UCDAVIS
Undergraduate Research Center
Office of Undergraduate Education

NSF LSAMP/CAMP, MURPPS and IIFH Scholars Summer Virtual Research Symposium

Schedule of Events

Friday, August 20,2021

1:00 p.m. - 3:35p.m.

https://ucdavis.zoom.us/j/91836631483?pwd=SGJjalcxVjkrNWg3YlcrOGRFMFVwUT09

UCDAVIS
UNIVERSITY OF CALIFORNIA

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NSF LSAMP/CAMP

UC DAVIS CAMP California Alliance for Minority Participation

The National Science Foundation (NSF) Louis Stokes Alliance for Minority Participation in the Sciences (LSAMP) program is called CAMP (California Alliance for Minority Participation) and it is part of a UC systemwide alliance. The NSF CAMP Program at UC Davis aims to recruit and retain students in STEM majors, facilitate their academic success, provide professional development, and encourage their transition to graduate study. Particular emphasis is placed on evidence- based recruitment and retention strategies, and relevant research and educational experiences in support of racial and ethnic groups historically underrepresented in STEM disciplines: African Americans, Hispanic Americans, American Indians, Alaska Natives, Native Hawaiians, and Native Pacific Islanders. Faculty-mentored research experiences play a large role in the program and NSF CAMP Scholars actively participate in research during the summer and throughout the academic year.

IIFH

UCDAVIS Innovation Institute for Food and Health

The Innovation Institute for Food & Health (IIFH) Undergraduate Research Fellowship is an award intended to support undergraduate students performing research with guidance by UC Davis faculty that relates to the mission of the IIFH to catalyze innovation across food, agriculture, and health. The IIFH Undergraduate Research Fellowship provides a summer research experience including professional development opportunities and training events related to entrepreneurship.

MURPPS

UCDAVIS | MURPPS

The Mentorship for Undergraduate Research Participants in the Physical and Mathematical Sciences (MURPPS) Program is a UC Davis undergraduate mentoring program supported by the Office of the Dean, College of Letters & Science. The MURPPS program is designed to increase the number of underserved students who pursue graduate studies in the physical and mathematical sciences by engaging diverse students in faculty-mentored research relevant to their majors. MURPPS at UC Davis aims to recruit and retain students, facilitate their academic success, provide professional development, and encourage their transition to graduate study.

NSF LSAMP/CAMP, MURPPS, and IIFH Scholars Summer Virtual Research Symposium Schedule of Events

Friday, August 20, 2021 https://ucdavis.zoom.us/j/91836631483?pwd=SGJjalcxVjkrNWg3YlcrOGRFMFVwUT09

01:00-01:05PM	Welcome, Announcements & Introductions
01:05-03:25PM	Virtual Presentations
03:30-03:35PM	Acknowledgments and Close

Virtual Presentations

Group 1: Chemistry, Engineering, Mathematics, & Physical Sciences

1:05PM	**Alejandro Armas**, Biomedical Engineering *Building Microservices for ResilientDB Connectivity*
1:20PM	**Yal Bai**, Applied Mathematics *Ralstonia Data Analysis*
1:35PM	**Trevor Clarke**, Applied Physics *The Effect of Disorder on Perfect Quantum State Transfer in Coupled Cavity-Emitter Arrays*
1:50PM	**Mykyta Dementyev**, Physics *Temperature and Gate Dependence of Carrier Diffusion in Single Crystal Methylammonium Lead Bromide Perovskite Nanostructures*
2:05pm	**Joakin Ejie**, Biomedical Engineering *Cloning Fluorescent Reporters for Hydrogelated Bacteria to Assess Invasion of Cancer Cells*
2:20pm	**Emily Jimenez**, Pharmaceutical Chemistry *Summer Research 2021: Synthesis of Densely Substituted Tetralins*
2:35pm	**Minatallah Mahgoub**, Chemical Engineering *Temperature Dependent Enzyme Kinetics*
2:50pm	**Metzil Montero**, Applied Physics *The Electrochemical Synthesis of Cu-Intercalated Bi_2Se_3*
3:05pm	**Emely Rivera**, Biomedical Engineering *Tissue Engineering Applications for Spina Bifida*
3:20pm	**Jeffrey Toman**, Biochemistry & Molecular Biology *Synthesis of Tetrasubstituted Allenes*
3:35pm	*ACKNOWLEDGMENTS AND CLOSING REMARKS*

Group 2: Biological Sciences

1:05PM	**Daniel Cardenas**, Biochemistry and Molecular Biology *Detection and Identification of Novel Compounds using in silico and in vitro methods*
1:20PM	**Kimberly Evans**, Environmental Science & Management *Into the Floodplain: Modeling Juvenile Chinook Salmon Growth*
1:35PM	**Jaime Morales Gallardo**, Global Disease Biology *Does parental experience change the ability to recover after a stressor?* *Examining the hormonal response and hippocampal gene expression*
1:50PM	**Lennyn Morales**, Biomedical Engineering *Determining Relative Stoichiometry of Domain-Forming CoQ proteins in CoQ Biosynthetic Pathway*
2:05pm	**Valerie Nyasimi**, Global Disease Biology *Efficacy of plant Bacteria Pseudomonas sp. in controlling Chickpea fungus, Fusarium oxysporum*
2:20pm	**Mikaela Pham**, Biotechnology & Design *Generation of a thermostable myrosinase to improve sulforaphane formation*
2:35pm	**Lindsay Rodgers**, Global Disease Biology *Nitrogen-fixing Bacteria in Landrace Maize Mucilage: A Metabolic Mystery*
2:50pm	**Juan Ado Sales**, Biotechnology *Cloning 3 Heterodera schactii Effector Genes*
3:05pm	**Dilasha Shenas**, Genetica & Genomics *Detecting New Tools for Developing Grey Mold in Strawberries*
3:20pm	**Sydney Woods**, Computer Science *Analyzing Platinum Resistance in Ovarian Cancer Patients*
3:35pm	*ACKNOWLEDGMENTS AND CLOSING REMARKS*

2021 Summer Research Scholars

List of Presenters

Group 1: Chemistry, Engineering, Mathematics, & Physical Sciences

Alejandro Armas

Major: Computer
Year: fourth
Research Program: CAMP
Faculty Mentor: Mohammad Sadoghi, PhD: Computer Science
Research Title: Building Microservices for Resilient DB Connectivity

Yal Bai

Major: Applied Mathematics
Year: Third
Research Program: MURPPS
Faculty Mentor: Tiffany Lowe-Power, PhD: Plant Pathology
Research Title: Ralstonia Data Analysis

Trevor Clarke

Major: Applied Physics
Year: Fourth
Research Program: MURPPS
Faculty Mentor:Richard Scalettar, PhD: Physics
Research Title: The Effect of Disorder on Perfect Quantum State Transfer in Coupled Cavity-Emitter Arrays

Mykyta Dementyev

Major: Physics
Year: Third
Research Program: NSF LSAMP/CAMP
Faculty Mentor: Dong Yu, PhD: Physics
Research Title: Temperature and Gate Dependence of Carrier Diffusion in Single Crystal Methylammonium Lead Bromide Perovskite Nanostructures

Emily Jimenez

Major: Pharmaceutical
Year: Second
Research Program: MURPPS
Faculty Mentor: Jared Shaw, PhD: Chemistry
Research Title: Synthesis of Densely Substituted Tetralins

Minatallah Mahgoub

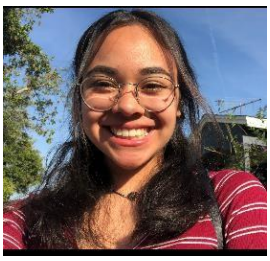
Major: Chemical
Year: Second
Research Program: NSF LSAMP/CAMP
Faculty Mentor: Michael Toney, PhD: Chemistry
Research Title: Temperature Dependent Enzyme Kinetics

Metzil Montero

Major: Applied Physics
Year: Fourth
Research Program: MURPPS
Faculty Mentor: Valentin Taufour, PhD: Physics & Astronomy
Research Title: The Electrochemical Synthesis of Cu-Intercalated Bi_2Se_3

Emely Rivera

Major: Biomedical Engineering
Year: Second
Research Program: NSF LSAMP/CAMP
Faculty Mentor: Chaoxing Zhang, PhD: Surgery/Biomedical Engineering
Research Title: Tissue Engineering Application for Spina Bifida



Jeffrey Toman

Major: Biochemistry & Molecular Biology
Year: Third
Research Program: NSF LSAMP/CAMP
Faculty Mentor: Jared Shaw, PhD: Chemistry
Research Title: Synthesis of tetrasubstituted allenes

Group 2: Biological Sciences

Daniel Cardenas

Major: Biochemistry & Molecular
Year: Second
Research Program: NSF LSAMP/CAMP
Faculty Mentor: Oliver Fiehn, PhD: Molecular & Cellular Biology
Research Title: Detection and Identification of Novel Compounds using in silico and in vitro methods

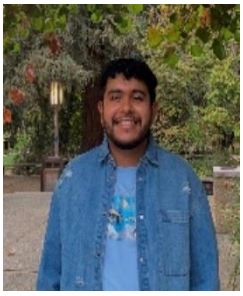
Joakin Ejie

Major: Biomedical Engineering
Year: Fourth
Research Program: NSF LSAMP/CAMP
Faculty Mentor: Cheemeng Tan, PhD: Biomedical Engineering
Research Title: Cloning Fluorescent Reporters for Hydrogelated Bacteriato Assess Invasion Cancer Cells

Kimberly Evans

Major: Environmental Science & Management
Year: Fourth
Research Program: NSF LSAMP/CAMP
Faculty Mentor: Rachel Johnson, PhD: Center for Watershed Services
Research Title: Into the Floodplain: Modeling juvenile Chinook Salmon Growth

Jaime Morales Gallado



Major: Global Disease Biology
Year: Fourth
Research Program: NSF LSAMP/CAMP
Faculty Mentor: Rebecca Calisi Rodriguez, PhD: Neurobiology, Physiology, and Behavior
Research Title: Does Parental Experience change the ability to recover after a stressor? Examining the hormonal response and hippocampal gene expression.

Lennyn Morales

Major: Biomedical Engineering
Year: Fourth
Research Program: NSF LSAMP/CAMP
Faculty Mentor: Jodi Nunnari, PhD: Molecular & Cellular Biology
Research Title: Determing Relative Stoichiometry of Domain-Forming CoO proteinsin CoO Biosynthetic Pathway

Valerie Nyasimi

Major: Global Disease Biology
Year: Fourth
Research Program: IIFH
Faculty Mentor: Douglas Cook, PhD: Plant Pathology
Research Title: Efficacy of plant Bacteria Pseudomonas sp. In controlling Chickpea fungus, *Fusarium oxysporum*

Mikaela Pham

Major: Biotechnology and Design
Year: Fourth
Research Program: IIFH
Faculty Mentor: Patrick Shih, PhD: Plant Biology Research
Research Title: Generation of a thermostable myrosinase to improve sulforaphane formation

Lindsay Rodgers

Major: Global Disease Biology
Year: Fourth
Research Program: IIFH
Faculty Mentor: Alan Bennett, PhD: Plant Sciences
Research Title: Nitrogen-fixing Bacterial in Landscape Maize Mucilage: A Metabolic Mystery

Juan Amado Sales

Major: Biotechnology
Year: Fourth
Research Program: IIFH
Faculty Mentor: Dr. Shahid Siddique: Entomology & Nematology
Research Title: Cloning 3 *Heterodera schactii* Effector Genes

Dilasha Shenaz

Major: Generics & Genomics
Year: Second
Research Program: NSF LSAMP/CAMP
Faculty Mentor: Barbara Blanco-Ulate, PhD: Plant Sciences
Research Title: Detecting New Tools for Developing Grey Mold in Strawberries

Sydney Woods

Major: Computer Science
Year: Fourth
Research Program: NSF LSAMP/CAMP
Faculty Mentor: Jeremy Chien, PhD: Biochemistry and Molecular Medicine
Research Title: Analyzing Platinum Resistance in Ovarian Cancer Patients

UCDAVIS
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The Undergraduate Research Center (URC) at UC Davis encourages and facilitates research opportunities for UC Davis undergraduate students in all majors and class levels. We offer funding, awards, and activities to support undergraduate research across the university. The URC promotes faculty-mentored research as a high-impact student experience to enhance readiness to succeed in future careers. Explore our site to discover opportunities for students and faculty.

urc.ucdavis.edu