Arya Kaul *La Jolla, CA*

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Education

University of California, San Diego

B.S. Bioengineering: Bioinformatics (GPA: 3.78) *Sep '15 – Present*

Graduate Coursework: Algorithms for Scalable Biological Data Analysis, Big Data in Computational Molecular Biology, Network Biology & Biomedicine, Medical and Population Genetics

Undergrad Coursework: Biology Meets Computing, Mathematical Analysis, Data Structures, Advanced Algorithms, Probability and Statistics in Bioinformatics, Biological Databases

Publications & Presentations

Measuring the quality and reproducibility of Hi-C data *Genome Biology*. Sole undergraduate author. Submitted September 2017

Small Molecule Inhibition of cAMP Response Element Binding Protein in Human Acute Myeloid Leukemia Cells *Molecular Cancer Therapeutics*. 2nd undergraduate author. Published June 2016

The Role of CREB in DNA Damage Repair Pathways in AML Presented at *Stanford Undergraduate Advising and Research Symposium 2016*. 2nd author.

Research Experience

Ay Lab — Vaccine Discovery, La Jolla Institute for Allergy and Immunology

Computational Research Assistant *Jun '16 – Present*

Implemented a Python based fast matrix balancing algorithm (HiCKRy) for contemporary chromatin conformation capture techniques. Coded in Numpy and Scipy. Streamlined the installation for Ay Lab software packages using the Anaconda Python distribution system, PyPi, and Github.

Gleeson Lab — Department of Neurosciences, UC San Diego

Biological Research Assistant *Oct '15 – Apr '17*

Performed Whole Exome Sequencing (WES) and Whole Genome Sequencing (WGS) to investigate the molecular mechanism between WNT secretion levels in early embryonic development and microcephaly through in vitro and in vivo models. Developed knowledge of a variety of Wet Lab techniques: DNA extraction and sequencing, CRISPR, and DNA Gels.

Sakamoto Lab — School of Medicine, Stanford University

Biological Research Assistant *Jun '14 – Aug '15*

Analyzed the role of CREB in conferring chemo resistance to Acute Myeloid Leukemia (AML) cells through Trypan Blue and Luciferin activity assays. Optimized Western Blots and conducted qPCR analyses to study the pathway of Ribosomal s6 Kinase for potential therapeutic targets to treat AML.

Professional Activities

Undergraduate Bioinformatics Club — UC San Diego

A community of undergraduate bioinformaticians at UC San Diego serving to strengthen, expand, and support UCSD's bioinformatics program.

President *Apr '17 – Present*

Created a community service collaboration with Illumina, initiated planning for a future Bioinformatics Department within the Jacobs School of Engineering , and grew mentorship program participation 4-fold.

Vice President of External Affairs *Jun '16 – Apr '17*

Organized a year-long speaker series where faculty members and industry leaders within bioinformatics could advise our member base. These included talks from leaders in academia, such as, Dr. Trey Ideker and Dr. Pavel Pevzner. As well as, speakers in industry, ranging from large companies like Illumina to promising startups like Animantis.

Biomedical Engineering Society — UC San Diego

Lab Expo Co-Chair *Mar '16 – Present*

Oversaw the planning and hosting of UCSD's largest on-campus research fair with a goal to increase appreciation of science and stress the importance of an interdisciplinary mindset in science. Planned and implemented attendee recruiting efforts that resulted in event registration increasing from under 200 to 500+ attendees. Presenters came from 7 diverse departments and presented research ranging from Bioengineering to pure Mathematics.

Health Hack '17 — UC San Diego

Finalist *Mar '17*

Annual interdisciplinary two-day hackathon seeking solutions for health care delivery and refugee health. 35 proposals submitted. Our team devised a Raspberry Pi based, RFID solution to address family separation during the refugee experience.

Skills

Computer Science: Python, C++, Java, R, LaTeX, UNIX, HTML, CSS
Wet Lab: Western Blots, DNA gels, Tissue Culture, DNA Extraction/Sequencing, CRISPR