Sophie A. Barton

31 Buena Vista Park, Cambridge, MA 02140
470-429-9904 | sophie.barton25@uga.edu

EDUCATION

Harvard University, Cambridge, MA **Present**
Department of Human Evolutionary Biology
First-year PhD student in Dr. Erin Hecht's Evolutionary Neuroscience Laboratory

University of Georgia, Honors Program, Athens, GA **May 2019**
Bachelor of Science in Psychology with Neuroscience Emphasis **GPA: 3.89**
Bachelor of Arts in Linguistics

University of Oxford, Oxford, UK **Sep-Dec 2018**
Studied psychology, genetics, and ethics with Oxford professors through the tutorial system **Term GPA: 4.00**

RESEARCH EXPERIENCE

Primate Cognition and Behavior Laboratory, Psychology Department, University of Georgia
Principal Investigator: Dr. Dorothy Fragaszy
Collaborated on joint projects with graduate students and P.I. relating to haptic perception in humans, tool use and vigilance in *Sapajus libidinosus* bearded capuchin monkeys, and tool use and socioecology in western lowland gorillas.

Stone Handling in Juvenile and Adult Bearded Capuchin Monkeys **Jan 2017-present**
- Investigated the components of skilled nut-cracking by comparing expert adult and novice juvenile monkeys
- Designed ethogram characterizing exploratory actions, grip types, strike angles, and strike outcomes and coded behavior of wild monkeys from videos taken at the field site in Brazil
- Compiled and analyzed all data using Microsoft Excel
- Wrote manuscript for the study; currently finalizing it for submission to the American Journal of Primatology

Vigilance in Wild Bearded Capuchin Monkeys **Aug 2018-present**
- Designed ethogram quantifying temporal patterns of vigilant behavior in wild monkeys during routine activities like foraging, drinking, and socializing; currently using it to code videos from the field site in Brazil
- Will analyze data and present findings at the UGA CURO 2019 Spring Symposium

Gorilla Socioecology and Tool Use **May-Aug 2018**
- Assessed the social structure of a captive gorilla family group and a bachelor group in relation to use of resources, particularly artificial termite mounds; learned to reliably recognize 13 gorillas at Zoo Atlanta
- Improved upon existing ethogram mapping gorilla interactions and tool use to location in enclosure and coded behavior through continuous and interval scanning using ZooMonitor

Dynamic Touch Perception Study **Aug 2016-Aug 2017**
- Investigated whether the perception of the length of an object through dynamic touch is contingent on its rotational inertia, independent to the medium in which it is wielded (air or water)
- Designed experiment and created experimental apparatuses including stimuli rods
- Recruited participants for the study and conducted experiments
- Wrote and edited the published manuscript

Canine Brains Project, Center for Behavioral Neuroscience, Georgia State University
Principal Investigator: Dr. Erin Hecht
Working with a multi-institutional team of researchers to study how artificial and natural selection shapes the brain by examining neurobehavioral variation in dog breeds and wilds canids.

Behavioral Sub-Project **May 2018-present**
- Helped design experimental setup and methodology for behavioral tests of dog temperament, sociality, empathy, cognition, and motivation
- Recruited volunteers, performed behavioral experiments with dogs and took saliva samples for genetic analysis
- Gathered survey and genetic data from dog owners at dog parks
- Will code videos of experiments and collate survey data

MRI Sub-Project **Aug 2018-present**
- Conducting behavioral tests of highly skilled and unskilled herding and hunting dogs prior to their MRI scans
- Assisting with fMRI scans of sedated dogs and will help analyze dog, domesticated fox, and wild canid neuroimages
- Will lead project in Spring 2019

Independent Sub-Project: Relationship Between Neotenous Features and Interspecific Sociality in Dogs **Aug 2018-present**
- Conceived project idea and created hypotheses
- Created scale of neotenous features in dogs that can be applied to other domesticated animals
- Using scale to score neotenous features in dogs and coding behavior of those dogs on a social

approach/avoidance test from experimental videos
- Will analyze the association between neotenous features and sociality with humans based on scale of neoteny and video data

Dyer Laboratory, Genetics Department, University of Georgia
Principal Investigator: Dr. Kelly Dyer
Conducted independent studies concerning the evolution and characteristics of courtship behavior in *Drosophila subquinaria* and *D. recens*, two recently diverged fruit fly species.

Role of Tarsal Segments in D. subquinaria and D. recens courtship **Jan-May 2018**
- Devised project idea, made hypotheses, and designed study methodology
- Maintained and expanded own fly stocks
- Performed tarsal segment removal surgeries on anesthetized flies and conducted mating trial experiments
- Analyzed data using Microsoft Excel

Characterization of D. subquinaria Courtship Songs **Aug 2016-May 2017**
- Conceived project idea and study methodology
- Created soundproof fly song recording chamber; used Audacity to record and analyze songs
- Maintained and expanded own fly stocks and optimized conditions in chamber for flies to court
- Performed statistical analysis using Microsoft Excel

Animal Communication Laboratory, Ecology, Evolution, and Behavior Department, University of Minnesota Twin Cities **May-Jul 2017**
Principal Investigator: Dr. Mark Bee
Contributed to a large research team investigating multivariate selection and the "cocktail problem" in Cope's gray treefrogs and American green treefrogs through phonotaxis and neurophysiological experiments during the summer treefrog mating season.
- Collected mating pairs of frogs from ponds in the field, cared for them in the laboratory, and released them back into the wild
- Helped setup and run phonotaxis experiments
- Conducted auditory brainstorm response (ABR) tests and single cell recordings
- Gained experience in MATLAB programming and sound recording

PUBLICATIONS AND PRESENTATIONS

Publications
- Mangalam, M., **Barton, S. A**., Wagman, J. B., Fragaszy, D. M., & Newell, K. M. (2017). Perception of the length of an object through dynamic touch is invariant across changes in the medium. *Attention, Perception, & Psychophysics*, *79*(8), 2499-2509.

Publications in Preparation
- **Barton, S. A**., Keo, S., Patel, R., Izar, P., Visalberghi, E., Haslam, M., Fragaszy, D.M. (in prep). Adult and juvenile bearded capuchin monkeys handle stone hammers differently during nut-cracking.

Conference Presentations
- *55th Annual Animal Behavior Society Conference, August 1-7, 2018*
  Poster – **Barton, S. A**., Keo, S., Patel, R., Izar, P., Visalberghi, E., Haslam, M., Fragaszy, D.M. Juvenile bearded capuchin monkeys handle the hammer differently than adults when cracking nuts.
- *University of Georgia (UGA) Center for Undergraduate Research (CURO) 2018 Spring Symposium, April 9-10, 2018*
  Poster – **Barton, S.A.**, & Dyer, K.A. The Role of Tarsi in the Courtship of *Drosophila subquinaria* and *D. recens.*
- *UGA CURO 2017 Spring Symposium, April 3-4, 2017*
  Talk – **Barton, S. A.**, Keo, S., Patel, R., Fragaszy, D.M. Unfamiliar Stone Hammer Use in Juvenile Bearded Capuchin Monkeys.
  Poster – **Barton, S.A.**, & Dyer, K.A. Examination of Courtship Songs Across *Drosophila subquinaria* Populations.

WORK EXPERIENCE

Freelance Work **Oct 2014-present**
Writer
- Primarily writing informational articles for clients' blogs
- Communicate clearly and effectively with clients to create an ideal product
- Maintain a five-star rating according to client reviews

Barking Hound Village Buckhead **May-Jul 2018**
Dog Daycare House Attendant
- Cared for upwards of 50 dogs and managed up to 25 dogs in group play; bathed and groomed dogs
- Managed the front desk and arranged client stays

Dyer Laboratory, Genetics Department **Jan-May 2016**
Paid Research Assistant
- Prepared food for *Drosophila* fruit flies, maintained stocks, and accurately sorted males and females for mating trial experiments
- Helped conduct mating trial experiments for research on the evolutionary mechanisms of *Wolbachia* infections in *Drosophila* and maintained laboratory equipment

TEACHING EXPERIENCE

Honors Teaching Assistant, University of Georgia Honors Program **Aug 2018 – present**

HONS 1000H Introduction to Honors course

- Teach class of 16 students, introducing them to opportunities in the Honors Program and at UGA
- Help students with professional development; design lectures and assignments and grade students
- Mentor students one-on-one

Neuroscience for Kids Lead Instructor, **Undergraduate Neuroscience Organization** **Aug 2017 – present**

Co-Chair of Program

- Write and prepare neuroscience lessons for third-grade students at Barrow Elementary School
- Teach weekly class of 15-20 students
- Recruit and manage volunteer instructors
- Collaborate with elementary school administrators and teachers to ensure program success

LEADERSHIP AND SERVICE

Undergraduate Neuroscience Organization **Aug 2015-present**

Neuroscience for Kids Co-Chair 2017-2019, Treasurer 2016-2017

- Created the budget for the 2016-2017 year and managed all club funds
- Maintained membership records including applications and involvement points
- Successfully collaborated with Fundraising Chair for the Annual Party for Parkinson's fundraising event
- Helped conceive, organize, and run the First Annual Georgia Collegiate Neuroscience Symposium
- Served on undergraduate research panels; arrange guest speakers for meetings; lead Neuro-Café discussions

Oxford University Museum of Natural History **Sep-Dec 2017**

Docent and Public Engagement Volunteer

- Interacted with a diverse set of visitors of varying ages, backgrounds, and nationalities
- Welcomed visitors to the museum, answered questions, and taught visitors about display specimens
- Helped manage large school visits to the museum
- Taught hands-on fossil workshops involving making casts

Science Museum of Minnesota **May-Jul 2017**

Dinosaurs and Fossils Gallery Docent

- Communicated information about dinosaurs and fossils to visitors of varying ages and backgrounds
- Answered visitor's questions about the museum and the Dinosaurs and Fossils Gallery
- Created and led workshop on dinosaur, bird, and mammal cranial endocasts

Language Partner Program **Aug 2015-May 2017**

Volunteer

- Met weekly with international student partners to help them improve their fluency in English
- Learned about Indian, French, and Chinese cultures through time spent with partners
- Improved conversational French speaking skills

Building 1516 Dorm **Jan-May 2016**

Hall Representative

- Recorded residents' issues and addressed them with administration
- Helped plan social events for residents and kept dorm bulletin boards updated with upcoming events

MEMBERSHIPS

University of Georgia Chapter of Psi Chi
Animal Behavior Society

HONORS AND AWARDS

Nominated by Psychology Department for membership in the University of Georgia Blue Key Honor Society chapter (Spring 2019)
Charles Turner Awardee for the 2018 Animal Behavior Society Conference (August 2018)
CURO Research Assistantship, Primate Cognition and Behavior Laboratory (Spring 2017)
CURO Research Assistantship, Dyer Laboratory (Fall 2016)
Nominated by Psychology Department for Who's Who Among Students in American Universities & Colleges (Fall 2016)

INTERESTS AND ADDITIONAL SKILLS

Outdoor sports including trail running, kayaking, and snowboarding
Martial arts including muay thai, jiu-jitsu, and taekwondo (second-degree black belt)
Training my dog Tamsin in obedience and agility
Fossil hunting
Creative writing