Natalie DeForest, PhD

Bioinformatics Scientist & Statistical Geneticist

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EDUCATION

PhD **Biomedical Sciences, Specialization in Bioinformatics** | University of California San Diego | November 2023
Dissertation title: "Leveraging human genetics and functional genomics to investigate insulin resistance disorders"

BS **Pharmaceutical Chemistry, Minor in Bioinformatics** | University of California Davis | June 2018
summa cum laude Major/Minor GPA: 3.9

RELEVANT EXPERIENCE

Senior Scientist - Computational Genomics, Fauna Bio, Emeryville, CA — Feb 2024 – Present
Identify and prioritize translatable genetic targets responsible for protection in animal models of disease resistance using a variety of omics data (i.e. bulk/single-cell RNA-seq, large-scale human genomics datasets including UK Biobank)

Majithia Laboratory, School of Medicine, University of California San Diego, La Jolla, CA
Postdoctoral Scholar — Nov 2023 – Jan 2024
Graduate Student Researcher — June 2019 – Nov 2023
Integrate high-throughput genomic screens, diverse omics datasets, and large-scale human genetic databases to prioritize novel therapeutic targets for prevalent metabolic disorders such as diabetes and cardiovascular disease.

Research Intern, Gilead Sciences, Foster City, CA — June 2018 – Sept 2018

Research Intern, Cytokinetics, South San Francisco, CA — June 2017 – Sept 2017

Clinical Data Intern, Pharmacyclics, an AbbVie Company, Sunnyvale, CA — June 2016 – Aug 2016

SKILLS

Technical:

- **Statistical / population genetics** (GWAS, omicQTLs, fine-mapping, burden testing, Mendelian Randomization, PheWAS)
- **Next generation sequencing & bioinformatics workflows** (bulk/single-cell RNA-seq, nextflow)
- **Scripting languages** (R, Python), Linux-based environments (bash), **high performance and cloud computing** (AWS, GCP), and **git version control**
- Mining and analyzing relevant **biological databases** (GTEx, ENCODE, Ensembl, GEO, SRA)
- Familiar with **machine learning models** and applications, adept in **prompt engineering** for utilizing large language model tools

General:

- Industry experience with **drug discovery and development** in both early and late stage companies
- Experienced in **leading and collaborating** with **multi-disciplinary teams** comprised of computational data scientists, experimentalists, and clinicians
- Adept in **perusing scientific literature** and understanding emerging studies
- Strong **track record of scientific publications**, **conference presentations**, and mentoring
- **Driven, creative problem solver**

SELECTED PUBLICATIONS & PRESENTATIONS

- **DeForest N.** et al. Genome-wide discovery and integrative genomic characterization of insulin resistance loci using serum triglycerides to HDL-cholesterol ratio as a proxy. *Nature Communications.* Sept 14, 2024. 10.1038/s41467-024-52105-y
- **DeForest N.** et al. Human gain-of-function variants in HNF1A confer protection from diabetes but independently increase hepatic secretion of atherogenic lipoproteins. *Cell Genomics*. May 30, 2023.10.1016/j.xgen.2023.100339.
- **DeForest N.** Activation of PPARG in skeletal muscle and visceral adipose tissues ameliorate NASH biomarkers in humans: implications for therapeutic targeting. Presented at *NASH Keystone Conference*, Whistler, Canada, Aug 2022
- **DeForest N**, Majithia AR. Genetics of Type 2 Diabetes: Implications from Large-Scale Studies. *Current Diabetes Reports.* Mar 19, 2022. 10.1007/s11892-022-01462-3.
- Du X, **DeForest N**, Majithia AR. Human Genetics to Identify Therapeutic Targets for NAFLD: Challenges and Opportunities. *Frontiers in Endocrinology*. Dec 7, 2021. 10.3389/fendo.2021.777075.

CERTIFICATIONS / AWARDS

- **Machine Learning Specialization**, DeepLearning.AI + Stanford University, Coursera — Dec 2024
- **T32 National Research Award**, National Institute for General Medical Sciences (NIGMS) — June 2020