Alexis Garretson

George Mason University, Department of Biology
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Current Positions

Graduate Research Fellow, National Science Foundation 2019 - Present
Graduate Research Assistant, George Mason University 2019 - Present
Research Associate, Mohonk Preserve, Department of Conservation Science 2019 - Present
Data Stewardship Community Fellow, Earth Science Information Partners 2018 - Present

Education

Ph.D. Genetics, Starting Fall 2020
Tufts University, Boston, MA &
Jackson Laboratory, Bar Harbor, ME

M.S. Biology, Concentration in Evolutionary Biology 2020
George Mason University, Fairfax, Virginia
Advisor: Dr. Rebecca Forkner
Committee: Dr. Rebecca Dikow, Dr. Lorelei Crerar, and Dr. Rebecca Forkner (Chair)
Thesis: Identifying and projecting the impacts of climate change on red maple phenology in the eastern United States

B.S. Biology, Concentration in Environmental and Conservation Biology 2014 -2018
George Mason University, Fairfax, Virginia
Cum Laude with Honors in the Major
Minors: Applied Global Conservation, Economics, & Public Health
Advisor: Dr. Michael von Fricken
Thesis: Agent-based modeling of environmental and land-use drivers of tick-borne diseases in mongolian herding communities

External Study

Harvard T.H. Chan School of Public Health, Boston, MA Summer 2018
Summer Program in Biostatistics and Computational Biology.
Ben-Gurion University of the Negev, Eilat, Israel Summer 2016
Studied Red Sea coral reef ecosystem and geology of Israel.
Smithsonian-Mason School of Conservation, Front Royal, VA Spring 2016
Semester Program in Wildlife Ecology and Conservation Biology.

Publications

Garretson, A., Napoli, M., Feldsine, N., Adler-Colvin, P., & Long, E. (2020). Vernal pool amphibian breeding ecology monitoring from 1931 to present: A harmonised historical and ongoing observational ecology dataset. Biodiversity Data Journal, 8, e50121. doi: 10.3897/BDJ.8.e50121

Mayernik, M. S., Breseman, K., Downs, R. R., Duerr, R., **Garretson, A.**, Hou, C.-Y. (Sophie), & Committee, E. D. G. I. (EDGI) and E. S. I. P. (ESIP) D. S. (2020). Risk Assessment for Scientific Data. Data Science Journal, 19(1), 10. doi: 10.5334/dsj-2020-010

Keuler, R., **Garretson, A.**, Saunders, T. et al. Genome-scale data reveal the role of hybridization in lichen-forming fungi. Scientific Reports 10, 1497 (2020). doi: 10.1038/s41598-020-58279-x

Data Packages

Mohonk Preserve, Feldsine, N., Forester, A., **Garretson, A.**, Huth P., Long E., Napoli, N., Pierce, E., Smiley, D., Smiley, S., Thompson, J. July 2019. Mohonk Preserve Amphibian and Water Quality Monitoring Dataset at 11 Vernal Pools from 1931-Present. Environmental Data Initiative: edi398. doi: 10.6073/pasta/864aea25998b73c5d1a5b5f36cb6583e

Mohonk Preserve, Feldsine, N., **Garretson, A.**, Kathe, J., Long, E., Montoya, A., Napoli, M., Wander, H., Citizen Science Volunteers. January 2019. Mohonk Preserve Stream Water Quality Invasive Species and Macroinvertebrate Sampling from 2015-Present. Environmental Data Initiative: edi399. doi: 10.6073/PASTA/068E4A6FA99628C6A01F4A739D5DD2D6

Garretson, A. 2019. Research-Grade iNaturalist Observations Recorded by Alexis Garretson. Global Biodiversity Information Facility. doi: 10.15468/DL.HZ5K6T

Book Chapters

Garretson, A. and Forkner, Rebecca. Phenology, Climate Change and Citizen Science. In *A Laboratory Manual for Biology 308: Laboratory/Field Exercises in Ecology and Evolution*. By Lorelei Crerar, Larry L. Rockwood.

Garretson, A. Natural Selection and Camouflage. In *A Laboratory Manual for Biology 308: Laboratory/Field Exercises in Ecology and Evolution.* By Lorelei Crerar, Larry L. Rockwood.

Garretson, A. and Crerar, Lorelei. Ecological and Evolutionary Modeling. In *A Laboratory Manual for Biology 308: Laboratory/Field Exercises in Ecology and Evolution*. By Lorelei Crerar, Larry L. Rockwood.

Publications in Preparation

Garretson, A., Crerar, L. Utilizing Agent-Based Modeling in Natural Selection and Evolution Education. (in prep for *Journal of Research in Science Teaching*).

Garretson, A., Napoli, M., Feldsine, N., Belardo, C., Long, E. Phenology Firsts: A Long-Term Dataset of Onset Dates in Flora and Fauna in the Hudson Valley Region of New York State. (In prep for *Scientific Data*).

Garretson, A., Forkner, R., Crerar L. Assessing the Quality of Classroom-Collected Citizen Science Data: A Case Study of the Nature's Notebook Phenology Protocols. (In prep for *Citizen Science: Theory and Practice*).

Kula, A., **Garretson, A.,** Carpenter, R., Buffington, M.L., Droege, S., Gates, M.W., Kula, R., Smith, D. Panning for Gold: Hymenopteran Trap Color Preference in a Forest Clearing. (In prep for *Ecology and Evolution*).

van Mantgem, E., **Garretson, A.,** Well, C., Morelli, T. Translational Science Education in Action: An iNaturalist Case Study. (In prep for *Citizen Science: Theory and Practice*).

Ferrari, C., Adler-Colvin, P., **Garretson, A.**, Napoli, M., Feldsine, N., Long, E. Three Years of Vegetation Plot Data Collection in the Shawangunk Mountains During the Early and Late Spring Season. (In prep for *Biodiversity Data Journal*).

Fellowships & Grants (Total awarded: $203,595)

American Alpine Club Researcher, American Alpine Club ($1,500) **Mar. 2020**

Global Discovery Scholarship, Global Education Office, George Mason University ($1,100) **Mar. 2020**

Data Stewardship Community Fellow (Returning), Earth Science Information Partners ($5,000) **Dec. 2019 - Present**

ACTIVATE AI and Search: Diversity & Inclusion Scholar, Lucidworks & Salesforce ($2,595) **Sept. 2019**

Frédéric Bastiat Research Sequence Fellow, Mercatus Center at George Mason University ($5,000) **June 2019 - Present**

Graduate Research Fellow, National Science Foundation ($138,000) **June 2019 - Present**

Environmental Data Initiative Summer Fellow, Environmental Data Initiative & Mohonk Preserve ($5,000) **June 2019 - Aug. 2019**

Ryan Kelley Memorial Research Fellowship, International Women's Fishing Association Scholarship Trust ($1,000) **April 2019**

Science Ambassador, Science Gateways Community Institute ($1,500) **Feb. 2019 - Present**

Olami Inspire Online Fellow, Olami ($1,700) **Jan. 2019 - May 2019**

Data Stewardship and Research Object Citation Community Fellow, Earth Science Information Partners ($5,000) **Dec. 2018 - Dec. 2019**

Kennedy Research Fellowship, David M. Kennedy Center for International Studies ($1,000) **Dec. 2018**

Ocean Discovery Fellowship, MIT Media Lab & All Hands on Deck ($750) **Oct. 2018**

Frédéric Bastiat Fellow, Mercatus Center at George Mason University ($5,000) **Sep. 2018 - May 2019**

Ridge to Reef Summer Trainee, Climate and Life Summer Institute, UC Davis and NSF (Research Traineeship in Urban Ecosystem Management) ($850) **Aug. 2018**

Post-Baccalaureate Internship, Harvard T.H. Chan School of Public Health, Department of Biostatistics ($5,100) **June 2018 - Aug. 2018**

Joseph Schumpeter Fellow, Mercatus Center at George Mason University ($3,000) **Sep. 2016 - May 2018**

Undergraduate Research Scholars Program (Traditional), George Mason University ($1,500) **Jan. 2018 - May 2018**

Sinai Scholar, Sinai Scholars Society ($500) **Oct. 2017 - Jan. 2018**

Research Semester Cohort, George Mason University, Department of Biology ($2,000) **Sep. 2017 - Dec. 2017**

Undergraduate Research Scholars Program (Intensive), George Mason University ($5,000) **May 2017 - Aug. 2017**

Undergraduate Research Scholars Program (Traditional), George Mason University ($1,500) **Sep. 2016 - Dec. 2016**

National Security Language Initiative for Youth, US State Department ($10,000) **Feb. 2012 - May 2012**

Awards & Honors

Open Access Publishing Fund, George Mason University (€90) **Spring 2020**

Biodiversity Open Data Ambassador, Global Biodiversity Information Facility **Fall 2020 -Present**

Attendance Funding: American Geophysical Union 2019, Earth Science Information Partners, Data Stewardship Committee ($2,000) **Fall 2019**

Attendance Funding: Evolutionary Dynamics of Cancer, Mathematical Biosciences Institute & National Institute of Statistical Sciences ($375) **Fall 2019**

2018 Science Alliance Leadership Training Fellow, New York Academy of Sciences **Oct. 2018**

Virtual Student Federal Service, USGS and Northeast Climate Science Center **Sep. 2018 - May 2019**

Arctic Summer College Fellow, Ecologic Institute **June 2018 - Aug. 2018**

Affiliate Researcher, Children's Hospital Boston **June 2018 - April 2019**

Ridge to Reef Travel Award & Scholarship, UC Davis and NSF Traineeship ($700) **Summer 2018**

Departmental Honors, Department of Biology, George Mason University **May 2018**

Senior Award, Department of Biology, George Mason University ($250) **May 2018**

OSCAR Student Excellence Award: Research and Scholarship, The Mason Impact Leadership Council ($500) **May 2018**

The Biology Writing Award, Department of Biology, George Mason University ($500) **May 2018**

Best Paper Award, Sinai Scholars Society - George Mason University ($150) **Jan. 2018**

Yeshiva Travel Scholarship, Chabad on Campus ($1,500) **Winter 2017**
Jeff Seidel Scholarship, Jeff Seidel Jewish Student Centers ($500) **Winter 2017**
Undergraduate Student Travel Fund, George Mason University ($500) **Oct. 2017**
OSCAR Fellow, Office of Undergraduate Research George Mason University **Aug. 2017 - May 2018**
Best Overall Research and Scholarship Poster Presentation, College of Humanities and Social Sciences ($500) **Apr. 2017**

Conference Presentations *(* indicates presenting author, if not AG)*

Oral Presentations:

Garretson, A. (2020, January). Citizen Science in the Earth Sciences: Challenges and Opportunities. Session organized at the Earth Science Information Partners Winter Meeting, Bethesda, MD.

Garretson, A. (2020, January). Do You See What I See? Citizen Science Data Coverage. Talk presented at the Earth Science Information Partners Winter Meeting, Bethesda, MD.

Garretson, A. (2019, July). The Unique Challenges of Long-Term Physical Collections: An Implementation of the Data Risk Matrix at the Mohonk Preserve. Talk presented at the Earth Science Information Partners Summer Meeting, Tacoma, WA.

*****Keuler, R., **Garretson, A.**, Saunders, T., Erickson, R., St. Andre, N., Grewe, F., Smith, H., Lumbsch, T. H., St. Clair, L. L., Leavitt, S. D (2019, July). Potential role of hybrid speciation in lichen-forming fungi. Talk presented at Botany Conference, Tucson, AZ.

Garretson, A. (2019, January). Using Science Gateways in Phenological Research. Talk presented to the Science Gateways Community Institute Board. Virtual.

*Davies, H., **Garretson, A.**, Hogan, K., Vodzak, M., Zimmerman, D., Valitutto, M., Aguirre, A., von Fricken, M. (2018, July). Regional-scale analysis of bat-virus associations in Tropical Asia to support One Health surveillance. Oral presentation at the 55th annual Association of Tropical Biology and Conservation Meeting, Sarawak, Malaysia.

Garretson, A. (2018, July). Effects of Gestational Age and Birth Weight on Neurodevelopmental and Psychiatric Outcomes in Adolescents after Pediatric Cardiac Surgery. Talk presented at the Harvard Pipelines to Biostatistics Symposium, Boston, MA.

Garretson, A. (2018, July). Arctic Vegetation: Avenues for Herbarium-Driven Research. Talk presented to the Arctic Summer College. Virtual.

Garretson, A. (2018, February). Polycentricity and Collective Action in Religious Communities: A Case Study of the Chabad-Lubavitcher Sect. Talk presented at the Austrian Student Scholars Conference, Grove City, PA.

Garretson, A. (2017, March). The Perception Problem: Migration and the Commons. Talk presented at the Austrian Student Scholars Conference, Grove City, PA.

Garretson, A. (2016, December). Natural Lands in Virginia. Talk presented at the Celebration of Student Scholarship, Fairfax, VA.

Garretson, A., Reid, A., Shumaker, P. (2016, May). Coyote Activity at the Smithsonian Conservation Biology Institute. Talk presented publicly at the Smithsonian-Mason School of Conservation, Front Royal, VA.

Garretson, A. (2016, May). Quantitative Analysis and Nutritional Optimization of Amazonian Fish Diet Mix. Talk presented to Amazonia keepers at the Smithsonian's National Zoo, Washington, DC.

Poster Presentations:

Garretson, A. Crerar, L. (2019, Nov.) Agent-Based Modeling in Evolution Education: Impacts on Student Understandings of Evolutionary Processes. Poster presented at the Mathematical Biosciences Institute Evolutionary Dynamics of Cancer Workshop. Columbus, OH.

Garretson, A., Blumberg, K., O'Brien, M. (2019, July). Research, Reuse, and Re-Search: Harmonizing ecocomDP and DarwinCore. Poster presented at the Earth Science Information Partners Summer Meeting 2019, Tacoma, WA.

Garretson, A., Napoli, M., Feldsine, N., Adler-Colvin, P., Long, E. (2019, July). Vernal Pool Amphibian Breeding Ecology Monitoring from 1931 to Present: A Harmonized Historical and Ongoing Observational Ecology Dataset. Poster presented at the Earth Science Information Partners Summer Meeting 2019, Tacoma, WA.

Garretson, A., Forkner, R. (2019, Jan.). Automated Classification of Herbarium Specimens in Phenological Research: Preliminary Results and Future Directions. Earth Science Information Partners Winter Meeting 2019. Bethesda, MD.

Garretson, A., von Fricken, M. (2018, Oct.). Agent-Based Modeling of Tick-Borne Disease Exposure in Mongolian Livestock and Herders. American Society of Tropical Medicine and Hygiene Annual Meeting 2018. New Orleans, LA.

*Davies, H., **Garretson, A.,** Hogan, K., Naimi, F., Vodzak, M., Zimmerman, D., Valitutto, M., Aguirre, A., von Fricken, M. (2018, Oct.) Characterizing the risk of bat-borne virus exposure at popular cave destinations in Southeast Asia for prevention and response. American Society of Tropical Medicine and Hygiene Annual Meeting 2018. New Orleans, LA.

Garretson, A., Forkner, R. (2018, August). Comparison of Herbaria-Derived Measures with Direct Observation of Phenological Trends. Ridge to Reef: Climate and Life Summer Institute, Irvine, CA.

*Ullah, O., Frelier, J.M., **Garretson, A.,** Bleich, S.N. (2018, July). Fast Food Pricing In Metropolitan Areas. Poster Presented at the FACETS Summer Poster Session at Harvard University. Boston, MA.

Garretson, A., von Fricken, M. (2018, May). Agent-Based Modelling of Tick-Borne Disease Exposure in Mongolian Livestock and Herders. OSCAR Celebration of Student Scholarship, Fairfax, VA.

Garretson, A., Crerar, L., Garretson, L. (2018, April). Utilizing Agent-Based Modeling in Natural Selection and Evolution Education. College of Science Celebration, Fairfax, VA.

Garretson, A., Forkner, R, Ingram, K. (2018, April). Aseasonal Leaf Production and Coloration in Mid-Atlantic Maples. College of Science Celebration, Fairfax, VA.

Garretson, A., Forkner, R., Crerar, L. (2017, December). Assessing the Accuracy of Student Phenological Data Collection. Poster Presented at the Biology Research Celebration, Fairfax, VA.

Garretson, A. (2017, October). Analysis of coyote activity around composting sites. Poster presented at the Student Conference on Conservation Science, New York City, NY.

Garretson, A. (2017, August). Recovery in Vulnerable Populations After Hurricane Katrina. Poster Presented at the OSCAR Summer Celebration of Student Scholarship, Fairfax, VA.

Garretson, A., Shefy, D., Greshin, P., Slonin, G. (2017, May). Assessing White Syndrome Dispersion in the Red Sea Fringing Reef. Poster presented at Celebration of Student Scholarship, Fairfax, VA.

Garretson, A., Reid, A. (2017, April). Analysis of coyote activity around waste disposal site and management implications. Poster presented at College of Humanities and Social Sciences Undergraduate Research Symposium, Fairfax, VA.

Garretson, A. (2017, April). The Politics of Addiction: Innovative Strategies for Combating Heroin Addiction in New Jersey. Poster at the National Conference for Undergraduate Research, Memphis, TN.

Garretson, A., *Reid, A. (2017, April). Analysis of coyote activity around waste disposal site and management implications. Poster presented at the National Conference for Undergraduate Research, Memphis, TN.

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Research Work Experience

Graduate Research Fellow, Forkner Lab **Aug. 2019- Present**
George Mason University - Fairfax, VA
- Develop methods for data acquisition, cleaning, and analysis for image-based ecological research, particularly methods for harmonizing data across multiple sources.
- Utilize museum specimens and citizen science products to assess changes in the phenology of insect and deciduous tree species over time.

Research Associate, Department of Conservation Science **Aug. 2019- Present**
Mohonk Preserve - New Paltz, NY
- Providing information management support to the ongoing ecological monitoring programs, including stream analyses, phenology observations, and vegetation monitoring.
- Investigating longitudinal and climate-driven changes in phenology and biodiversity of the preserve.

Community Fellow, Data Stewardship Committee **Dec. 2018- Present**
Earth Science Information Partners - Virtual
- Support the members and leadership of the Data Stewardship Committee, including attending meetings, organizing agendas, and providing input.
- Assisting in the development of a data rescue evaluation matrix and other ad hoc committee projects.

Environmental Data Fellow, Environmental Data Initiative & Mohonk Preserve **June 2019 - Aug. 2019**
Mohonk Preserve - New Paltz, NY
- Curated data packages and create structured metadata (EML) for publication in the EDI repository.
- Expanded and implemented a long-term data management and rescue strategy for the archive holdings.

Graduate Research Assistant, The Griffen Lab **Apr. 2019 - Aug. 2019**
Brigham Young University, Department of Biology - Provo, UT
- Developing a variety of models of intertidal crab movements and implementing them in a supercomputing environment.
- Analyzing and comparing model outputs using python and R.
- Prepare results and findings for publication.

Volunteer Field Technician, The Leavitt Lichen Lab **Apr. 2019**
Brigham Young University, Department of Biology - Provo, UT
- Performed surveys for lichen diversity and collecting herbarium specimen in the Mojave Desert region.
- Assisted in planning and carrying out sampling trips.

Virtual Student Federal Service, Northeast Climate Adaptation Science Center **Sep. 2018 - May 2019**
United States Geological Survey - Virtual
- Synthesized the results of the National Parks centennial BioBlitz program with respect to new species discoveries, range expansion, and checklisting.
- Analyzed the impact of citizen science collector characteristics on the scientific outputs and data quality.

Research Collections Volunteer, Stanley L. Welsh Herbarium **Sep. 2018 - Jan. 2019**
Monte L. Bean Life Science Museum, Brigham Young University - Provo, UT
- Supported collection digitization and databasing projects.
- Created, cleaned, and checked database records for collection specimens.

Post-Baccalaureate Intern, Dr. David Wypij **June 2018 - Sep. 2018**
Harvard T.H. Chan School of Public Health - Boston, MA
- Developed web-scraping applications to support the data acquisition needs of public health researchers.
- Investigated the impact of pediatric cardiac surgery on long-term neurodevelopment.

Intern, Systematic Entomology Laboratory **Mar. 2018 - June 2018**
The National Museum of Natural History and the USDA - Washington, DC
- Implemented a pipeline for digitizing, auto-translating, and classifying legacy literature on the identification of old-world Hymenopteran.
- Analyzed field-collected specimens and biodiversity data and prepared results for publication.
- Supported curatorial goals through indexing, mounting, and cataloguing specimens.

Undergraduate Field Work Volunteer, River Herring Survey **Feb. 2017 - May 2018**
Potomac Environmental Research and Education Center (PEREC) - Woodbridge, VA
- Assisted in field data collection at stream sites including water quality testing and stream assessment.
- Performed biodiversity assessments through trap deployment, and specimen evaluation & identification.

Undergraduate Research Assistant, Department of Biology **Jan. 2017 - May 2018**
George Mason University Department of Biology - Fairfax, VA
- Directed web-based data acquisition, data entry, metadata creation, and quality control on National Park visitation rates, changes in local climate, and variation in autumn color change over several decades.
- Analyzed data with machine learning methods, regression modeling, and time series analysis.
- Trained, mentored, and supervised incoming students on the project.

Research Practicum Student, The Nutrition Department **Jan. 2016 - May 2016**
Smithsonian's National Zoo - Washington, DC
- Optimized Amazonian Fish exhibit diets using literature values and energetics modeling approaches.
- Ran nutritional assays for fat, fiber, dry matter values, bomb calorimetry, protein, and ash.

Teaching Experience

Bioinformatics & Data Analysis II (BIO 665). Teaching Assistant. Brigham Young University, Department of Biology. Course Instructor: Dr. Stephen Piccolo. **Jan. 2019 - Apr. 2019** **Student Review: 4.88/5**

Introduction to Bioinformatics (BIO 165). Teaching Assistant. Brigham Young University, Department of Biology. Course Instructor: Dr. Stephen Piccolo. **Jan. 2019 - Apr. 2019** **Student Review: NA**

Principles of Biology for Non-Majors (BIO 100). Teaching Assistant. Brigham Young University, Department of Biology. Course Instructor: Dr. Seth Bybee. **Sep. 2018 - Dec. 2018** **Student Review: 4.66/5**

Applied Ecology (BIO 344/EVPP 344). Learning Assistant. George Mason University, Department of Biology and Department of Environmental Science and Policy. Course Instructor: Dr. Lorelei Crerar. **Jan. 2018 - May 2018** **Student Review: 8.98/10**

Foundations of Ecology & Evolution (BIO 308/EVPP 308). Learning Assistant. George Mason University, Department of Biology and Department of Environmental Science and Policy. Course Instructor: Dr. Lorelei Crerar. **Sep. 2017 - Dec. 2018** **Student Review: 9.55/10**

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Teaching & Education Work Experience

Graduate Teaching Assistant, Bioinformatics and Data Analysis II & Intro to Biology Sep. 2018 - Apr. 2019
Brigham Young University, Department of Biology
- Provided instruction to graduate and undergraduate students in bioinformatics and machine learning.
- Created teaching modules in R, python, and using publically-available data.
- Met and consulted with students one-on-one to support conceptual understanding and to provide feedback on independent research.
- Evaluated and provided feedback on student essays, projects, labs, tests and other assessments.

Learning Assistant, Ecology and Evolution & Applied Ecology Aug. 2017 - May 2018
George Mason University STEM Accelerator - Fairfax, VA
- Facilitated student learning through review sessions, individual tutoring, and in-class assistance.
- Optimized curriculum through the integration of basic python & R training and inclusion of teaching models to demonstrate evolutionary processes.

STARS Fellow, Students and Tutors Achieving Success Aug. 2013 - Aug. 2014
STARS (Formerly The Lake Avenue Community Foundation) - Pasadena, CA
- Supported and administered K-12 educational achievement program preparing enrichment activities, tutoring, and fostering emotional development for students from vulnerable communities.
- Developed and implemented curriculum to support educational goals.

Exhibit Interpreter, Guest Services Department Oct. 2012 - May 2013
The Children's Museum of Cleveland - Cleveland, OH
- Presented to and assisted museum guests, lead school tours and assisted with special events.
- Planned and facilitated educational programming for school-aged students in atmospheric science, oceanography, paleontology, biology, and nutrition.

Invited Classroom Lectures

Model Selection in Ecology. Guest Lecturer - Bioinformatics & Data Analysis II, Brigham Young University **Apr. 2019**

Introduction to Regression Modeling in R. Guest Lecturer - Bioinformatics & Data Analysis II, Brigham Young University **Mar. 2019**

Modeling Hardy-Weinberg Equilibrium. Guest Lecturer - Principles of Biology, Brigham Young University **Nov. 2018**

Evolution and Math. Guest Lecturer - Introduction to Biology for Non-Majors, Brigham Young University **Oct. 2018**

The Genetics of Small Groups - Ashkenazi Jews and Utah Mormons. Guest Lecturer - Introduction to Biology for Non-Majors, Brigham Young University. **Oct. 2018**

Web Scraping in R. Guest Lecturer - Biostatistics Summer Program, Harvard T.H. Chan School of Public Health **Jul. 2018**

Ecological and Evolutionary Modeling. Guest Lecturer - Ecology and Evolution Laboratory, George Mason University. **Mar. 2018**

Phenology and Climate Change. Guest Lecturer - Ecology and Evolution Laboratory, George Mason University. **Oct. 2017**

Speciation and Coyote/Wolf Hybrids. David M. Brown Planetarium, Darwin Day 2017. **Feb. 2017**

HIV 101. Guest Lecturer - Introduction to Public Health, George Mason. **Jan. 2014**

Intimate Partner Violence. Guest Lecturer - Introduction to Personal Health, Case Western Reserve University. **Apr. 2012**

Mentorship

Undergraduate Students

Tedra Cuddy, B.S. student. George Mason University. Fall 2019. Supervised federal work-study research student in data collection and statistical analysis in R and python.

Renae Bitor, B.S. student. George Mason University. Fall 2019. Supervised in data entry and analysis.

Lars Anderson, B.S. student. Brigham Young University. Summer 2019. Supervised in field data collection for *Hemigrapsus sanguineus*.

Eleanor DiNuzzo, B.S. student. Brigham Young University. Spring 2019. Provided field research oversight and mentorship, supported model development, analysis, R programming, and NetLogo Programming for independent research.

Jade Carver, B.S. student. Brigham Young University. Spring 2019. Trained in statistical analysis, graphics in R, graduate school applications.

Kylie Perkins, B.S. student. Brigham Young University. Spring 2019. Mentored in statistical analysis, graduate school applications, and provided career development advice.

Angela Lam, B.S. student. Westminster College. Summer 2018. Provided support in editing career application materials, mentored in R programming and biostatistics methods.

Omar Ullah, B.S. student. California State University, Northridge. Summer 2018. Taught web scraping and computational methods for data extraction, statistical analysis, and graphical presentation of results.

Jessica Anang, B.S. student. George Mason University. Fall 2017. Mentored in methods, statistical analysis, and literature search strategies in tandem with the George Mason University Biology Research semester.

Anna Reid, B.S. student. George Mason University. Spring 2015. Supported undergraduate program of study development, provided support in undergraduate research opportunities, taught camera trapping methods and data analysis

Graduate Students

Catherine Ferarri, M.A. student. SUNY New Paltz. Summer 2019. Trained in using R, data cleaning and data publishing.

Penelope Adler-Colvin, Recent graduate. SUNY New Paltz. Summer 2019. Trained in using R, data analysis and presentation, and publishing.

Kaitlyn Golden, M.S. student. Brigham Young University. Fall 2018 - Spring 2019. Trained in R programming and data analysis, NetLogo programming, and ecological modeling best practices, and collaborated on independent research.

Alexandra Duffy, Ph.D. student. Brigham Young University. Fall 2018 - Spring 2019. Trained in R programming and data analysis, NetLogo programming, and ecological modeling best practices, and collaborated on independent research.

Alexandria Hoth, M.S. student. Brigham Young University. Fall 2018 - Spring 2019. Provided support in teaching, statistics, R programming, NetLogo programming, and ecological model development.

BIO 550 Behavioral Ecology students. Spring 2019. Brigham Young University. Mentored select students 4 undergraduate and 7 graduate students conducting independent behavioral ecology research projects using modeling in ecology.

Professional Membership

Delta Alpha Pi, International Honor Society for Students with Disabilities
Sigma Xi, The Scientific Research Honor Society
Virginia Academy of Science
Next Generation Global Health Security Network