

Olivia S. B. Spagnuolo

Email: oliviaspagnuolo11@gmail.com

Pronouns: she/her/hers

EDUCATION

Doctor of Philosophy, Integrative Biology and Ecology, Evolution, and Behavior Expected Dec 2023
Graduate Certificate in Spatial Ecology Current GPA: 3.9

Michigan State University, East Lansing, MI

Advisor: Dr. Kay E. Holekamp

Dissertation: Spatial Ecology Methods and Applications to Large Carnivore Conservation in Kenya

Master of Science, Natural Resources and Environment

August 2016

Dual Track: Environmental Informatics and Conservation Ecology

Final GPA: 3.9

University of Michigan, Ann Arbor, MI

Advisor: Dr. Bobbi S. Low

Thesis: Pasting behaviour suggests cryptic sociality in the striped hyaena, *Hyaena hyaena*

Bachelor of Science, Zoology

August 2014

Concentration: Animal Behavior and Neurobiology

Final GPA: 3.9

Michigan State University, East Lansing, MI

PEER-REVIEWED PUBLICATIONS

Spagnuolo, OSB, Low, BS, Califf KJ, Wagner, AP, Holekamp, KE. (*In prep.*) Pasting and denning behaviour suggest emergent sociality in a population of striped hyaenas, *Hyaena hyaena*.

Spagnuolo, OSB, Lemerle, MA, Holekamp, KE, Wiesel, I. (2022.) The value of individual identification in studies of free-living hyenas and aardwolves. *Mammalian Biology* 102(4), 1-24.

Spagnuolo, OSB, Incorvaia, DC, Johnson, ET, Roberts, EK. (2021). A question of behaviors: How to design, test, and use an ethogram. In *Exploring Animal Behavior in Laboratory and Field*, 2nd ed.

Spagnuolo, OSB, Jarvey, JC, Battaglia, MJ, Laubach, ZM, Miller, ME, Holekamp, KE, Bourgeau-Chavez, LL. (2020). Mapping Kenyan grassland heights across large spatial scales with combined optical and radar satellite imagery. *Remote Sensing* 12(7), 1086. <https://doi.org/10.3390/rs12071086>

Lehmann, KDS, Montgomery, TM, MacLachlan, SM, Parker, JM, **Spagnuolo, OS**, VandeWetering, KJ, Bills, PS, Holekamp, KE. (2016). Lions, hyenas, and mobs (Oh my!). *Current Zoology* 63(3), 313-322.

Donlin, M, Cavanaugh, BL, **Spagnuolo, OS**, Yan, L, & Lonstein, JS. (2014). Effects of sex and reproductive experience on the number of orexin A-immunoreactive cells in the prairie vole brain. *Peptides* 57, 122-128.

CONFERENCE PRESENTATIONS

Spagnuolo, O., Salome, S., Fisher, R., Richardson, A., Jarvey, J., & Holekamp, K. Effects of livestock grazing intensity on space use by large carnivores in the Maasai Mara National Reserve, Kenya. Oral presentation at the International Society for Behavioral Ecology Congress, August 2022.

Jarvey, J., Brocker, A., Salome, S., **Spagnuolo, O.**, & Holekamp, K. Spatial ecology of spotted hyena (*Crocuta crocuta*) foraging across changing ecological conditions. Poster presentation at the International Society for Behavioral Ecology Congress, August 2022.

Spagnuolo, O.S.B., Jarvey, J.C., Battaglia, M.J., Laubach, Z.M., Miller, M.E., Holekamp, K.E., & Bourgeau-Chavez, L. Using combined radar and optical satellite imagery to quantify and compare grassland heights of regions under different management regimes in the Masai Mara, Kenya. Virtual poster presentation at the Ecological Society of America, August 2020.

Spagnuolo, O., Low, B., Roloff, G., Califf, K., Wagner, A., & Holekamp, K. Scent marking and den sharing suggest social tolerance in a population of striped hyenas. Virtual talk at the annual conference of the Animal Behavior Society Annual Meeting, July 2020.

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Spagnuolo, O., Low, B., Roloff, G., Califf, K., Wagner, A., & Holekamp, K. Scent marking behavior consistent with emergent sociality in a population of striped hyenas (*Hyaena hyaena*). Poster presentation at the Annual Conference of the Animal Behavior Society and International Ethological Conference, July 2019.

Spagnuolo, O.S., Low, B.S., Wagner, A.P., & Holekamp, K.E. Pasting behavior of striped hyenas, *Hyaena hyaena*, in southern Kenya. Poster presentation at the 76th Midwest Fish and Wildlife Conference, January 2016.

AWARDS, GRANTS, FELLOWSHIPS

- Outstanding Scholar Fellowship – MSU – 2023 – \$7,500
- Ecology, Evolution, and Behavior (EEB) Travel Funding – MSU – 2022 – \$330
- Professional Horizons Grant – MSU – 2022 – \$750
- Dissertation Completion Fellowship – MSU – 2022 – \$10,000
- Travel Award – International Society for Behavioral Ecology – 2022 – \$1,000
- Nominated for 2022 Michigan State University (MSU) Excellence-In-Teaching Citation
- Recipient of 2022 MSU College of Natural Science (CNS) Excellence-In-Teaching Citation
- Don Hall Fellowship in Ecology, Evolution, and Behavior (EEB) – MSU – 2021 – \$8,500
- Dissertation Continuation Fellowship – MSU – 2021 – \$7,500
- John Shaver Fellowship in Zoology – MSU – 2019, 2021 – \$5,450
- Rasmussen Fellowship – MSU – 2017 – \$5,000
- Early Start Fellowship – MSU – 2017 – \$6,000
- Howard M. Wright Memorial Award – University of Michigan – 2016 – \$500
- Rackham Summer Award – University of Michigan – 2015 – \$8,000
- Academic Leadership Fellowship – University of Michigan – 2014 – \$15,000
- CNS Undergraduate Research Scholarship – MSU – 2014 – \$1,000
- Dean's Research Scholarship – MSU – 2013-2014 – \$1,500
- CNS Undergraduate Research Scholarship – MSU – 2013 – \$1,000
- Larry D. Fowler Endowment Undergraduate Research Scholarship – MSU – 2013 – \$3,500
- Mullica Research Award – MSU – 2012 – \$750

RESEARCH POSITIONS

Team Member, ACT NOW Amazonas Action Alliance (International) Feb 2023-May 2023

- Competitor in XPrize Rainforest, a five-year-long global competition in innovation of autonomous technologies needed for rainforest biodiversity assessment (prize: \$10 million)
- This international, culturally diverse, and interdisciplinary research team is composed of indigenous community members, data scientists, AI researchers, biodiversity scientists, ecological modelers, and engineers
- From a pool of 300 competing teams, ACT NOW was one of only fifteen teams to advance to the semifinals in Singapore
- I co-developed methods, materials, and budgets for species detection via camera trapping

Research Assistant, Mara Hyena Project (Masai Mara National Reserve, Kenya) Sep 2016-August 2017

- Identified hundreds of individual spotted hyenas by naturally-occurring markings
- Behavioral sampling: scan sampling, critical incident sampling, and focal animal sampling
- Biological samples: collected and processed biological samples (e.g., saliva, feces)
- Ecological monitoring: conducted regular line transects and recorded daily weather
- Operation of equipment: radio tracked, collected GPS data, recorded vocalizations
- Assisted in radio collaring immobilized hyenas and collecting and processing biological samples
- Managed remote field site: maintained vehicles, equipment, and samples; oversaw camp staff and maintained community relations; stocked supplies; kept financial records; submitted reports

Research Associate, University of Michigan (Ann Arbor, MI) September 2015-August 2016

- Used existing dataset to investigate space use and social behavior of striped hyenas via data extraction, cleaning, and analysis (ArcGIS and R); developing figures; and writing manuscript

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Research Assistant, Michigan State University (East Lansing, MI) June 2012-August 2014

- Lonstein Lab, Neuroscience Program: Conducted behavioral tests, performed surgeries, processed brain tissue, and conducted various lab techniques (e.g., BCA assays, Western blots)
- Holekamp Lab, Zoology Department: Extracted behavioral data from field notes

Intern, Cheetah Conservation Fund (Otjiwarongo, Namibia) July-August 2013

- Research: Conducted game counts, extracted camera trap, and assisted with literature review
- Husbandry and veterinary medicine: Assisted with daily husbandry for ~50 resident rescue cheetahs; performed daily husbandry for resident livestock and horses; shadowed veterinarian
- Education: Gave daily public presentations while feeding cheetahs; led public tours of onsite museum, veterinary clinic, and model farm; and assisted in education on field research techniques of National Geographic Student Expeditions group

Volunteer, Annual Kirtland's Warbler Census, U.S. Forest Service (Mio, MI) June 2012

- Conducted daily transects for Kirtland's Warbler on foot, identifying birds by sight and song

Volunteer, The Wolves and Moose of Isle Royale (Isle Royale, MI) August 2011

- Backpacked off-trail on Isle Royale to collect moose skulls for Michigan Technological University

COLLECTIONS CURATION AND MANAGEMENT

Intern, Natural Science Collections Summer Institute (East Lansing, MI) May-August 2021

- Developed and tested workflow for digitization of museum specimens
- Created "Specimen Spotlight" articles for public education through the museum web platforms

TEACHING EXPERIENCE

Lead Program Instructor, Michigan State University (Kenya) August 2019-May 2023

- Behavioral Ecology of African Mammals (ZOL 490): Summer 2022, 2023 (2020-2021 cancelled)
 - Organized and led intensive six-credit, three-week study abroad course in rural Kenya
 - Students learned to identify native species, create ethograms, practice systematic behavioral sampling, conduct wildlife transects, and estimate population
 - Students conducted original research in teams and presented their results
 - During each school year, I advertised the course; recruited, interviewed, and selected students; updated course materials; prepared emergency protocols and academic contingency plans; scheduled travel, accommodations, and activities; and held predeparture meetings covering travel logistics and academic content
 - Each summer, I lectured, facilitated educational activities, graded assignments, moderated intrapersonal conflict, responded to emergencies on the ground, and addressed health issues as they arose

Graduate Teaching Assistant, Michigan State University (East Lansing, MI) August 2017-July 2023

- Biology of Mammals (IBIO 365): Spring 2018, 2019, 2020, 2021, 2023
- Organismal Biology Lab (BS 172): Fall 2022
 - Led development of collaborative undergraduate research program with MSU Museum
- Ecological Aspects of Animal Behavior (IBIO 415): Fall 2021
- Evolution (IBIO 445): Fall 2019, Summer 2020, Fall 2020
- Genetics (IBIO 341): Summer 2020
- Animal Behavior (IBIO 313): Summer 2019
- Cell and Molecular Biology Lab (BS 171): Fall 2017, 2018
- Developed course content, syllabi, study materials, and assessments; administered and graded assessments; assisted students with research projects and scientific papers; delivered lectures and laboratory demonstrations; held office hours; and submitted grades to university
- Supervised 18 Undergraduate Learning Assistants and trained five Graduate Teaching Assistants

Olivia S.B. Spagnuolo, M.S.

Graduate Student Instructor, University of Michigan (Ann Arbor, MI)

May 2015-August 2016

- Ecology (EEB 281): Spring 2016
- Ecology Lab (EEB 372): Fall 2015
- Explorations of a Field Biologist, Michigan Math & Science Scholars: Summer 2015, 2016
- Lectured, gave feedback on projects and papers, graded assessments, facilitated field activities

Supplemental Instructor, Lansing Community College (Lansing, Michigan)

January-May 2012

- General, Organic, and Biological Chemistry (CHEM 120): Spring 2012
- Led group and individual tutor sessions, assisted students during class

SCIENCE COMMUNICATION

Fact Checker, Discover Magazine (remote)

January 2021-present

- Check sources, verify information, and revise stories before publication

Co-coordinator & Emcee, Biology on Tap (Lansing, MI)

January 2019-August 2022

- Free monthly public event where biologists give informal talks (typical attendance: 100-150)
- Presented talk: "Can Dogs Save the World?" (Working dogs in conservation), January 2019

Volunteer, MSU Science Festival (East Lansing, MI)

April 2021

- Developed slideshow and supporting quiz, gave oral presentation, and organized and advertised virtual booth: "Well Spotted! Using Natural Markings to Identify Individual Hyenas"

Volunteer, Behaviour 2019 Outreach Fair (Chicago, IL)

July 2019

- Presented at booth at Animal Behavior Society conference about spotted hyena research

Blogger, MSU Hyena Research: Notes From Kenya

September 2016-July 2018

- Wrote regular blog posts with videos and photographs from my field research in Kenya

Volunteer, Darwin Day (East Lansing, MI)

February 2018

- Presented outreach materials on spotted hyena morphology, behavior, and ecology at booth

Guide, Offspring Films (Masai Mara National Reserve, Kenya)

May 2017

- I guided the documentary team, ensured denning hyenas' behavior was not disturbed by filming, identified hyenas, provided information, and appeared on-camera

Interviewee, The Daily Planet (Nairobi, Kenya; Canada)

May 2017

- Appeared on news segment to describe an encounter in which a rock python consumed a hyena

Docent, Potter Park Zoo (Lansing, MI)

July 2011-August 2014, September 2017-October 2018

- Handled and presented a wide variety of live education animals (e.g., armadillo, eagle owl, boa constrictor, tarantula, cockroach) at education programs on zoo grounds and at outreaches
- Guided public educational tours of exhibit animals
- Worked at various children's activities and helped with logistics at special events
- Monitored animals that were ill or expected to go into labor overnight

Assistant Program & Volunteer Coordinator, Potter Park Zoo (Lansing, MI)

August 2010-August 2014

- Scheduled education programs, billed customers, and maintained records
- Coordinated docents and volunteers for education programs and special events
- Filled diverse roles at special events and helped in other areas of zoo as needed

YouTube

- Videos of Kenyan mammal behavior; over 9,800 subscribers and over 5.7 million views. My videos have been featured on a newscast, a nature show, and a MinuteEarth educational video.

ACADEMIC SERVICE

Academic papers reviewed

- *Ecology and Evolution* – April 2021
- *Mammalian Biology* – May 2023

Member, Animal Behavior in Conservation Working Group (remote)

September 2019-present

Committee Member, Undergraduate Awards Committee (East Lansing, MI)

January 2021-present

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Guest Speaker, Michigan State University (East Lansing, MI) October 2019-Present

- Guest speaker, Ecology (IBIO 355) Honors Option: Oct 2022. Topic: Career talk, undergraduate opportunities, and advice for graduate school applications
- Guest Lecturer, Research Experience (LB 348): Feb 2022. Topic: Geographic Information Systems
- Guest Lecturer, Ecological Aspects of Animal Behavior (IBIO 415): Oct 2021, 2022. Topic: Animal Space Use and Movement
- Guest Speaker for MSU Zoological Students Association. Topic: Careers in field research of large carnivore behavior. October 2019, 2020, 2021
- Panelist for Ecology (IBIO 355) Honors Option. Topic: Undergraduate research and funding opportunities at MSU. July 2019

Board Service, EEB Graduate Group (East Lansing, MI) Jan 2018-Aug 2019, May 2020-Aug 2022

- Colloquium Co-Chair: May 2021-August 2022
- Research Symposium Co-chair: May 2020-May 2021
- EEB Graduate Group, Social Co-chair: January 2018-May 2019

Focus Group Volunteer, Michigan State University (East Lansing, MI) February 2020

- Evaluate curricula for undergraduate degree programs (e.g., Zoology, Integrative Biology)

Judge, Michigan Future Farmers of America April 2019

Veterinary Science Career Development Event (East Lansing, MI)

Evaluator, University Undergraduate Research and Arts Forum (East Lansing, MI) April 2018

HUSBANDRY EXPERIENCE

Husbandry Intern, True North Equestrian (Williamston, Michigan) May - August 2014

- Studied and performed daily husbandry, designed emergency protocols

Zookeeper Intern, Potter Park Zoo (Lansing, Michigan) May-August 2011

- Performed daily husbandry for exhibit and education animals from over 160 species
- Target trained red ruffed lemurs and ring-tailed lemurs
- Designed enrichment to reduce stereotypy in red ruffed lemur, collected and analyzed behavioral data, and presented results to husbandry staff and interns
- Shadowed veterinarians and assisted with capture, restraint, and transport of animals

Foster Volunteer & Adoption Ambassador, Capital Area Humane Society (Lansing, MI) Jan 2018-present

- Foster and rehabilitate domestic animals with severe fear or aggression, with injuries and illnesses, when too young for adoption or in need of bottle feeding, and when shelter is full
- Facilitate adoptions: interview potential adopters, provide educational materials, process paperwork, and communicate with adopters post-adoption
- To date, I have fostered 32 cats, 9 rats, 2 dogs, and 1 rabbit. I have facilitated 9 adoptions.

CERTIFICATIONS

- Adult and Pediatric First Aid/CPR/AED (American Red Cross, issued August 2023)

PROFESSIONAL MEMBERSHIPS

- International Society for Behavioral Ecology (2022-present)
- Women in Nature Network (2020-present)
- Animal Behavior Society (2019-present)
- Society for Conservation Biology (2019-present)