KEVIN MOYUNG

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EDUCATION

University of California, San Diego | Biology: Bioinformatics (B.S.) La Jolla, CA
- Provost Honors (Fall 2017, Spring 2018) Sept 2015 - Jun 2019

Castro Valley High School | High School Diploma Castro Valley, CA
- Highest Honors Aug 2011 - Jun 2015
- Mathematics Department Award

EXPERIENCE

Paul Insel Laboratory, UC San Diego La Jolla, CA
Research Intern in Bioinformatics Nov 2016 - Present
- Helped develop and implement an RNA-seq analysis pipeline using bioinformatics tools such as Kallisto and EdgeR
- Reduced RNA-seq analysis time through automation via batch scripts
- Assisted with analysis of RNA-seq data from multiple projects at the Insel lab
- Analyzed RNA-seq data for differential gene expression of G-protein coupled receptors in solid tumors
- Mined and visualized data for mutations, copy number variation and gene expression using TCGA and GTEX public databases, incorporating tools from UCSC Xena
- Developed methods and best practices for removing batch effects in gene expression data, including for publicly available data such as TCGA
- Contributed to the development of approaches to relate gene expression and CNV data

Ferring Research Institute, Inc. San Diego, CA
Bioinformatics Intern Jun 2018 – Aug 2018
- Developed and optimized machine learning models to stratify non-muscle invasive bladder cancer patients into various molecular and prognostic subgroups
- Performed survival analysis on overall survival and tumor progression derived from molecular gene signatures
- Developed and optimized a cross-platform analysis pipeline for high dimensional RNA-seq and Microarray datasets

Aduro Biotech, Inc. Berkeley, CA
Immune Monitoring and Biomarker Development Intern Jun 2017 – Sept 2017
- Optimized data mining from the prediction of immunogenic peptides using NetMHC 4.0 and Epitope Prediction using R
- Built a graphical user interface in Python that quickly mines the PubMed database for article abstracts
- Developed a database to store and access ELISPOT and high dimensional clinical data using SQL and Access

Michael Karin Laboratory, UC San Diego La Jolla, CA
Laboratory Assistant Jan 2016 – May 2017
- Performed Polymerase Chain Reactions (PCR) on over 100 strains of mice
- Optimized PCR workflow using new reagents
- Generated data from amplified DNA via Gel Electrophoresis

MANUSCRIPTS

The landscape of GPCR expression, mutation and copy number variation in solid tumors
Cell (Submitted for review, Nov 2018)
Krishna Sriram, Kevin Moyung, Ross Corriden, Hannah Carter, Paul Insel

High-content detection of GPCR mRNA expression: which methods work best?
ACS Pharmacology Translational Science. Special Issue on GPCRs (In preparation)
Krishna Sriram, Shu Z. Wiley, Matthew W. Gorr, Kevin Moyung, Randall P. French, Andrew M. Lowy, Paul A. Insel

PUBLISHED ABSTRACTS

Solid tumors have frequent mutation, copy number variation and differential mRNA expression of GPCRs: Are such GPCRs functional oncogenes
Cancer Research (AACR 2018)
Krishna Sriram, Kevin Moyung, Ross Corriden, Paul A. Insel
DOI: 10.1158/1538-7445.AM2018-3293

HRH1: A Novel GPCR Drug Target in Pancreatic Cancer
The FASEB Journal (ASPET 2018)
Alyssa Rodriguez, Krishna Sriram, Kevin Moyung, Paul A. Insel

LEADERSHIP & EXTRACIRRICULARS

The Undergraduate Bioinformatics Club (UBIC) La Jolla, CA
Community Service Chair Sept 2017 – Jun 2018

- Created a "Sequence a Monster" activity for elementary, middle, and high school students at the San Diego Science and Engineering Festival to teach children about DNA, genotypes, and phenotypes
- Built a Lego Sequencer using Arduino and Python
- Led a committee of undergraduate bioinformatics students to plan and host quarterly outreach programs and events

The Undergraduate Bioinformatics Club (UBIC) La Jolla, CA
Bioinformatics Expo Chair Mar 2017 – Jun 2017

- Led a team of committee members to plan and successfully execute an industry and academia symposium for undergraduate bioinformatics students with over 80 attendees
- Coordinated with distinguished speakers such as Dr. Pavel Pevzner, Dr. Trey Ideker, Dr. Hannah Carter, and Dr. Terry Gaasterland

SKILLS

Bioinformatics
RNA Sequence Analysis, DNA Sequence Analysis, Sequence Alignment, Variant Calling, Differential Expression Analysis, De Novo Genome Assembly, Survival Analysis

Machine Learning
K-Means Clustering, Hierarchical Clustering, K-Nearest Neighbors, Random Forest, Decision Trees, Support Vector Machines, Principal Component Analysis

Programming Languages
Python, R, C++, Bash, Java, MATLAB

Laboratory Techniques
PCR, Gel Electrophoresis

Spoken Languages
English, Spanish, Cantonese, Mandarin

RELEVANT COURSEWORK

Advanced Bioinformatics Laboratory | Dr. Melissa Gymrek (Spring 2018)
Advanced Tools in Bioinformatics | Dr. Theresa Gaasterland (Spring 2018)
Probability and Statistics for Bioinformatics | Dr. Glenn Tesler (Winter 2018)
Design and Analysis of Algorithms | Dr. Andrew Kahng (Winter 2018)
Advanced Data Structures | Dr. Debashis Sahoo (Fall 2017)
Linear Algebra | Dr. Bo Li (Spring 2017)

Introduction to Machine Learning | Dr. Zhuowen Tu (Fall 2018)
Applied Genomic Technologies | Dr. Sheng Zhong (Fall 2018)

INTERESTS

Salsa Dancing, Weightlifting, Photography, Bouldering, Tennis