

CURRICULUM VITAE

Joey White

Professional Research Assistant

Institute for Behavioral Genetics
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Degrees

2024 Bachelor of Arts, *Summa Cum Laude* University of Colorado, Boulder
Major: Ecology and Evolutionary Biology
Minor: Computational Biology
Undergraduate Honor's Thesis: *QTL Mapping of Pericarp Strength in Sunflower: Overcoming Tradeoffs Between Seed Quality and Insect Resistance*

Research Positions and Employment

2024 – present **Professional Research Assistant:** Reynolds Lab, Institute for Behavioral Genetics, University of Colorado Boulder

Provide support for three longitudinal twin and adoption study consortia to assess coaction of genetic and environmental factors on cognitive aging and Alzheimer's and related dementias (AD/ADRD):

- Data management and documentation, e.g., codebooks and manuals
- Perform integrity checks of the data, coordinate the development of database of measures, create scoring protocols to be made available to the team, and create codebooks detailing variable construction, QC steps, and psychometrics information
- Manage project data files, harmonize variables (e.g., sociodemographic variables, mental health, and cognition) across participating studies
- Data analysis: applying scoring to phenotypic and genomic datasets, creation of polygenic scores (PGS), writing and running scripts
- Writing summaries of analyses, contributing to scientific presentations and manuscripts

2021-2024 **Undergraduate Research Intern:** Kane Lab, Department of Ecology and Evolutionary Biology, University of Colorado Boulder

- Used genomic and quantitative genetic methods to determine the genetic basis of achene pericarp strength in *Helianthus annuus* L.
- Phenotyped more than 700 individuals, collected and processed tissue samples
- Extracted genomic DNA and prepared DNA libraries for next-gen (Illumina) sequencing
- Bioinformatically aligned reads to reference genome and analyzed genetic variants

- Constructed genetic linkage map, nominated candidate genes based on genomic position of QTL marker loci
- Bioinformatically assembled, De Novo, organellar genomes of *Linum sp.* from raw, next-gen sequence data

2022 **Undergraduate Research Intern:** Hulke Lab, USDA Agricultural Research Service, Fargo, North Dakota

- Maintained *H. annuus* populations grown outdoors in Moorhead, MN. Conducted weed control, pollinator control, self-pollination, and controlled hybridization for crop breeding
- Dissected florets and used microscopy to assess capitate glandular trichome density and quality
- Grew several generations of *H. annuus* plants in a greenhouse in Boulder, CO, collected and prepared tissue samples (liquid nitrogen, lyophilization, geno/grider)
- Performed DNA extractions on plant tissue samples and prepared libraries for next-gen sequencing

2018-2024 **Staff Sergeant, Electromagnetic Warfare Operator,** 138th Electromagnetic Warfare Squadron, United States Air Force, Colorado Air National Guard

- Operated state of the art SATCOM (satellite communication) weapon system in support of counter-VEO (violent extremist organization) operations in Western Africa (2023-2024)
- Analyzed signal characteristics (including bandwidth, SNR, and modulation) in several microwave frequency bands of the EM spectrum and across a variety of SATCOM platforms, trained to engage adversary signals in accordance with established tactics, techniques, and procedures
- Participated in multiple joint-force training and mobilization exercises (2021, 2022)
- Supervised lower ranking enlisted members and provided mentorship and career counseling to both peers and subordinates, helping them reach their personal and professional goal

Conference Presentations

January 10-14, 2025 Oral presenter, Plant and Animal Genome Conference (PAG), talk entitled '*QTL Mapping of Pericarp Strength in Sunflower: Overcoming Tradeoffs Between Seed Quality and Insect Resistance*'

Publications

Manuscripts in preparation

2024 **White, J., McNeil, J., Keepers, K., Smart, B., Prasifka, J., Hulke, B., Kane, N.** (in preparation), *Genetics Architecture of Sunflower Pericarp Traits: A Combined GWAS and QTL Mapping Approach*

Other publications

- 2024 *Helianthus annuus* L. mapping population sequence read archive
 - In preparation
- 2022 *Linum usitatissimum* chloroplast sequence
 - GenBank Accession Number: OL853705

Honors and Awards

- 2024 *Summa Cum Laude*, Department of Ecology and Evolutionary Biology, University of Colorado
 Boulder
- 2021, 2022 Dean's List

Practical Research Skills and Coursework

Quantitative Genetics: QTL analysis, genetic and linkage mapping, VCA, heritability estimation

Bioinformatics: next-gen DNA sequence data analysis and manipulation, computing (R, Linux, Python), bioinformatic tools (bwa-mem, GATK, awk, grep, sed, samtools, fastqc, and trimmomatic), genome annotation tools (GeSeq, OGDRAW, BankIt, Reverse Complement), UCSC Genome Browser, GenBank

Phylogenetics: PAUP, MrBayes, BEAST, RAxML, phytools, mesquite, MEGA, FigTree

Laboratory: DNA extractions, genomic DNA library preparations, PCR, Qbit DNA concentration assay, soil microbiome analysis, light microscopy, cell and bacteriophage culturing, reagent preparations

Other skills: MEB data management and documentation (Karolinska Institutet), Microsoft Office, literature review, GitHub, technical writing

Relevant Coursework: Quantitative Genetic Methods, Dynamic Models in Biology, Evolution, Principles of Ecology, Genomics, Phylogenetics and Comparative Biology, Calculating Biological Quantities, Data Science and Biostatistics, Computer Science: Data Structures, Molecular Biology, Organic Chemistry 1 & 2, Bacteriophage Genomics

References

Available upon request