

KENNA D. S. LEHMANN, PHD

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STATEMENT ON EXPANDED CURRICULUM VITAE (CV) – I have expanded my CV content to include myriad diverse contributions related to DEI activities and community efforts. I recognize that faculty from underrepresented groups (including women) spend a disproportionate amount of time on teaching, mentoring, service, and other ‘invisible’ contributions that are often neglected during hiring decisions as well as tenure and promotion reviews (Johnsrud & Des Jarlais, 1994; Social Sciences Feminist Network Research Interest Group, 2017). In line with a current call to update how we evaluate researchers and their contributions to the academy (<https://royalsociety.org/topics-policy/projects/research-culture/tools-for-support/resume-for-researchers/>), I have thus provided my expanded CV.

EDUCATION

| | |
|---|-----------------------------------|
| Dual Ph.D: Michigan State University; Integrative Biology and Ecology, Evolutionary Biology and Behavior | GPA: 4.0 2012-2020 |
| BS: University of California, Davis; College of Biological Sciences Evolution, Ecology and Biodiversity | GPA: 3.75 Graduated: June 2008 |

RESEARCH EXPERIENCE

School of Biological Sciences, University of Nebraska Lincoln – Lincoln, NE

Population Biology Program of Excellence Postdoctoral Fellowship

Project: Testing the interdependences of sociality, communication, and cooperation

Supervisor: Dr. Eileen Hebets

College of Natural Sciences, Michigan State University – East Lansing, MI

Dissertation: Communication and cooperation *in silico* and nature

Supervisor: Dr. Kay E Holekamp

PUBLICATIONS

† indicates authors contributed equally to this work

*indicates mentored undergraduate co-author

11. †Montgomery, T. M., †**Lehmann, K. D. S.**, *Gregg, S., *Keyser, K., *McTigue, L. E., Beehner, J. C., Holekamp, K. E. Social and demographic traits predict cooperation during inter-specific conflict. DOI: 10.1101/2022.05.30.494003
10. Curren, L.J, Sawdy, M. A., Scribner, K. T., **Lehmann, K. D. S.**, and Holekamp, K. E. 2022. Endurance rivalry among male spotted hyenas: what does it mean to “endure?”. Behavioral Ecology and Sociobiology. 76: 112. DOI: 10.1007/s00265-022-03212-7.
9. **Lehmann, K. D. S.**, Jensen, F. H., Gersick, A. S., Strandburg-Peshkin, A., and Holekamp, K. E. 2022. Long-distance vocalizations of spotted hyenas contain individual, but not group, signatures. *Proceedings of the Royal Society B: Biological Sciences*. 289: 2022054820220548. DOI: 10.1098/rspb.2022.0548
8. †**Lehmann, K. D. S.**, †*Shogren, F.G., *Fallick, M., Watts, J.C., Schoenberg, D., Wiegmann, D.D., Bingman, V.P.; Hebets, E.A. 2022. Exploring higher-order conceptual learning in an Arthropod with a large multisensory processing Center. *Insects*. 13(1): 81. DOI: 10.3390/insects13010081
7. †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., and Getty, T. 2021. *Toxoplasma gondii* infections are associated with boldness towards lions in wild hyena hosts. *Nature Communications*. 12(1): 1-8. DOI: 10.1101/2020.08.26.268805
6. Gering, E., Laubach, Z., Weber, P., Hussey, G., Turner, J., **Lehmann, K.**, Montgomery, T., Holekamp, K., Getty, T. 2020. “Time Makes You Older, Parasites Make You Bolder — *Toxoplasma gondii* Infections Predict Hyena Boldness toward Definitive Lion Hosts.” *Evolution in Action: Past, Present and Future*. Eds. Banzhaf W. et al. Springer, Cham.

5. Johnson-Ulrich, L., **Lehmann, K. D. S.**, Turner, J. W., Holekamp, K. E. 2018. "Hyenas." *Field and Laboratory Methods in Animal Cognition: A Comparative Guide*. Eds. Nereida Bueno-Guerra and Federica Amici. Cambridge, UK: Cambridge University Press.
4. †**Lehmann, K. D. S.**, †Montgomery, T. M., *MacLachlan, S. M., *Parker, J. M., *Spagnuolo, O. S., *VandeWetering, K. J., Bills, P. S., and Holekamp, K. E. 2017. Lions, hyenas, and mobs (Oh my!). *Current Zoology*. 63(3): 313-322. DOI: 10.1093/cz/zow073.
3. Smith, J. E., **Lehmann, K. D. S.**, Montgomery, T. M., Strauss, E. D., and Holekamp, K. E. 2017. Insights from long-term field studies of Mammalian Carnivores. *Journal of Mammalogy*. 98(3): 631-641. DOI: 10.1093/jmammal/gyw194.
2. **Lehmann, K. D. S.**, Goldman, B. W., Dworkin, I., Bryson, D. M., Wagner, A. P. 2014. From Cues to Signals: Evolution of Interspecific Communication via Aposematism and Mimicry in a Predator-Prey System. *PLoS ONE*. 9(3): e91783. DOI: 10.1371/journal.pone.0091783.
1. Krakauer, A. H., Tyrrell, M., **Lehmann, K.**, Losin, N., Goller, F., and Patricelli, G. L. 2009. Vocal and anatomical evidence for two-voiced sound production in the greater sage-grouse *Centrocercus urophasianus*. *Journal of Experimental Biology*. 212: 3719-3727. DOI: 10.1242/jeb.033076

SIGNIFICANT AWARDS AND FELLOWSHIPS

| | | |
|-----------|---|-----------|
| 2021 | Program of Excellence Postdoctoral Fellowship | ~\$90,000 |
| 2019 | MSU Graduate School Outstanding Doctoral Student Mentor Award | \$1500 |
| 2017 | American Society of Mammologists Grant-in-Aid of Research | \$1500 |
| 2014 | John R. Shaver Research Fellowship for Graduate Students in the Department of Zoology | \$1700 |
| 2012 | NSF Graduate Research Fellowship | \$98,000 |
| 2004-2008 | University of California, Davis, Regents Scholar | |

GRANTS AND FELLOWSHIPS

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| 2020 | EEBB Summer Fellowship | \$2100 |
| 2019 | MSU Graduate School Dissertation Completion Fellowship | \$7500 |
| 2019 | EEBB Travel Fellowship | \$1200 |
| 2018 | MSU College of Natural Science Dissertation Continuation Fellowship | \$6000 |
| 2018 | EEBB Summer Fellowship | \$1900 |
| 2017 | MSU College of Natural Science Dissertation Continuation Fellowship | \$6000 |
| 2017 | EEBB Travel Fellowship | \$2200 |
| 2017 | Integrative Biology Travel Award | \$200 |
| 2017 | BEACON Travel Award | \$460 |
| 2016 | EEBB Summer Fellowship | \$1800 |
| 2015 | EEBB Travel Fellowship | \$1400 |
| 2015 | MSU Graduate School Travel Fellowship | \$350 |
| 2015 | MSU International Studies and Programs Travel Fellowship | \$350 |
| 2015 | BEACON Travel Award | \$1640 |
| 2014 | EEBB Summer Fellowship | \$1800 |
| 2013 | EEBB Travel Fellowship | \$1000 |
| 2013 | MSU Graduate School Research Enhancement Funds | \$1000 |
| 2013 | BEACON Travel Award | \$1200 |

PRODUCTS AND DELIVERABLES

Task Force on Inclusive Initiatives - Final Report. College of Natural Science, Michigan State University.
Published: April 1, 2019. *Contributor.*

PRESENTATIONS AND POSTERS

- Lehmann, K. D. S.**, McGinley, R., Bern, M., Hebets, E. A. July 2022. Quantifying variation in visual signals within a spider clade. Annual Meeting of the Animal Behavior Society 2022. San Jose, Costa Rica. Contributed Oral Presentation.
- Lehmann, K. D. S.**, McGinley, R., Bern, M., Hebets, E. A. June 2022. Quantifying variation in visual signals within a spider clade. Annual Meeting of the American Arachnological Society 2022. Davis, CA. Contributed Oral Presentation.
- Lehmann, K. D. S.**, Strandburg-Peshkin, A., Jensen, F., Gersick, A., and Holekamp, K. E. July 2019. Investigating individual and group signatures in whoops, the long-distance calls of the spotted hyena. Behaviour 2019. Chicago, IL. Contributed Oral Presentation.
- Lehmann, K. D. S.**, and Holekamp, K. E. June 2019. The vocal repertoire of a highly social carnivore. Annual Meeting of the American Society of Mammalogists. Washington, DC. Contributed Oral Presentation.
- Lehmann, K. D. S.**, and Holekamp, K. E. August 2018. Form and function of groan vocalizations by spotted hyenas. International Society for Behavioural Ecology Conference, Minneapolis, Minnesota. Contributed Oral Presentation.
- Lehmann, K. D. S.**, and Holekamp, K. E. August 2018. The vocal repertoire of the most highly gregarious carnivore. Animal Behavior Society Conference, Milwaukee, Wisconsin. Contributed Oral Presentation.
- Lehmann, K. D. S.**, and Holekamp, K. E. June 2017. Testing hypotheses about why the hyena laughs. Animal Behavior Society Conference, Toronto, Canada. Contributed Oral Presentation.
- Lehmann, K. D. S.**, Montgomery, T. M., and Holekamp, K. E. August 2015. Cooperation and Communication in Spotted Hyenas. Behavior2015: a joint meeting of the International Ethological Conference, Australasian Society for the Study of Animal Behaviour, Australasian Evolution Society, and Australasia, New Zealand and Africa Region of Applied Ethology, Cairns, Australia. Invited Oral Presentation.
- Lehmann, K. D. S.**, Gersick, A., Elie, J., Theunissen, F., and Holekamp, K. E. June 2015. Investigating Group Signatures in Whoops, the Long-Distance Calls of the Spotted Hyena. Animal Behavior Society Conference, Anchorage, Alaska. Contributed Oral Presentation.
- Lehmann, K.**, Goldman, B. W., Adami, C., Dworkin, I., Bryson, D., and Wagner, A. P. Aug. 12-15, 2013. From Cues to Signals: Experimental Evolution of Aposematism and Mimicry in a Predator-Prey System. BEACON Congress. Poster Presentation.
- Lehmann, K. 2008.** Utilizing information theory to study the communication system of *Orcinus orca*. Acoustics '08 Paris: a joint meeting of the Acoustical Society of America, the European Acoustics Association, and the Société Française d'Acoustique. Contributed Oral Presentation.

UNIVERSITY SERVICE

Reviewed, Ad Hoc Diversity, Equity, and Inclusion (DEI) Committee Recruitment Plan. School of Biological Sciences, University of Nebraska—Lincoln.

EEBB Representative, College of Natural Science Diversity, Equity, and Inclusion Advisory Council, Fall 2019 – Spring 2020

Member, College of Natural Science Council on Diversity and Community, Fall 2017 – Spring 2019

Graduate Student Representative, EEBB Executive Committee, Fall 2017 – Spring 2019

Member, EEBB Seminar Committee, Spring 2018

President, EEBB Graduate Group, Fall 2017 – Spring 2018

Organizer, EEBB Research Symposium Planning Committee, Fall 2016 – Spring 2017

Mentor, University Undergraduate Research and Arts Forum, Spring 2016, 2017, 2018 and 2019

Graduate Representative from Integrative Biology, College of Natural Sciences Student Advisory Council, Fall 2013 and Spring 2014

PROFESSIONAL SOCIETY SERVICE

Judge for Animal Behavior Society 2021 Conference Founder's Poster Competition

Invited Reviewer for the following Journals:

Ethology

Journal of Mammalogy

The American Naturalist

Behavioral Ecology

International Journal of Comparative Psychology

BOOK REVIEWS

Neuroendocrine Regulation of Animal Vocalization: Mechanisms and Anthropogenic Factors in Animal Communication, ed. Rosenfeld, C. S. and Hoffmann, F. Quarterly Review of Biology. **Declined invitation.**

PROFESSIONAL TRAINING

Animal Behavior Society Ally Training Program, 19 July 2022

American Arachnological Society Science Ambassador, 17 & 25 June 2022

Inclusive Leaders Workshop, UNL, 6 October 2021

Communicating in STEM: How to engage your audience, 19 March 2019

College of Natural Science Cultural Competency for Personal, Organizational and Community Change workshop, 23 January 2019

MSU Graduate School Leadership Summit, 3 November 2018

Understanding Implicit Bias Training, 20 April & 1 May, 2018

Pathways to Scientific Teaching Course, Fall 2015

Cornell Lab of Ornithology, Sound Analysis Workshop, 30 March – 3 April 2015

Time Management: A Workshop for Graduate Students, Post-docs, and Faculty, 15 April 2015

Planning, Managing and Funding Research Projects, 25 January 2014

Cornell Lab of Ornithology, Sound Recording Workshop, 8-15 June 2013

TEACHING EXPERIENCE

Ecology, Michigan State University

Instructor of Record, Summer 2020

Honors Research Seminar, Michigan State University

Co-instructor and Research Project Supervisor, Fall 2018 and Spring 2019

Fundamental Genetics, Michigan State University

Teaching Assistant, Fall 2016 and Spring 2018

Honors Organismal Biology Laboratory, Michigan State University

Lab Instructor, Fall 2017

Organismal and Population Biology Laboratory, Michigan State University

Lab Instructor, Spring 2017

Behavioral Ecology of African Mammals, Michigan State University Study Abroad

Lead Instructor, Summer 2016

Course Instructor, Summer 2015

International Research Experience for Students, Maasai Mara, Kenya

Graduate Assistant Advisor, June 2014 to December 2015

INVITED LECTURES AND PANELS

| Role | Topic | Course | Date |
|----------------|----------------------------------|------------------------------|-------------|
| Guest Lecturer | Amblypygids | Arachnology | Fall 2021 |
| Guest Lecturer | Development and Maternal Effects | Animal Behavior | Fall 2021 |
| Guest Lecturer | Animal Communication | Animal Behavior | Fall 2021 |
| Guest Lecturer | Optimality and Game Theory | Animal Behavior | Fall 2021 |
| Panelist | Researchers at MSU | IBIO 200 Animal Biodiversity | Fall 2019 |
| Guest Lecturer | Communication and Recognition | Behavioral Ecology | Fall 2019 |
| Guest Lecturer | Animal Communication | Behavioral Ecology | Fall 2016 |
| Guest Lecturer | Animal Communication | Behavioral Ecology | Fall 2015 |

UNDERGRADUATES MENTORED

| Student | Program/Position | Post BA/BS Education (if known) |
|------------------|--------------------------------|---|
| Paul Mai* | First Year Research Experience | |
| William Cao* | First Year Research Experience | |
| Summer Eckhardt* | Lab Research Assistant | |
| Sarah Raisch* | Lab Research Assistant | |
| Abby Thiemkey* | Lab Research Assistant | NSF IRES Research Assistant The Ohio State University, Wildlife Science Master's Program |
| Monica O'Reilly* | Lab Research Assistant | Colorado State University, Political Science with specialization in Environmental Politics and Policy Master's Program |
| Taylor Carlini* | Lab Research Assistant | University of Illinois College of Veterinary Medicine |
| Dai Lambert* | Lab Research Assistant | |
| Emily Mall* | Lab Research Assistant | |
| Johanna Becker* | Lab Research Assistant | |
| Sydney Watson* | Lab Research Assistant | |

* indicates woman or minority

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|-------------------|---|---|
| Carrie Walls* | Lab Research Assistant | |
| Max Martin* | MSU Honors College Professorial Assistantship | |
| Hugh McCullough | Lab Research Assistant | UNL Complex Biosystems PhD Student |
| Alyssa Forman* | Lab Research Assistant | |
| Paige Barnes* | MSU Honors College Professorial Assistantship | |
| Katie Keyser* | Lab Research Assistant | |
| Samantha Gregg* | Lab Research Assistant | |
| Leah McTigue* | Lab Research Assistant | NSF IRES Research Assistant University of Arkansas Biological Sciences Master's Program |
| Meghan Bugaj* | Lab Research Assistant | Western Washington University Master's Program |
| Cam Forton | Lab Research Assistant | |
| Jordan Marsh | Lab Research Assistant | |
| Morgan Lucot* | Lab Research Assistant | NSF IRES Research Assistant |
| Isaac Walton | Lab Research Assistant | |
| Olivia Lefere* | Lab Research Assistant | MSU College of Veterinary Medicine University of Texas Rio Grande Valley, Master of Science in Ocean, Coastal, Earth Science |
| Cameron Moody* | Lab Research Assistant | |
| Robyn Strong* | NSF IRES Research Assistant | |
| Ciara Main* | NSF IRES Research Assistant | |
| Ashlei Tinsley* | NSF IRES Research Assistant | University of Pennsylvania School of Veterinary Medicine |
| Molly McEntee* | NSF IRES Research Assistant | Georgetown University, Biology PhD Candidate |
| Kelsey Vandelet* | Lab Research Assistant | |
| Oliva Spagnuolo* | Lab Research Assistant | MSU Integrative Biology PhD Candidate |
| Jenna Parker* | Lab Research Assistant | Colorado State University, Fish, Wildlife, and Conservation Biology, PhD Candidate |
| Sarah MacLachlan* | Lab Research Assistant | MSU, Master of Animal Behavior and Welfare |
| Ryan Grady | Lab Research Assistant | |
| Darren Incorvaia | Lab Research Assistant | MSU Integrative Biology PhD |

PRESENTATIONS AND POSTERS BY MENTORED UNDERGRADUATE CO-AUTHORS

*indicates mentored undergraduate co-author

- *Raisch, S., *Eckhardt, S., *Krause, A., *Markray, T., **Lehmann, K. D. S.**, and Holekamp, K.E. 5 April 2019. Mobbing in Spotted Hyena-Lion Interactions. University Undergraduate Research and Arts Forum (UURAF). Poster
- *Burke, J., *Boger, B., *Calvillo, C., *Lenoir, J., **Lehmann, K. D. S.**, and Holekamp, K.E. 5 April 2019. Do giggles function to recruit allies?. University Undergraduate Research and Arts Forum (UURAF). Poster
- *Walls, C. A., **Lehmann, K. D. S.**, and Holekamp, K.E. 13 April 2018. Giggles at kills: Spotted hyenas (*Crocuta crocuta*) avoiding eavesdropping in a communication network. University Undergraduate Research and Arts Forum (UURAF). Contributed Oral Presentation
- *Thiemkey, A., **Lehmann, K. D. S.**, and Holekamp, K.E. 13 April 2018. Risky behaviors by spotted hyenas (*Crocuta crocuta*) in the presence of lions (*Panthera leo*). University Undergraduate Research and Arts Forum (UURAF). Poster
- *McTigue, L. E., **Lehmann, K. D. S.**, Montgomery, T. M., and Holekamp, K. E. Sex differences in participation in mobbing behavior by spotted hyenas (*Crocuta crocuta*) during lion-hyena interactions. 7 April 2017. University Undergraduate Research and Arts Forum (UURAF). Poster
- *Barnes, P. E., **Lehmann, K. D. S.**, and Holekamp, K. E. Do Immigrated Male Spotted Hyenas Show Vocal Variation in Accordance with Females Present? 7 April 2017. University Undergraduate Research and Arts Forum (UURAF). Poster
- *MacLachlin, S. S., **Lehmann, K. D. S.**, Montgomery, T. M., and Holekamp, K. E. Whooping behavior of spotted hyenas. 8 April 2016. University Undergraduate Research and Arts Forum (UURAF). Poster
- *Lucot, M., **Lehmann, K. D. S.**, and Holekamp, K. E. Characterizing the spotted hyena (*Crocuta crocuta*) giggle in varying social interactions. 8 April 2016. University Undergraduate Research and Arts Forum (UURAF). Poster
- *MacLachlin, S. S., Montgomery, T. M., **Lehmann, K. D. S.**, and Holekamp, K. E. 23 July 2014 Hyena-Lion Interactions: a clash of carnivores. Mid-Michigan Symposium for Undergraduate Research Experience (mid-SURE). Poster.
- *MacLachlin, S. S., Montgomery, T. M., **Lehmann, K. D. S.**, and Holekamp, K. E. Recruitment of allies by spotted hyenas during interactions with lions. 10 April 2015. University Undergraduate Research and Arts Forum (UURAF). Poster.
- *MacLachlin, S. S., Lewin, N., Montgomery, T. M., **Lehmann, K. D. S.**, and Holekamp, K. E. 2015. Mobbing Success by spotted hyenas during interactions with lions. Animal Behavior Society Conference, Anchorage, Alaska. Poster.
- *MacLachlin, S. S., Lewin, N., Montgomery, T. M., **Lehmann, K. D. S.**, and Holekamp, K. E. 22 July 2015. Mobbing Success by spotted hyenas during interactions with lions. Mid-Michigan Symposium for Undergraduate Research Experience (mid-SURE). Poster.

PUBLIC OUTREACH**Outreach Organizer and Host**, Biology on Tap, October 2016 – October 2019

Began, organized, and hosted a monthly public science night at pubs in Lansing, MI. Each night centered around a theme with two talks designed for a lay audience, intermission trivia, and raffled door prizes. Biology on Tap was fully sustained by guest donations with ~80 guests each month.

Mara Hyena Project Social Media, June 2014 – June 2015, Wrote blogs for MSU Hyena Project Blog (msuhyenas.blogspot.com) Organized and provided content for MSU Hyena Project's Facebook, Instagram, and Twitter accounts.

CONSULTING FOR EDUCATIONAL PROGRAMS

| | |
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| Interviewed on camera for natural history production (Strictly confidential until aired) | 2022 |
| Provided recordings for MinuteEarth "Hyena Butter" YouTube Video | 2021 |
| Interviewed by BBC Natural History Unit for series on mammals | 2021 |
| Interviewed by Wildstar Films for television series | 2021 |
| Interviewed by Offspring Films for wildlife series | 2020-2021 |
| Interviewed by BBC Natural History Unit for "The Waterhole" | 2019 |
| Interviewed by Wildlife 24 Production DAC of Blink Films for wildlife documentary series | 2018 |
| Interviewed by Wag TV for Animal Planet nature series | 2018 |

PRESS COVERAGE

| News Outlet | Year | Title | Highlighted Research |
|---------------------------------------|-------------|--|---|
| Quartz | 2017 | Long before there was Facebook, there was Facebook for animals | Mara Hyena Project |
| United Press International, Breitbart | 2016 | As video shows, mob mentality a boon to hungry hyenas | Lehmann, Montgomery, et al. Lions, hyenas, and mobs (oh my!) |
| MSU Today, Science Daily | 2016 | Mobs are, sometimes, good | Lehmann, Montgomery, et al. Lions, hyenas, and mobs (oh my!) |
| WILX News 10 | 2016 | Viral video misleads viewers about zoo lions | Mara Hyena Project |
| New Scientist | 2015 | Team of hyenas works together to steal fresh carcass from lions | Early coverage of Lehmann, Montgomery, et al. Lions, hyenas, and mobs (oh my!) |
| NPR Michigan Radio | 2015 | Could hyenas teach us something about the way we communicate? | Dissertation research on hyena vocalizations and collaboration with Cooperative Predator Vocalization Consortium |
| PBS Nova | 2014 | How the Kingsnake Is Still Fooling Predators into Thinking It's Venomous | Lehmann et al. From Cues to Signals: Evolution of Interspecific Communication via Aposematism and Mimicry in a Predator-Prey System |

NOMINATIONS OF OTHER INDIVIDUALS FOR AWARDS

| Nominee | Year | Award |
|---------------------|-------------|--|
| Abigail Theimkey | Spring 2019 | Richard Lee Featherstone Endowed Prize |
| Dr. Gail Patricelli | Fall 2017 | Academic Senate Distinguished Teaching Award for Undergraduate Teaching |
| Dr. Kay E. Holekamp | Spring 2017 | MSU Graduate School Outstanding Faculty Mentor Award |
| Sarah MacLauchlin | Spring 2014 | MSU Beckman Scholars Program |
| Dr. Gail Patricelli | Spring 2012 | UC Davis Chancellor's Award for Excellence in Mentoring Undergraduate Research |