, Pages: 333-340

Johnson-Ulrich, L. & **Holekamp, K.E** (2019) Group size and social rank predict inhibitory control in spotted hyenas. *Animal Behaviour*. 160: 157-168.
doi.org/10.1016/j.anbehav.2019.11.020

Johnson-Ulrich, L., Benson-Amram, S.R. & **Holekamp, K.E.** (2019) Fitness consequences of innovation in wild spotted hyenas. *Frontiers in Ecology and Evolution*. Vol. 7, Article 443. doi: 10.3389/fevo.2019.00443

Laubach, Z.M., Dolinoy, D.C., Faulk, C.D., Montrose, L., Jones, T.R., Ray, D., Pioon, M.O. & **Holekamp, K.E.** (2019) Early life social and ecological determinants of global DNA methylation in wild spotted hyenas. *Molecular Ecology*. 28: 3786-3798
<https://doi.org/10.1111/mec.15174>

Green, D.S. & **Holekamp, K.E.** (2019) Pastoralist activities affect the movement patterns of a large African carnivore, the spotted hyena (*Crocuta crocuta*). *Journal of Mammalogy*. 100 (6): 1941–1953, <https://doi-org.proxy2.cl.msu.edu/10.1093/jmammal/gyz135>

Green, D.S., Zipkin, E.F., Incorvaia, D.C. & **Holekamp, K.E.** (2019) Long-term ecological change inside a protected area in the Mara-Serengeti ecosystem. *Global Ecology and Conservation*. 20: Article Number: e00697. <https://doi.org/10.1007/s10531-017-1469-7>

Green, D.S., Farr, M.T., **Holekamp, K.E.**, Strauss, E.D., & Zipkin, E.F (2019) Can hyena behaviour provide information on population trends of sympatric carnivores? *Philosophical Transactions of the Royal Society, B*. 374: Article Number: 20180065.
<http://dx.doi.org/10.1098/rstb.2018.0065>

Holekamp, K.E. & Sawdy, M. A. (2019) The evolution of matrilineal social systems in fissioned carnivores. *Philosophical Transactions of the Royal Society, B*. 374: Article Number: 20180065. <http://dx.doi.org/10.1098/rstb.2018.0065>.

Strauss, E. D. & **Holekamp, K. E.** (2019a) Inferring longitudinal hierarchies: Framework and methods for studying the dynamics of dominance. *Journal of Animal Ecology*. 88 (3) 521-536. DOI: 10.1111/1365-2656.12951.

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Holekamp, K. E., Smale, L. Simpson, H. B. & Holekamp, N. A. (1984) Hormonal influences on natal dispersal in free-living Belding's ground squirrels (*Spermophilus beldingi*). *Hormones and Behavior* 18: 465-483.

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Holekamp, K. E. (1984) Dispersal in ground-dwelling sciurids. In *The Biology of Ground-Dwelling Squirrels*. J. O. Murie and G. R. Michener (eds.) University of Nebraska Press. Lincoln, Nebraska. Pp. 297-320

Holekamp, K. E. & Reutener, D. B. (1981) Observation, description, and analysis of the captive behavior of *Marmosa murina*. *JSAS Cat. Sel. Doc. Psych.* Vol 11. 69 pp.

OTHER PUBLICATIONS (Total=22)

Banzhaf, W., B.H.C. Cheng, B.H.C., Deb, K., **Holekamp, K. E.**, Lenski, R. E., Ofria, C., Pennock, R.T., Punch, W.F., & Whittaker D.J. (Eds.) (2020) *Evolution in Action: Past, Present and Future. A Festschrift in Honor of Erik D. Goodman*. Springer Series on Genetic and Evolutionary Computation. Springer, Cham, Switzerland, 607 pages. ISBN 978-3030398309

Holekamp, K.E. (2020) A strong Director facilitates the successes of all BEACON members: a personal example. Pp 19-32 in *Evolution in Action – Past, Present, and Future: A Festschrift in Honor of Erik Goodman’s 75th Birthday*. Banzhaf W., Cheng B., Deb K., Holekamp K., Lenski R., Ofria C., Pennock R., Punch B., Whittaker D. (eds) Springer-Verlag. ISBN 978-3030398309

Smith, J.E. & **Holekamp, K.E.** (2019). Spotted Hyenas. In: Choe, J.C. (Ed.), *Encyclopedia of Animal Behavior, (2nd ed.)*. Vol. 3, pp. 190–208. Elsevier, Academic Press. ISBN: 9780128132517

Montgomery, T.M. & **Holekamp, K. E.** (2017) Dominance, testosterone, and cortisol. *Encyclopedia of Evolutionary Psychological Science*. T.K. Shackelford, V.A. Weekes-Shackelford (eds.), Springer International Publishing. Cambridge, MA. DOI 10.1007/978-3-319-16999-6_1439-1.

Holekamp, K.E. (2017) Convergent Evolution of Hyena and Primate Social Systems. In *Encyclopedia of Evolutionary Psychological Science*, T.K. Shackelford, V.A. Weekes-Shackelford (eds.), *Encyclopedia of Evolutionary Psychological Science*. DOI 10.1007/978-3-319-16999-6_3108-2

Smith, J. E. & **Holekamp, K. E.** (2017). Landmark Studies: Spotted Hyenas. *Encyclopedia of Animal Behavior*. M.D. Breed & J. Moore, Editors. Academic Press, Oxford. Second edition.

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Holekamp, K. E. (2004) A view from the field: What the lives of wild animals can teach us about care of laboratory animals. In The Development of Science-Based Guidelines for Laboratory Animal Care. Proceedings of the November 2003 International Workshop. Institute for Laboratory Animal Research. National Research Council. The National Academies Press. Washington, DC. Pp 169-174

Engh, A.L., & **K. E. Holekamp.** (2003) Uncovering the secret lives of hyenas. Annual Science Encyclopedia. World Book Publishing. Chicago. Pp 118-131.

Holekamp, K. E. & L. Smale (2000). A hostile homecoming. In The Smile of a Dolphin: Remarkable Accounts of Animal Emotions. M. Bekoff (ed.) Discovery Books (Random House). New York. Pp. 118-121.

Boydston, E. E. & **K. E. Holekamp** (2000) Applications of geographic information system (GIS) technology to hyena conservation. I.U.C.N. Hyaena Specialist Group Newsletter 7: 24-27.

Holekamp, K. E. (1997) Book review of Carnivore behavior ecology, and evolution: volume two, edited by J. L. Gittleman. Quarterly Review of Biology. 72: 212.

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INVITED LECTURES

2022-2023: Phi Beta Kappa visiting lecturer
2022: Classes without Quizzes, Michigan State University, East Lansing, MI.
2022: University of Michigan, Ann Arbor, MI.
2021: Distinguished Animal Behaviorist plenary lecture at the Animal Behavior Society Annual meeting, August 4, 2021
2021: Robert M. Storm Distinguished Lecture Series, Oregon State University, Corvallis, OR
2020: International remote seminar organized by Duke University as part of their Long-Term Animal Research (LTAR) Seminar Series
2020: Remote seminar at Georg-August University of Göttingen (Germany) and the German Primate Center
2020: International remote seminar on Frontiers in Social Evolution (FINE) jointly organized by the University of Tennessee at Chattanooga and the University of Zurich
2020: University of Wisconsin, Emlen Lecture Series, Madison, WI
2020: Society for Integrative and Comparative Biology, Symposium on Mammalian Reproduction. Austin, TX
2020: University of Stony Brook, Stony Brook, NY
2019: University of Konstanz, Konstanz, Germany
2019: University of Montana, Missoula, MT
2019: Miami University, Hefner Lecture Series, Oxford OH.
2019: Colorado State University, Otis Seminar Series, Fort Collins, CO.
2018: Arizona State University, Evolution of Social Complexity Seminar series. Tempe, AZ.
2018: Cornell University, Cornell Life Sciences Lecture Series, Ithaca, NY.
2018: University of California, Storer Lectureship series, Davis, CA.
2017: St. Clair Community College, Port Huron, MI
2017: Georgetown University, Washington, DC
2017: Columbia University, Department of Ecology, Evolution & Environmental Biology. New York, NY.
2017: Capstone Lecture, American Society of Mammalogists annual meeting, University of Idaho, Moscow, ID
2017: Kellogg Biological Station, Hickory Corners, MI.
2016: University of Zurich, Zurich, Switzerland
2016: Bowling Green State University, Bowling Green, OH
2015: Convergent Minds Conference, Boston University
2014: Washington State University, Pullman WA
2014: Presidential Symposium, Annual meeting of the Animal Behavior Society, Princeton, NJ.
2014: Plenary speaker: Conference on African Large Carnivores: impacts on ecosystems and humans interactions. Nairobi, Kenya
2014: Bucknell University, Lewisburg, PA.
2014: National Institute for Mathematical and Biological Synthesis (NIMBioS), University of Tennessee, Knoxville, TN.
2013: Integrative Biology, University of California, Berkeley, CA.
2013: Plenary speaker. Student Conference on Conservation Science. Bangalore, India.
2013: Presidential Symposium, Annual meeting of the Society for the Study of Evolution, Salt Lake City, UT.
2013: Psychology, University of California, Berkeley, CA.
2013: Arizona State University, Tempe, AZ
2013: University of Michigan, Dearborn, MI
2013: Smith College, Northampton, MA

2013: University of Illinois, Urbana-Champaign, IL.
2012: Integrative Biology, University of California, Berkeley, CA.
2012: Michigan State University, EEBB seminar, E. Lansing, MI
2011: University of Gottingen, Gottingen, Germany
2011: Plenary speaker: International Congress on 'Hominid-carnivore interactions during the Pleistocene.' Salou, Tarragona, Spain
2011: University of Connecticut, London, CT
2011: University of Tennessee, Knoxville, TN
2011: International Ethological Conference, Symposium on Social Complexity, Bloomington, IN
2010: Georgetown University, Washington, DC
2010: University of Michigan, Ann Arbor, MI
2010: University of Rennes, Rennes, France
2010: University of Guelph, Guelph, Ontario, Canada
2010: Whitney R. Harris World Ecology Center at the University of Missouri-St. Louis
2009: University of Idaho, Moscow, ID
2009: Hope College, Holland MI.
2009: Rutgers University, Newark, NJ. (Lectures on both evolution of intelligence and women in science)
2009: The Oregon Zoo, Portland, OR.
2009: University of Arizona, Tucson, AZ. (Lectures to both Cognitive Science program and Environmental Biology)
2009: Danforth Plant Science Center, St Louis, MO,
2009: University of Utah, Salt Lake City, UT.
2008: Tel Aviv University, Tel Aviv, Israel
2008: Boston University, Boston, MA.
2008: Binder Park Zoo, Kalamazoo, MI.
2008: The Santa Fe Institute. Symposium on social inequity, Santa Fe, NM.
2008: Simon Fraser University, Vancouver, BC.
2008: University of Michigan, Ann Arbor, MI.
2007: University of Nebraska, Lincoln, NE.
2007: Miami University, Oxford, OH.
2007: University of Nebraska, Omaha, NE.
2006: University of California, Davis, CA.
2006: University of California, Los Angeles, CA.
2006: Annual meeting of the American Society of Mammalogists, Keynote speaker: C. Hart Merriam Award recipient. Amherst, MA.
2006: The Royal Society, Symposium on social intelligence. London, U.K.
2006: University of California, Berkeley, CA. (2 talks at UCB, in 2006 in Feb & Oct)
2005: Duke University, Durham, NC.
2005: University of Kentucky. Keynote speaker: Research Symposium at the Center for Ecology, Evolution and Behavior, Lexington, KY.
2005: Eastern Michigan University, Ypsilanti, MI.
2005: University of Miami, Miami, FL
2005: Potter Park Zoo, Lansing, MI.
2005: Western Michigan University. Kalamazoo, MI.
2004: University of California, Berkeley, CA.
2004: Utah State University, Logan, UT.
2004: International Society of Primatologists annual meeting. Symposium on fission-fusion societies, Torino, Italy.
2004: Michigan State University EEBB Program, E. Lansing, MI.

2004: Smith College, Northampton, MA.
2004: Sam Houston State University. The E.O. Wiley Lecture. Huntsville, TX.
2004: University of British Columbia, The Dennis H. Chitty Lecture. Vancouver, BC.
2003: Indiana University, Bloomington, IN.
2003: National Academy of Sciences, Conference on management of laboratory animals. Washington, DC.
2003: Emory University, Atlanta, GA.
2002: Brazilian Ethological Society, Plenary speaker. Congress of the Brazilian Ethological Society Natal, Brazil.
2002: University of Massachusetts, Symposium on "The role of sex differences in health and disease." Amherst, MA.
2002: University of Minnesota, Graduate student selection for 2002 Distinguished Speaker in Ecology, Evolution & Behavior. Minneapolis. MN.
2002: Central Michigan University, MI
2002: Oregon State University, Corvallis, OR.
2002: Humboldt State University, Arcata, CA.
2001: Purdue University, Lafayette, IN.
2001: International Ethology Congress, Symposium on Non-genetical inheritance. Tübingen, Germany.
2000: Zoological Society of San Diego, San Diego, CA.
2000: University of Missouri, World Ecology Day. Sponsored by the International Center for Tropical Ecology. St. Louis, MO.
2000: Lehigh University, Bethlehem, PA.
1999: Midwest Animal Behavior Society Meeting, Symposium on Parental investment. Bowling Green, OH.
1998: Rutgers University, Newark, NJ.
1998: Special symposium: Contributions by outstanding women mammalogists. American Society of Mammalogists annual meeting, Blacksburg, VA.
1998: Special symposium: Behavioral endocrinology in natural contexts. Society for Behavioral Neuroendocrinology annual meeting. Emory University, Atlanta, GA.
1998: The Ohio State University, Columbus, OH.
1998: Texas A and M University, Galveston, TX.
1997: The Johns Hopkins University, Baltimore, MD.
1997: Winter Animal Behavior Conference. Jackson Hole, WY.
1996: St Louis Zoological Society Guest Lecture Series, St Louis, MO.
1996: Conference on Steroid Hormones and Behavior, Workshop on Steroid Hormones and Brain Function. Breckenridge, CO.
1996: University of Toledo Medical School, Toledo, OH.
1995: Wayne State University, Detroit, MI.
1995: Winter Animal Behavior Conference. Jackson Hole, WY.
1995: University of Utah. Salt Lake City, UT.
1994: Cornell University. Ithaca, NY.
1994: Charles and Anne Morrow Lindbergh Foundation. Little Falls, MN.
1994: David and Lucille Packard Foundation. Monterey, CA.
1993: Conference on Reproductive Behavior. Twenty fifth anniversary celebration. East Lansing, MI.
1993: University of Missouri. St. Louis, MO.
1992: East African Natural History Society, Nairobi, Kenya.
1992: University of Kansas. Lawrence, KS.
1992: University of Minnesota. Minneapolis, MN.
1992: University of Wisconsin. Madison, WI.

1991: National Museums of Kenya. Nairobi, Kenya.
1991: State University of New York. Stony Brook, NY.
1990: National Museums of Kenya. Nairobi, Kenya.
1989: University of Nairobi. Nairobi, Kenya.
1989: Centennial Meeting, Animal Behavior Symposium, American Society of Zoologists.
Boston, MA.
1988: University of California. Berkeley, CA.
1986: University of California. Santa Cruz, CA.
1985: University of Nevada. Reno, NV.
1984: International Symposium on Migration: Mechanisms and Adaptive Significance. Port
Aransas Marine Laboratory, Port Aransas, TX.
1984: International Symposium on the Biology of Sciurid Rodents. Banff, Alberta, Canada.

RESEARCH EXPERIENCE

2016-present: Michigan State University, East Lansing (with A. S. Gersick, F. Jensen, and A. Strandburg-Peshkin). Communication and the coordination of collective behavior in animal societies.

2015-present: Michigan State University, East Lansing (with E. F. Zipkin & D. Z. Hambrick). Selection for general intelligence by novel environments.

2014-present: Michigan State University, East Lansing (with D. Dolinoy from the University of Michigan). Epigenetic mediation of adult behavior.

2012-2014: Michigan State University, East Lansing (with C. Adami & A. Hintz) Game theoretical modeling of the emergence of social stratification & its impacts on health.

2010-present: Michigan State University, East Lansing (with R. Mikulainen at the University of Texas and B. Kerr at the University of Washington): Study of the role of communication and emotion in coordination of group cooperative activities in biological and digital organisms.

2009-Present: Michigan State University, East Lansing (with K. R. Theis, now at Wayne State University & T. Schmidt, now at the University of Michigan): Study of symbiotic relationships between spotted hyenas and the various bacteria that inhabit their scent glands as these affect chemical communication.

2007-2013: Michigan State University, East Lansing (with L. Mansfield, P. Fraker & J. Tsao): Development of the spotted hyena as a new model of pathogen resistance.

2004-2014: Michigan State University, East Lansing (with S. Sakai & B. L. Lundrigan): Testing the 'social brain' hypothesis in carnivores using computed tomography.

2002-2010: Michigan State University, East Lansing (with L. Smale & J. A. French) Effects of contrasting regimes of interspecific competition on mammalian behavioral development.

2001-Present: Michigan State University, East Lansing (with K. T. Scribner) Molecular genetic analysis of relatedness among free-living spotted hyenas.

2001-Present: Michigan State University, East Lansing (with B. L. Lundrigan & M. L. Zelditch) Integrated study of behavioral and morphological development in African carnivores.

1999-2004: Michigan State University, East Lansing (with L. Smale, S. E. Glickman, and J. French) Field Study of sibling rivalry in mammals.

1996-Present: Michigan State University, East Lansing (with L. Smale, A. L. Engh & S. R. Benson-Amram) Field Study of the evolution of intelligence in gregarious mammals.

1994-2005: Michigan State University, East Lansing (with S. Nunes & E. M. Muecke) Field study of physiological and energetic variables influencing the probability and timing of dispersal behavior in free-living Belding's ground squirrels (*Spermophilus beldingi*).

1994-1998: Michigan State University, East Lansing. (with C. Salsbury & T. McElhinny) A laboratory study of causes & consequences of dispersal in a diurnal, group-living rodent (*Arvicanthis niloticus*).

1993-1996. Michigan State University, East Lansing (with L. Smale) Field study of social and ecological influences on reproductive success in free-living spotted hyenas (*Crocuta crocuta*).

1991-1996. Michigan State University, East Lansing (with L. Smale) Field study of reproduction, dispersal patterns, and mating system in free-living spotted hyenas (*Crocuta crocuta*).

1988-1991. California Academy of Sciences, San Francisco (with L. Smale and L. G. Frank). Developmental study of rank acquisition and sexually dimorphic behavior in spotted hyenas (*Crocuta crocuta*).

1989-91. Charles A. Lindbergh Fund-supported study of the impact of tourist vehicles on survival, reproduction, and behavior in free-living spotted hyenas and other large carnivores inhabiting the Masai Mara National Reserve, Kenya.

1983-87. University of California, Santa Cruz. NRSA postdoctoral fellow investigating endocrine influences on sexually dimorphic reproductive behaviors in free-living California ground squirrels (*Spermophilus beecheyi*).

1982-83. University of California, Santa Cruz. Research fellow in the endocrinology laboratory of F. Talamantes, investigating regulation of secretion of placental lactogen in *Mus musculus*.

1979-81. University of California, Berkeley. Doctoral dissertation research investigating proximal causes of natal dispersal behavior in free-living Belding's ground squirrels (*Spermophilus beldingi*).

1977-83. University of California, Berkeley (with S. E. Glickman and B. L. Ivins). Comparative study of the behavioral ecology and social systems of two California populations of dusky-footed woodrats (*Neotoma fuscipes*).

1972-73. Smith College (with D. B. Reutener). Undergraduate honors thesis research developing a captive ethogram for neotropical murine opossums (*Marmosa murina*).

SOCIETY MEMBERSHIPS

American Academy of Arts and Sciences
American Association for the Advancement of Science
American Association of University Women
American Society of Mammalogists
American Society of Naturalists
American Women in Science
Animal Behavior Society
International Society for Behavioral Ecology
Phi Beta Kappa
Sigma Xi
Society for Behavioral Neuroendocrinology
Society for the Study of Evolution

TEACHING AND RESEARCH INTERESTS

Behavioral Ecology
Ethology
Behavioral Endocrinology
Mammalogy
Evolutionary Ecology

COURSES TAUGHT AT MICHIGAN STATE UNIVERSITY

Fall semester 2020: IBIO415: Behavioral Ecology (with Lily Johnson-Ulrich)
Spring semester, 2020: IBIO822: Evolution of Mammalian Societies
Fall semester, 2018: IBIO801: Issues in Professional Development
Fall semester, 2018 & Spring semester, 2019: UGS200H: Freshman Honors seminar
"The Form and Function of Vocal Communication in Animals"
Fall semester, 2016: IBIO801: Issues in Professional Development
Fall semester, 2015: ZOL822: Epigenetic mediation of complex phenotypes
Fall semester, 2014: ZOL801: Issues in Professional Development
Fall semester, 2012: ZOL801: Issues in Professional Development
Fall semester, 2011: ZOL822: Evolution of Animal Social Behavior
Fall semester, 2010: ZOL801: Issues in Professional Development
Fall semester, 2009: ZOL801: Issues in Professional Development

Fall semester, 2008 & Spring semester, 2009: UGS200H: Freshman Honors seminar (with Barb Lundrigan) "Comparative analysis of carnivore skull development"

Fall semester, 2008: ZOL801: Issues in Professional Development
UGS200H: Freshman Honors seminar (with Barb Lundrigan)
"Comparative analysis of carnivore skull development"

Fall semester, 2007: ZOL801: Issues in Professional Development (with Catherine Lindell)

Fall and spring semesters 2006-7: on sabbatical

Fall semester, 2005: ZOL313: Introduction to Animal Behavior
ZOL801: Issues in Professional Development

Fall semester, 2004: ZOL313: Introduction to Animal Behavior
ZOL822: Graduate Seminar: Animal Social Complexity

Fall semester, 2003: ZOL313: Introduction to Animal Behavior

Fall semester, 2002: ZOL313: Introduction to Animal Behavior
ZOL822: Graduate Seminar: Classic papers in Animal Behavior (co-taught with Heather Eisthen)

Summer semester, 2002: ZOL490 Behavioral Ecology of African Mammals.

Fall semester, 2001: ZOL313: Introduction to Animal Behavior

Fall semester, 2000: ZOL313: Introduction to Animal Behavior
ZOL822: Graduate Seminar in Animal Behavior (co-taught with Heather Eisthen)

Summer semester, 1999: ZOL490: The Behavioral Ecology of African Mammals. (Co-taught with Barbara Lundrigan)

Fall semester, 1998: ZOL/LBS148H: Introductory Organismal Biology for Honors students
ZOL489: The Biology of Mammalian Carnivores

Fall semester, 1997: ZOL/LBS148H: Introductory Organismal Biology for Honors students
ZOL822: Graduate Seminar in Animal Behavior

Fall semester, 1996: ZOL365: The Biology of Mammals
ZOL890: The Biology of Migratory Organisms

Fall semester, 1995: ZOL365: The Biology of Mammals
ZOL890: Behavioral Mechanisms in Evolutionary Ecology

Fall semester, 1994: ZOL365: The Biology of Mammals

Spring Semester, 1994: ZOL360: The Biology of Birds and Mammals (co-taught with Donald Beaver)

Fall Semester, 1993: ISB202: Ecology and Behavior: An Introductory Organismal Biology Course for Non-Majors.

Multiple guest lectures each year in courses offered in Zoology, Plant Biology, Fisheries and Wildlife, including field courses in Kenya.

COURSES TAUGHT ELSEWHERE

University of California, Berkeley: Fall semester, 2006: PSYCH 290. Integrated field & laboratory study in behavioral biology (a graduate seminar at UC Berkeley co-taught with Dr S. E. Glickman)

SERVICE & OUTREACH

Member or chair of the young faculty mentoring committees of: Ingo Braasch, Julie Ganz, Sara Fitzpatrick, Jason Gallant, and Elise Zipkin.

Assistance to BBC, National Geographic, Humblebee Films, and Sisbro Studios 2021

Biology on Tap, January, 2020

Lecture to the Lansing Womens' Club, November, 2019

Member, Provost's Committee on Retention, Promotion and Tenure, composed of University Distinguished Professors (2018-present), reviewing RPT cases from CNS, CANR, Lyman Briggs and the College of Engineering.

Member, Mentoring Task Force for the Graduate School at MSU (2018-present)

Member, IBIO Strategic Hiring Planning Committee (2018-present)

Member, Steering Committee for Strategic Planning for the Graduate School at MSU (2017-present)

Member, Search committee for a new dean of the College of Natural Science at MSU (2016-2017 and 2017-2018)

I was the subject of a book by author Sy Montgomery, written for middle school children, called *The Hyena Scientist*, published in May, 2018 by Houghton Mifflin Harcourt Publishing Company. See <https://www.amazon.com/Hyena-Scientist-Scientists-Field/dp/0544635116>

Member, IUCN Hyaena Specialist Group. 1989-2009 and 2016 – 2025. Chair of the Specialist Group 2009-2016.

Member, Global Advisory Board, Global Academy of Sciences, New Delhi, India 2015-present.

Member MSU CNS dean search committee 2016-2017.

Member MSU Museum Director search committee 2014-2015.

Merriam award committee, American Society of Mammalogists 2012-2017.

Member, All-University Awards Committee, MSU, 2012-2014.

Member Departmental committee developing an Academic Program Review (APR) for Zoology 2013-14.

Member, Advisory Panel for the Carnivore Conservation Evidence Synopsis Project, based at Cambridge University, UK. 2012-present.

Director, interdisciplinary program in Ecology, Evolutionary Biology & Behavior. January 2009-present.

Editorial Advisory Panel Member for *Nature Communications*. 2010-2016.

Extensive work with public media each year, including BBC, PBS, Animal Planet, CNN, Big 10 Channel, National Geographic, New York Times, Smithsonian Magazine, and many others.

Member, MSU Museum Council, August 2010-present

Reviewer for: *Nature*, *PNAS*, *Journal of Mammalogy*, *Animal Behaviour*, *Behavioral Ecology*, *Acta Theriologica*, *Journal of Zoology London*, *Hormones and Behavior*, *Behavioral Ecology and Sociobiology*, *Proceedings of the Royal Society*, *Functional Ecology*, and *Physiological Zoology*.

Member, Scientific Advisory Committee for the MSU Museum, 2004-present.

Member, Mammal Endangered Species Technical Advisory Committee to the Michigan Department of Natural Resources. 1996-present.

Director of Graduate Programs in Zoology, Michigan State University 1998-2006.

I developed and maintained the IUCN website on the family Hyaenidae at www.hyaenidae.org, 2007-2017.

With Barb Lundrigan, I co-organized the fall 2008 workshop on Geometric Morphometrics taught at MSU, and funded by one of our NSF grants.

Faculty advisor for *Kila Nafasi* Student Group (a charitable organization based at MSU dedicated to raising funds to educate Masai women; *Kila Nafasi* is Swahili for “Every Opportunity”), 2008-present.

Judge of student posters & oral presentations at the annual meeting of the American Society of Mammalogists, Springfield, MO. 2005.

Member, Animal Behavior Panel, IOB/IOS, National Science Foundation 2004 & 2007. Associate Editor, *Animal Behaviour* 2001-2005.

Member, Animal Behavior Panel, IBN, National Science Foundation. 1997-2000.

Advisor for Honors College undergraduates majoring in Zoology, Michigan State University 1997-present.

Member 1996-99, Women's Advisory Council to the Provost, Michigan State University.

Co-chair, Women's Advisory Council to the Dean of the College of Natural Science Michigan State University. 1998-1999.

Service on multiple search committees for new faculty and staff, as well as numerous ad hoc committees within the Department of Zoology.

External examiner for Ph.D dissertations: University of British Columbia (2001); University of Michigan (2008 & 2012); University of Pennsylvania (2009)

FORMER GRADUATE STUDENTS & POST-DOCS

Post-docs

C. Salsbury, Postdoc, PhD University of Kansas. Currently Professor and Chair of Biology at Butler University

S. M. Cooper, Postdoc, PhD University of Witwatersrand. Currently Associate Professor of Wildlife Biology at Texas A & M University

A. P. Wagner, PhD Montana State University. Currently working for Metron Scientific in Washington, DC.

A. M. Laurence, PhD University of Rennes.

A. Ilany, PhD Tel Aviv University. Currently an Assistant Professor of Biology at Bar-Ilan University in Israel.

Graduate Students

T. McElhinny, BS Michigan State University, MS, 1996, (PhD received in 2009) Currently a fixed-term Associate Professor in Science Education at MSU

S. Nunes, BS University of California at Santa Cruz, PhD 1997. (NSF Fellow)

Currently Professor of Biology at the University of San Francisco, San Francisco, CA.

E. E. Boydston, BS Duke University, PhD 2001, Currently a Research Biologist for the US Geological Survey in Monterey, CA

M. Szykman, BS Amherst College, PhD 2001. Currently an Associate Professor and Chair of Wildlife Biology at California State Polytechnic University, Humboldt (previously) Humboldt State University, Arcata, CA.

A. L. Engh, BS Iowa State University, PhD 2002. (NSF Fellow) Currently an assistant professor of Biology at Kalamazoo College, Kalamazoo, MI.

K. Greene, BS Michigan State University, MS 2002. Currently raising children in Lansing, MI.

R. C. Van Horn, BS University of Minnesota, PhD 2003. Currently a Senior Research Biologist in Applied Animal Ecology, San Diego Zoo Institute for Conservation Research, San Diego, CA.

S. M. Dloniak, BS Northland College, PhD 2004. Currently a freelance science writer and Chief Science Officer for Kenya Wildlife Trust in Nairobi, Kenya

S. A. Wahaj, BS University of Florida, PhD 2004. (NSF Fellow) Currently a Health and fitness counselor, Maple Valley, WA.

E. M. Muecke, BS University of California, PhD 2005. Currently a Research Administrator, Portland State University, Portland, OR.

J. M. Kolowski, BS Cornell University, MSc Southern Illinois University, PhD 2007. Currently Research Ecologist and Graduate/Professional Training Manager at the Smithsonian Institution, National Zoological Park Monitoring and Assessment of Biodiversity Program, Washington, DC.

H. E. Watts, BS Duke University, PhD 2007 (NSF fellow). Currently an Associate Professor of Biology at Washington State University, Pullman, WA.

J. B. Tanner, BS University of Massachusetts, PhD 2007. Currently an Associate Professor of Biology at Emerson College, Boston, MA.

K. R. Theis, BS State University of New York, PhD 2008. Currently an Associate Professor in the Department of Biochemistry, Microbiology, and Immunology, Wayne State University, Detroit, MI.

W. M. Pangle, BS McGill University, PhD 2008. Currently Adjunct Assistant Professor in Biology at Central Michigan University, Mt. Pleasant, MI.

P. E. Van Meter, BS Emory University, PhD 2009. Currently at the Anxiety Disorders Clinic, New York State Psychiatric Institute, Columbia University, New York, NY. Also Adjunct Science Faculty in Biology at Colorado Mountain College.

J. E. Smith, BS Colby College, MSc University of Illinois Urbana-Champaign, PhD 2010. Currently an Associate Professor and Chair of Biology at Mills College, Oakland, CA.

S. La Croix, BS University of Notre Dame. PhD 2011. Director, AnimaLINK LLC. New Hudson, MI.

S. R. Benson-Amram, BS Cornell University. PhD 2011. Currently an assistant professor of Zoology and Forest and Conservation Sciences at the University of British Columbia, Vancouver, British Columbia, Canada

B. Dantzer, BS, Northern Michigan University, MSc University of Louisiana, PhD 2012. Currently an Associate Professor of Psychology & EEB at the University of Michigan. Ann Arbor.

R. W. Taylor, BS U. C. Berkeley PhD 2012. Currently a Research Associate at Stanford University.

K. C. S. Yoshida, BS Amherst College, PhD 2012. (NSF fellow). Currently Curator of Biology at the Las Vegas Natural History Museum in Las Vegas, Nevada.

L. J. Curren, BS Amherst College, PhD 2012. Currently a Senior Lecturer in Biology at the University of New Hampshire

A. S. Flies, BS Minnesota State University at Mankato, PhD 2012 (NSF fellow). Currently a Senior Research Fellow at the Menzies Institute for Medical Research, University of Tasmania, Hobart, Tasmania.

E. M. Swanson, BS University of Minnesota, PhD 2013 (NSF fellow). Currently research associate in Ecology & Evolution at the University of Minnesota

K. J. Califf, BS University of Washington, PhD 2013 (NSF fellow). Currently teaching high school biology at Brebeuf Jesuit Preparatory School in Indianapolis, IN

T. M. Ikime, BS Moi University, MSc 2015, Currently a staff scientist at Kenya Wildlife Service, Nairobi, Kenya.

D. S. Green, BS Arizona State University, PhD 2015 (NSF fellow). Currently a research associate at the Institute for Natural Resources, Oregon State University.

N. S. Lewin, BS Vassar College, PhD 2017 (NSF fellow). Currently a Data Architect at Northwestern University, Chicago, IL.

J. R. Greenberg, BS Carlton College, PhD 2017 (NSF fellow). Currently a Lecturer in the Department of Psychology at the University of Wisconsin, Madison, WI

J. W. Turner, BS Grinnell College, PhD 2018. Currently a post-doctoral fellow at the University of British Columbia, Canada.

A. S. Booms, BS Columbia University, Currently MIA.

E. D. Strauss, BS University of California, Berkeley, PhD 2019 (NSF fellow). Currently a post-doctoral fellow at the University of Konstanz.

Z. M. Laubach, BS Juniata College, MS University of Michigan. PhD 2019. Currently a NSF postdoctoral fellow at the University of Colorado, Boulder

S. C. Jones, BS North Carolina State University, PhD 2019 (NSF fellow) Currently Budburst Education Manager at the Chicago Botanic Garden.

L. Johnson-Ulrich, BS University of Miami, PhD 2020 (NSF fellow). Currently a postdoctoral fellow at the University of Zurich, Switzerland

T.M. Montgomery, BS Amherst College, PhD 2020 (NSF fellow) currently a postdoctoral fellow at the University of Konstanz, Germany.

K. D. S. Lehmann, BS University of California, Davis, PhD 2020 (NSF fellow). Currently a post-doctoral fellow in population biology at the University of Nebraska, Lincoln.

C. A Rojas, BS Wellesley College, PhD 2021 (NSF fellow). Currently a Chancellor's Postdoctoral Fellow in the Eisen lab at the University of California at Davis.

CURRENT GRADUATE STUDENTS & POSTDOCS

S. K. McCormick, BS University of New Mexico, PhD expected 2022 (NSF fellow)

M. A. Sawdy, BS Smith College, PhD expected 2022 (NSF Fellow)

O. Spagnuolo, BS Michigan State University, MS University of Michigan, PhD expected 2022

J. Jarvey, BS Northern Michigan University, MS University of Michigan (NSF Fellow), PhD expected 2023

J. M. Woerner, BS Duke University. PhD expected 2026

ACADEMIC MENTORS

PhD mentors: Stephen E. Glickman and Roy L. Caldwell,
University of California at Berkeley

Other members of PhD dissertation guidance committee:
Frank A. Beach
David B. Wake

Postdoctoral mentor: Frank Talamantes, Department of Biology
University of California at Santa Cruz