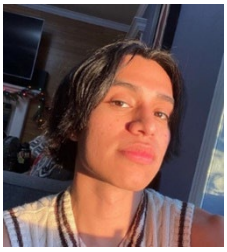
2022 PhD Cohort: Student Research Summary



Charly Acevedo

Cal Poly Pomona: General Biology, BS
Email: cacev029@ucr.edu

RESEARCH SUMMARY: Would like to conduct HIV research with the goal to have own lab at a university to work towards a cure for HIV, but to have other undergraduate students from different socioeconomic backgrounds to be able to have a chance to do so in my lab. Experience and skills developed while working in an HIV research lab: Range and set temperature PCR, RNA/DNA Isolation, Gel Electrophoresis, Agar plating and culture growth, SDS-PAGE, Agar Deep/ Slant Growth, Western Blotting, ELISA, Centrifugation, Transfection/ Electroporation, Aseptic Techniques, Liquid Chromatography, Cell culture, Transfection, Flow Cytometry, Transformation. **RESEARCH INTERESTS:** Chronic inflammatory and autoimmune disease, Cytokine, chemokine and endocrine biology in health and disease, Drug design and vaccine development, Microbiology, parasitology and vector borne diseases, HIV research.

Vinit Adani

UC San Diego: Biochemistry & Cell Biology, BS
Email: vadan001@ucr.edu

RESEARCH SUMMARY: Currently working at a private company, Werfen Autoimmunity. Working alongside a collaborative team, focuses on pre-clinical validation and discovery of novel biomarkers for use in diagnosis and management of autoimmune diseases. Works in a collaborative team developing an immunoassay that converts these preclinical markers into diagnostic devices used on a particle based multi-analyte system (PMAT). Goal is to better understand how cellular response, genetic variation and environmental exposure contribute to disease. **RESEARCH INTERESTS:** Interest in understanding immune mechanisms and cellular networks involved in disease. Immune mechanisms involved in inflammation, understanding immune dysfunction in chronic and metabolic disease, and translational biomarkers in Multiple Sclerosis fascinating.

Samuel Asiedu

Kwame Nkrumah University of Science and Technology; GHANA: Biological Sciences, BS/ Microbiology, MS
Email: sasie001@ucr.edu
Sponsored by Dr. Meera Nair

RESEARCH SUMMARY: Research interest is tailored on understanding the biology of parasitic helminth infection with a goal of developing newer and efficient biomarkers which could have therapeutic and diagnostic benefits. Work as a Research Assistant and MPhil student in the lab of Dr. Alexander Kwarteng (former NIH and CIFAR Fellow) to assess the impact of W. bancrofti parasites on the host immune response and specifically, to identify hitherto unknown components of the immune response that lead to a protective immune response, where microfilariae (MF) are absent from peripheral blood or skin compared to immune response, which permits the development and circulation of MF. After my doctorate degree in Biomedical sciences from UCR, I hope to accept a postdoctoral fellowship at a research facility such as NIH and later establish my own research lab in Ghana. **RESEARCH INTERESTS:** Microbiology, parasitology and vector borne diseases.

Diana Del Castillo

UC Riverside: Biochemistry, BS
Email: ddelc001@ucr.edu

RESEARCH SUMMARY: My primary aim within academia is to become a voice of science. I will utilize my expertise to make the science available and understandable to not just those within the academic world, but to those on the outside that will benefit most. Present articles and offer insight in having contributed to the health disparities-focused portion of a public policy-aimed paper. I hope to build on the current understanding of the molecular basis of chronic disease. **RESEARCH INTERESTS:** Chronic inflammatory and autoimmune disease, Cytokine, chemokine and endocrine biology in health and disease, Mucosal physiology, Signal transduction and receptor biology.

David Gorrie

UC Santa Barbara: Pharmacology & Biopsychology, BS
Cal State San Marcos: Biotechnology, MS
Email: dgorr002@ucr.edu

RESEARCH SUMMARY: Areas of research interest include cellular and molecular biology, drug discovery, pharmacology, neuroscience, and translational research. The specialization I would be likely to pursue at UCR would be pharmacology and drug discovery. My research experience is extensive, spanning both academia and industry. Some techniques I am highly skilled with are buffer preparation, spectroscopy (UV-Vis and Fluorescence), luminometry, tissue culture, ICC & IF, microscopy (phase contrast, brightfield, and fluorescence), primary cell isolation, flow cytometry, RNA (isolation, generation, and manipulation), DNA (isolation, and manipulation), library preparation, PCR (endpoint, q, and q-RT), transfection, transformation, recombinant protein expression and purification (as well as working with E. coli generally (streaking, glycerol stocks, etc.), SDS-PAGE, Western Blot, and primer design. **RESEARCH INTERESTS:** Areas of research interest include cellular and molecular biology, drug discovery, pharmacology, neuroscience, and translational research. The specialization I would be likely to pursue at UCR would be pharmacology and drug discovery. Cancer cell biology, Drug design and vaccine development, Signal transduction and receptor biology.

Ronald Horne

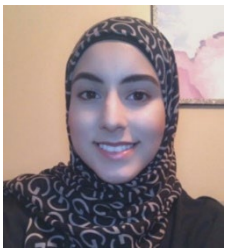
Cal State Fullerton: Biological Science, BS
Email: rhorn012@ucr.edu

RESEARCH SUMMARY: I aim to earn my Ph.D. and pursue a career in biomedical research. For MARC thesis project, investigating the yellow-light induced signal transduction pathway in the unicellular green alga, Chlamydomonas reinhardtii, in the lab of Dr. Amybeth Cohen in the Department of Biological Science (CSU Fullerton). Summer research at UCSD, investigated Prap1 inhibition in pancreatic tumor cells. **RESEARCH INTEREST:** Cancer cell biology, Developmental disorders, Drug design and vaccine development, Microbiology, parasitology and vector borne diseases. I found the study of cellular and molecular interactions to be fascinating. Molecular and genetic biology interested me the most; learning of the advances made and the continued exploration of cell interactions.

Julie Innabi

University of La Verne: Physics, BS
Email: jinna002@ucr.edu

RESEARCH SUMMARY: During my time as an undergraduate physics major, I conducted two research projects. My first research was with Faraday Optical Rotation on three different lasers passing through a polarizer, magnet, and sample of water to find the Verdet constant. My second research, looked at the impact of elevation on the rate of muon decay by looking specifically at three locations of different elevation: Newport Beach, CA (low elevation), La Verne, CA (middle elevation value), and Big Bear Lake (high elevation). These research projects taught me how to conduct experimental designs, scientific writing, and problem-solving. **RESEARCH INTERESTS:** Cancer cell biology, Drug design and vaccine development, Microbiology, parasitology and vector borne diseases. My career aspiration is to become a medical research doctor and to conduct research that will be educating future generations of doctors. I would like to expand my research skills into the medical field of clinical studies that rely on bioinformatics and investigate genomics and DNA analysis to identify potential mutations associated with diseases, especially in oncology.



Nala Kachour

University of La Verne: Biology, BS
Western University of Health Sciences: Biomedical Sciences, MS
Email: nkach001@ucr.edu

RESEARCH SUMMARY: Studied immune system deficiency within my graduate research experience at Western University of Health Sciences. Worked with Dr. Venketaraman to better understand the effects of glutathione on the immune response against Mycobacterium tuberculosis (M. tb). The work in my thesis is to understand the effects of liposomal GSH treatment on db/db (diabetic) mice infected with M. tb. **RESEARCH INTERESTS:** Chronic inflammatory and autoimmune disease, Cytokine, chemokine and endocrine biology in health and disease. One of my goals after obtaining my PhD is to get involved in CAR T cell therapy research for solid tumors.

Jose Martin

UC Santa Barbara: Biochemistry - Molecular Biology, BS
Cal State Long Beach: Biochemistry, MS
Email: jmart559@ucr.edu

RESEARCH SUMMARY: Outside of a course setting, I worked with Dr. Rolf Christofferson to determine genetic factors in S. cerevisiae that contribute to fermentation and analyze volatile production. Outside of UCSB, I was part of the research and development team in a biotech company, BioSB Inc. My project was to optimize mouse and rabbit monoclonal detection systems, including the monoclonal antibodies, Alkaline Phosphatase label, and chromogen Staining. For MS at CSULB, I joined Dr. Elena Grintsevich's lab, where we focus on actin cytoskeletal regulators such as Molecule Interacting with CasL. I aim to characterize the effects of MICAL oxidation on different actin isoforms. **RESEARCH INTERESTS:** Cancer cell biology, Developmental disorders, Neurodegeneration. I prefer doing research involving the nervous system or immunology. UCR provides an extensive range of possible research opportunities.

Sakina Tayabally

University of Sharjah; United Arab Emirates: Biotechnology, BS, MS
Email: staya003@ucr.edu

Sponsored by Dr. Martin Garcia-Castro

RESEARCH SUMMARY: As a research assistant I analyzed the impact ofnanoparticles on cytotoxicity of plant species and salinity and drought stress on UAE native plants and performed experiments for oil extraction and biodiesel fuel production from native seeds. I pursued my M.S. thesis on stem cell biology. I started investigating the characteristics of dental pulp stem cells (DPSCs) growing in 3D matrices of differing strengths. **PUBLICATIONS:** Author: Tayabally, S.E.H., Khan, A.A., Abdallah, S.H., Khattak, M.N.K., Jayakumar, M.N., Samsudin, A.R. The characteristics of the dental pulp stem cells growing in 3D Cell Culture Gel (Col-Tgel) of different strengths. Manuscript submitted for publication. Saudi Journal of Biological Sciences. Co-author: El-Keblawy, A., Soliman, S., Al-Khoury, R., Ghauri, A., Al Rammah, H., Hussain, S. E., ... & Manzoor, Z. (2019). Effect of maturation conditions on light and temperature requirements during seed germination of Citrullus colocynthis from the Arabian Desert. Plant Biology, 21(2), 292-299. **RESEARCH INTEREST:** Alzheimer's disease. My interest in regenerative medicine specifically neural cell lineages. microglia was very intriguing and her aim to apply these ideas to aid in diagnosis and therapy is something I have always strongly wanted to do, extend organismal life, and research on host-virus interactions linked to neurodegenerative diseases also piques my interest.

Abel Vargas

UC Riverside Biochemistry, BS
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RESEARCH SUMMARY: Starting summer 2019, I worked in Dr. Katherine Borkovich's lab full-time, and I focused on the effects of G-protein coupled receptor deletion on protein levels in a model organism for filamentous fungi. I conducted various biochemical assays, transformed cells with modified plasmids, ran various PCR gels, and cultured multiple strains for use in our experiments. I joined the City of Hope Eugene and Ruth Roberts Summer Academy, where I worked under Dr. Victoria Seewaldt and focused on the effects of an extracellular ligand on proteins in Luminal B breast cancer cells sensitive and resistant to current treatment methods. This experience was my first time working with human cell cultures, and I was able to extract proteins from the cells used in our experiments to analyze through Western blot assays. Overall, this research experience gave me valuable experience in working with human cell cultures while also imparting a desire to further explore how human cells interact with their surroundings. Given my previous fascination with the immune system that began as I took various university courses, the research experiences I have taken part of led to my synthesis passion of focusing on immunology. My particular interest within immunology lies with how the cells of our immune system interact with pathogens. **RESEARCH INTEREST:** Microbiology, parasitology and vector borne diseases, Immunology, Chronic Inflammatory and Autoimmune Diseases.