# Isaac Wong

iwong1@mgh.harvard.edu • iwong@broadinstitute.org • github.com/theisaacwong

## EDUCATION

**University of Rochester** May 2019

- *Bachelor of Science in Computational Biology*
- *Bachelor of Arts in Computer Science*

## EXPERIENCE

**Massachusetts General Hospital – Center for Genomic Medicine** Boston, Massachusetts

*Bioinformatics Specialist – Talkowski lab* *July 2019 – present*

- Developing computational pipelines to resolve structural variants from next generation sequencing data with a focus on populations with neurological developmental diseases.

**University of Rochester – Department of Biology** Rochester, New York

*Independent Research under Dr. Amanda Larracuente* *August 2018 – May 2018*

- Developed a computational model for the evolution of satellite DNA arrays to infer how recombination rates and fitness functions affect the expansion and collapse of individual arrays across large timescales.
- Developed computational tools to measure the age of satellite arrays in order to elucidate factors driving the evolution of satellite DNA.

**Freie Universität – Department of Biochemistry** Berlin, Germany

*Research Assistant under Dr. Helge Ewers,* DAAD RISE Fellowship *May 2018 – August 2018*

- Developed computational tools to measure, analyze, and simulate the movement of and forces acting on magnetic nanoparticles which were bound to cell membrane proteins and which were manipulated by an external magnet.

**University of Rochester – Department of Biology** Rochester, New York

*Independent Research under Dr. Amanda Larracuente* *January 2017 – May 2018*

- Developed computational tools for predicting individual satellite DNA array size from whole genome shotgun sequencing reads in order to shed light on factors driving evolution of satellite DNA.
- Developed computational tools for the quantification of *Drosophila* satellite DNA copy number variation for all loci of a repeat family in a genome across a population from long read sequences.
- Assisted in computational analysis, construction of genome assembly, and genome annotation of multiple firefly species with a focus on repetitive elements using common bioinformatic and NGS tools.
- Developed a molecular protocol for fluorescent *in situ* hybridization to firefly chromosomes and imaged the first karyotype showing probe hybridization to canonical telomere sequence.

## POSTER PRESENTATIONS

- Isaac Wong, "Dynamic evolution of euchromatic satellites on the X chromosome in *Drosophila*" 60th Annual Drosophila Research Conference, Dallas, Texas, 2019.
- Isaac Wong, "Complex Satellite DNA variation within and between populations of *Drosophila melanogaster*," 59th Annual Drosophila Research Conference, Philadelphia, Pennsylvania, 2018.

## PEER REVIEWED PAPERS

- Fallon, Timothy R et al. "Firefly Genomes Illuminate Parallel Origins of Bioluminescence in Beetles" *eLife* vol. 7 e36495. 16 Oct. 2018, doi:10.7554/eLife.36495

## SKILLS

- Proficient in Java and R. Problem solving experience with Python, C, Perl.
- Data analysis, data visualization, strong communication and interpersonal skills, strong time management.

## AWARDS

- Grace McCormack Award. Rochester New York *May 2019*
- Dean's Award. Undergraduate Research Symposium talk. Rochester, New York *April 2019*
- GSA Victoria Finnerty Undergraduate Award. Dallas, Texas. *January 2019*
- DAAD RISE Fellowship. Berlin, Germany. *May 2018*