

CONNIE A. ROJAS

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EDUCATION

Dual Ph. D (May 2021)	Michigan State University Ecology, Evolution, and Behavior (EEB) Integrative Biology <i>Certificate in College Teaching</i> <u>PhD dissertation</u> : “Socioecological predictors of microbiome variation in wild populations of African mammals”
B.A., 2014	Wellesley College Biological Sciences and Psychology (<i>Cum laude</i>)

RESEARCH AND WORK EXPERIENCE

2021- Current	University of California – Davis, Genome Center Postdoctoral Researcher (supervisor: Dr. Jonathan Eisen)
2015-2021	Michigan State University – Ecology, Evolution, and Behavior Ph.D. Candidate (supervisor: Dr. Kay Holekamp)
2018	Michigan State University – Mara Hyena Project, Maasai Mara, Kenya Field-based observational and experimental research for Ph.D. (supervisor: Dr. Kay Holekamp)
2018	Universidad Nacional Autónoma de México – Institute of Ecology Visiting Scholar in computational metagenomics for Ph.D. (supervisor: Dr. Valeria Souza)
2016, 2017	Wayne State University School of Medicine – Department of Biochemistry, Microbiology, and Immunology Visiting Scholar in microbiome lab work and analysis (supervisor: Dr. Kevin Theis)
2014- 2015	New York University – Department of Anthropology Field Assistant (supervisor: Dr. James Higham)
2014	National Science Foundation – Division of Environmental Biology Summer Scholar (supervisor: Dr. George Gilchrist)
2013- 2014	Wellesley College – Department of Biological Sciences Research Assistant and Lab Manager (supervisor: Dr. Vanja Klepac-Ceraj)
2013	Organization for Tropical Studies – La Selva Biological Station REU Researcher (supervisor: Dr. Susan Whitehead)

PUBLICATIONS

Peer-reviewed Publications

- Rojas, C.A.**, K.E. Holekamp, M. Viladomat-Jasso, V. Souza, J.A. Eisen, and K.R. Theis. 2022.
Taxonomic, Genomic, and Functional Variation in the Gut Microbiomes of Wild Spotted Hyenas
Across 2 Decades of Study. *mSystems*.
<https://journals.asm.org/doi/10.1128/msystems.00965-22>

Ganz, H.H., G. Jospin, **C.A. Rojas**, A.L. Martin, et al., J. Jarett. 2022. The Kitty Microbiome Project: Defining the healthy fecal “core microbiome” in pet domestic cats. *Veterinary Sciences* 9(11). <https://www.mdpi.com/2306-7381/9/11/635>

Rojas, C.A.*, M. Palacios-Mejia*, E. Curd, M.A. Renshaw, K. Edalati, B. Shih, N. Vincent, M. Lin, P. Nguyen, R. Wayne, K. Jessup, and S. Parker. 2022. Soil microbial community composition and tolerance to contaminants in an urban brownfield site. *Microbial Ecology*. <https://doi.org/10.1007/s00248-022-02061-1>

***denotes co-first authors**

Rojas, C.A., S. Ramírez-Barahona, K.E. Holekamp, and K.R. Theis. 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>

Rojas, C.A., A. de Santiago Torio, S. Park, T. Bosak, and V. Klepac-Ceraj. 2021. Organic electron donors and terminal electron acceptors structure anaerobic microbial communities and interactions in a permanently stratified sulfidic lake. *Frontiers in Microbiology*:12. <https://doi.org/10.3389/fmicb.2021.620424>

Rojas, C.A., K.E. Holekamp, A.D. Winters, and K.R. Theis. 2020. Body-site specific microbiota reflect sex and age class among wild spotted hyenas. *FEMS Microbiology Ecology*: 96(2). <https://doi.org/10.1093/femsec/fiaa007>

Other Publications

Theis, K.R., D.J. Whittaker, and **C.A. Rojas**. 2020. A hologenomic approach to animal behavior. In: Banzhaf W., BHC Cheng, K. Deb, K.E. Holekamp, R.E. Lenski, C. Ofria, R.T. Pennock, W.F. Punch, D.J. Whittaker (Eds) *Evolution in Action – Past, Present, and Future: A Festschrift in Honor of Erik D. Goodman*. Genetic and Evolutionary Computation. Springer, Cham. https://doi.org/10.1007/978-3-030-39831-6_18

Rojas, C.A. 2020. How BEACON shaped my research and career trajectory. *Evolution in Action – Past, Present, and Future: A Festschrift in Honor of Erik D. Goodman*. https://doi.org/10.1007/978-3-030-39831-6_5

Rojas, C.A., K.R. Theis, & K.E. Holekamp. 2019. Host socio-ecological variables shape gut microbiota diversity in spotted hyenas. *AGEP Science Today Bulletin*.

Rojas, C.A., K.E. Holekamp, & K.R. Theis. 2016. The structure and function of the juvenile spotted hyena scent pouch microbiome. *AGEP Science Today Bulletin*.

Manuscripts in revision or in prep

Rojas, C.A., H.H. Ganz, J. Gardy, J.A. Eisen. 2022. Recovery of high-quality genomes from the fecal microbiome of the domestic cat (*Felis catus*) using Hi-C proximity ligation (in review).

Rojas, C.A., Z. Entrolezo, J. Jarett, G. Jospin, D. Kingsbury, A. Martin, J.A. Eisen, and H. Ganz. 2022. Microbiome responses to fecal microbiota transplantation in cats with chronic digestive issues (submitted).

GRANTS AND FELLOWSHIPS

Doctoral or Postdoctoral Fellowships (total \$201,000+)

Chancellor’s Postdoctoral Fellowship, University of California – Davis (2021-current)
Graduate Research Fellowship, National Science Foundation (NSF) (2017-2019)
Predoctoral Fellowship, Ford Foundation (2015)
University Enrichment Fellowship, MSU Graduate School (2015, 2020)
Graduate Research Fellowship, Wellesley College (2015)

Research Awards (total \$81,000)

John R. Shaver Fellowship, MSU Department of Integrative Biology (2020)
Summer Fellowship, MSU EEB Program (2019, 2018, 2016)
Research Enhancement Award, MSU Graduate School (2018, 2016)
Research Award, NSF BEACON Center DBI-0939454 (2017)
Grants in Aid of Research, American Society of Mammologists (2017)

Travel Grants (total \$5,550)

Travel Fellowship, MSU EEB Program (2020, 2017)
Graduate Student Travel Award, Animal Behavior Society (ABS) (2019)
Diversity Travel Award, ABS (2019, 2017, 2016)
Travel Grant, NSF BEACON Center (2016-2019)
Travel Award, Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) (2017)

Professional Development (\$19,000)

Professional Development Award, MSU Council of Graduate Students (COGS) (2020)
Scholar Award, MSU Alliances for Graduate Education and the Professoriate (AGEP) (2016-2020)
Dr. MLK Jr. Endowed Scholarship, MSU Office of Inclusion and Intercultural Initiatives (2018)
Tracy A. Hammer Award for Professional Development, MSU College of Natural Sciences (2017)
Chrysler Foundation HENAAC Scholarship, Great Minds in STEM (2016)
Scholarship, Hispanic Scholarship Fund (HSF) (2015)

HONORS AND AWARDS

Inducted Member, MSU Chapter of the Edward A. Bouchet Graduate Honor Society (2020)
Outstanding Abstract Award, American Society for Microbiology (ASM) (2019)
Disciplinary Leadership Award, MSU Council of Graduate Students (COGS) (2017)
Outstanding Graduate Award, Delta Tau Lambda Sorority, Inc (2016)
Guest Speaker, Maywood Academy High School Graduation Ceremony (2016)

CONTRIBUTED TALKS AND POSTERS

- Rojas, C.A.** Mammalian Host-Microbiome Interactions: insights from cats and hyenas 2022. Biology Department Seminar Series. California State University – Los Angeles (virtual).
- Rojas, C.A.** Microbiome variation and function in wild and domestic mammals. 2022. Lake Arrowhead Microbial Genomics Meeting (LAMG). Lake Arrowhead, CA.
- Rojas, C.A.,** Z. Entrolezo, J. Jarett, G. Jospin, D. Kingsbury, A. Martin, J.A. Eisen, and H. Ganz. Microbiome responses to fecal microbiota transplantation in domestic cats. 2022. Anaerobe Congress. Seattle, WA. (poster)
- Rojas, C.A.,** Z. Entrolezo, J. Jarett, G. Jospin, D. Kingsbury, A. Martin, J.A. Eisen, and H. Ganz. Fecal Microbiome response to fecal microbiota transplantation in cats. 2022. American College of Veterinary Internal Medicine (ACVIM) Forum. Austin, TX. (electronic Poster)
- Rojas, C.A.** Fecal Microbiota Transplants As A Tool To Reduce Disease Susceptibility In Animals. 2022. 5th Annual Microbiome Connect: Animal. Boston, MA.
- Rojas, C.A.** Microbiome variation and function in wild and domestic mammals. 2022. Biology Department Seminar Series. California State University – Dominguez Hills (virtual).
- Rojas, C.A.** Microbiome variation and function in wild and domestic mammals. 2022. Medical Microbiology and Immunology (MMI) 291 Seminar Series. University of California – Davis (virtual).
- Rojas, C.A.,** J.W. Turner, K.R. Theis, and K.E. Holekamp. Do social interactions predict gut microbiota variation in a fission-fusion mammalian society? 2021. Animal Behavior Society Virtual Meeting.

- Rojas, C.A.** Socioecological predictors of microbiome variation in wild populations of African mammals. 2021. Doctoral Dissertation Defense (virtual). Also presented at the Wellesley Summer Research Program (SRP) Seminar Series (virtual).
- Rojas, C.A.,** S. Ramírez-Barahona, K.E. Holekamp, and K.R. Theis. Evidence of phyllosymbiosis among the gut microbiotas of sympatric African herbivores. 2020. Mammalian Microbiomes Seminar (virtual). Organized by Dr. Lauren Petruccio and Dr. Alice Baniel.
- Rojas, C.A.,** K.R. Theis, V. Souza, M. Viladomat-Jasso, and K.E. Holekamp. Gut microbiome structure and function across three generations of wild spotted hyenas. 2020. Long Term Animal Research Seminar Series organized by Duke University (virtual). Recording available at https://www.youtube.com/watch?v=kEa-k5a2JVU&t=113s&ab_channel=Long-TermAnimalResearchSeminarSeries
- Rojas, C.A.,** K.E. Holekamp, A.D. Winters, and K.R. Theis. Body-site specific microbiota among juvenile and adult wild spotted hyenas. 2020. FEMS Microbiology Ecology Webinar on Animal Microbiomes. Recording available at https://www.youtube.com/watch?v=VLra17Bwgc0&t=1878s&ab_channel=FEMSMicrobiology
- Rojas, C.A.,** K.E. Holekamp, and K.R. Theis. Host phylogenetic relatedness and dietary guild structure the gut microbiota of African herbivores. 2020. MSU EEB Colloquium, Michigan State University, East Lansing, MI. This work was also presented as a pre-recorded seminar at the virtual annual meeting of the Ecological Society of America (ESA) and as a live webinar at the NSF BEACON Congress. <https://eco.confex.com/eco/2020/meetingapp.cgi/Paper/84486>
- Rojas, C.A.,** K.R. Theis, V. Souza, M. Viladomat-Jasso, and K.E. Holekamp. Gut microbiome varies with host social rank, age, and individual identity in wild spotted hyenas. 2019. 56th Annual Conference of the Animal Behavior Society, University of Illinois at Chicago, IL.
- Rojas, C.A.,** A. de Santiago Torio, S. Park, T. Bosak, and V. Klepac-Ceraj. Biogeochemical gradients and carbon sources drive microbial community assembly in a permanently stratified lake. American Society for Microbiology Microbe. Moscone Center, San Francisco, CA. (poster). Winner of an Outstanding Abstract Award.
- Rojas, C.A.,** K.R. Theis, V. Souza, M. Viladomat-Jasso, and K.E. Holekamp. Host and ecological variables shape the gut microbiome in wild spotted hyenas. 2019. American Society for Microbiology (ASM) Microbe. Moscone Center, San Francisco, CA (talk and poster).
- Rojas, C.A.,** L. Zaman, L. Barrow, and K. Milligan-Myhre. It's Complicated: The Ecology and Evolution of Microbes and Their Hosts. 2018. Symposium organized by E. A. Humphrey and M. Neiman and presented at the Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) National Conference, Henry B. Gonzales Convention Center. San Antonio, TX. (invited talk).
- Klepac-Ceraj, V., A. Farrel-Sherman, **C.A. Rojas**, S. Park, A. de Santiago Torio, and T. Bosak. Electron acceptors and carbon sources shape anaerobic microbial communities in a highly sulfidic lake. 2018. 17th International Symposium on Microbial Ecology. Congress Center Leipzig, Leipzig, Germany. (poster).
- Rojas, C.A.,** K.R. Theis, and K.E. Holekamp. K. Age, social group, and body-site related variation in spotted hyena microbiota. 2017. 54th Annual Conference of the Animal Behavior Society, University of Toronto Scarborough, Toronto, Canada.
- Rojas, C.A.,** K.R. Theis, and K.E. Holekamp. Structure, function, and diversity of the hyena microbiome. 2017. 1st Annual EEBB Research Symposium, Michigan State University. East Lansing, MI.

Sawdy, M., **C.A. Rojas**, T. Montgomery, E. Strauss, T. Swem, A. Bond, and C. Bahlai. Environmental drivers of egg size in northern rockhopper penguins. 2017. Annual Meeting of the ESA. Portland, OR. (poster).

Rojas, C.A., K.E. Holekamp, and K.R. Theis. Uncovering the Functional Potential of Body-Site Specific Microbiomes in Spotted Hyenas. 2016. SACNAS National Conference, Long Beach Convention Center. Long Beach, CA. (poster). Also presented at the annual AGEF Fall Conference (2016). Kellogg Center, East Lansing, MI. (poster).

Rojas, C.A., K.E. Holekamp, and K.R. Theis. The scent pouch microbiome of juvenile spotted hyenas is age and body-site specific. 2016. 53rd Annual Conference of the Animal Behavior Society, University of Missouri. Columbia, MO. (poster). Also presented at the Annual Conference of Ford Fellows (2016). The National Academies, Washington, D.C. (poster).

ADDITIONAL RESEARCH TRAINING

- 2020 **Advanced R -- Graphing with GGPlot**, course led by Charles Belinsky (MSU) (June 29- August 10).
- 2020 **Grant Writers Seminars and Workshops: Write Winning Grants Seminar**, led by Dr. John D. Robertson (online)(May 6).
- 2018 **Reconstructing genomes using whole-shotgun data and comparative genomics**, workshop led by Dr. Alejandra Escobar (UNAM) and Dr. Tina Godoy (UNAM) (November 28-29, 2018).
- 2018 **Introduction to Bioinformatics for Metagenomics Microbiome Analysis**, led by Elaina Graham (USC) and Kristin Yoshimura (UDeI) (June 21-22, 2018).
- 2017 **Explorations in Data Analyses for Metagenomic Advances in Microbial Ecology** (EDAMAME), workshop led by Dr. Adina Howe, Dr. Ashley Shade, and Dr. Tracy Teal (August 6-12, 2017).
- 2016 **R workshop for Microbial Ecologists**, workshop led by Dr. Pat Schloss (May 23-25, 2016)

REVIEWER

ASM Spectrum
Molecular Ecology
Animal Microbiome
FEMS Microbiology Ecology
BMC Microbiology
PeerJ
International Journal of Primatology

TEACHING

Recipient, Certificate in College Teaching, MSU, Spring 2021
Graduate Teaching Assistant, Genetics (online), MSU, Summer 2021
Instructor, Behavioral Ecology of African Mammals, MSU, Summer 2020 (cancelled)
Instructor, Upward Bound, MSU, Summer 2020
Graduate Teaching Assistant, Ecology, MSU, Spring, 2019
Graduate Teaching Assistant, Genetics (online), MSU, Summer 2017
Graduate Teaching Assistant, Ecology (online), MSU, Summer 2016
Teaching Fellow, Bailey Scholars Program (BSP), MSU, Spring 2020
Fellow, Future Academics Scholars in Teaching (FAST), MSU, Fall-Spring 2019-20

Guest Lecture, “The Ecology of Microbiomes in Wild Spotted Hyenas”, Microbiology, Wellesley College, 2020

Guest Lecture “Introduction to Microbial Ecology and Microbiome Studies”, Ecology, Michigan State University, 2019 & 2021

MENTORING

- 2022 – **Mariangel Correa-Orellana**, undergraduate senior; provided professional guidance as they applied to graduate school as part of the UC Davis Ecology and Evolution Preview Program. Provided feedback on C.V., answered questions about applying to and succeeding in graduate school, and reviewed statements for graduate school applications and fellowships.
- 2021- **Hira Lesea**, Undergraduate Researcher, University of California – Davis; was trained on
2022 culturing anaerobic microbes from cat anal sacs and extracting DNA from swabs and culture isolates. Also learned how process and analyze metagenomic datasets using the command line and a suite of bioinformatics tools for metagenome read processing, assembly, and functional annotation.
- 2019 **Graduate Student Facilitator, MSU Summer Research Opportunities Program (SROP)**
Assisted a cohort of 18 STEM undergraduates with the development of their oral and poster research presentations over the course of 10 weeks. Also held weekly office hours and provided professional development and career advice.
- 2019 **Dimaris Colon Molina**, Master’s Candidate, University of Puerto Rico at Mayaguez; assisted with development of statements for the Ford Foundation Predoctoral Fellowship.
- 2017 **Christina Kohler**, Undergraduate Research Assistant, Wayne State University; trained in essential microbiome wet laboratory skills, including DNA extractions, purifications and quantification, PCR, gel electrophoresis, and preparation of isolation media.
- 2017 **Hugh McCullough**, Undergraduate Volunteer, MSU; trained in microbiome R data analysis and discussed relevant published articles.

WORKSHOPS FACILITATED ON TEACHING AND MENTORING

- Rojas, C.A.** “Fostering a sense of belonging in the college classroom.” 2020. MSU Graduate Student TA Orientation (virtual). Michigan State University. This workshop was also presented at the Learn Best Practices in Teaching Sessions (virtual).
- Rojas, C.A.**, and Y. Dufour. “How effective are R Shiny Apps in a microbial genomics course?” 2020 CIRTL All-Network Teaching-as-Research Presentations (virtual). Also presented an extended version of this talk at the MSU FAST Fellows Symposium (virtual).
- Bustos, T., **C.A. Rojas**, J. Saucedo, M. Bilbao, and E. Ayers. “Navigating White Spaces as Women of Color in Academia.” 2019. 25th Annual Dia de La Mujer Conference. Michigan State University.
- Alvarez, E., A. de Jesus, **C.A. Rojas**, and D. Martinez. “We Will Persist: Navigating Graduate School.” 2017. 24th Annual Dia de La Mujer Conference, Michigan State University.
- Rojas, C.A.**, and N. Paredes. “Surviving as a Chicax in Academia.” 2016. 23rd Annual Dia de La Mujer Conference, Michigan State University.

SERVICE

Departmental or Academic

- Participant, Focus Group on MSU IBIO Curriculum Review

- Developed Travel Award for MSU IBIO graduate students and post-docs
- Recruiter for MSU Graduate Programs at the SACNAS National Conference (2 yrs)

Professional development of graduate and undergraduate students

- Mentor, UC Davis Ecology and Evolution Preview Program
- Interviewee, University of California – Davis, College of Biological Sciences
<https://biology.ucdavis.edu/news/researcher-studying-microbiome-and-chemical-communication-cats-named-chancellors-postdoctoral>
- Speaker, spoke about career path and graduate research to Wellesley Summer Research Program (SROP) participants
- Contributor, MSU AGEP Survival Guide for Graduate Students
- Panelist, NSF Summer Scholars Alumni Panel (SSIP) for incoming scholars (2 years)
- Panelist, Conversation with Current PhD Students for Wellesley College McNair Scholars
- Panelist, Graduate School Panel for MSU SROP participants and visiting McNair Scholars (2 years)
- Panelist, Graduate School and Ecology Careers, MSU IBIO 355 Honors students
- Panelist, *Ponte las Pilas* Applying to Graduate School Workshop for MSU Latino undergraduates
- Evaluator, MSU SROP Final Symposium Presentations (in-person and virtual) (3 years)
- Evaluator, Oral and Poster presentations at the MSU Undergraduate Research and Arts Forum (4 years)
- Reviewer, NSF GRFP statements from MSU applicants (3 years)

Outreach

- Interviewee, MSU SciFiles Podcast, audio available at <https://impact89fm.org/81027/podcasts/the-sci-files-07-14-2019-connie-rojas-spotted-hyena-microbiomes/>
- Skype a Scientist Video Chats with 5th-12th grade classrooms
- Presenter, Spotted Hyena Biology educational talks, Masai Mara lodges, Kenya
- Presenter, MSU Science Festival, facilitated interactive activities on hyena biology and fieldwork
- Volunteer, MSU Darwin Discovery Day & Girls Math and Science Day
- Blogger, Notes from Kenya (Mara Hyena Project)
- Interviewer, MSU Outstanding Alumni Series
<https://grad.msu.edu/outstanding-alumni-hall-fame-series-interview-paul-e-turner-phd-1995>

PROFESSIONAL MEMBERSHIPS

Edward A. Bouchet Graduate Honor Society (BGHS)
 Sigma Xi The Scientific Research Society
 Society for the Advancement of Hispanics/Chicanos and Native Americans in Science (SACNAS)
 Animal Behavior Society (ABS)
 American Society of Mammologists (ASM)
 American Society for Microbiology (ASM)
 Anaerobe Society
 Advancing Graduate Education and the Professoriate (AGEP)
 Psi Chi The International Honor Society in Psychology