Jorja Burch, Ph.D. jorjaelliott@tamu.edu | jorjaelliott.github.io

Science Communication | Research & Publication | Quantitative Genetics | Computational Biology

SUMMARY

With a Ph.D. in Biology from Texas A&M University and a robust background in biology, I bring extensive experience in both the theoretical and applied aspects of statistical analysis. My research focuses on evolutionary biology, leveraging advanced computational methods and quantitative genetics. This research informs my current leadership of a 22-journal health sciences portfolio at Wiley, where I drive editorial vision, strengthen research integrity, and expand content pipelines through new initiatives and strategic acquisitions. I excel at enabling global research communities—particularly early-career investigators—by improving author experience, accelerating dissemination, and shaping journals that reflect scientific rigor, inclusivity, and innovation.

EXPERTISE & SKILLS

Writing & Publishing: fellowship and grant applications, Editorial Manager, Research Exchange, and ScholarOne platforms, peer review, editorial process & management, special issues, academic publishing, academic journal development

Soft Skills: public speaking, written and oral communication, presentation assembly, leadership, mentorship, multi-disciplinary collaboration, adaptive problem solving, multi-tasking, self-motivated, time management, strategic planning, detail-oriented

Genetics: evolutionary biology, quantitative genetics, crop science, theoretical genetics

Molecular Biology: DNA extraction, PCR, gel visualization/imaging, spectrophotometry

Plant Biology: plant husbandry, greenhouse management, emasculation, fertilization strategies, vernalization techniques, SPAD chlorophyll content collection

Computational: Microsoft Office suite, PaperPile, Endnote, ImageJ, BioRender, Adobe Creative Suite, ChatGPT, Microsoft Copilot

Programming: R, R Shiny, Python (beginner), HTML/CSS (beginner), Git/GitHub

Data Science: simulations, recursion equations, data munging, data visualization, literature search, database development

EDUCATION & TRAINING

Ph.D., Biology Texas A&M University	2021 – 2025
B.S., Biology Fort Hays State University – *cum laude*	2017 – 2021
GSA Peer Review Training Program	2023 – 2025

POSITIONS & EXPERIENCE

2025 – present: Publisher, Health Sciences - Wiley
Leads a portfolio of 22 academic journals, both proprietary and society-owned, in the health sciences. Responsible for journal strategy development and performance, appointment of editorial teams, and oversight of journal operations. Leads new initiatives such as content acquisition and diversity, Early Career Researcher initiatives, and new journal launches.

2024 – 2025: Content Acquisitions Specialist - Wiley

Serves as the content acquisition specialist within the research publications team at Wiley. Oversees portfolio of 40 health sciences titles, published by Wiley. Responsible for overseeing the development of special issues from ideation through publication, then post-publication promotion and evaluation. Use data analysis tools to identify impactful special issue topics and network in relevant markets to commission content for special issues.

2023 – 2024: Associate Editor, Reviewer - Journal of Emerging Investigators

Serves as an associate editor for JEI, a science journal and mentorship program publishing research by middle and high school scientists: responsible for assessing manuscript quality, obtaining peer reviews, requesting revisions where appropriate, and making recommendations to the journal Editor about acceptance or rejection of a manuscript.

2023 – 2025: Reviewer - GSA Peer Review Training Program

This program provides early career researchers with experience in peer review and the editorial process. Participants learn about scientific publishing, different peer review styles, how to dissect a manuscript, and how to provide the most useful feedback to the authors. As a participant, I review research articles and genome reports for G3 and Genetics journals.

2021 – 2025: Graduate Researcher | Texas A&M University, Biology

Research focuses on a central question: What role does epistasis play across the tree of life? By observing morphological and life history traits in crosses within and between species, I have used a quantitative genetics technique, line cross analysis, to infer the net genetic architecture for traits that have diverged in the parental lines.

- Combined data collected through literature search with empirical data, analyzed with line cross analysis, to quantify genetic architecture of traits across tree of life. Created database to house over 1600 line-cross datasets and allow users to plot results (https://evobir.shinyapps.io/lca-synth/).
- Developed project to estimate potential biases in quantifying genetic architecture of compound traits using theoretical genetics and a simulation-based approach.
- Updated software release for "SAGA 2.0 (statistical analysis of genetic architecture). Created and updated all tutorials and help files to coincide with the most recent release.

2020: Heartland Plant Innovations, Manhattan, KS

Worked in plant biotechnology development centered on double-haploid breeding. Developed skills: polymerase chain reaction, sequencing, embryo rescue, wheat emasculation, fertilization strategies, greenhouse management, and vernalization techniques.

2018 – 2021: Undergraduate Research

Experience in both cellular plant biology lab and ecology/crop-science lab.

- Studied enzymatic tolerance to sulfide, lactic acid, and ethanol in corn and catfish tissues. Work funded by the Kansas IDeA Network of Biomedical Research Excellence (K-INBRE).
- Studied impacts of commercial soil microbial additives on growth and performance of wheat and sorghum. Work funded by Kansas National Science Foundation (NSF) Established Program to Simulate Competitive Research (EPSCoR)

PUBLICATIONS

J. Burch, M. Chin, B.E. Fontenot, S. Mandal, T.D. McKnight, J.P. Demuth, H. Blackmon. 2024. Wright was right: Leveraging old data and new methods to illustrate the critical role of epistasis

in genetics and evolution. *Evolution* 78(4) 624-634. ***Received 2025 SSE Presidents' Award for Outstanding Dissertation Paper**

J. Burch, C. Nava, H. Blackmon. 2024. Assessing the opportunity for selection to impact morphological traits in crosses between two *Solanum* species. *PeerJ* 12:e17985

J. Burch, C. Nava, M. Copeland, H. Blackmon. Failures to atomize traits leads to systemic failure in line cross analyses. *Under review at Proceedings of the Royal Society B*

PEER REVIEWS (number indicates how many articles have been reviewed for each journal)

Journal of Evolutionary Biology (2), Journal of Heredity (1), G3 (2),
Journal of Emerging Investigators (1)

TEACHING & MENTORSHIP

Teaching Assistant
- Experimental Design, graduate course | Fall 2022, Fall 2023
    - 100 students per semester
- Critical Writing in Biology, senior course | Fall 2023, Spring 2024, Fall 2024, Spring 2025
    - 25-50 students per semester
- Introductory Honors Biology I | Fall 2022
    - 24 students
- Introductory Biology II | Spring 2022
    - 48 students
- Introductory Biology I | Fall 2021
    - 60 students

Mentored Undergraduate Researchers
- Mentee: Maximos Chin | Topic: Epistasis in Evolution
    - Manuscript accepted to *Evolution,* currently a Ph.D. student at UC Davis
- Mentee: Crystal Nava | Topic: Genetic architecture of morphological traits
    - 1 manuscript published in *PeerJ*; 1 manuscript under review at *Proceedings of the Royal Society B*, currently applying to Ph.D. programs
- Mentee: Alyssa McPhail | Topic: Line cross analysis
- Mentee: Kenzie Laird | Topic: Greenhouse management

AWARDS, GRANTS, & ACHIEVEMENTS

2024
Nominated for SSE Presidents' Award for Outstanding Dissertation Paper. Society for the Study of Evolution.

Recipient of the Lawrence S. Dillon Distinguished Graduate Student Award for Excellence in Research and Teaching at Texas A&M University

2023
Texas Genetics Society Travel Award

Accepted into Genetics Society of America Journals Peer Review Training Program

Outstanding graduate presentation award – Texas Genetics Society 50th Annual Meeting

2nd place poster presentation – Texas A&M University Life on a Dynamic Planet Symposium

2020
K-INBRE Star Trainee Program Grant; Effects of Sulfide, Ethanol, and Lactic Acid on cytochrome c oxidase and citrate synthase in plant roots. - $7000

2019
K-INBRE Summer/Semester Scholar Program Grant; Effects of Sulfide, Ethanol, and Lactic Acid on cytochrome c oxidase and citrate synthase in plant roots. - $4000

PRESENTATIONS (T: talk, P: poster, C: coauthor, A: presentation award)

2024
Epistasis & trait evolution: genetic architecture in Solanum and beyond. Doctoral defense. Texas A&M University - T

Publishing: Perils, Pitfalls, & Peer Review. Workshop for Texas A&M University, Department of Biology, Evolutionary Biology Graduate Students - T

Diversity in research experiences & transitioning from undergraduate to graduate programs. Guest speaker, Fort Hays State University Alumni Board Meeting - T

Resolving a 100-year debate: The role of epistasis in the genetic architecture of traits. Southeast Texas Evolutionary Genetics and Genomics Symposium - P

Assessing the opportunity for selection to impact morphological traits in crosses between two Solanum species. Texas Genetics Society 51st Annual Meeting - P, C, A

Wright was right: Resolving a 100-year debate. Texas Genetics Society 51st Annual Meeting - T

Assessing the opportunity for selection to impact morphological traits in crosses between two Solanum species. Texas A&M University Student Research Week - P, C

Wright was right: Resolving a 100-year debate. Texas A&M University Student Research Week - T

Role of undergraduate research experiences; Graduate research overview. Fort Hays State University - Kansas Academy of Mathematics and Science - T

Wright was right: Resolving a 100-year debate. Texas A&M University Evolution Journal Club - T

Resolving a 100-year debate: The role of epistasis in the genetic architecture of traits. Student Post-Doctoral Research Conference 2024 - P

2023
Genetic architecture of eight morphological traits in Solanum crosses. Genome Editing Symposium 2023 - P, C, A

Wright was Right: Over one thousand datasets support the critical role of epistasis in genetics and evolution. Evolution 2023 - P

Experiences in undergraduate and graduate education & my research on epistasis synthesis. Fort Hays State University - Kansas Academy of Mathematics and Science - T

Wright was Right: Over one thousand datasets support the critical role of epistasis in genetics and evolution. Texas Genetics Society 50th Annual Meeting - P

Wright was Right: Over one thousand datasets support the critical role of epistasis in genetics and evolution. Texas A&M University Life on a Dynamic Planet Symposium - P

Wright was Right: Over one thousand datasets support the critical role of epistasis in genetics and evolution. Texas A&M University Student and Post-Doctoral Research Conference - P

2021
Enzymatic tolerance to sulfide, lactic acid, and ethanol in corn and catfish tissues. American Association for the Advancement of Science - P

LEADERSHIP & OUTREACH

2024
Commencement Speaker, Class of 2024 (Kansas) Academy of Mathematics & Science, Fort Hays State University Graduation

Judge for undergraduate student presentations - Texas Genetics Society 51st Annual Meeting

Judge for undergraduate and graduate student presentations - Student Research Week, Texas A&M University

Local organizing committee for Texas Genetics Society 51st Annual Meeting

2023
Graduate School Information Panelist - Texas A&M University, Department of Biology

Trainee Board Member 2023-2025 – Texas Genetics Society

Graduate Student Recruitment for Texas A&M Biology Department – Texas Genetics Society 50th Annual Meeting

2022
Coding Workshop Facilitator – Experimental Design Graduate Course, Coding in R Department of Biology, Texas A&M University