Kristy Mualim

https://kmualim.github.io/

Email : kmualim@stanford.edu
Mobile : +1 3109048155

Education

McGill University — Montreal, QC
B.Sc in Biochemistry — Sept. 2015 – Dec. 2018

Research Experience

Carnegie Institute of Science — Palo Alto, CA
Research Assistant, Advisor: Dr. Moisés Expósito-Alonso — April. 2021 - Present

- Disentangling genotype-phenotype differences (such as drought tolerance and root growth) in the Brassicae family using deep learning algorithms.

Stanford University — Palo Alto, CA
Research Assistant, Advisor: Dr. Jesse Engreitz — April. 2019 - Present

- Curated CRISPR-FlowFISH, GWAS and eQTL datasets to benchmark the performance of existing cCRE-gene linking prediction methods.
- Organized multiple bioinformatics challenge days to foster community collaboration and analysis in the field of Distal Regulation.

Stanford University — Palo Alto, CA
Research Assistant, Advisor: Dr. Anshul Kundaje — April. 2019 - Present

- Developed and optimized a data mining and analysis pipeline for processing DNase, ATAC and Histone data on ENCODE to generate an atlas of cCRE-gene linking maps across 200 celltypes and tissues
- Developed deep learning algorithms to investigate the transcription factor landscape and mechanistic behavior of chromatin modifiers

University of California, Berkeley — Berkeley, CA
Research Assistant, Advisor: Dr. Montgomery Slatkin — April. 2019 - April 2020

- Developed an analytical solution to estimating coalescence probabilities and population divergence times from SNP data in Neanderthals.

McGill University — Montreal, QC
Undergraduate Researcher, Advisor: Dr. Jerome Waldispühl — May. 2018 - Jan. 2019

- Improved and developed upon a citizen-science interface to solve the multiple sequence alignment problem across biological kingdoms - Phylo; a citizen-science platform for solving the multiple sequence alignment problem
- Utilized Phylo to curate a syllabus focused on introducing kids to biological topics.

McGill University — Montreal, QC
Undergraduate Researcher, Advisor: Dr. Kalle Gehring — Sept. 2016 – June. 2018

- Developed and improved protein purification experimental protocols.
- Used size-exclusion chromatography and Nuclear Magnetic Resonance (NMR) to discover an unexpected secondary structure within a linker domain of a mitochrondrial protein involved in autophagy (DENND3).

Publications

1. **Mualim**, **K.**, Theunert, C. & Slatkin, M. Estimation of coalescence probabilities and population divergence times from SNP data. *Heredity* **127** (2021).
2. Nasser, J. *et al.* Genome-wide enhancer maps link risk variants to disease genes. *Nature* **593,** 1–6 (2021).
3. **Mualim**, **K.** *et al.* A Computational Validation of Enhancer-Gene Linking. *ENCODE Consortium* (2019).

Leadership Experience

Community Organizer Palo Alto, CA

Sunrise Movement, Justice, Equity and Anti-Oppression Lead Aug 2019 - Present

- Facilitated Discussions to address issues involving accessibility, inclusion and anti-oppression and created affinity groups for marginalized identities to process and connect on similar experiences.
- Spearheaded a Compensation Fellowship program focused on financially supporting under-served community leaders doing electoral work.
- Involved indigenous organizations in decision-making processes and to respect the principle of free, prior and informed consent when pushing for local policy.
- Launched an awareness campaign and spearheaded mask & air-purifier builds to aid communities affected by wildfires, in collaboration with the Common Humanity Collective
- Established partnerships with Palo Alto City Council to redefine and re-access Palo Alto's Sustainability Goals

Selected Coursework

Molecular Biology & Cell Biology
Physical Chemistry & Biological Sciences I, II
Molecular Mechanisms of Cell Function
Laboratory Methods in Biochemistry & Molecular Biology I, II
Microbiology

Awards

BL21 Research Scholar: Research Grant for Independent Student Researchers
Yale Hackathon Award: Developed a machine learning classifier to rate building accessibility for people with disabilities.
T.E.A.M Scholar: Grant for Exceptional Students in Chemistry