Eric S. Davis, Ph.D.

Bioinformatics Scientist • Software Developer

HI, I'M ERIC!

I recently completed my Ph.D. in Bioinformatics and Computational Biology at UNC-CH where I study 3D chromatin structure in human development and disease in the Phanstiel Lab.

I'm passionate about developing software, engineering pipelines, creating interactive visualization tools, and analyzing biological data.

CONTACT

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KEY SKILLS

Programming languages including R, Python, bash scripting, C++, Julia, HTML, CSS, Javascript, and more.

Pipelining tools such as Make, Snakemake, and Nextflow using Docker, Singularity, and Git for reproducibility.

High-performance computing environments, AWS cloud computing.

Strong understanding of large, complex **NGS data types** (e.g. Hi-C/Micro-C, RNA, ChiP, ATAC, GWAS, Single-cell, and more).

Confident working in highly collaborative, **fast-paced environments**.

EDUCATION

The University of North Carolina at Chapel Hill, School of Medicine — *2018 – 2023*
Ph.D., Bioinformatics & Computational Biology
Advisor: Doug Phanstiel

The University of North Carolina at Chapel Hill, School of Medicine — *2012 – 2016*
B.S., Biology; B.A., Chemistry

EXPERIENCE

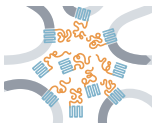
Bioinformatics and Computational Biology (UNC-CH) — *2018 – 2023*
Graduate Research Assistant, Phanstiel Lab
- Developed the lab's computational infrastructure including data pipelines, organization, and software packages.
- Co-authored over 20 publications in high impact journals such as Nature, Genetics, Cell Reports, and Bioinformatics.
- Presented work at major national and international conferences.

Exemplar Health — *2022 – 2023*
Consulting Front-end Developer (part-time)
- Developed business applications using .NET Core and C# with a Microsoft SQL server database.

Marsico Lung Institute/UNC Cystic Fibrosis Research Center — *2016 – 2018*
Research Technician, Tarran Lab
- Co-authored 7 publications in high impact journals.
- Collaborated with Deep Green Software to build an E-liquid safety Postgres database (https://eliquidinfo.org).
- Experimental techniques in electrophysiology and microscopy.

FEATURED PUBLICATIONS (3 of 20+ publications)

Mariner: Explore the Hi-Cs
An R/Bioconductor package enabling users to flexibly manipulate, extract, aggregate, and visualize chromatin interaction data.



Phase separation drives aberrant chromatin looping and cancer development
A fusion protein leads to chromatin looping and pro-to-oncogene expression. Published in Nature.

3D Chromatin Structure in Chondrocytes Identifies Putative Osteoarthritis Risk Genes
Bioinformatics, genomics and genome editing reveal putative OA risk genes. Published in Genetics.

FEATURED PRESENTATIONS

Keystone Symposium: Chromatin Architecture in Development and Human Health in Victoria, BC, Canada — *3/12/2023*
"Mariner: Explore the Hi-Cs"

BioC2022: Bioconductor Conference in Seattle, WA, USA — *7/27/2022*
"Nullranges: Modular Workflow For Overlap Enrichment"