

AMRITA RHOADS



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EDUCATION

California Institute of Technology

June 2020

Bachelor of Science, Biological Engineering

TECHNICAL EXPERIENCE

Addgene, Antibodies Team, Boston, MA

October 2021 - Current

Lab Technician II

- Purified and ran quality control assays on over 100 recombinant affinity reagents under NIH's BRAIN initiative.
- Cloned sequence-defined antibodies made available to the scientific community and aided with customer questions.
- Represented Addgene at several scientific conferences.

Caltech, Ondrus Lab, Pasadena, CA

March 2019 - Fall 2021

Summer Undergraduate Research Fellow (SURF)

- Studied a pathway implicated in numerous cancers, such as basal cell carcinomas.
- Designed a Smoothened knockout line of mouse embryonic fibroblasts using the CRISPR/Cas9 system.
- Performed protein expression assays to determine Smoothened activity using the ShhLIGHT2 reporter system.
- Maintained up to 10 mammalian cell lines at a given time alongside accurate experimental records.

Adaptive Phage Therapeutics, Gaithersburg, MD

July 2018 - September 2018

Summer Intern

- Doubled pipetting speed by developing Python scripts to automate pipetting protocols.
- Cultured bacterial and bacteriophage populations to investigate a new treatment for antibiotic-resistant infections.
- Assisted in transitioning lab work over to GMP standards.

Caltech, Ismagilov Lab, Pasadena, CA

April 2017 - October 2017

Summer Undergraduate Research Fellow (SURF)

- Designed novel primers for antibiotic susceptibility tests.
- Developed protocols for several new methods for rapid nucleic acid amplification and tested multiple novel methods.
- Wrote code for automated image processing analysis of digital droplet PCR (ddPCR) outputs using Python 3.6.

Arizona State University, Anbar Lab, Tempe, AZ

October 2015 - July 2017

Research Intern

- Wrote a proposal and awarded a grant to study breath carbon isotopes and human metabolism.
- Developed protocols for measuring breath carbon isotope ratios with cavity ring-down spectroscopy.
- Managed a study from start to finish, including IRB approval and publication.

SKILLS

- **Laboratory:** Aseptic Technique; Tissue Culture; Recombinant Protein Purification; Cloning; Western Blot; Immunocytochemistry; ELISA; PCR; DNA Preparation; LN2 Handling; Flow Cytometry
- **General:** Bayesian Analysis; Machine Learning; Image Processing; Data Visualization; Literature Analysis and Review
- **Computer:** Proficient in Python 2.7, Python 3.6, Stan; Comfortable with C/C++, Java; Familiar with MATLAB, Excel, R

LEADERSHIP EXPERIENCE

Dabney House President, Pasadena, CA

January 2019 - February 2020

- Spearheaded fundraising initiatives worth over \$30,000 by working with the Caltech Fund and interfacing with alumni.
- Negotiated the remodel of several common spaces over the course of many months.
- Supervised a complete overhaul of room allotment procedures among 100 students by leading dorm-wide meetings.
- Awarded the Deans' Cup for exceptional leadership.

PUBLICATIONS AND PRESENTATIONS

SURF Seminar Day - "Oxysterol and Corticosteroid Interactions with Smoothened"

October 2019

Gordon, Gwyneth & Rhoads, Amrita 2018, "Field-Deployable Measurements of Free-Living Individuals to Determine Energy Balance: Fuel Substrate Usage through Breath $\delta^{13}C$ and Diet through Hair $\delta^{13}C$ and $\delta^{15}N$ values", *Isotopes in Environmental & Health Studies*

SURF Seminar Day - "Development and Refinement of Rapid Antibiotic Susceptibility Testing"

October 2017