

Nikhil Kaimal

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650.430.0972

Citizenship: U.S.

Education

M.S./PhD in Chemical and Biomolecular Engineering

University of California Irvine

September 2019 – Present

B.S. in Biochemical Engineering

University of California Davis

September 2015 – June 2019

Skills

- SEC-MALS, DLS, UV-Vis and CD Spectroscopy
- Protein production, purification, and characterization
- HPLC, spectrophotometry, MALDI and XEVO Mass Spectrometry
- Flow Cytometry, Immunocytochemistry
- Human embryonic stem cell culture, passaging, and differentiation
- CRISPR-Cas9 genome editing
- Northern blotting, southern blotting, PCR, plasmid minipreparation, gel electrophoresis
- Growth, maintenance, assaying of *C.elegans*,
- Bacterial cell culture, Basic bioreactor operation
- MATLAB programming and data analysis, SAXS data analysis, chemical process optimization with AspenPlus
- Western blotting, confocal and fluorescence microscopy, infrared imaging,
- Agrobacterium transformations, bioluminescence assays, qRT-PCR, general plant assays,
- Bioinformatics with Metamorph, BRASS, and q-PCR analysis software

Research Experience

Gorodetsky Lab at University of California Irvine

September 26, 2019 – Present

- **Project:** Production, purification, and biophysical characterization of a cephalopod structural protein isoform
- Full-time lab research, contributed to writing of an accepted grant proposal
- Expressing and purifying, and characterizing an isoform of particular interest and performing further biophysical characterization to determine protein optical properties

Harmer Lab at University of California Davis

September 28, 2018 – June 20, 2019

- **Project:** Investigating the roles of three genes of interest in the circadian clock and gene splicing
- 9 hours of lab research per week
- Crossed, genotyped and performed bioluminescence assays with specific mutants to understand the impact of genes of interest on plant circadian rhythm

Neurona Therapeutics Process Sciences Internship

June 18, 2018 - September 21, 2018

- **Project:** Comparison of immunocytochemistry and intracellular flow cytometry for evaluation of intracellular markers during cortical interneuron differentiation
- Full time summer research internship, presented findings to company, produced SOP for intracellular flow and written report on results
- Developed flow cytometry methodology for analysis of differentiating cells to attempt to achieve comparable results to immunocytochemistry

Harmer Lab at University of California Davis

September 27, 2017 – June 15, 2018

- **Project:** Using CRISPR-Cas9 constructs to disrupt function in circadian clock day phase activators to create a mutant for seven clock genes
- 9 hours of lab research per week
- Used CRISPR-Cas9 to knock out circadian clock day phase activators

Rhee Lab at Stanford University Carnegie Institute of Science

June 19, 2017 - August 31, 2017

- **Project:** Analyzing interactions between *Valeriana officinalis* root extract components and *Caenorhabditis elegans* olfactory neurons
- Full-time independent lab research, presented findings at seminar
- Worked with *C. elegans* to test interactions between bioactive components of Valerian root extract and olfactory neurons and concurrently tested responsiveness of *A. thaliana* mutants of interest to salt stress

Harmer Lab at University of California Davis

September 21, 2016 – June 10, 2017

- **Project:** Circadian rhythm analysis after removal of important repressors and activators
- 9 hours of lab research per week, presented findings at research symposium
- Made *A. thaliana* lines mutant for five genes and analyzed circadian rhythms with bioluminescence assays and gene-expression analyses

Rhee Lab at Stanford University Carnegie Institute of Science

June 12, 2016 - August 26, 2016

- **Project:** Analysis of the medicinal plant *Valeriana officinalis* using chromosome counting and *C. elegans* chemotaxis assays
- Full-time independent lab research, presented findings at seminar
- Worked with *C. elegans* to test the neurological impact of Valerian root extract, and used chromosome counting to determine ploidy

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Giulivi Lab at University of California Davis

June 17, 2013 - July 26, 2013

- **Project:** Antioxidant defense patterns and oxidative stress in children with autism
- 8 hours of lab work per day, presented results at symposium
- Compared expression levels of proteins of interest in children with autism and their mothers