Alexis Garretson

ACM SIGHPC Computational & Data Science Fellow | NSF Graduate Research Fellow
Ph.D. candidate in Mammalian Genetics at Tufts University & The Jackson Laboratory
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Education

2025 (expected) **Mammalian Genetics**, Ph.D.
The Jackson Laboratory for Mammalian Genetics, Bar Harbor, ME and
Tufts University, Boston, MA
Advisor: Dr. Beth Dumont
Committee: Dr. Lenore Cowen, Dr. Mary Ann Handel, Dr. Elissa Chesler, Dr. Steve Munger, Dr. Gary Churchill (Chair)
Thesis: Integrated Advanced Genomic Data Analysis to Interrogate the Interrelationship of Fertility and Genomic Stability

2020 **Biology**, M.S. Concentration in Evolutionary Biology
George Mason University, Fairfax, Virginia
Advisor: Dr. Rebecca Forkner
Committee: Dr. Rebecca Dikow, Dr. Lorelei Crerar
Thesis: Identifying and Projecting Novel and Long-Term Phenological Trends: Integrating Heterogeneous Data Sources

2018 **Biology**, B.S. Concentration in Environmental and Conservation Biology
Minors: Economics, Public Health, and Applied Global Conservation
George Mason University, Fairfax, Virginia
Cum Laude with Honors in the Major
Advisor: Dr. Michael von Fricken
Thesis: Agent-Based Modeling of Tick-borne Diseases in Mongolian Livestock and Herding Communities

External Study

2024 **Traineeship in Advanced Data Analysis (AI/ML)**
Artificial Intelligence/Machine Learning Consortium to Advance Health Equity and Researcher Diversity & National Center For Advancing Translational Science (NCATS)
Project: An AI/ML-Based Analysis of Thromboembolic risk for people with COVID-19 receiving estrogenic therapies

2023 **Summer Graduate Intern in Single Cell Biology**
The Joint Genome Institute, Lawrence Berkeley National Laboratory
Project: Comparative Analysis of Stem Cell Niches Across Eukaryota: Single-Cell Insights into the Origins of Multicellularity

2018 **Post-Baccalaureate Biostatistics Training Program**
Harvard T.H. Chan School of Public Health, Boston, MA
Biostatistics and Computational Biology
Project: Effects of Gestational Age and Birth Weight on Neurodevelopmental and Psychiatric Outcomes in Adolescents after Pediatric Cardiac Surgery.

Continuing Support

2024 - 2026 **Contraception and Infertility Research-Extramural Loan Repayment Program, NICHD**
The role of germline mutation rates in reproductive decline and infertility
Role: Principal Investigator **Total Award:** $30,794

2022 - 2026 **Computational & Data Science Fellowship**
Association for Computing Machinery's (ACM) Special Interest Group on High-Performance Computing (SIGHPC)
Role: Fellow **Total Award:** $45,000

2019 - 2024 **National Science Foundation Graduate Research Fellowship**
Using Deep-Learning & Computer Vision in the Phenological Classification of Digitized Herbarium Specimens
Role: Principal Investigator **Total Award:** $138,000

Selected Publications *Genomics*

1. **Garretson, A.,** Dumont, B.L., Handel, M.A. 2023. Reproductive genomics of the mouse: implications for human fertility and infertility. Development. 150 (4): dev201313. doi: https://doi.org/10.1242/dev.201313
2. Lawal, RA., Mathis, V., Barter, M., Charette, J., **Garretson, A.**, Dumont, BL. Taxonomic assessment of two wild house mouse subspecies using whole-genome sequencing. Scientific Reports 12, 20866 (2022). https://doi.org/10.1038/s41598-022-25420-x
3. Keuler, R., **Garretson, A.**, Saunders, T. et al. 2020. Genome-scale data reveal the role of hybridization in lichen-forming fungi. Scientific Reports. doi:10.1038/s41598-020-58279-x

Publications

4. Gould, E., Fraser, H. S., Parker, T. H., Nakagawa, S., Griffith, S. C., … **Garretson. A.**, … Whelan, S. (2025). Same data, different analysts: Variation in effect sizes due to analytical decisions in ecology and evolutionary biology. BMC Biology, 23(1), 35. https://doi.org/10.1186/s12915-024-02101-x
5. Moran Sosa, L., Taylor, A., **Garretson, A.**, Backus, A., Richards, K., Graber, J., Hilliard, R., Disney, J.E. Examining potential PFAS Contamination of Private Wells from a High School in rural Maine. In press at Environmental Health Perspectives. doi: https://doi.org/10.1289/EHP14653
6. Taylor, A., **Garretson, A.**, Bieluch, K., Buckman, K., Lust, H., Bailey, C., Farrell, A., Jackson, B., Lincoln, R., Arneson, E., Hall, S., Stanton, B., Disney, J. 2024. A Mixed Method Approach to Understanding the Public Health Impact of a School-Based Citizen Science Program to Reduce Arsenic in Private Well Water. Environmental Health Perspectives. doi: https://doi.org/10.1289/EHP13421.
7. **Garretson, A., ***Cuddy, T., Duffy, A., Forkner, R. 2023. Citizen science data reveal regional heterogeneity in phenological response to climate in the large milkweed bug, *Oncopeltus fasciatus.* Ecology and Evolution 13 (7), e10213 doi: https://doi.org/10.1002/ece3.10213
8. **Garretson, A.**, Bailey, C., Taylor, A., Dabulewicz, A., Bisson, B., Dorn, N., Kaczor, K., Nahf, M.A., Webber, H., Whiting, M., Disney, J. 2023 Citizen and Community Science Approaches to Understanding Changes in Coastal Habitats Using Anecdata.org. Maine Policy Review 32.2 (2023): 239 -247, https://doi.org/10.53558/BDOX8109

9. **Garretson, A**. Institutional Differences in the Stewardship and Research Output of United States Herbaria. *Institutions and Incentives in Public Policy: An Analytical Assessment of Non-Market Decision-Making.* ed. Rosolina A. Candela, Rosemarie Fike, and Robert Herzberg. London: Rowman and Littlefield International**.** IBSN 9781538160947. Preprint: 10.1101/2021.01.07.425759
10. **Garretson, A**., *Mohney, S., *Silarszka, R., *Cahill, M., *Griffin, L., Mohonk Preserve Stream Watch Citizen Scientists, Feldsine, N., Napoli, M., Long, E. 2022. Citizen science and land use data provide insight into the invasive riparian plant composition of the Hudson River Valley Watershed. Invasive Plant Science and Management, 1-27. doi:10.1017/inp.2022.26
11. **Garretson, A.,** Forkner, R. Herbarium specimens document delays in the abscission of senesced maple leaves in the northeastern United States over the past 150 years. 2021. Frontiers in Forests and Global Change. doi: 10.3389/ffgc.2021.664763
12. Young, A.M., van Mantgem, E.F., **Garretson, A.**, Noel, C., Morelli, T. 2021 Translational science education through citizen science. Frontiers in Environmental Science. doi:10.3389/fenvs.2021.800433
13. **Garretson, A.** Citizen Science Can Improve Visitor Experience and Research Outcomes in Museums and Cultural Institutions. In *Digital Museums: What's new in the field?*. ed. Andrea Ledsema, Jessica BrodeFrank, Isabel Sanz. Museum Computer Network. 2021. http://publications.mcn.edu/2020-scholars/citizen-science/
14. **Garretson, A.**, Crerar, L. 2021. Moths and frogs and *E. coli*, oh my!: Agent-based modeling of evolutionary systems. CourseSource. https://doi.org/10.24918/cs.2021.35
15. Buffington, M.L., **Garretson, A.**, Kula, R., Gates, M.W., Carpenter, R., Smith, D.R., Kula, A.A. 2020. Pan trap color preference across Hymenoptera in a forest clearing. Entomol Exp Appl. doi:10.1111/eea.13008
16. **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. doi:10.3897/BDJ.8.e50121
17. Mayernik, M.S., Breseman, K., Downs, R.R., Duerr, R., **Garretson, A.**, Hou, C.-Y., EDGI, ESIP 2020. Risk Assessment for Scientific Data. Data Science Journal. doi:10.5334/dsj-2020-010

Publications in Preparation

1. Phan, L., Gatti, A., Li, N., … **Garretson, A.**, … Yue, S., Wang, A., Hendrycks, D. Humanities Last Exam. Preprint: https://doi.org/10.48550/arXiv.2501.14249
2. Baumgart, L. A., Morales-Cruz, A., Greenblum, S. I., Wang, P., Zhang, Y., Yang, L., Chen, C., Dilworth, D. J., **Garretson, A.**, Grosjean, N., He, G., Savage, E., Yoshinaga, Y., Blaby, I. K., Daum, C. G., & O'Malley, R. C. (2024). An atlas of conserved transcription factor binding sites reveals the cell type-resolved gene regulatory landscape of flowering plants. bioRxiv. https://doi.org/10.1101/2024.10.08.617089 (In submission).
3. **Garretson, A.**, Blanco-Berdugo, L., Dumont, BL. Mapping the Global Distribution of *Mus musculus*: Implications for Evolutionary Genetics. (In submission). https://doi.org/10.1101/2024.07.09.602589
4. **Garretson, A.**, Dumont, BL. Fitness effects of breeding strategy: implications for life history trait evolution and mouse husbandry. (In revision). https://doi.org/10.1101/2023.02.13.526889

Fellowships and Scholarships (Total awarded: $135,795)

2024 **Traineeship in Advanced Data Analysis,** Artificial Intelligence/Machine Learning Consortium to Advance Health Equity and Researcher Diversity (AIM-AHEAD) and NIH National Center For Advancing Translational Science ($10,000)

2023 **Robert G. Raskin Scholarship,** Earth Science Information Partners ($5,000)

2022 **Computational & Data Science Fellowship,** Association for Computing Machinery's (ACM) Special Interest Group on High-Performance Computing (SIGHPC)
Dean's Fellow, Tufts Graduate School of Biomedical Sciences ($40,000)
Tufts Institute for the Environmental Fellowship, Tufts University ($2,500)
Transforming Ecology Education Biodiversity Faculty Mentoring Network, Ecological Society of America & QUBES Hub ($1,000)

2020 **Loewy-Mohonk Liaison Fellowship**, Mohonk Preserve & Lowey Family Foundation ($7,000)
Museum Computer Network Scholar, MCN and Kress Foundation ($800)
FUNding Friday, Earth Science Information Partners Lab Funding ($3,000)
Graduate Supplemental Scholarship, Provost Graduate Education Awards, George Mason University ($2,500)
American Alpine Club Researcher, American Alpine Club ($1,500)
Global Discovery Scholarship, George Mason University ($1,100)
Dan Searle Fellow, Institute for Humane Studies ($3,000)

2019 **Environmental Data Initiative Summer Fellow,** Environmental Data Initiative and Mohonk Preserve ($5,000)
Data Stewardship Community Fellow (Returning), Earth Science Information Partners ($6,000)
ACTIVATE AI and Search: Diversity and Inclusion Scholar, Lucidworks and Salesforce ($2,595)
Olami Inspire Online Fellow, Olami ($1,700)
Ryan Kelley Memorial Research Fellowship, International Women's Fishing Association Scholarship Trust ($1,000)
Science Ambassador, Science Gateways Community Institute ($1,500)

2018 **Data Stewardship and Research Object Citation Community Fellow,** Earth Science Information Partners ($5,000)
Kennedy Research Fellowship, David M. Kennedy Center for International Studies ($1,000)
Ocean Discovery Fellowship, MIT Media Lab and All Hands on Deck ($750)
Ridge to Reef Summer Trainee, Climate and Life Summer Institute, UC Davis and NSF (Research Traineeship in Urban Ecosystem Management) ($850)
Post-Baccalaureate Internship, Harvard T.H. Chan School of Public Health, Department of Biostatistics ($5,100)

2018 **Undergraduate Research Scholars Program**, George Mason University ($1,500)

2017 **Sinai Scholar**, Sinai Scholars Society ($500)
Research Semester Cohort, George Mason University, Department of Biology ($2,000)
Undergraduate Research Scholars Program, George Mason University ($5,000)

2016 **Undergraduate Research Scholars Program**, George Mason University ($1,500)
Federal Supplemental Educational Opportunity Grant, George Mason University ($1,400)
Virginia Commonwealth Award, George Mason University ($6,000)

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

Awards and Honors

2025 **eLife Ambassador,** eLife Ambassadors Programme
Top 550 Questions Prize in Humanity's Last Exam, Center for AI Safety and Scale AI

2024 **Outstanding Data Analysis and Communication Award** (Individual), Artificial Intelligence/Machine Learning Consortium to Advance Health Equity and Researcher

Diversity (AIM-AHEAD) and NIH National Center For Advancing Translational Science
Outstanding Visual Presentation Award (Team), AIM-AHEAD, and NIH National Center for Advancing Translational Science
NSF Rising Scientist Award, The Allied Genetics Conference 2024
Student Enrichment Fund Travel Award, Graduate School of Biomedical Sciences, Tufts University ($1,000)
Trainee Travel Scholarship, International Mammalian Genome Society

2023 **Top Oral Presentation Award,** The Jackson Lab Scientific Symposium
Trainee Travel Scholarship, International Mammalian Genome Society
JAX Trainee Travel Award, The Jackson Laboratory

2021 **FLOW (First-Generation, Low-Income, and/or Working Class) Fellow**, Scientists Promoting INclusive Excellence (SPINEs), Tufts University

2020 **Biodiversity Open Data Ambassador,** Global Biodiversity Information Facility
Champion, National Microbiome Data Collaborative
Data and Software Carpentry Instructor, The Carpentries
CourseSource Writing Studio Writing Fellow, CourseSource and Society for the Advancement of Biology Education Research
Open Access Publishing Fund, George Mason University
Community Science Fellow: Science, Policy, and Engagement Cohort, American Geophysical Union and Gordon and Betty Moore Foundation

2018 **Science Alliance Leadership Training Fellow,** New York Academy of Sciences
Virtual Student Federal Service, USGS and Northeast Climate Science Center
Departmental Honors, Department of Biology, George Mason University
Senior Award, Department of Biology, George Mason University

2018 **OSCAR Student Excellence Award: Research and Scholarship,** Mason Impact Leadership Council
The Biology Writing Award, Department of Biology, George Mason University
Best Paper Award, Sinai Scholars Society - George Mason University
F.A. Hayek Essay Contest First-Place Winner, Department of Economics, George Mason

Teaching Experience

2020 **Computer Vision for Ecology**
Lead Instructor. George Mason University, Department of Biology.

2019 **Bioinformatics and Data Analysis II**
Teaching Assistant. Brigham Young University. Student Review: 4.88/5
Introduction to Bioinformatics
Teaching Assistant. Brigham Young University.

2018 **Principles of Biology for Non-Majors** Teaching Assistant. Brigham Young University.
Student Review: 4.66/5
Applied Ecology
Learning Assistant. George Mason University, Department of Biology.
Student Review: 8.98/10

2017 **Foundations of Ecology and Evolution**
Learning Assistant. George Mason University, Department of Biology.
Student Review: 9.55/10

Mentorship

In the summer of 2020, in response to the COVID pandemic, I organized a remote virtual summer research internship for students at George Mason University to analyze publicly available data, learn foundational data science skills, and perform a team research project under the supervision of a graduate student mentor. We had 14 participants and 2 peer-reviewed publications to date.

1. **Joshua Quigley,** M.S. student. University of New England. Fall 2022. Supervised capstone project analyzing marine debris data.
2. **Sirohi Kumar,** B.S. student. Smith College. Summer 2022 Supervised in the Jackson Laboratory Summer Student Program studying wild mice transposable elements using long-read data and computational methods.
3. **Charlie Bourne,** H.S. student. Summer 2022. Supervised field data collection and management summer project on marine microplastics.
4. **Harper Hollister Fremont-Smith,** H.S. student. Summer 2022. Supervised field data collection and management summer project on phytoplankton.
5. **Michael Maniscalco,** Ph.D. student. UC Santa Barbara. Summer 2022. Supervised an Environmental Data Initiative-funded summer fellowship curating phytoplankton data.
6. **Nathan Dorn,** Americorps Environmental Steward. Summer 2022. Supervised environmental field research and volunteer management.
7. **Stephen Bredin,** Recent graduate. George Mason University. Summer 2020. Supervised summer research project in amphibian breeding ecology.
8. **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.
9. **Lars Anderson,** B.S. student. Brigham Young University. Summer 2019. Supervised in field data collection for Hemigrapsus sanguineus.
10. **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.

Professional Development and Continuing Education

2024 **The Whole Scientist,** The Jackson Laboratory
2024 **T2T Nanopore Ultra-Long Workshop,** UCSC Sequencing Technology Center
2021 **Human and Mammalian Genetics and Genomics**, The Jackson Laboratory
2021 **Statistical Inference for Biologists**, The Jackson Laboratory
2021 **Short Course on the Genetics of Addiction**, The Jackson Laboratory
2021 **Science Communication Training**, National Center for Ecological Analysis and Synthesis
2020 **Quantitative Trait Mapping in the Diversity Outbred**, UW-Madison and JAX
2020 **Life Sciences Consulting Short Course,** Tufts Biomedical Business Club
2020 **Containerization with Singularity**, The Jackson Laboratory
2020 **Introduction to HPC,** The Jackson Laboratory
2020 **Data Science Instructor Training**, The Carpentries
2019 **Evolutionary Dynamics in Cancer,** Mathematical Biosciences Institute and NISS
2019 **Data Publishing Workshop,** Environmental Data Initiative
2018 **Collective Behavior and Emergent Phenomena in Biology,** Mathematical Biosciences Institute

Service

2022-Present Co-founder, Tufts Computational Biology Club
President 2022-2024, Senior Advisor 2024-2025
2021, 2016 Science Fair Judge, Computational Biology
2021-Present Reviewer, *Citizen Science: Theory and Practice*
2020-Present Reviewer, *Journal of Emerging Investigators*
2020-Present Community Environmental Health Lab, Local Environmental Volunteer
2020-2021 Associate Editor, *Journal of Emerging Investigators*
2020 Abstract reviewer for the National Conference on Undergraduate Research
2020 Scholarship reviewer for the American Councils for International Education

Professional Membership

2020 **Phi Kappa Phi**
2018 **Delta Alpha Pi**, International Honor Society for Students with Disabilities
2016 **Sigma Xi**, The Scientific Research Honor Society

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

Session Chair:

Complex Traits and Evolution. Mar 2024. The Allied Genetics Conference. Washington, DC.

Oral Presentations:

1. **Garretson, A.,** Dumont, B. (2024 Apr.) Comprehensive Tissue-Specific Somatic Mutation Profiling via RNA-seq in Diverse Mice. RECOMB-Seq. Cambridge, MA.
2. **Garretson, A.,** Dumont, B. (2024 Mar.) Relationships Between Germline Mutation Rates and Reproductive Success. IMGS Trainee Symposium. The Allied Genetics Conference. Washington, DC.
3. **Garretson, A.**, Wang, P., Baumgart, L., O'Malley, R., Greenblum, S. (2023, Aug.) Comparative Analysis of Stem Cell Niches Across Eukaryota: Single-Cell Insights into the Origins of Multicellularity. Symposium on New Lineages of Life. Berkeley, CA.
4. **Garretson, A.**, Dumont B. (2023, Jun.) The rate and spectrum of somatic mutations in healthy tissues revealed by RNA sequencing. Genetics, Molecular, and Cellular Biology Retreat. Tufts University, Freeport, Maine.
5. **Garretson, A.**, Dumont B. (2023, May) Somatic Mutation Rates and Spectra Vary by Anatomical Site and Genetic Background in Healthy Mice. 7th Annual JAX Scientific Symposium. Farmington, Connecticut.
6. **Garretson, A.**, Dumont B. (2023, Apr.) The Somatic Mutation Landscape Of Laboratory Mice: Signatures of Molecular and Metabolic Phenotypes. 49th Maine Biological and Medical Sciences Symposium. MDI Biological Laboratory, Bar Harbor, Maine.
7. **Garretson, A.**, Dumont B. (2023, Mar.) Relationships Between Germline Mutation Rates and Reproductive Success in the Collaborative Cross Mice. International Mammalian Genome Conference 2023. Tsukuba, Japan.
8. **Garretson, A.,** Dumont B. (2022, Aug.) Modeling Age-Related Reproductive Decline in the Collaborative Cross Mouse Population. Mechanisms of Cellular Resilience Symposium. MDI Biological Laboratory, Bar Harbor, ME.
9. **Garretson, A.** Dumont, B. (2022, Apr.) Leveraging single-institution breeding records of laboratory animals to investigate the genetics of fertility. 49th Maine Biological and Medical Sciences Symposium. MDI Biological Laboratory, virtual.

10. **Garretson, A.**, Dumont, B. (2022, Apr.) Structural variation implicated in male infertility using retrospective analysis of Collaborative Cross breeding records. Tufts University Genetics-Neuroscience Retreat. The Jackson Laboratory, Bar Harbor, ME.
11. **Garretson, A.** (2021, Oct.) Alt Text in Twitter Job Postings: Improving The Accessibility of Digital Communications. ConsMark 2021, Virtual.
12. **Garretson, A.** †*Cuddy, T., Forkner, R. (2020, June). Observational biodiversity occurrence data reveal spatiotemporal trends in large milkweed bugs. National Conference for Undergraduate Research, Virtual.
13. **Garretson, A.** (2020, August). Do you see what I see? Harmonizing data from multiple repositories. Talk presented at the Ecological Society of America Conference. Virtual.
14. **Garretson, A.** (2020, June). Extracting phenology and life history data from digitized specimens. Talk presented at the 4th Annual Digital Data Conference, Indiana University. Virtual.
15. **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.
16. **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.
17. **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.
18. †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.
19. **Garretson, A.** (2019, January). Using Science Gateways in Phenological Research. Talk presented to the Science Gateways Community Institute Board. Virtual.
20. †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.
21. **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.
22. **Garretson, A.** (2018, July). Arctic Vegetation: Avenues for Herbarium-Driven Research. Talk presented to the Arctic Summer College. Virtual.
23. **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.
24. **Garretson, A.** (2017, March). The Perception Problem: Migration and the Commons. Talk presented at the Austrian Student Scholars Conference, Grove City, PA.
25. **Garretson, A.** (2016, December). Natural Lands in Virginia. Talk presented at the Celebration of Student Scholarship, Fairfax, VA.
26. **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.
27. **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:

1. **Garretson, A.,** Borges-Velez, G., Cadenhead, J., Lim, M.J., Yen, S., Delic, A. (Aug. 2024). Thromboembolic risk for people with COVID-19 receiving estrogenic therapies versus non-users: A comparative analysis (Work in Progress). AI for Health Equity Symposium. Atlanta, GA.
2. **Garretson, A.,** Dumont, B. (2024 Apr.) Genetic Architecture of the Germline Mutation Rate and Reproductive Success in the Collaborative Cross. Research in Computational Molecular Biology (RECOMB). Cambridge, MA.
3. **Garretson, A.,** Dumont, B. (2024 Apr.) Comprehensive Tissue-Specific Somatic Mutation Profiling via RNA-seq in Diverse Mice. The 14th RECOMB Satellite Conference on Biological Sequence Analysis. Cambridge, MA.
4. **Garretson, A.,** Dumont, B. (2024 Mar.) Comprehensive Tissue-Specific Somatic Mutation Profiling via RNA-seq in Diverse Mice. The Allied Genetics Conference. Washington, DC.
5. **Garretson, A.,** Dumont, B. (2024 Mar.) Relationships Between Germline Mutation Rates and Reproductive Success. The Allied Genetics Conference. Washington, DC.
6. **Garretson, A.,** Wang, P., Baumgart, L., O'Malley, R., Greenblum, S. (2023, Aug.) Comparative Analysis of Stem Cell Niches Across Eukaryota: Single-Cell Insights into Tissue Regeneration and Resilience. Joint Genome Institute User Meeting. Berkeley, CA.
7. **Garretson, A.,** Dumont B. (2023, Mar.) Heritable Fitness Effects Of Breeding Strategy In House Mice: Implications For Mouse Husbandry And The Evolution Of Alloparenting. International Mammalian Genome Conference 2023. Tsukuba, Japan.
8. **Garretson, A.** Dumont, B. (2022, Apr.) Structural variation may impact fertility through altered gene expression. Poster presented at the 2022 Jackson Lab Trainee Symposium. Portland, ME.
9. **Garretson, A.** Dumont, B. (2022, Apr.) Germline mutational burdens predict reproductive success. Poster presented at the 2022 New England Science Symposium. Harvard University, virtual.
10. **Garretson, A.** Dumont, B. (2021, Nov.) Relationship Between Reproductive Traits and the Mutation Rate in the Collaborative Cross Mouse Population. Poster presented at the 2021 Earle P. Charlton Poster Competition, Tufts University. Virtual.
11. **Garretson, A.** Dumont, B. (2021, Oct.) Genetic Architecture of Mutation Rate in the Collaborative Cross Mouse Population. Poster presented at the Jackson Laboratory Scientific Symposium. Virtual.
12. **Garretson, A.** (2021, Sep.) Alt Text in Twitter Job Postings are an Underutilized Tool to Support Accessibility. Poster presented at the American Public Health Association Disability Section First Annual Twitter Conference. Virtual.
13. †*Silarszka, R., †*Cahill, M., †*Griffin, L., **Garretson, A.**, *Mohney, S., Mohonk Preserve Stream Watch Citizen Scientists, Feldsine, N., Napoli, M., Long, E. (2021, Apr.) Land Use and Basin Characteristics Associated with the Occurrence of Invasive Vegetation in the Hudson River Valley, New York. Poster at the National Conference for Undergraduate Research. Virtual.
14. **Garretson, A.** (2021, Jan.). Linking Data Usage to Citizen Science Observations and Observers. Poster Presented at the Earth Science Information Partners Winter Meeting 2021.
15. **Garretson, A.**, Forkner, R. (2020, June). Digitized herbarium specimens document changes in phenophases and pathogen damage in Eastern United States maples. Poster presented at the Ecological Society of America Conference. Virtual.
16. **Garretson, A.** †*Cuddy, T., Forkner, R. (2020, June). Observational biodiversity occurrence data reveal spatiotemporal trends in large milkweed bugs. Poster presented at the Ecological Society of America Conference. Virtual.
17. **Garretson, A.**, Forkner, R. (2020, June). Digitized herbarium specimens document changes in phenophases and pathogen damage in Eastern United States maples. Poster presented at the 4th Annual Digital Data Conference, Indiana University. Virtual.

18. **Garretson, A.** †*Cuddy, T., Forkner, R. (2020, June). Extracting life stage and behavioral data from observational biodiversity occurrence data reveals spatiotemporal trends in large milkweed bugs. Poster presented at the 4th Annual Digital Data Conference, Indiana University. Virtual.
19. **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. Columbus, OH.
20. **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.
21. **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.
22. **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.
23. **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.
24. †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.