

# Natalie DeForest, PhD

Bioinformatics Scientist & Statistical Geneticist

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## EDUCATION

- PhD Biomedical Sciences, Specialization in Bioinformatics, University of California San Diego** Nov 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 characterize translatable genetic targets responsible for protection in animal models of disease resistance using diverse omics and human genomics data via Convergence, our internal AI-driven drug discovery platform.
- Postdoctoral Scholar, Majithia Laboratory, School of Medicine, UC San Diego (La Jolla, CA)** Nov 2023 – Jan 2024
- Graduate Student Researcher, Majithia Laboratory, School of Medicine, UC San Diego (La Jolla, CA)** 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
- Undergraduate Honors Researcher, UC Davis Dept. of Chemistry (Davis, CA)** Aug 2016 – June 2018  
Honors Thesis title: “Chemoenzymatic synthesis of sialyl-Lewis X, a biologically important tetrasaccharide, and the cloning and characterization of enzymes for carbohydrate synthesis”
- Clinical Data Intern, Pharmacyclics, an AbbVie Company (Sunnyvale, CA)** June 2016 – Aug 2016

## SKILLS

### Technical:

- **Statistical / population genetics** (GWAS (Plink, Hail), omicQTLs, fine-mapping, colocalization, burden testing, Mendelian Randomization, PheWAS, UK Biobank)
- **Next generation sequencing & bioinformatics workflows** (bulk/single-cell RNA-seq, nextflow)
- **Scripting languages** (R, Python), Linux and **command line** interfaces (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**, internal / external **research 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](https://doi.org/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](https://doi.org/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](https://doi.org/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](https://doi.org/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