Kayla Wilhoit

Biomedical Sciences Program
Texas A&M University

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EDUCATION

2019-present: B.S. in Biomedical Sciences, Texas A&M University, College Station, Texas **GPA**: 4.0
Minors in Japanese and Genetics
- Current senior, graduating May 2023

EXPERIENCE

2019-present: **Undergraduate Researcher,** Blackmon Laboratory, Department of Biology, Texas A&M University
Lead researcher on forward-time population genetic simulation project in R modeling the fate of sex chromosome autosome fusions. First author publication to be submitted Fall 2022.
Co-lead researcher on method development project in R to quantitatively evaluate the need for sequencing data within a phylogeny.

June-July 2022: **Summer Undergraduate Research Intern,** National Institute of Genetics, Japan
Participated in NIGINTERN 2022 program with an international group of interns. Investigated mammalian diet and habitat effects on gene copy number using computational analysis. Developed a set of PCR primers to characterize chromosomal inversions in stickleback fishes.

June-Aug 2021: **Summer Undergraduate Research Intern,** Translational Imaging Center, Houston Methodist Research Institute
Developed a machine learning R script to efficiently evaluate large complex datasets of imaging and clinical results. Investigated the use of color quantization for profiling peripheral arterial disease (PAD) lesions.

June-Aug 2020: **Summer Undergraduate Research Intern,** Virtual Academy, Houston Methodist Research Institute
Participated in online seminars and research discussion with other interns during the Houston Methodist Research Institute Virtual Academy.

2017-2019: **High School Research Assistant,** Demuth Laboratory, Department of Biology, University of Texas at Arlington
Created a reproducible method of demonstrating cytonuclear incompatibility between divergent *Tribolium* beetle populations.

PRESENTATIONS

INVITED SEMINARS

2021: *Inequality of Sex Chromosome to Autosome Fusions.* Computational Biology Seminar, Department of Computer Informatics, Sofia University (Kl. Ohridski), Sofia, Bulgaria

PRESENTATIONS

2022: *Mammalian Copy Number Variation and Diet* & *Chromosomal Inversion Evolution in Sticklebacks.* **Wilhoit K**, Kitano J, Ishikawa A, Iwasaki W, Yamanouchi S, Yamasaki Y. National Institute of Genetics, Mishima, Japan — Talk

Inequality of Fusions Between Autosomes and Sex Chromosomes. **Wilhoit K**, Blackmon H. Texas Genetics Society, College Station TX — Poster

2021: *Artificial Intelligence Solutions for Medical Images: Machine Learning using fMRI and Cognitive Testing and Feature Space Characterization of Peripheral Arterial Plaque.* **Wilhoit K**, Karmonik C, Wright T, Randolph K, Shi Z, Lu L, French K, Braden S, Urban R, Sinha K, Berczeli M, Lumsden A, Roy T. Houston Methodist Association for Postdoctoral and Trainee Affairs (MAPTA) Summer Research Symposium, Houston TX — Poster

Inequality of Fusions Between Autosomes and Sex Chromosomes. **Wilhoit K**, Blackmon H. Texas A&M University Student Research Week, College Station TX — Poster

- Won 2nd Place Undergraduate Subject Area Award

Inequality of Fusions Between Autosomes and Sex Chromosomes. **Wilhoit K**, Blackmon H. Texas Genetics Society, College Station TX — Poster

SKILLS

Programming and Data Science: R (tidyverse, caret, MCMCglmm, ggplot2, Shiny), ImageJ, Phylogenetics

Molecular Biology: DNA/RNA extraction, PCR, primer design and optimization, gel imaging

RELEVANT COURSEWORK

- Cell and Molecular Biology (Honors)
- Organic Chemistry
- Biochemistry
- Biomedical Anatomy
- Biomedical Physiology
- Biomedical Microbiology
- Population Genetics
- Biomedical Genetics
- Molecular Genetics (Honors)
- Analysis of Genomic Signals
- Bioinformatics
- Experimental Design
- Statistical Methods

AWARDS

2019: Texas A&M Craig and Galen Brown Foundation Scholar

- 50 scholars in STEM disciplines chosen per year to receive a 4-year scholarship to attend Texas A&M University

Texas A&M President's Endowed Scholar

- 200 scholars displaying academic achievement and leadership chosen per year to receive a 4-year scholarship to attend Texas A&M University

Texas A&M National Merit Scholar

- Scholarship offered to National Merit Finalists to attend Texas A&M University

Regeneron Science Talent Search Scholar - $2000 Award

- 300 students chosen nationwide for research conducted in high school

Leadership and Outreach

Organizations

2021-present: Texas A&M Undergraduate Research Ambassadors

- Promoting Texas A&M undergraduate research at recruiting and student outreach events
- Sharing student perspective with university faculty and administration

2019-present: Texas A&M Biomedical Sciences Association

- Providing volunteer tutoring in major-related courses to members

2019-present: Texas A&M National Scholars Ambassadors

- Introducing prospective National Merit students to the university and department of interest
- Served as Treasurer for 2021-2022 year

Outreach Events

2022: R Workshop – Texas A&M University

- Facilitated R programming workshops for graduate students

2021: Expanding Your Horizons – Texas A&M University

- Volunteered for hands-on genetics workshop at a sixth-grade girls science career conference

References

Heath Blackmon
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Texas A&M University
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Christof Karmonik
Assoc. Research Professor of Translational Imaging
Houston Methodist Academic Institute
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