

Christopher J. Fiscus, PhD

Bioinformatics Scientist

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Summary

R&D Scientist with extensive experience in bioinformatics, computational biology, and data science. Strong track record of leading high-impact research projects within cross-functional teams. Expert communicator with a talent for translating complex technical information to diverse stakeholders, fostering collaboration and driving project success.

Professional Experience

Postdoctoral Researcher

University of California, Irvine

09/2022 - Present

Irvine, CA

- Conducting cutting-edge research on wild grape genomics utilizing novel genomics and machine learning algorithms, leading to 4 conference presentations (3 talks, 1 poster)
- Led a team of 4 in the 2023 Pan-Structural Variation Hackathon in the Cloud, designed an algorithm to characterize copy number variation from next generation sequencing data
- Developed and implemented bioinformatics algorithms for analysis of multi-omics NGS sequencing data in a high-performance computing environment

Graduate Student Researcher

University of California, Riverside

09/2016 - 09/2022

Riverside, CA

- Contributed to genomics research projects as part of a cross-functional R&D team, leading to 3 peer-reviewed publications and 8 conference presentations (2 talks, 6 posters)
- Developed a novel pipeline utilizing K-mer frequencies from WGS reads to profile genomes, estimate repeat copy number variation, and map genetic basis of CNV using GWAS
- Mentored and managed teams of 1-2 direct reports (5 mentees total), enhancing their technical skills and contributing to successful project outcomes

Quality Control Laboratory Technician

Charles Krug Winery

12/2015 - 08/2016

St. Helena, CA

- Conducted enology laboratory tests throughout production, ensuring legal compliance and maintaining quality standards across multiple product lines
- Redesigned 5 SOPs for quality control laboratory assays, improving laboratory efficiency by 20% and ensuring consistent, reliable testing procedures
- Collaborated with production teams to identify and resolve product quality issues, enhancing overall product consistency through thorough data analysis and problem-solving

Harvest Laboratory Technician

Charles Krug Winery (via Apex Life Sciences)

08/2015 - 12/2015

St. Helena, CA

- Conducted enology laboratory tests and data evaluation supporting the production of 1.5 million cases annually

Skills

- **Data analysis:** inferential statistics, regression, clustering, PCA, machine learning (random forests)
- **Programming:** R (tidyverse, ggplot2), bash, python
- **Bioinformatics:** NGS data analysis, SNP calling, GWAS, bwa, GATK, samtools/bcftools, bedtools, plink
- **Computing:** Unix command line, SLURM (HPC), conda, git (version control), snakemake (workflow)

Education

Ph.D. Genetics, Genomics and Bioinformatics

2022

University of California, Riverside

B.S. Biotechnology

2015

University of California, Davis

Certifications

AWS Cloud Technical Essentials

11/2023

Coursera

Publications 0000-0001-9569-1809

Fiscus CJ, Aguirre-Liguori JA, Gaut GRJ, Gaut BS. Climate, population size, and dispersal influences mutational load across the landscape in *Vitis arizonica*. bioRxiv. 2024. p. 2024.08.22.609253. doi:10.1101/2024.08.22.609253

Landis JB, Guercio AM, Brown KE, **Fiscus CJ**, Morrell PL, Koenig D. Natural selection drives emergent genetic homogeneity in a century-scale experiment with barley. Science. 2024;385: eadl0038. doi:10.1126/science.adl0038

Deb SK, Kalra D, Kubica J, Stricker E, Truong VQ, Zeng Q, **Fiscus CJ**, [41 authors], Sedlazeck FJ, Busby B. The fifth international hackathon for developing computational cloud-based tools and resources for pan-structural variation and genomics. F1000Res. 2024;13: 708. doi:10.12688/f1000research.148237.1

Fiscus CJ, Herniter IA, Tchamba M, Paliwal R, Muñoz-Amatriaín M, Roberts PA, Abberton M, Alaba O, Close TJ, Oyatomi O, Koenig D. The pattern of genetic variability in a core collection of 2,021 cowpea accessions. G3. 2024. doi:10.1093/g3journal/jkae071

Martinez SE, Conn CE, Guercio AM, Sepulveda C, **Fiscus CJ**, Koenig D, Shabek N, Nelson DC. A KARRIKIN INSENSITIVE2 paralog in lettuce mediates highly sensitive germination responses to karrikinolide. Plant Physiol. 2022. doi:10.1093/plphys/kiac328