

MICHAEL LAFFERTY

Bioinformatics | Human Genomics

CONTACT

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[Website](#) | [LinkedIn](#) | [GitHub](#)

Raleigh, NC

EDUCATION

PhD Bioinformatics and Computational Biology
University of North Carolina
Chapel Hill, NC, 2022

BSE Chemical Engineering
University of Michigan
Ann Arbor, MI, 2010

LANGUAGES

R | Python | Bash | Java | C++

SKILLS

Sequence analysis
Dimensionality reduction
Linear modeling
Data normalization
Gene ontology analysis
Gene set enrichment analysis
Colocalization analysis
Enrichment analysis

TOOLS

PLINK | Seurat | STAR | Bowtie
Salmon | Picard | Granges
DESeq2 | matrixEQTL
EMMAX | Gviz

PROFILE

I am a PhD in Bioinformatics and Computational Biology with over 12 years of industry and academic experience working in both dry-lab and wet-lab settings. I have a track record of rigorous science, bioinformatic expertise, and clear and concise communication. I love working on complex problems in a fast-paced and collaborative environment.

EXPERIENCE

POSTDOCTORAL RESEARCH ASSOCIATE, May 2022 – Present
GRADUATE RESEARCH ASSISTANT, May 2017 – May 2022
UNIVERSITY OF NORTH CAROLINA, Chapel Hill, NC

- Investigate the role of genetic variation on gene expression in the developing human neocortex (mRNA/miRNA eQTLs)
- Implicate genes and genetic regulatory elements as possible mechanisms for developmental neuropsychiatric disorders via GWAS colocalizations
- Assess reproducibility of human cortical organoid differentiations using single-cell rna-sequencing
- Develop data analysis pipelines for:
 - Next generation sequencing (RNA-seq, ATAC-seq)
 - Gene expression data (microarrays, differential gene expression)
 - Genotyping and imputation analyses (1000 Genomes/TOPMed)
- Investigate biological pathways associated with neuronal proliferation and differentiation using human primary neural progenitor cells:
 - Primary cell culture
 - RNA extraction and quantification
 - Immunocytochemistry and image analysis

PROCESS DEVELOPMENT ASSOCIATE, Jun 2015 – Jan 2016
KBI BIOPHARMA, Research Triangle Park, NC

- Developed unit operations for purification of novel biopharmaceuticals and scaled development purification processes for transfer to manufacturing

DEVELOPMENT SCIENTIST, Jan 2014 – Jun 2015
CYTONET LLC, Durham, NC

- Optimized a cGMP liver cell isolation process to improve product quality and yield, and designed primary hepatocyte viability and functionality assays