Kristy Mualim

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EDUCATION

McGill University
B.Sc in Biochemistry

Montreal, QC

Sept. 2015 – Dec. 2018

- ○ 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

RESEARCH EXPERIENCE

Carnegie Institute of Science
Research Assistant, Advisor: Professor Moisés Expósito-Alonso

Palo Alto, CA

April. 2021 - Present

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

Stanford University
Research Assistant, Advisor: Professor Jesse Engreitz

Palo Alto, CA

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
Research Assistant, Advisor: Professor Anshul Kundaje

Palo Alto, CA

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
Research Assistant, Advisor: Professor Montgomery Slatkin

Berkeley, CA

April. 2019 - April 2020

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

McGill University
Undergraduate Researcher, Advisor: Professor Jerome Waldispühl

Montreal, QC

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
Undergraduate Researcher, Advisor: Professor Kalle Gehring

Montreal, QC

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).