KATIE M. SAUND

katiemsaund@gmail.com • 313.418.3016 • linkedin.com/in/katiesaund • katiesaund.com • github.com/katiesaund/

RESEARCH & EDUCATION

PhD candidate in Microbiology & Immunology University of Michigan, Ann Arbor, MI 2015 – Dec. 2020 *expected*

- **Advisor:** Evan Snitkin, Ph.D.
- **Thesis project:** Statistical & bioinformatic approaches to identify variants in whole genome sequencing (WGS) data associated with pathogenic phenotypes and patient outcomes during *Clostridium difficile* infection.
- **Topics:** computational biology, bacterial genomics & metagenomics, infectious disease, evolution.
- **Awards**: ASM Travel Award (2019), UM Rackham Conference Travel Grant & Professional Development Award (2019), NIH Predoctoral Genetics Training Grant (2016 – 2018), & UM Maas Fellowship (2015).
- **Software**:
  - hogwash. R package. Three bacterial GWAS methods. github.com/katiesaund/hogwash
  - prewas. R package. Data preprocessing for bacterial GWAS. github.com/Snitkin-Lab-Umich/prewas/
- **Papers:**
  - Published: Mau, Eckley, Bergin, Saund, Villano, Vendrov, Snitkin, Young, Yung. mSphere. 2019.
  - Under review & preprint available:
    - Saund, Rao, Young, Snitkin. github.com/katiesaund/clinical_cdifficile_trehalose_variants
    - Bassis, Bullock, Sack, Saund,… github.com/cbassis/MotherDaughter_Vaginal_Microbiota.study
  - Submitted: Saund*, Lapp*, Thiede*, Pirani, Snitkin. preWAS: data preprocessing for bacterial GWAS. *Equal contribution. github.com/Snitkin-Lab-Umich/prewas_manuscript_analysis
  - In preparation: Saund & Snitkin. Hogwash: Three bacterial GWAS methods.
- **External talks:** American Society for Microbiology Microbe in San Francisco, CA (2019) & Systems Biology and Antibacterial Resistance Program in La Jolla, CA (2018).

Research rotation with Benjamin Segal, MD at University of Michigan 2015

- **Project**: Screened effect of potential therapeutic drug on progression of experimental autoimmune encephalomyelitis (a mouse model of multiple sclerosis). **Topics**: autoimmunity, T-regs, T-cells, & immunology.

Research Assistant & Scientist 1 (Promoted 2014) Seattle Children's Research Institute, Seattle, WA. 2012 – 2015

- **Advisor:** Courtney Crane, Ph.D. (U. of Washington & Ben Towne Center for Childhood Cancer Research)
- **Project:** Characterization of the role of lactate dehydrogenase in the pediatric glioma microenvironment.
- **Topics:** cancer immunotherapy, solid tumors, immunology, cancer metabolism, NK cell & macrophage biology.
- **Paper:** Haberthur, Brennan, Hoglund, …, & Crane. Cancer Biology & Therapy. 2016.

California Institute of Technology (Caltech) B.S. Biology, Pasadena, CA 2008 – 2012

- **Leadership:** Co-President for Class of 2012. Coordinated commencement & obtained grant for class trip.
- **Awards**: Everhart Service (2012), Teruggi Memorial (2011), Studenski Memorial (2010), & Shepard (2009).
- **Research**: SantaLucia Lab: 16s rRNA alignment algorithm improvement (Wayne State University; 2009) & Manary Lab: food & clinical interventions for pediatric malnutrition (Washington University; 2010, 2011).

COMPUTATIONAL AND LABORATORY SKILLS

Computational R, bash, package development, high performance cluster (HPC) computing, version control (git), data visualization, markdown, dashboards (shiny), batch scheduling (PBS, SLURM), unit testing, linux/mac/PC.
Bioinformatic tools blast, constrains, iqtree, ksnp, mafft, pilon, prank, provean, roary, sift, snpeff, treewas, raxml.
Laboratory Anaerobic bacterial culture, co-immunoprecipitation of proteins, CRISPR/Cas9 genome editing, cryostat, flow cytometry, immune cell isolation, lentiviral transduction, mammalian cell culture, molecular biology, mouse handling, microbial techniques, plasmid construction, robotic pipetting system, qPCR.

INVESTING, MENTORSHIP, & SERVICE AT UNIVERSITY OF MICHIGAN

Volunteer Data Scientist for Statistics in the Community 2019 – Present

- Statistical analysis & insights from Myeloproliferative Neoplasms Research Foundation member surveys.

Student Advisor at Wolverine Venture Fund 2018 – Present

- Performed due diligence on Series A/B healthcare & technology companies to inform investment decisions.

Venture Capital Investment Competition 2018 – 2019

- First place team at UM Ross School of Business competition & participant at Regional Competition (UT Austin).

Undergraduate Honors Thesis Research Mentor 2018 – Present

- Weekly supervision of thesis research for undergraduate microbiology student.

Professional Development Diversity, Equity, & Inclusion (DEI) Certificate 2019 – 2020

- Training in intercultural communication, anti-racism & bystander intervention