# Sophie Alexandra Barton

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## EDUCATION

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

**University of Georgia, Athens, GA** **May 2019**
*Magna Cum Laude with High Honors*
Bachelor of Science in Psychology with a Neuroscience Emphasis
Bachelor of Arts in Linguistics

**University of Oxford, Oxford, UK** **Sep-Dec 2018**
*Visiting Student*
Studied neuroscience, psychology, genetics, and ethics with Oxford professors through the tutorial system

## RESEARCH EXPERIENCE

**Evolutionary Neuroscience Lab, Human Evolutionary Biology Department, Harvard University** **June 2019-Present**
**Principal Investigator: Dr. Erin Hecht**

- Studying the evolution of adaptations for neuroplasticity using domestic dog breeds and other canids as a natural model system.
- Using MRI, histological, behavior coding, and historical literature review techniques.
- Managing domestic dog research projects in the lab.
- Training and mentoring undergraduate researchers.

**Primate Cognition and Behavior Laboratory, Psychology Department, University of Georgia** **Aug 2016-May 2019**
**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 bearded capuchin monkeys (*Sapajus libidinosus*), and socioecology in western lowland gorillas (*Gorilla gorilla gorilla).*
- Trained in study design, behavior coding, and manuscript writing.

**Canine Brains Project, Center for Behavioral Neuroscience, Georgia State University** **May 2018-May 2019**
**Principal Investigator: Dr. Erin Hecht**

- Worked with multi-institutional team of researchers to study behavioral variation in domestic dogs.
- Trained in study design and behavior coding.

**Dyer Lab, Genetics Department, University of Georgia** **Aug 2016-May 2018**
**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.
- Trained in fly stock care, study design, and audio recording/analysis.

**Animal Communication Lab, Ecology, Evolution, and Behavior Department,** **May-July 2017**
**University of Minnesota Twin Cities**
**Principal Investigator: Dr. Mark Bee**

- Contributed to a large research team investigating multivariate selection and the "cocktail problem" in Cope's gray treefrogs (*Hyla chroysoscelis*) and American green treefrog (*Hyla cinerea*) during the summer treefrog mating season.
- Learned how to conduct field research, phonotaxis experiments, auditory brainstem response (ABR) tests, and single cell recordings.

## PUBLICATIONS AND PRESENTATIONS

**Publications**

- Fragaszy, D. M., **Barton, S. A.**, Keo, S., Patel, R., Izar, P., Visalberghi, E., & Haslam, M. (2020). Adult and juvenile bearded capuchin monkeys handle stone hammers differently during nut-cracking. *American Journal of Primatology*, e23156.
- 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.

**Conference Presentations**

- *Society for Neuroscience's 50th Annual Meeting, November 8-16, 2021 [Upcoming]*
  Poster – **Barton, S.A.**, Gutman, D.A., Preuss, T.M., Kent, M., Hecht, E.E. Neuroanatomical asymmetry in the canine brain.
- *South Eastern Evolution and Human Behavior Conference, April, 2019*
  Poster – **Barton, S.A.,** Cutts, S. A., Garner, E., Presley, H.W., Fragaszy, D.M. Assessing Vigilance Behavior in Wild Bearded Capuchin Monkeys (*Sapajus libidinosus*).
- *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.

**Public Presentations**

- *Harvard Museums of Science and Culture Virtual I Heart Science Festival, February 12th, 2021*
  Talk – **Barton, S.A.**, Why is My Dog Like That?
- *Petminded Community Events, April, 2021*
  Talk – **Barton, S.A.,** The Science of Canine Play

## WORK EXPERIENCE

**Freelance Work** **Oct 2014-May 2019**
*Writer*

- Ghost wrote articles for clients' websites.

**Barking Hound Village Buckhead** **Summer 2018**
*Dog Daycare House Attendant*

- Cared for upwards of 50 dogs daily and managed 25 dogs in group play.
- Managed the front desk and arranged client stays.

**Dyer Laboratory, Genetics Department** **Jan-May 2016**
*Paid Research Assistant*

- Managed fly stocks.
- Helped conduct mating trial experiments for research on the evolutionary mechanisms of Wolbachia infections in Drosophila and maintained laboratory equipment.

## TEACHING EXPERIENCE

**Harvard Museums of Science and Culture** **Present**
*Science Education Partner*

- Trained in a four-week-long science communication course.
- Used training to present research in the Harvard Museums of Science and Culture's I Heart Science Virtual Festival.

**Honors Teaching Assistant, University of Georgia Honors Program** **Aug 2018 – May 2019**
*HONS 1000H Introduction to Honors course*

- Taught an academic and professional development class for freshman students in the Honors Program at UGA.
- Mentored students one-on-one.

**Neuroscience for Kids Lead Instructor**, **Undergraduate Neuroscience Organization,** **Aug 2017 – May 2019**
**University of Georgia**
*Co-Chair of Program*

- Prepared and taught weekly neuroscience lessons for third-grade students at Barrow Elementary School.
- Managed volunteer instructors and collaborated with elementary school administrators and teachers to ensure program success.

## LEADERSHIP AND SERVICE

**Action Potential Advising Program, Simply Neuroscience** **Present**
*Mentor*

- Providing educational and career guidance for undergraduate students interested in neuroscience.
- Sharing my experience getting into graduate school and beginning a career in neuroscience.

**Undergraduate Neuroscience Organization, University of Georgia** **Aug 2015-May 2019**
*Neuroscience for Kids Co-Chair 2017-2019, Treasurer 2016-2017*

- Managed club funds as Treasurer and neuroscience education program for elementary school students as Neuroscience for Kids Co-Chair.
- Helped organize the club's annual Party for Parkinson's fundraising event.
- Helped conceive, organize, and run the First Annual Georgia Collegiate Neuroscience Symposium.

- Served on undergraduate research panels; arranged guest speakers for meetings; lead Neuro-Café discussions.

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

*Docent and Public Engagement Volunteer*

- 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*

- Created and led workshop on dinosaur, bird, and mammal cranial endocasts.
- 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.

**Language Partner Program, University of Georgia** **Aug 2015-May 2017**

*Volunteer*

- Met weekly with international student partners to help them improve their fluency in English.
- Improved conversational French speaking skills.

**Building 1516 Dorm, University of Georgia** **Jan-May 2016**

*Hall Representative*

- Recorded residents' issues and addressed them with building administration.
- Helped plan social events for residents.

## MEMBERSHIPS

Society for Neuroscience

J.B. Johnston Club for Evolutionary Neuroscience

Animal Behavior Society

Harvard Graduate Women in Science and Engineering

University of Georgia Chapter of Psi Chi (past)

University of Georgia Blue Key Honor Society Chapter (past)

## HONORS AND AWARDS

Awarded a $2,863 summer research grant from the Department of Human Evolutionary Biology (Summer 2021)

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, fully funded conference attendance (August 2018)

CURO Research Assistantship, $1,000 grant, Primate Cognition and Behavior Laboratory (Spring 2017)

CURO Research Assistantship, $1,000 grant, Dyer Laboratory (Fall 2016)

Nominated by Psychology Department for Who's Who Among Students in American Universities & Colleges (Fall 2016)

## PROFESSIONAL SKILLS

Neuroimaging: Unix, FSL, MRIcroGL

Programming: R

Audio Recording, Editing, & Analysis: Audacity, Praat

Video Recording & Editing: Digital Camcorders, Adobe Premiere Pro

Video Coding: Observer XT, BORIS

Experimental Design: Ethology, Psychology, & Neuroimaging

Experimental Ethogram Design & Use: Focal, Continuous, Instantaneous, & Scan Sampling; In-Person Observation & Video Footage

Animal Care & Handling: Dogs, Cope's gray treefrogs, *Drosophila* species

Participant Recruitment: In-Person & Virtual Advertising Campaigns

Other Programs: Word, PowerPoint, Excel, Canva, Photoshop, GIMP, SPSS

## 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)

Speaking conversational French, German, and Dutch

Dog sports including sheepdog trialing & bird dog field trialing

Fossil hunting

Creative writing

Graphic design

3D printing