

Amy Fox

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Education

Colorado State University, Fort Collins, CO Fall 2017 - Present
PhD in Microbiology, Immunology, Pathology
GPA: 4.0/4.0

Rice University, Houston, TX Fall 2013 - Spring 2017
Bachelor of Science in Bioengineering
GPA: 3.3/4.0

Projects

Rice University, Department of Bioengineering, Houston, TX Fall 2016 - Present
Smart Compression Sock

- Elected as team leader for a group of 5 students tasked with developing a smart compression sock to treat chronic venous disorders
- Developing design ideas, proposals, and presentations to sponsors and faculty advisors
- Submitted a patent for the lace-tension control design

Rice University, Department of Anthropology, Houston, TX Fall 2015
An Experimental Evaluation of Gar Scale Arrow Points

- Performed a literature search on gar scales at archaeological sites in the United States
- Modified 10 gar scales with abrasive techniques and shot them at a target using a calibrated cross bow
- Assessed the damage of the gar scales and determined that alligator gar scales can be easily modified and utilized as tips for projectile weaponry

Experience

Mycobacteria Research Laboratories, Colorado State University Fall 2017 – Present
PhD Student

- Develop R-based data analysis pipeline for flow cytometry data
- Characterize cellular immune response to candidate *Mycobacterium tuberculosis* vaccines through flow cytometry
- Collaborate with labs to build statistical pipeline for gene expression analysis

Testmasters, Houston, TX Fall 2016 – Fall 2017
Instructor

- Instructed classes of 30 students in 3-hour SAT and ACT math and science courses
- Tutored individual students on mathematical skills and testing strategies to help improve their scores on standardized tests

Baylor College of Medicine, Texas Children's Hospital Fall 2015 – Spring 2017
Research Advisor: Dr. Job Lopez
Project Intern

- Assessed murine exposure to *Borrellia turicatae* via western blots
- Optimized ELISAs for use in prevalence study of murine exposure to *Borrellia* in Panama and in determining if pigs develop antibodies against tick saliva
- Extracted DNA from ticks and perform PCR to determine if ticks are infected with *Borrellia*
- Trained to work with mice and dissect ticks for salivary gland extracts

Bioscience Research Collaborative, Rice University Spring 2014 - Spring 2015
Administrative Assistant

- Compiled information from literature searches to update faculty research highlights

- Managed book orders for 26 graduate students

Publications

1. Bermúdez S, Gottdenker N, Krishnavajhala A, **Fox A**, Wilder H, Gonzalez K, Smith D, Lopez M, Perea M, Rigg C, Montilla, S, Calzada J, Saldaña A, Caballero C, Lopez J. Synanthropic mammals as potential hosts of tick-borne pathogens in Panama. *Plos One*. 2017; 12(1).
2. Costa A, **Fox A**. An Experimental Evaluation of Gar Scale Arrow Points. *Journal of Houston Archeological Society*. 2016;136: 23-31.
3. Fox A, Dutt T, Karger B, Rojas M, Obregon-Henao A, Anderson B, Henao-Tamayo M. Cyto-feature engineering: A pipeline for flow cytometry analysis to uncover immune populations and associations with disease. *Scientific Reports*. 2020; 10.
4. Fox A, Dutt T, Karger B, Obregon-Henao A, Anderson B, Henao-Tamayo M. Acquisition of High-Quality Spectral Flow Cytometry Data. *Current Protocols in Cytometry*. 2020; 93(1).

Posters, Awards, Patents

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| 2016 | Eighth Annual Elevator Pitch Competition: 1st Place |
| 2016 | Eighth Annual Elevator Pitch Competition: People's Choice Award |
| 2017 | Brown School of Engineering Design Showcase and Post Competition: Poster Presentation |
| 2017 | Brown School of Engineering Design Showcase and Poster Competition: People's Choice Award |
| 2017 | Rice University Bay Area Showcase: Poster Presentation |
| 2017 | Rice University Bay Area Showcase: Most Investable Design Award |
| 2017 | Adjustable Compression Sock: Patent Pending |
| 2019 | Colorado State University Microbiology, Immunology, and Pathology: Travel Grant |
| 2019 | Keystone Symposia: Tuberculosis: Mechanisms, Pathogenesis and Treatment: Poster Presentation |
| 2019 | 20 th Annual CVMBS Research Day: Poster Presentation |
| 2019 | CMB, MCIN, BMB, TOX Research Symposium: Poster Presentation |
| 2019 | National Science Foundation: Gaussi Fellowship |
| 2019 | Cytek Group User Meeting: Travel Award |
| 2019 | Cytek Group User Meeting: Oral Presentation |
| 2019 | Cyo 2019: Poster Presentation |
| 2019 | Cyto 2019: Outstanding Poster Award |
| 2020 | 21 st Annual CVMBS Research Day: Oral Presentation |
| 2020 | 21 st Annual CVMBS Research Day: 2nd Place in Basic Science Oral Presentation |
| 2020 | Front Range Computational & Systems Biology Symposium: Poster Presentation |

Extracurricular Activities

MIP Graduate Student Organization	Fall 2017 – Present
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President – Technology Officer

- Apply for internal Colorado State University grants for exploring alternative careers and mentoring
- Invite speakers from the government, local biotechnology start-up companies, and universities to share their research

Graduate Women in Science

Fall 2017 – Present

VP of Engagement – National Liaison – Outreach Chair

- Partner with local girl scout troop to help 20 students receive STEM-related badges
- Develop curriculum to teach science classes at a local middle school

Science Olympiad at Preston Middle School

Fall 2017

- Instructed students in two topics: Crime Busters and Potions & Poisons
- Co-coached two nationally competitive teams

Rice Club Sailing Team

Fall 2013 – Spring 2017

President

- Coordinated and scheduled weekend practices and regattas with coaches, Lakewood Yacht Club, and members
- Orchestrated Rice's first regatta with schools from across the nation

Rice Women's Waterpolo

Fall 2013 - Spring 2017

Treasurer

- Managed collection of yearly dues and reimbursement of money for travel
- Recorded expenditures throughout the year

Volunteers Around the World

Fall 2015 - Fall 2016

- Fundraised \$2,000 for medications and supplies to distribute in Peru
- Performed triage, measured vital statistics, and managed a pharmacy in plazas throughout Cusco providing free medical care for 200 people per day
- Taught a class on nutrition and exercise at an orphanage