

Eli D. Strauss

Max Planck Institute of Animal Behavior
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Research Interests

Social complexity, inequality, dominance, competition, socioecology, behavioral ecology, quantitative methods in evolution and ecology, social network analysis

Education and Employment

- 2021 – Humboldt Postdoctoral Fellow, Max Planck Institute of Animal Behavior.
Advisor: Damien Farine
- 2020 – 2021 BEACON Postdoctoral Fellow, Michigan State University
- 2019 – 2020 POE Postdoctoral Fellow, University of Nebraska, Lincoln, NE.
Advisor: Dai Shizuka
- 2019 – 2020 BEACON Postdoctoral Fellow, Michigan State University.
- 2012 – 2019 **Dual PhD** at Michigan State University
Integrative Biology (IBIO) and Ecology, Evolution, & Behavior (EEBB)
Advisor: Kay E. Holekamp
- 2007 – 2011 **B.A. cum laude** at University of California, Berkeley, CA. Advisor: Steve Palmer

Awards and Honors

- 2019 Alexander von Humboldt Postdoctoral Research Fellowship (€64,080)
- 2019 Journal of Animal Ecology Elton Prize Finalist
- 2019 Animal Behavior Society Walter Clyde Allee Competition Finalist
- 2019 University of Nebraska Lincoln School of Biological Sciences Population Biology Postdoc of Excellence (\$45,000)
- 2019 Competitive award from NSF-funded BEACON Center for the Study of Evolution in Action. “Evolutionary perspectives on social inequality” (\$88,609)
- 2019 MSU EEBB Distinguished Student Speaker (\$500)
- 2017 Best Graduate Student Talk at *Göttinger Freilandtage*, Germany (\$180)
- 2012 NSF Graduate Research Fellowship (\$138,000)
- 2012 Graduate School University Distinguished Fellowship (\$80,000)
- 2011 Undergraduate Thesis in Cognitive Science with Highest Honors

Publications

Peer-Reviewed (underline denotes mentee co-author)

Brown A, Pioon M, Holekamp KE, **Strauss ED** (in review after revision). Infanticide by females is a leading source of juvenile mortality in a large social carnivore. *The American Naturalist*.

Holekamp KE, **Strauss ED** (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>

Strauss ED, Shizuka D, Holekamp KE. (2020) Juvenile rank acquisition influences fitness independent of adult rank. *Proceedings of the Royal Society, B*. 287: 20192969. <http://dx.doi.org/10.1098/rspb.2019.2969>.

- Green DS, Farr M, Holekamp KE, **Strauss ED**, Zipkin E. (2019) Can hyena behavior predict abundances of sympatric carnivores? *Philosophical Transactions of the Royal Society, B*. 374: Article Number: 20180065. <http://dx.doi.org/10.1098/rstb.2018.0065>.
- Strauss ED**, Holekamp KE. (2019) Social alliances improve rank and fitness in convention-based societies. *Proceedings of the National Academy of Sciences of the United States of America* 116 (18): 8919–8924. On the cover of the 30 April, 2019 issue. <https://doi.org/10.1073/pnas.1810384116>.
- Strauss ED**, Holekamp KE. (2019) 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.
- Smith JE, Lehmann KDS, Montgomery TM, **Strauss ED**, Holekamp KE. (2017) Insights from long-term field studies of mammalian carnivores. *Journal of Mammalogy*, 98:631-641. doi:10.1093/jmammal/gyw194.
- Holekamp KE, **Strauss ED**. (2016) Aggression and dominance: An interdisciplinary overview. *Current Opinion in Behavioral Sciences*, 12:44-51.
- Jones SC, **Strauss ED**, Holekamp KE. (2015) Ecology of African Carrion. Pp. 459-489 in *Carrion Ecology, Evolution, and Their Applications*. Benbow ME, Tomberlin JK, Tarone AM (Eds). CRC Press. Boca Raton, FL.
- Johnson AE, **Strauss ED**, Pickett R, Adami C, Dworkin I, Goldsby HJ. (2014) More bang for your buck: Quorum-sensing capabilities improve the efficacy of suicidal altruism. *ALIFE 14: Proceedings of the Fourteenth International Conference on the Synthesis and Simulation of Living Systems*, New York, NY.
- Strauss ED**, Schloss KB, Palmer SE. (2013) Color preferences change after experience with liked/disliked colored objects. *Psychonomic Bulletin & Review*, 20:935-943.
- Schloss KB, **Strauss ED**, Palmer SE. (2013) Object color preferences. *Color Research & Application*, 38:393-411.

Software

2019. **Strauss ED**. DynaRankR: Inferring Longitudinal Dominance Hierarchies. R package version 1.0.0. <https://CRAN.R-project.org/package=DynaRankR>

Invited Seminars and Workshops

2020. **Invited talk**. Long-term Animal Research Seminar Series, organized by Duke University, Durham NC.
2020. **Invited talk**. Department of Biological Sciences, University of Cincinnati, Cincinnati OH.
2020. **Invited talk**. Program in Evolution and Behaviour, University of Lethbridge, Lethbridge AB, Canada.
2019. **Invited talk**. Program in Ecology, Evolution, & Behavior, Michigan State University, Lansing MI.
2019. **Invited member** of Reorganizing Social Organization Workshop at Max Planck Institute of Evolutionary Anthropology, Leipzig, Germany.
2019. **Invited talk**. Department of Migration, Max Planck Institute of Animal Behavior, Radolfzell, Germany.
2019. **Invited talk**. Warder Clyde Allee Competition, Animal Behavior Society, Chicago IL.
2017. **Invited talk**. School of Biological Sciences, University of Nebraska, Lincoln NE.

Conference Posters and Presentations (underline denote mentee co-author)

2020. Brown AK, Holekamp KE, **Strauss ED**. Infanticide by females is a leading source of juvenile mortality in a large social carnivore. Poster presented at *Ecological Society of America*.
2019. Brown AK, **Strauss ED**, Holekamp KE. The function of infanticide by females in a large social carnivore. Poster presented at *University Undergraduate Research and Arts Forum* (Awarded First Place, \$100).
2018. **Strauss ED**, Shizuka D, Holekamp KE. Early life dominance interactions predict longevity in spotted hyenas. Talk presented at *BEACON Center for Evolution in Action*, Lansing, MI.
2018. O'Toole A, **Strauss ED**, Holekamp KE. Mechanisms underlying variation in maternal rank inheritance during development of spotted hyenas. Poster presented at *University Undergraduate Research and Arts Forum* (Awarded First Place, \$100).
2018. Rivers CJ, Montgomery TM, **Strauss ED**, Holekamp KE. Does social rank affect play behavior in juvenile spotted hyenas (*Crocuta crocuta*)? Poster presented at *Mid-Michigan Symposium for Undergraduate Research Experiences*, East Lansing, MI.
2018. **Strauss ED**, Shizuka D, Holekamp KE. Early life dominance interactions predict longevity in spotted hyenas. Talk presented at the *International Society for Behavioral Ecology Conference*, Minneapolis, MN.
2018. Redgate G, Chojnacki A, Gutwein K, Woloszyk Z, Laubach ZM, Montgomery TM, **Strauss ED**. Detection of leopards by prey in relation to habitat. Poster presented at *University Undergraduate Research and Arts Forum*, East Lansing, MI.
2017. Sawdy MA, **Strauss ED**, Rojas CA, Montgomery TM, Melvin TA, Bahlai CA, Bond AL. Environmental drivers of egg size variation in northern rockhopper penguins (*Eudyptes moseleyi*). *Ecology, Evolutionary Biology, and Behavior Research Symposium*, Lansing, MI. *Ecological Society of America Annual Meeting*, Portland, OR.
2017. **Strauss ED**, Holekamp KE. Social bonds predict dynamics of dominance status in societies of spotted hyenas. Talk presented at *Göttinger Freilandtage*, Gottingen, Germany (Awarded "Best student talk," \$180).
2017. **Strauss ED**, Holekamp KE. Social rank reversals in a long-term study of spotted hyenas. Talk presented at the *Animal Behavior Society Conference*, Toronto, ON.
2017. **Strauss ED**, Holekamp KE. The structure of nepotistic dominance hierarchies: The role of kinship and dominance. Talk presented at *BEACON Center for Evolution in Action*, Lansing, MI.
2016. **Strauss ED**, Holekamp KE. Social rank reversals in a long-term study of spotted hyenas. Talk presented at *MSU's Annual EEBB Research Symposium*, Lansing, MI.
2015. Glover A, **Strauss ED**, Holekamp KE. The Relationship Between Aggression and Submission in Spotted Hyenas. Talk presented at *Emerging Researchers National Conference*, Washington DC.
2014. Claiborne D, **Strauss ED**, Holekamp KE. Social Hierarchy of the Spotted Hyena (*Crocuta crocuta*). Poster presented at *Annual Biomedical Research Conference for Minority Students*, San Antonio, TX.
2014. **Strauss ED**, Holekamp KE. Intraspecific variation in the society of a social carnivore. Poster presented at the *Animal Behavior Society Conference*, Princeton, NJ.
2014. Mirmomeni M, Hintze A, **Strauss ED**, Adami C. The collective hunting game: A new game to model social behavior in animals. Talk presented at the *Society for the Study of Evolution Conference*, Raleigh, NC.
2011. **Strauss ED**, Schloss KB, Palmer SE. The effects of imagined experiences of objects on preferences for colors. Talk presented at the *Vision Science Society Conference*, Naples, FL.

2010. **Strauss ED**, Schloss KB, Palmer SE. The good, the bad, and the ugly: Effects of object exposure on color preferences. Poster presented at the *Vision Science Society Conference*, Naples, FL.
2010. Schloss KB, Fortenbaugh FC, **Strauss ED**, Palmer SE. CSI Berkeley Episode II: Perceptual organization and selective attention. Talk presented at the *Vision Science Society Conference*, Naples, FL.
2009. Schloss KB, Fortenbaugh FC, **Strauss ED**, Palmer SE. CSI Berkeley Episode II: Perceptual organization and selective attention. Talk presented at the *Configural Processing Consortium*, Boston, MA.

Research Grants and Fellowships

- 2019 Dissertation Completion Fellowship (\$7,500)
- 2018 Dissertation Continuation Fellowship (\$7,500)
- 2017 BEACON Travel Fellowship (\$1,000)
- 2017 EEBB Travel Fellowship (\$600)
- 2016 IBIO John R. Shaver Award (\$1,125)
- 2016 EEBB Summer Fellowship (\$1,800)
- 2014 EEBB Summer Fellowship (\$1,800)
- 2013 EEBB Travel Fellowship (\$400)
- 2012 BEACON Top-up Fellowship (\$3,000)
- 2010 UC Berkeley Undergraduate Research Apprenticeship Summer Award
- 2009 UC Berkeley Undergraduate Research Apprenticeship Summer Award

Mentoring

- 2020 – 2021 Mentored masters student Heidi Rogers on capstone project.
- 2019 – 2021 Mentored undergraduate Ally K Brown on a research project culminating in her first-authored paper and a prize-winning poster.
- 2015 – 2019 Mentored seven undergraduate students Candice Rivers, Ashley O'Toole, Siera Tyl, Taryn Withers, Antonia Langfeldt, Kecil John, Nicole Seman conducting behavioral data extraction and analysis, culminating in the presentation of a prize-winning poster by Ashley O'Toole.
- 2014 – 2015 Mentored four students Genevieve Redgate, Allie Chojnacki, Katelyn Gutwein, Zack Woloszyk in field methods for behavior through NSF IRES program, culminating in a poster presentation.
- 2013 – 2014 Mentored Aliyah Glover, Daniel Claiborne, two students from underrepresented minorities through REU SROP program, culminating in poster presentations.

Teaching

- 2018 (fall) IBIO 830 Statistical Methods in Evolution and Ecology (teaching assistant for graduate-level course)
- 2018 (sum) IBIO 341 Fundamentals of Genetics (teaching assistant)
- 2016 (spring) IBIO 445 Evolution (discussion Instructor)
- 2015 – 2017 IBIO 490 Behavioral Ecology of African Mammals (lead Instructor)

Service and Outreach

- 2020 – 2021 Guest Editor for *Philosophical Transactions of the Royal Society, B*
- 2021 Mara Hyena Project Reproducibility Workshop Organizer
- 2020 – 2021 Contributor to Open Data Science Workshop, Ecology of Animal Societies Department, Max Planck Institute of Animal Behavior

2017 – 2018 Graduate student representative to IBIO faculty meeting
2017 – 2018 MSU Hacky Hour founder & organizer (coding group for graduate students)
2017 – 2018 EEBC Recruitment Liaison
2017 – 2018 MSU Science Festival volunteer
2016 – 2019 Biology on Tap founder & organizer (public outreach event for adults)
2016 – 2018 EEBC Quantitative Methods Committee (revamping stats curriculum)
2015 – 2016 IBIO Seminar Committee
2014 – 2015 Weekly public presentations about spotted hyenas at Mara Serena Lodge, Kenya
2014 – 2015 Mara Hyena Research Project field blog
2013 – 2014 MSU Museum Darwin Day volunteer

Peer Review

Reviewer for *Scientific Reports*, *Methods in Evolution and Ecology*, *International Journal of Primatology*, *Proceedings of the Royal Society B*, *Behavioral Ecology*, *Functional Ecology*, *Animal Behaviour*, *Behavioral Ecology and Sociobiology*, *Behavior Research Methods*, *Evolution and Ecology*, *Primates*, *SIAM Review Research Spotlights*, *Philosophical Transactions of the Royal Society B*, *Royal Society Open Science*.