Christopher J. Fiscus, PhD

Bioinformatics Scientist
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cjfiscus

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

Bioinformatics Scientist I 10/2024 - Present
Exact Sciences Corp. San Diego, CA

Postdoctoral Researcher 09/2022 - 09/2024
University of California, Irvine Irvine, CA

- Conducted cutting-edge research on wild grape genomics utilizing novel genomics and machine learning algorithms, leading to 4 conference presentations (3 talks, 1 poster) and 2 peer-reviewed publications
- 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 09/2016 - 09/2022
University of California, Riverside 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 12/2015 - 08/2016
Charles Krug Winery 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 08/2015 - 12/2015
Charles Krug Winery (via Apex Life Sciences) 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, AWS, 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, Koenig D. The genetic control of rapid genome content divergence in *Arabidopsis thaliana*. bioRxiv. 2025. p. 2025.06.11.659220. doi:10.1101/2025.06.11.659220

Martin GT, **Fiscus CJ**, Gaut BS. Quantifying the evolution of SNPs that affect RNA secondary structure in *Arabidopsis thaliana* genes. Mol Biol Evol. 2025; msaf126. doi:10.1093/molbev/msaf126

Fiscus CJ, Aguirre-Liguori JA, Gaut GRJ, Gaut BS. Mutational load and adaptive variation are shaped by climate and species range dynamics in Vitis arizonica. New Phytol. 2025 doi:10.1111/nph.70238

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