DR. GITANJALI E. GNANADESIKAN

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Updated: August 29, 2023

EDUCATION

University of Arizona *August 19, 2023*
PhD in Biological Anthropology
Minor in Cognitive Science
University Fellow, NSF Graduate Research Fellow, PEO Scholar
Dissertation: *Genetic and Endocrine Contributions to Dog Behavior and Cognition in a Working Dog Population*
Committee: Evan L. MacLean, Stacey R. Tecot, Bridgett M. vonHoldt, Mary A. Peterson
GPA: 4.0

University of Arizona *May 10, 2019*
MA in Anthropology
Report: *Estimating the Heritability of Cognitive Traits Across Dog Breeds Reveals a Heritable Cooperative-Communicative Factor*
Adviser: Evan L. MacLean
GPA: 4.0

Princeton University *June 3, 2014*
AB in Ecology and Evolutionary Biology, *magna cum laude*.
Thesis: *Exploring the Canine Methylome: The Impacts of Domestication on the Regulatory Genome*
Adviser: Bridgett M. vonHoldt
GPA: 3.72

ACADEMIC APPOINTMENTS

Emory University *August 2023 – Present*
Postdoctoral Fellow with Marcela Benítez in the Department of Anthropology *Atlanta, GA*

· Emory FIRST (Fellowship in Research and Science Teaching) and NIH IRACDA Fellow
· Affiliate at the Language Research Center (Georgia State University)

FELLOWSHIPS

2023 - 2027	Emory Fellowship in Research and Science Teaching/NIH IRACDA Fellow ($238,000)
2023	University of Michigan Society of Fellows – Declined ($207,000)
2018 - 2023	NSF Graduate Research Fellowship ($138,000)
2017 - 2018	Andrew Carnie University Fellow – University of Arizona first-year fellowship ($63,311)
2014 - 2015	Teaching Fellow – Teach for China

PEER-REVIEWED PUBLICATIONS

† Co-first authors. * Undergraduate mentee.

14. ManyDogs Project, Julia Espinosa, Jeffrey R. Stevens, Daniela Alberghina, Harley E. E. Alway, Jessica D. Barela, Michael Bogese, Emily E. Bray, Daphna Buchsbaum, Sarah-Elizabeth Byosiere, Molly Byrne, Camila M. Cavalli, Leah M. Chaudoir*, Courtney Collins-Pisano, Hunter J. DeBoer, Laura E. L. C. Douglas, Shany Dror, Marina V. Dzik, Beverly Ferguson, Laura Fisher, Hannah C. Fitzpatrick, Marianne S. Freeman, Shayla N. Frinton, Maeve K. Glover, **Gitanjali E. Gnanadesikan**, Joshua E. P. Goacher, Marta Golańska, C.-N. Alexandrina Guran, Elizabeth Hare, Brian Hare, Mia Hickey*, Daniel J. Horschler, Ludwig Huber, Hoi-Lam Jim, Angie M. Johnston, Juliane Kaminski, Debbie M. Kelly, Valerie A. Kuhlmeier, Lily Lassiter, Lucia Lazarowski, Jennifer Leighton-Birch, Evan L. MacLean, Kamila Maliszewska, Vito Marra, Lane I. Montgomery, Madison S. Murray, Emma K. Nelson, Ljerka Ostojić, Shennai G. Palermo, Anya E. Parks Russell, Madeline H. Pelgrim, Sarita D. Pellowe, Anna Reinholz, Laura A. Rial, Emily M. Richards, Miriam A. Ross, Liza G. Rothkoff, Hannah Salomons, Joelle K. Sanger, Laurie Santos, Angelina R. Schirle, Shania J. Shearer, Zachary A. Silver, Jessica M. Silverman, Andrea Sommese, Tiziana Srdoc, Hannah St. John-Mosse, Angelica C. Vega, Kata Vékony, Christoph J.Völter, Carolyn J. Walsh, Yasmin A. Worth, Lena M. I. Zipperling, Bianka Żołędziewska, Sarah G. Zylberfuden (2023). ManyDogs 1: A multi-lab replication study of dogs' pointing comprehension. *Animal Behavior & Cognition*, 10(3): 232-286. Preprinted registered report: 10.31234/osf.io/f86jq. Final doi: 10.26451/abc.10.03.03.2023

13. ManyDogs Project, Daniela Alberghina, Emily E. Bray, Daphna Buchsbaum, Sarah-Elizabeth Byosiere, Julia Espinosa, **Gitanjali E. Gnanadesikan**, C.-N. Alexandrina Guran, Elizabeth Hare, Daniel J. Horschler, Ludwig Huber, Valerie A. Kuhlmeier, Evan L. MacLean, Madeline H. Pelgrim, Bryan Perez, Dana Ravid-Schurr, Liza Rothkoff, Courtney L. Sexton, Zachary A. Silver & Jeffrey R. Stevens (2023). ManyDogs Project: A Big Team Science Approach to Investigating Canine Behavior and Cognition. *Comparative Cognition & Behavior Reviews*, 18, 59–77. doi: 10.3819/CCBR.2023.180004

12. Salomons, Hannah, Kyle Smith, Megan Callahan-Beckel, Margaret Callahan, Kerinne Levy, Brenda S. Kennedy, Emily Bray, **Gitanjali E. Gnanadesikan**, Daniel J. Horschler, Margaret Gruen, Jingzhi Tan, Philip White, Bridgett M. vonHoldt, Evan MacLean & Brian Hare (2023). Response to Hansen Wheat et al.: Additional analysis further supports the early emergence of cooperative communication in dogs compared to wolves raised with more human exposure. *Learning & Behavior*. doi: 10.3758/s13420-023-00576-2

11. **Gnanadesikan, Gitanjali E.**, Elizabeth Hammock, Stacey R. Tecot, Rebecca J. Lewis, Russ Hart, C. Sue Carter & Evan L. MacLean (2022). What are oxytocin assays measuring? Epitope mapping, metabolites, and comparisons of wildtype & knockout mouse urine. *Psychoneuroendocrinology*, 143, 105827. doi: 10.1101/2022.03.03.482682

10. Horschler, Daniel J., Emily E. Bray, **Gitanjali E. Gnanadesikan**, Molly Byrne, & Evan L. MacLean (2022). Dogs re-engage human partners when joint social play is interrupted. *Animal Behaviour*, 183, 159–168. doi: 10.1016/j.anbehav.2021.11.007.

9. **Gnanadesikan, Gitanjali E.**, Elizabeth A. D. Hammock, Stacey R. Tecot, C. Sue Carter & Evan L. MacLean (2021). Specificity of Plasma Oxytocin Immunoassays: A Comparison of Commercial Assays and Sample Preparation Techniques Using Oxytocin Knockout and Wildtype Mice. *Psychoneuroendocrinology*, 132, 105368. doi: 10.1016/j.psyneuen.2021.105368

8. Salomons, Hannah, Kyle Smith, Megan Callahan-Beckel, Margaret Callahan, Kerinne Levy, Brenda S. Kennedy, Emily Bray, **Gitanjali E. Gnanadesikan**, Daniel J. Horschler, Margaret Gruen, Jingzhi

Tan, Philip White, Bridgett M. vonHoldt, Evan MacLean & Brian Hare (2021). Cooperative communication with humans evolved to emerge early in dogs. *Current Biology*, 31(14), 3137-3144.e11. doi: 10.1101/2021.01.12.425620

7. Bray, Emily E., **Gitanjali E. Gnanadesikan**, Daniel J. Horschler, Kerinne M. Levy, Brenda S. Kennedy, Tom R. Famula & Evan L. MacLean (2021). Early-emerging and highly-heritable sensitivity to human communication in dogs. *Current Biology*, 31(14), 3132–3136.e5. doi: 10.1016/j.cub.2021.04.055

6. Bray, Emily E., Margaret E. Gruen, **Gitanjali E. Gnanadesikan**, Daniel J. Horschler, Kerinne M. Levy, Brenda S. Kennedy, Brian A. Hare & Evan L. MacLean (2021). Dog cognitive development: A longitudinal study across the first two years of life. *Animal Cognition*, 24(2), 311–328. doi: 10.1007/s10071-020-01443-7.

5. **Gnanadesikan, Gitanjali E.**, Brian Hare, Noah Snyder-Mackler, Josep Call, Julianne Kaminski, Ádám Miklósi & Evan MacLean (2020). Breed differences in dog cognition associated with brain-expressed genes and neurological functions. *Integrative and Comparative Biology*, 60(4), 976–990. doi: 10.1093/icb/icaa112

4. Bray, Emily E., Margaret E. Gruen, **Gitanjali E. Gnanadesikan**, Daniel J. Horschler, Kerinne M. Levy, Brenda S. Kennedy, Brian A. Hare & Evan L. MacLean (2020). Cognitive characteristics of 8-to-10-week-old assistance dog puppies. *Animal Behaviour*, 166, 193-206. doi: 10.1016/j.anbehav.2020.05.019

3. **Gnanadesikan, Gitanjali E.**, Brian Hare, Noah Snyder-Mackler & Evan L. MacLean (2020). Estimating the Heritability of Cognitive Traits Across Dog Breeds Reveals Highly Heritable Inhibitory Control and Communication Factors. *Animal Cognition*, 23(5), 953–964. doi: 10.1007/s10071-020-01400-4

2. **Gnanadesikan, Gitanjali E.**, William D. Pearse & Allison K. Shaw (2017). Evolution of mammalian migrations for refuge, breeding, and food. *Ecology and Evolution*, 7(15), 5891–5900. doi: 10.1002/ece3.3120

1. Janowitz Koch, Ilana L., Michelle M. Creek, Michael J. Thompson, Kerry A. Deere-Machemer, Jun Wang, Lionel Duarte, **Gitanjali E. Gnanadesikan**, Eskender L. McCoy, Liudmilla Rubbi, Daniel R. Stahler, Matteo Pellegrini, Elaine A. Ostrander, Robert K. Wayne, Janet S. Sinsheimer & Bridgett M. vonHoldt (2016). The concerted impact of domestication and transposon insertions on methylation patterns between dogs and grey wolves. *Molecular Ecology*, 25(8), 1838–1855. doi: 10.1111/mec.13480

MANUSCRIPTS IN REVIEW OR PREPARATION

Gnanadesikan, Gitanjali E., Dhriti Tandon, Emily E. Bray, Brenda S. Kennedy, Stavi Tennanbaum, Evan L. MacLean & Bridgett M. vonHoldt (submitted). Do dogs display behavioral traits central to Williams-Beuren Syndrome? Transposons, behavior & training success in assistance dogs. Preprint doi: 10.21203/rs.3.rs-2902414/v1

Gnanadesikan, Gitanjali E., Elizabeth Carranza, Katherine M. King, Abigail Flyer, Gianna Ossello, Paige Smith, Netzin Steklis, H. Dieter Steklis, Jessica Connelly, Melissa Barnett, Nancy Gee, Stacey R. Tecot & Evan MacLean (submitted). Glucocorticoid response to naturalistic interactions between children and dogs.

Gnanadesikan, Gitanjali E., Emily E. Bray, Erica N. Cook, Kerinne M. Levy, Laura E.L.C. Douglas, Brenda S. Kennedy, Stacey R. Tecot & Evan L. MacLean (in prep). Basal Plasma Oxytocin & Fecal

Cortisol Concentrations are Highly Heritable and Associated with Individual Differences in Behavior & Cognition in Dog Puppies.

Gnanadesikan, Gitanjali E., Emily E. Bray, Kerinne M. Levy, Laura E.L.C. Douglas, Daniel J. Horschler, Stephanie Hargrave, Brenda S. Kennedy & Evan L. MacLean (in prep). Characterizing the Heritability of Cognitive and Behavioral Traits across Development in Domestic Dogs.

Gnanadesikan, Gitanjali E., Evan L. MacLean & Jessica R. Andrews-Hanna (in prep). Do Animals Imagine? Behavioral and Neural Evidence for Imaginative Capacities in Non-human Animals.

Gnanadesikan, Gitanjali E.†, Katherine M. King†, Elizabeth Carranza, Abigail Flyer, Gianna Ossello, Paige Smith, Netzin Steklis, H. Dieter Steklis, C. Sue Carter, Jessica Connelly, Melissa Barnett, Nancy Gee, Stacey R. Tecot & Evan MacLean (in prep). Effects of Human-Animal Interaction on Salivary and Urinary Oxytocin Concentrations in Children and Dogs

Bray, Emily E., Laura E.L.C. Douglas, Kerinne M. Levy, **Gitanjali E. Gnanadesikan**, Daniel J. Horschler, Brenda S. Kennedy & Evan L. MacLean (in prep). Effects of maternal style and early rearing environment on puppy behavior and cognition.

HONORS & AWARDS

2023 School of Anthropology Graduate Teaching Award ($500)
2022 University of Arizona Herbert E. Carter Travel Award for interdisciplinary work ($600)
2022 University of Arizona Graduate College Travel Grant ($500)
2022 School of Anthropology Graduate Student Travel Award ($800)
2021 University of Arizona Graduate College Travel Grant ($500)
2020 PEO Scholar Award ($15,000)
2019 University of Arizona Graduate College Travel Grant ($500)
2018 University Fellows Professional Development Award ($500)
2018 School of Anthropology Summer Award: Traditions, Transitions & Treasures Fund ($2,000)
2018 Graduate and Professional Student Council Research and Project Grant ($1,000)
2018 Graduate and Professional Student Council Travel Grant ($750)
2017 NSF GRFP Honorable Mention
2014 Elected to the Sigma Xi scientific honors society
2014 Porter '52 EEB Research Fund conference award to present thesis work ($750)
2013 Princeton EEB award to attend the International Canine and Feline Genomics conference ($900)
2013 John T. Bonner Senior Thesis Fund grant for summer thesis work ($4,400)

INVITED TALKS – ACADEMIC

Social Cognition and Primate Behavior Lab at Emory University. *How do Genetics & Hormones Contribute to Behavior & Cognition and their Evolution?* March 27, 2023.

Department of Psychology at Reed College. *What Makes an Individual? Using Genetics & Hormones to Explore Dog Behavior and Cognition.* November 21, 2022.

Behavioral Neuroscience and Comparative Psychology seminar series at Arizona State University's Psychology Department. *Exploring the Genetic Bases of Behavior and Cognition in Dogs.* September 21, 2022.

Comparative Cognition Lab at Yale University. *Exploring the Genetic Underpinnings of Dog Cognition.* February 19, 2021.

CONFERENCE PRESENTATIONS

Gnanadesikan, Gitanjali E., Emily E. Bray, Erica N. Cook, Stacey R. Tecot & Evan L. MacLean. *Heritability and Behavioral Associations with Oxytocin and Cortisol Concentrations in Dog Puppies.* Oral presentation at the Animal Behavior Society 2023 Meeting. Portland, OR. July 12-15, 2023.

Gnanadesikan, Gitanjali E., Dhriti Tandon, Emily E. Bray, Evan L. MacLean, & Bridgett M. vonHoldt. *Do dogs have elements of Williams-Beuren Syndrome? Transposons, behavior & training success in assistance dogs.* Oral presentation at the 30th Annual International Comparative Cognition Conference. Melbourne, FL. April 12-15, 2023.

Gnanadesikan, Gitanjali E., Dhriti Tandon, Emily E. Bray, Evan L. MacLean & Bridgett M. vonHoldt. *Williams-Beuren Syndrome, Behavior & Cognition, and Training Success in Assistance Dogs.* Presented at the Animal Behavior Twitter Conference 2023. January 18, 2023. https://twitter.com/g_gnanadesikan/status/1615718189664731136

Gnanadesikan, Gitanjali E., Dhriti Tandon, Emily E. Bray, Evan L. MacLean & Bridgett M. vonHoldt. *Do dogs have elements of Williams-Beuren Syndrome? Transposons, behavior & training success in a population of assistance dogs.* Oral presentation at the Canine Science Conference 2022 Meeting. Hamilton, NY. October 7-9, 2022.

Gnanadesikan, Gitanjali E., Dhriti Tandon, Emily E. Bray, Evan L. MacLean & Bridgett M. vonHoldt. *Do dogs have Williams-Beuren Syndrome? Transposons, behavior & training success in a population of assistance dogs.* Oral presentation at the Animal Behavior Society 2022 Meeting. San José, Costa Rica. July 20–23, 2022.

Gnanadesikan, Gitanjali E., Elizabeth A. D. Hammock, Stacey R. Tecot, Rebecca J. Lewis & Evan L. MacLean. *Developing a new extraction method to minimize interference in immunoassay of urinary oxytocin.* Recorded talk for the International Society of Wildlife Endocrinology Virtual Conference 2021. August 16–17, 2021.

Gnanadesikan, Gitanjali E., Emily E. Bray, Evan L. MacLean & Bridgett M. vonHoldt. *Williams-Beuren Syndrome in Dogs? Genetic Variation, Social Behavior, and Assistance Dog Success.* Oral presentation at the East Coast Canine Cognition Workshop. New Haven, CT. April 23–24, 2021.

Gnanadesikan, Gitanjali E., Julia Espinosa & ManyDogs. *ManyDogs 1: An International Collaborative Approach to Pointing Comprehension in Domestic Dogs.* Presented at the Animal Behaviour Twitter Conference. January 27, 2021. https://twitter.com/ManyDogsProject/status/1354550089918767105

Gnanadesikan, Gitanjali E. & Evan L. MacLean. *Breed Differences in Heritable Cognitive Traits Associated with Brain-Expressed Genes and Neurological Functions in Dogs.* Presented at the Animal Behaviour Twitter Conference. January 27, 2021. https://twitter.com/g_gnanadesikan/status/1354547287112880134

Gnanadesikan, Gitanjali E., Brian Hare, Noah Snyder-Mackler & Evan L. MacLean. *Exploring the Genetic Bases of Breed Differences in Dog Cognition.* Oral presentation at the East Coast Workshop on Canine Cognition. New Haven, CT. February 15–16, 2020.

Gnanadesikan, Gitanjali E., Brian Hare, Noah Snyder-Mackler, and Evan L. MacLean. *Estimating the Heritability of Cognitive Traits Across Dog Breeds.* Oral presentation at the University of Arizona–Arizona State University Cognitive Science Conclave. Tucson, AZ. December 7, 2019.

Gnanadesikan, Gitanjali E., Brian Hare, Noah Snyder-Mackler, and Evan L. MacLean. *Estimating the Heritability of Cognitive Traits Across Dog Breeds Reveals Highly Heritable Inhibitory Control and Cooperative-Communicative Factors.* Oral presentation at the Southwestern Association of Biological Anthropologists Annual Meeting. Tempe, AZ. November 1–2, 2019.

Gnanadesikan, Gitanjali E., Brian Hare, Noah Snyder-Mackler, Evan L. MacLean. *Estimating the Heritability of Cognitive Traits Across Dog Breeds Reveals a Heritable Cooperative-Communicative Factor.* Oral presentation at the International Canine Science Conference. Phoenix, AZ. October 18–20, 2019.

Gnanadesikan, Gitanjali E., Brian Hare & Evan L. MacLean. *Estimating the Heritability of Cognitive Traits Across Dog Breeds.* Oral presentation at the 26th Annual International Comparative Cognition Conference. Melbourne, FL. April 10–14, 2019.

Gnanadesikan, Gitanjali E., Daniel J. Horschler & Evan L. MacLean. *Social Cues and Hormonal Profiles Over Development in Wolf Puppies.* Poster presentation at the Graduate and Professional Student Council Research Showcase. Tucson, AZ. February 13, 2019.

Gnanadesikan, Gitanjali E. & Evan L. MacLean, *Estimating the Heritability of Cognitive Traits.* Oral presentation at the East Coast Workshop on Canine Cognition. New Haven, CT. November 10–11, 2018.

Gnanadesikan, Gitanjali E. & Bridgett M. vonHoldt. *Exploring the Canine Methylome: The Impact of Domestication on the Regulatory Genome.* Poster presentation at the annual meeting for the Society for Integrative and Comparative Biology. Austin, TX. January 3–7, 2014

OTHER ABSTRACTS

Liu, Arielle., Allison Hays, Katherine King, **Gitanjali E. Gnanadesikan**, Rebecca J. Lewis, Stacey R. Tecot. *Urinary Oxytocin and Aggression in Wild Verreaux's Sifaka (Propithecus verreauxi) in Kirindy Mitea National Park, Madagascar.* Poster presentation by Arielle Liu at the annual meeting of the American Society of Primatologists. June 20–23, 2023.

Bray, Emily E., Laura Douglas, **Gitanjali E. Gnanadesikan**, Daniel J. Horschler, Kerinne M. Levy, Brenda S. Kennedy & Evan L. MacLean. *Effects of early rearing environment on working dog puppy behavior and outcome.* Oral presentation by Emily Bray at the Canine Science Conference 2022 Meeting. October 7–9, 2022.

King, Katherine, Allison Hay, Arielle X. Liu, **Gitanjali E. Gnanadesikan**, Rebecca J. Lewis, & Stacey Tecot. *Investigating urinary oxytocin and affiliative behavior in wild male Propithecus verreauxi at Kirindy Mitea National Park, Madagascar.* Poster presentation by Katherine King at the annual meeting of the American Society of Primatologists. August 25–28, 2022

King, Katherine, Allison Hay, Arielle X. Liu, **Gitanjali E. Gnanadesikan**, Rebecca J. Lewis, & Stacey Tecot. Oxytocin and affiliative behavior in male *P. verreauxi* at Kirindy Mitea National Park, Madagascar. Poster presentation by Katherine King at the Animal Behavior Society 2022 Meeting. July 20–23, 2022.

Bray, Emily E., **Gitanjali E. Gnandesikan**, Daniel J. Horschler & Evan L. MacLean. *Heritable variation in dog social cognition.* Presented by Emily Bray at the Animal Behaviour Twitter Conference. January 27, 2021. https://twitter.com/DrEmilyBray/status/1354554832749645826

MacLean, Evan L., Emily E. Bray, **Gitanjali E. Gnanadesikan** & Daniel J. Horschler. *Associations between individual differences in cognition and training outcomes in assistance dogs.* Presented by Evan MacLean at the East Coast Workshop on Canine Cognition. February 15–16, 2020.

Bray, Emily E.,**Gitanjali E. Gnanadesikan**, Daniel J. Horschler & Evan L. MacLean. *Early development and longitudinal stability of cognitive traits in working dogs.* Presented by Emily Bray at the East Coast Workshop on Canine Cognition. February 15–16, 2020.

MacLean, Evan L., **Gitanjali E. Gnanadesikan**, Emily E. Bray & Noah Snyder-Mackler. *Dog Diversity as a Natural Experiment in Cognitive Evolution.* Presented by Evan MacLean at the Society for Integrative and Comparative Biology Annual Meeting. January 3–7, 2020.

MacLean, Evan L., Emily E. Bray, **Gitanjali E. Gnanadesikan** & Daniel J. Horschler. *Ontogeny and heritability of cognitive and temperamental traits in an assistance dog population.* Presented by Evan MacLean at the International Canine Science Conference, October 18–20, 2019.

Bray, Emily E., **Gitanjali E. Gnanadesikan**, Daniel J. Horschler & Evan L. MacLean. *Early emerging cognition in 9-week-old puppies.* Presented by Emily Bray at the 26th International Conference on Comparative Cognition. April 10–14, 2019.

MacLean, Evan L., Emily E. Bray, **Gitanjali E. Gnanadesikan**, Daniel J. Horschler. *Heritability of cognitive traits in a pedigreed dog population.* Presented by Evan MacLean at the 26th International Conference on Comparative Cognition. April 10–14, 2019.

PAST RESEARCH EXPERIENCE

Laboratory for the Evolutionary Endocrinology of Primates (LEEP) 2017–2023
Research Assistant with Evan MacLean and Stacey Tecot *Tucson, AZ*

- Developed, validated, and performed extraction and immunoassay protocols for oxytocin, vasopressin, and cortisol in a variety of biological samples; trained others on these methods.
- Contributed to studies on: human-animal bond (NIH), affiliation in male sifaka (NSF), and effects of maternal style on puppy behavior and cognition (AKC).
- Species studied included canines, humans, mice, lemurs, and titi monkeys.

ManyDogs 2017–2023
Project Coordinator, Methods Team, Team Captain

- General project administration, infrastructure building, and team management.
- Led the methods and protocol development, integrating suggestions from participating labs, and developing consensus among diverse groups.
- Led data collection at the Arizona Canine Cognition Center: trained and mentored undergraduate experimenters.

Fieldwork with Captive Wolf Pups 2018
Graduate Student *Wildlife Science Center, MN*

- Socialized, conducted behavioral tests on, and collected biological samples from captive wolf puppies.

Arizona Canine Cognition Center (ACCC) 2016–2017
Laboratory Coordinator *Tucson, AZ*

- Collaborated with multiple institutions to develop a battery of cognitive tests to use on puppies.
- Conducted cognitive behavioral experiments with companion dogs in the Tucson area at the ACCC and puppies at Canine Companions for Independence.

Senior Thesis Research 2013–2014
Student with Bridgett vonHoldt *Princeton, New Jersey*

· "Exploring the Canine Methylome: The Impacts of Domestication on the Regulatory Genome"
· Conducted computational analysis of genome-wide methylation data with the aim of discovering differences in genetic regulation between dogs and wolves.

The Jackson Laboratory 2012
Summer Student with Kenneth Paigen *Bar Harbor, Maine*

· Worked in a molecular biology laboratory on a project to identify the binding sites of PRDM9, a zinc-finger protein involved in meiotic recombination.

UNIVERSITY TEACHING EXPERIENCE

NSCS 200: Fundamentals of Neuroscience and Cognitive Science Spring 2023
Graduate Teaching Associate *University of Arizona*

· Topics: Neuron structure and function, sensory systems and perception, motor systems, introduction to cognitive science and methods.

ANTH 265: Human Evolution Fall 2022
Instructor of Record *University of Arizona*

· Topics: Evolutionary theory, genetic & epigenetic inheritance, human diversity, cognitive evolution.

ANTH 326: Domestication February 2, 2022
Guest Lecturer *University of Arizona*

· Topic: Breed differences and the genetic bases of dog behavior & cognition.

PSYC 3362: Mind of a Dog September 10, 2020; September 9, 2021
Guest Lecturer *Boston College*

· Topic: Breed differences and the genetic bases of dog cognition.

New Start Summer Program August 2020; July 2021
Guest Lecturer *University of Arizona*

· Topic: Introduction to biological anthropology and comparative cognition for incoming undergraduates.

NSCS 320: Issues and Themes in Cognitive Science December 3, 2020
Guest Lecturer *University of Arizona*

· Topic: Comparative cognition, canine cognition, cognitive evolution.

ANTH 170C2: Animal Minds Fall 2019
Graduate Teaching Associate *University of Arizona*

· Led two weekly discussion sections; graded assignments and final papers for 59 students. Contributed to curriculum development, created grading rubrics, and designed activities (used in subsequent years).

UNDERGRADUATE THESIS ADVISING

2021 – 2023	Mia Hickey, University of Arizona	*ManyDogs 1: Effect of Canine Engagement on Performance in a Point-Following Task*
2021 – 2023	Leah Chaudoir, University of Arizona	*Do Dogs Truly Understand Pointing Cues? How Eye Contact Affects Choices*

ADDITIONAL TEACHING & MENTORING EXPERIENCE

2022 –	Peer mentoring circle with graduate students, org. by Women of Color in EEB.
2021 –	Mentoring two junior graduate students through the Women of Color in EEB program.
2020 – 2023	Mentored a junior graduate student in the School of Anthropology.
2020 – 2023	Mentored a first-generation/low-income Princeton undergraduate.
2022 & 2023	Panelist for graduate school "Survival Skills and Ethics" class.
2021 – 2022	Peer mentoring circle with graduate students, org. by Animal Behavior Society.
2020	Mentored an undergraduate research assistant in the ACCC.
2019 – 2020	Peer editor for University of Arizona's Fellowship Application Support Program.
2018 – 2019	Mentored a first-year graduate student in the University Fellows Program.
2017 – 2018	Mentored a high school student from the Arizona MESA program.
2016 – 2017	Trained undergraduates for research activities at the ACCC.
2016	Tutored and mentored elementary school students in Baltimore.
2014 – 2015	Taught English and music to third and fifth graders in rural China.
2011 – 2013	Student mentor for Princeton University's Integrated Science Curriculum.

OUTREACH – INVITED TALKS

Splendido Assisted Living. *How Do Our Pets Think? And How Do We Know?* February 8, 2022.

Arizona Senior Academy. *How Do Our Pets Think? And How Do We Know?* July 14, 2021.

Petminded. *Dognition & Genetics.* February 7, 2021.

OUTREACH – SCIENTIFIC EDUCATION

2021	Interviewed for scientist profile in National Geographic Kids book "Can't Get Enough Dog Stuff" by Stephanie Gibeault & Moira Donohue.
2019 – 2020	Science Olympiad: weekly volunteer at Mansfeld Middle School in Tucson.
2017 – 2018	Arizona MESA: weekly volunteer with a science club at Flowing Wells High School.
2017	Dog Days with the Dean: experimental demonstration for undergraduate students.
2017	Office of Admissions: experimental demonstration for AP high school students.

ACADEMIC SERVICE

2022	Session chair for Canine Science Conference.
2022	Volunteer judge for the Animal Behavior Society's undergraduate poster contest.
2015 –	Princeton alumni interviewer.
2020 – 2022	Organizer of the department's bioanthropology journal club.
2020 – 2021	Vice president for the Anthropology Graduate Students at the University of Arizona.
2020	Member of the School of Anthropology's anti-racism ad hoc committee.
2019 – 2020	Co-organizer for a students of color community group in the School of Anthropology.
2018 – 2020	Organizer of the Arizona Canine Cognition Center's journal club.
2020	Co-organizer of a student-led departmental discussion on racism and anti-racism.
2020	Founder & organizer of weekly School of Anthropology "teatime".
2019 – 2020	Student representative on the department's Curriculum & Scheduling Committee.
2019 – 2020	Secretary for the Anthropology Graduate Students at the University of Arizona.
2018 – 2019	Travel and research grant judge for the Graduate and Professional Student Council.
2010 – 2011	Co-founder of and historian for the Women in Science Colloquium at Princeton.

AD HOC REVIEWER

Animal Cognition, Comprehensive Psychoneuroendocrinology, Ethology Ecology & Evolution, iScience, Journal of the Experimental Analysis of Behavior, PeerJ, Physiology & Behavior, Scientific Reports, Applied Animal Behaviour Science.

PROFESSIONAL MEMBERSHIPS

Sigma Xi Honor Society, Comparative Cognition Society, Cognitive Science Society, International Society for Wildlife Endocrinology, Animal Behavior Society

SELECTED MEDIA COVERAGE

"Man's Best Friend." *Utah Public Radio: Undisciplined.* https://www.upr.org/post/undisciplined-mans-best-friend

"Puppies are biologically wired to communicate with people." *Radio New Zealand.* https://www.rnz.co.nz/national/programmes/sunday/audio/2018800500/puppies-are-biologically-wired-to-communicate-with-people

"Do Dog Breeds Differ in Cognitive Traits?" *Psychology Today Blog: Animal Minds.* https://www.psychologytoday.com/us/blog/animal-minds/202008/do-dog-breeds-differ-in-cognitive-traits

"What a Crowdsourced Study Taught Us About How Dogs Learn." *Smithsonian Magazine.* https://www.smithsonianmag.com/science-nature/how-much-dogs-intelligence-hereditary-180975448

"What separates dogs and wolves? Researchers journey to Anoka County to find out." *Minnesota Star Tribune.* http://www.startribune.com/what-separates-dogs-and-wolves-researchers-journey-to-anoka-county-to-find-out/488199251/

TECHNICAL STRENGTHS

Lab Skills:	Immunoassays, Solid-Phase Extraction, DNA Extraction, PCR
Computer Languages:	R, Bash
Also familiar with:	Python, C++, Arduino, MATLAB, HTML
Other tools:	High Performance Computing, LaTeX, RMarkdown