
**Achievement Rewards
for College Scientists
Northern California Chapter**



2021-2022 Annual Report

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MISSION STATEMENT: ARCS Foundation advances science and technology in the United States by providing financial awards to academically outstanding U.S. citizens studying to complete degrees in science, technology, engineering, mathematics and medical research.

ARCS STORY: In 1958, a group of intrepid women in Los Angeles took on the challenge of the “space race” and created ARCS Foundation, funding gifted science, medical and engineering students to help re-establish our country’s leadership in science. Today the challenge is achieving breakthroughs in biotechnology, regenerative medicine, and clean energy to secure our country’s future. We once again risk falling behind other leading nations, with only 15% of U.S. college students majoring in science or engineering. Our answer is still the same: when we support brilliant young scientists, we invest in America’s future in a powerful way.

Every dollar contributed to ARCS Foundation’s Scholar Awards Fund goes directly to students selected by their universities for their merit and the caliber of their research. The impact is profound: ARCS scholars appreciate our belief in them as much as the financial help.

ARCS has 15 chapters in the United States and has awarded over \$131 million to more than 11,500 scholars since 1958.

NORTHERN CALIFORNIA CHAPTER: The Northern California Chapter of ARCS Foundation was established in 1970 and has funded more than 2,900 Scholar Awards totaling over \$24.6 million. For the 2022-2023 academic year, the Chapter distributed \$1,085,000 to 83 scholars attending seven prestigious Northern California universities.

- * **ARCS is 100% FOCUSED:** ARCS is the largest private membership organization in the United States focusing on support to the most promising U.S. science scholars.
- * **ARCS grants are 100% FLEXIBLE:** ARCS award recipients decide how best to use ARCS funds to pursue their academic research efforts.
- * **ARCS is 100% VOLUNTEER:** ARCS members donate their time, talents and financial resources in order to foster academic excellence and research in the sciences, mathematics, medicine and engineering.
- * **ARCS is 100% EFFECTIVE:** 100% of all donations to the annual Scholar Awards Campaign are directed to the best and brightest scholars at our nation’s top research universities.

MISSION

ARCS
STORY

NORTHERN
CALIFORNIA
CHAPTER

ARCS IS
UNIQUE

RECIPIENT SCHOOLS OF ARCS FOUNDATION GRANTS

ARCS FOUNDATION, INC. can boast of alumni who have achieved distinction in their fields and are making significant contributions to the strength and leadership of our country.

The scholar awards program is administered by the academic institutions to which ARCS chapters make allocations. Recipient institutions are approved by the National Board of ARCS FOUNDATION, INC. according to exacting standards.

Following is a list of the recipient schools of ARCS Foundation scholar awards for the fifteen chapters which make grants.

ATLANTA CHAPTER

- Emory University
- Georgia Institute of Technology
- Morehouse College
- University of Georgia (Athens)

COLORADO CHAPTER

- Colorado School of Mines
- Colorado State University
- University of Colorado at Boulder
- University of Colorado at Colorado Springs
- University of Colorado at Denver
- University of Colorado School of Medicine

HONOLULU CHAPTER

- University of Hawaii, Manoa

ILLINOIS CHAPTER

- Illinois Institute of Technology
- Loyola University of Chicago, Stritch School of Medicine
- Northwestern University
- The University of Chicago
- The University of Illinois at Urbana-Champaign

LOS ANGELES CHAPTER

- California Institute of Technology
- Harvey Mudd College
- Pomona College
- University of California, Los Angeles: Brain Research Institute
- University of Southern California: Keck School of Medicine
- Viterbi School of Engineering

METROPOLITAN WASHINGTON CHAPTER

- Georgetown University
- The George Washington University
- The Johns Hopkins University
- University of Maryland, College Park
- University of Virginia

MINNESOTA CHAPTER

- University of Minnesota

NORTHERN CALIFORNIA CHAPTER

- San Francisco State University
- Stanford University
- University of California, Berkeley
- University of California, Davis
- University of California, Merced
- University of California, San Francisco
- University of California, Santa Cruz

ORANGE COUNTY CHAPTER

- University of California, Irvine

OREGON CHAPTER

- Oregon Health and Science University
- Oregon State University
- University of Oregon

PHOENIX CHAPTER

- Arizona State University
- Northern Arizona University
- University of Arizona

PITTSBURG CHAPTER

- Carnegie Mellon University
- University of Pittsburgh

SAN DIEGO CHAPTER

- San Diego State University
- Scripps Research Institute
- University of California, San Diego
- University of San Diego

SEATTLE CHAPTER

- University of Washington
- Washington State University

UTAH CHAPTER

- University of Utah

RECIPIENT UNIVERSITIES' LEADERSHIP

ARCS Foundation Northern California Chapter appreciates its strong alliance with each of the universities receiving award funds. We hereby salute the presidents and chancellors of these, our area's finest universities, and list their names together with the departments in which scholars were funded this year.

DR. LYNN MAHONEY, PRESIDENT
SAN FRANCISCO STATE UNIVERSITY

Department of Biology (Integrative)
Department of Chemistry and Biochemistry
Department of Geography & Environment
Department of Mathematics
Department of Physics & Astronomy

DR. MARC TESSIER-LAVIGNE, PRESIDENT
STANFORD UNIVERSITY

Department of Biology
Department of Biophysics
Department of Chemical Engineering
Department of Chemistry
Department of Earth System Science
Department of Electrical Engineering
Department of Geophysics
Department of Mathematics

DR. CAROL CHRIST, CHANCELLOR
UNIVERSITY OF CALIFORNIA, BERKELEY

Department of Electrical Engineering & Computer Science
Department of Environmental Science, Policy & Management
Department of Integrative Biology
Department of Mathematics
Department of Mechanical Engineering
Department of Metabolic Biology & Molecular Toxicology
Department of Molecular & Cell Biology
Department of Nuclear Engineering
Department of Plant & Microbial Biology

DR. GARY S. MAY, CHANCELLOR
UNIVERSITY OF CALIFORNIA, DAVIS

Animal Behavior Graduate Group
Department of Biomedical Engineering
Department of Chemistry
Department of Civil & Environmental Engineering
Ecology Graduate Group
Geology Graduate Group
Department of Integrative Pathobiology
Neuroscience Graduate Group
Department of Pharmacology & Toxicology
Population Biology Graduate Group
Department of Soils & Biogeochemistry

DR. JUAN SÁNCHEZ MUÑOZ, CHANCELLOR
UNIVERSITY OF CALIFORNIA, MERCED

Department of Cognitive & Information Sciences
Department of Environmental Systems
Department of Physics

DR. SAM HAWGOOD, CHANCELLOR
UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Department of Bioengineering
Department of Biological & Medical Informatics
Department of Biomedical Sciences
Department of Cell Biology
Department of Developmental & Stem Cell Biology
Department of Epidemiology & Translational Science
Department of Neuroscience
Department of Oral Craniofacial Sciences
Department of Pharmaceutical Science & Pharmacogenomics

DR. CYNTHIA LARIVE, CHANCELLOR
UNIVERSITY OF CALIFORNIA, SANTA CRUZ

Department of Astronomy & Astrophysics
Department of Biomolecular Engineering
Department of Chemistry
Department of Computer Science & Engineering
Department of Earth & Planetary Sciences
Department of Ecology & Evolutionary Biology
Department of Environmental Studies
Department of Microbiology & Environmental Toxicology
Department of Molecular, Cell & Developmental Biology
Department of Ocean Sciences
Department of Physics
Science Communications Master's Program

SAN FRANCISCO STATE UNIVERSITY

Department of Biology (Integrative)
Department of Chemistry & Biochemistry
Department of Geography
Department of Mathematics
Department of Physics & Astronomy

DEPARTMENT OF GEOGRAPHY

MARINA BOZINOVIC
PAMELA CULP SCHOLAR
NANCY MUELLER SCHOLAR

Marina is broadly interested in geographic information sciences in the context of marine sciences. Her research will use passive acoustic monitoring to identify spatial and temporal distributions of baleen whales around the San Francisco Bay in relation to vessel threats such as collisions and noise pollution. This work around threatened whale species is of particular interest to the NOAA Southwest Fisheries Science Center. Prior to graduate school, Marina earned her B.S. in Aquatic Biology and worked at the California Academy of Sciences overseeing scientific and occupational diving and supporting safe mesophotic coral reef research using mixed-gas rebreathers. Her outside interests include vegetarian cooking, exploring new cities, and reformer Pilates.



DEPARTMENT OF CHEMISTRY & BIOCHEMISTRY

ANTHONY BRAVO
ARLENE INCH SCHOLAR

Anthony is interested in solving environmental issues. His undergraduate research consisted of studying the origins of organic carbon sequestered in bay area saltmarshes. This culminated with a paper recently published in the journal of Limnology and Oceanography on which he is second author. His current research revolves around using low-cost optics and computer vision software to image and monitor the motility of plankton as a function of pollutant concentration. He has presented at San Francisco State's COSE Symposium and SACNAS National Diversity in STEM Conference. He has been a MARC Scholar and is currently a Genentech Foundation MS Scholar.



DEPARTMENT OF BIOLOGY (INTEGRATIVE)

ERIC COYLE
ARCS FOUNDATION SCHOLAR

Eric is a member of the Stillman and Vredenburg labs where his research interests span physiology, behavior, microbiology, and disease ecology with the aim of investigating the multi-level impacts of co-occurring environmental stressors and perturbations resulting from natural processes and human activity. He is also a Genentech Foundation Masters Scholar at San Francisco State and a recipient of the BioLuminaries award. Outside of research, Eric is involved in a diversity, equity, and inclusion effort at UC Davis called the Student Voices Project. This project seeks to make a platform for more open sharing between students and faculty to build a bridge between these two central elements of the university experience. Eric's future plans entail a Ph.D. program and postdoctoral position to continue developing as a researcher and scientist.



DEPARTMENT OF CHEMISTRY & BIOCHEMISTRY

HUY DO
JACK LUND ENDOWMENT FUND SCHOLAR

Huy's research focuses on examining structures and functions of uncharacterized acetyltransferase proteins using both in-silico and in-vitro techniques. He has incorporated computational skills learned from the courses offered by San Francisco State's Graduate Opportunity to Learn Data Science (GOLD) program to analyze large scale datasets for his research projects. He has also worked as a part-time assistant in both the Chemistry department office and Chemistry stockroom, all while maintaining continuous productivity on his research project. Huy's research experience and engagement with international collaborators have caused him to switch his career path from medicine to a goal of obtaining a Ph.D. in biosciences.



DEPARTMENT OF CHEMISTRY & BIOCHEMISTRY

KLOE KEETER
GAIL & HARVEY GLASSER SCHOLAR
MR. & MRS. WILLIAM H. MOORHOUSE, JR. SCHOLAR

Kloe has been conducting research in biochemistry/molecular biology since her sophomore year as an undergraduate. Her current project is applying synthetic adhesion molecules as a toolkit to investigate how ligand intracellular signaling impacts synthetic Notch and CAR T cell activation, in Dr. Wendell Lim's laboratory at UCSF. Kloe also has a passion for teaching and will be teaching introduction to chemistry lab at San Francisco State in fall of 2022. She hopes to encourage more people to fall in love with research like she did early on.



DEPARTMENT OF PHYSICS & ASTRONOMY

KEN LUU
ARCS FOUNDATION SCHOLAR

As an undergraduate, Ken conducted research in a variety of topics in computational nuclear physics at San Diego State University where he graduated cum laude. He then had a summer internship at Los Alamos National Laboratory (LANL) with the Parallel Computing School, where he studied the physics of fireballs and how they evolve over time. Also at LANL, he worked on the stability of molecules in the atmosphere of white dwarfs. At San Francisco State he is working on 3D General Relativistic simulations of jets in black hole-disk systems. His research interest is motivated by the fact that computation can be used alongside experiments and theory to stimulate progress. Outside the lab, Ken enjoys rock climbing and learning guitar, with the goal of performing in front of a live audience.



DEPARTMENT OF MATHEMATICS

CHARLIE MCMENOMY
ROBERT LANSDON TRUST SCHOLAR

Charlie is interested in partial differential equations, particularly in their applications to scientific fields such as physics and engineering. His mathematics thesis research will focus on determining the response of a composite material in time when at least one of the two component materials has a lossy behavior. Charlie spent this past summer learning about integral equations and their applications at the graduate summer school at the Mathematical Sciences Research Institute in Berkeley. He hopes to begin working towards a Ph.D. in Applied Mathematics in Fall 2023 with the goal of one day conducting research for the Department of Energy.



DEPARTMENT OF BIOLOGY (INTEGRATIVE)

KIRA MILLER
DAN & STACEY CASE FOUNDATION SCHOLAR
CHRIS & PAT ROMAN SCHOLAR

Kira combines her interests in ecology with her love of the mountains by studying amphibians in the Sierra Nevada. Over the years, field research has taken her from these alpine meadows to the red desert of Utah; from vernal pools in California's Central Valley to the longleaf pine flatwoods of Florida. Her research interests focus on amphibian disease and resilience, and at San Francisco State she aims to study the interactions between amphibian skin microbiome and the amphibian chytrid fungus, *Batrachochytrium dendrobatidis*. She hopes her work will remind us of the link between wildlife and human systems and emphasize the importance of ecological conservation. When she's not thinking about frogs (and even when she is), Kira enjoys recreating outdoors and being creative in the kitchen.



DEPARTMENT OF BIOLOGY (INTEGRATIVE)

KATHERINE MONTANA
CAROL HENWOOD SCHOLAR
SUSAN & DENNIS MOORADIAN SCHOLAR

Katherine Montana is a scientist, advocate, and change-maker. While earning her B.A. in Anthropology and Integrative Biology with honors at UC Berkeley, she researched the genetics of potential environmental toxin resistance in frogs and the phylogenetic relationships of sea slugs. As a graduate student at San Francisco State and the California Academy of Sciences, Katherine is proud to conduct ground-breaking spider systematics research, reveal untold stories found in the Academy Library's archives, and mentor other emerging scientists. Her research focuses on using genomic and morphological data to determine the phylogenetic relationships between spider species in the genus *Lathys* of the family Dictynidae, a group that has been understudied and whose relationships need resolving. She is honored to form community with other scientists, especially those who have been underrepresented in the field.



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DEPARTMENT OF MATHEMATICS

LEKHA PRIYA PATIL
CHARLIE & JAMIE CAMPBELL SCHOLAR

Lekha is interested in the properties of fractals through the lenses of real analysis, topology, and measure theory. Fractals exist everywhere in the real world, from snowflakes and clouds to the circulatory system. By studying fractals, we gain the tools to model real life objects which occur in irregular shapes with non-smooth perimeters. Lekha earned her bachelor's degree in applied mathematics at UC Berkeley, where her interest in pure math first began. She is currently a graduate teaching associate at SF State, where she has taught precalculus and calculus I.



DEPARTMENT OF BIOLOGY (INTEGRATIVE)

ANDRES PATINO-LOPEZ
ARCS FOUNDATION SCHOLAR

Andrés (they/them), a first-generation Latinx graduate student, is working towards becoming a Wildlife Ecologist and strives to one day work in urban-rural gradient environments helping to manage threatened and non-threatened wildlife species at both the state and federal level. They were selected this summer as a Mosaics in Science Intern, a program coordinated by the National Park Service and Environment for the Americas, to work in the Golden Gate Recreation Area as an Assistant Biologist. They worked for the San Francisco Recreation and Park Department for five years and were recognized for their outstanding outreach work leading the Love Dolores campaign at Dolores Park. They now work as a Graduate Teaching Assistant at SF State. During their free time, Andrés enjoys hiking, rock climbing, backpacking, searching for wildlife, and practicing poi.



DEPARTMENT OF BIOLOGY (INTEGRATIVE)

CAROLYN SCHWARTZ
MICHELE GOSS SCHOLAR

Carolyn is researching how the sense of hearing changes in response to noise generated by human activity. Many city-dwelling animals change their vocal signals in ways that help them cope with the negative effects of noise. However, little is known about how human-generated noise affects hearing. Carolyn is studying ear anatomy and physiology of Pacific chorus frogs that live in urban and rural areas across the San Francisco Bay Area. Carolyn's B.S. is from Colorado State University, where she conducted research in a variety of fields including forestry, chemical ecology, behavioral biology, and biocontrol of invasive species. Outside of school, Carolyn enjoys hiking, drawing, and spending time with her dog Joey.



STANFORD UNIVERSITY

Department of Biology
Department of Biophysics
Department of Chemical Engineering
Department of Chemistry
Department of Earth System Science
Department of Electrical Engineering
Department of Geophysics
Department of Mathematics

DEPARTMENT OF MATHEMATICS

SEAN COTNER

ARCS FOUNDATION SCHOLAR

Sean studies algebraic groups, especially over fields of positive characteristic. Algebraic groups are generally well understood over the complex numbers, but over fields of positive characteristic their study becomes more complicated. Sean's work aims both to understand the differences between these two worlds and to unify them when possible. Outside of research, Sean has been involved in numerous outreach programs, including the Directed Reading Program and the Leland Scholars Program at Stanford. Apart from academics, Sean enjoys playing guitar, listening to music, and playing games with friends.



DEPARTMENT OF BIOPHYSICS

NICOLE DELROSSO

KIMBALL FOUNDATION SCHOLAR

Nicole has been investigating the molecular principles that describe how some transcriptional activation domains are stronger than others. To answer this question, she developed a high-throughput in vitro assay to systematically measure affinities between these effector domains and their transcriptional cofactors. She couples these measurements to high throughput in vivo screens of effector domain transcriptional activities in human cells. She recently presented this work at the Cold Spring Harbor Systems Biology meeting. Nicole enjoys mentoring younger students and, beyond research, loves to learn new languages and spend time with her rescued mini-poodle. Nicole is an author on five peer-reviewed publications, on three of which she is a first author, and was previously an NSF GRFP research fellow.



DEPARTMENT OF BIOLOGY

MALLORY HARRIS

JIM & BECKY MORGAN SCHOLAR

Mallory studies how human behavior shapes infectious disease transmission. She uses quantitative methods to understand how infectious diseases spread through populations with social divisions, predict how climate change will affect malaria burden, and characterize sources of health misinformation. She earned her B.A. in Mathematics and Computational Biology from the University of Georgia, where she conducted research on predicting vector-borne disease outbreaks. As the co-president of Scientists Speak Up, she organizes seminars and workshops on communication and advocacy about scientific topics.



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DEPARTMENT OF CHEMICAL ENGINEERING

JENNIFER HOFMANN
SHELAGH ROHLEN SCHOLAR

Jen's research interests lie in developing predictive computational models to connect microscopic details of protein interactions to bulk suspension properties and cellular behaviors. Her models have identified novel contributions of colloidal-scale physics, including ultra-weak electrostatic attractions and limited interaction valency, in organizing the cellular interior and orchestrating life-essential processes. Jen obtained her B.S. in chemical engineering from MIT and gained diverse experience across the biopharmaceutical industry, including internships at Novartis, Genentech, and the NIH. Outside of research, Jen served on the Society of Rheology's Diversity, Equity, & Inclusion Committee from 2018-2021 and enjoys reading and hiking with her dog in her free time.



DEPARTMENT OF CHEMISTRY

SAMANTHA TING HUNG
ARCS FOUNDATION SCHOLAR

Samantha gained experience with the design and characterization of materials in undergraduate research work on controlled drug delivery and semiconductors. Currently, she uses nonlinear infrared spectroscopy to study the effects of nanoconfinement on ultrafast liquid dynamics. Her 2021 publication compared the dynamics of different liquids confined in mesoporous silica, a confining framework with energy and biomedical applications. Besides being keen on understanding molecular systems, she is also passionate about sharing knowledge. She participated in STEM outreach programs and is a mentor in Stanford's Enhancing Diversity in Graduate Education fellowship program, a trainer at the Stanford Nano Shared Facilities, and a language tutor. In lab, she is the laser and chemical safety coordinator, and recently received the departmental Safety STAR Award. As a music and philosophy enthusiast, Samantha produces art in addition to science.



DEPARTMENT OF ELECTRICAL ENGINEERING

WILLIAM HWANG
NVIDIA SCHOLAR

William is interested in energy-efficient computing enabled by emerging spintronic memories and its applications in AI at the edge, such as smartphones and wearable appliances. His research currently focuses on developing nonvolatile spintronic memory devices which promise both lower energy consumption and higher areal densities than today's prevailing SRAM technology, and spur personalized machine learning and inference in mobile health devices, Internet of Things (IOTs) and beyond. He was an NSF GRFP research fellow. Outside of research, he enjoys playing piano, biking and skiing.



DEPARTMENT OF CHEMICAL ENGINEERING

MATTHEW LIU

RHODA GOLDMAN MEMORIAL SCHOLAR

Matthew earned his B.S. in chemical engineering at UC Berkeley and interned at Lawrence Berkeley National Laboratory, where he studied the chemical kinetics of aerosol oxidation processes. At Stanford he has been a NASA space technology research fellow and recipient of the Electrochemical Society's student award in industrial electrochemistry and electrochemical engineering. Currently, as a member of William Tarpeh's lab, Matthew applies principles of electrochemical engineering to advance the studies of electrocatalytic nitrate reduction, reaction microenvironments, reactive separation processes, and resource recovery from wastewater. Passionate about both teaching and research, Matthew aims to be a professor of chemical engineering and contribute to making transformative impacts in the field of electrocatalysis.



DEPARTMENT OF CHEMISTRY

ANNA MAKAR-LIMANOV

ARCS STANFORD GRADUATE FELLOW

Anna is passionate about using chemistry to help tackle sustainability challenges. She is working on developing new resins for CLIP-3D printing to produce chemically recyclable materials. Anna received her B.A. magna cum laude with distinction in Chemistry and Mathematics from Amherst College in 2020. At Amherst, she worked on metal alkoxide initiators for the ring-opening polymerization of cyclic esters. In 2018, she was a Center for Sustainable Polymers Summer Undergraduate Fellow at University of Minnesota, Twin Cities. Outside of the lab, Anna enjoys singing in choirs, knitting, hiking, and listening to podcasts.



DEPARTMENT OF EARTH SYSTEM SCIENCE

COURTNEY PAYNE

DANA & ROBERT EMERY SCHOLAR

Courtney is studying how climate change is affecting phytoplankton (single-celled algae that form the base of the food web) in the Arctic Ocean, using a combination of satellite remote sensing, ecosystem modeling, and laboratory experiments. She has been a lead instructor in two classes at Stanford and has acted as the teaching assistant for three others. In her spare time, she enjoys rock climbing and spending time on the water with her wife and dog.



DEPARTMENT OF ELECTRICAL ENGINEERING

RICHELLE SMITH

WILLIAM K. BOWES, JR. FOUNDATION SCHOLAR

Richelle's research interests include energy-efficient systems, analog & radio-frequency integrated circuit design, oscillators, wireline transceivers, and brain-inspired computing. Her current projects include high-speed, energy-efficient modulation schemes for digital communications. Lowering the power consumption of the computer chips and transceivers that handle our communication traffic will reduce our carbon footprint on the planet. In addition to addressing computing's energy overhead from communications, Richelle's research also seeks to reduce the energy from computing operations by rethinking the architecture and circuits. Richelle has held internship positions at Linear Technology, Rambus Labs, Stanford Brains in Silicon Lab, and TDK-InvenSense. Outside of research, she enjoys horseback riding/horse polo, playing electric guitar/bass, and growing carnivorous plants.



DEPARTMENT OF GEOPHYSICS

PAUL SUMMERS

KIMBALL FOUNDATION SCHOLAR

Paul is working with the Thwaites Interdisciplinary Margin Evolution group focusing on numerical modeling of the physical processes governing Antarctic shear margins, with special focus on Thwaites Glacier. He also works with the Stanford Radio Glaciology group on resolving thermal anomalies in ice. Paul's research interests focus on data model integration in the cryosphere. He is a mentor to undergraduate researchers and passionate about making glaciology more accessible for rising scientists. He also enjoys running, climbing, and sewing in his free time.



UNIVERSITY OF CALIFORNIA, BERKELEY

Department of Electrical Engineering & Computer Science
Department of Environmental Science, Policy & Management
Department of Integrative Biology
Department of Mathematics
Department of Mechanical Engineering
Department of Metabolic Biology & Molecular Toxicology
Department of Molecular & Cell Biology
Department of Nuclear Engineering
Department of Plant & Microbial Biology

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DEPARTMENT OF MATHEMATICS

AHMAD ABASSI

ARCS FOUNDATION SCHOLAR

Ahmad completed a double bachelor's degree in Computer Engineering and Mathematics and a master's degree in Electrical Engineering from the Technion in Israel. His current research focus is on moving boundary problems in fluid mechanics using high-performance computing and asymptotic expansion methods. In addition to his studies, Ahmad is a passionate educator with four years of teaching experience at the Technion and UC Berkeley, has years of work experience in the life sciences, and is interested in linguistics and world cultures.



DEPARTMENT OF MECHANICAL ENGINEERING

ALANNA COONEY

MOLLY HAUSER MEMORIAL SCHOLAR
BAILEY & CHRIS MEYER SCHOLAR

Alanna's research project in Berkeley's Energy and Multiphase Transport Laboratory involves performing experiments to characterize the performance of thermal energy storage devices or "thermal batteries. These devices capitalize on the energy stored and released during solid-liquid phase change processes. By better understanding the performance characteristics of these devices, we can create models to predict how they would function in building heating, ventilation, and air conditioning (HVAC) systems in order to utilize them to offset peak demand loads and run buildings more efficiently using model predictive controls.



DEPARTMENT OF INTEGRATIVE BIOLOGY

JACQUELYN GALVEZ

SUSAN & JIM ACQUISTAPACE SCHOLAR
JULIE & TOM REIS SCHOLAR

Jackie is a native of sunny southern California, where she grew up fishing in the highly diverse watersheds around the Golden State. Her current research in the Functional Anatomy and Vertebrate Evolution Laboratory focuses on the skeletal changes in freshwater fish populations that relate to varying migratory behaviors, food preferences, and seasonal changes. Her current study animals include cichlids, trouts, and chars. Jackie is passionate about community building and public outreach, and has worked tirelessly to organize and lead community events in her department and the Museum of Vertebrate Zoology on the UC Berkeley campus.



DEPARTMENT OF MOLECULAR & CELL BIOLOGY

CYNTHIA "ABBY" HARRIS

RHODA GOLDMAN MEMORIAL SCHOLAR

Ferroptosis is an iron-dependent type of cell death that results from the accumulation of reactive lipid peroxides. Abby is looking into elucidating the participation of copper and potentially other redox-active metals in ferroptosis, with the aim of expanding our understanding of its mechanism and allowing the development of new ways to induce ferroptotic cell death in cancer and other disorders. She pursued another side of cancer research as an intern at Genentech, where she worked on identifying novel drug targets.



DEPARTMENT OF ELECTRICAL ENGINEERING & COMPUTER SCIENCE

LOGAN HOROWITZ

DIANA & STEVE STRANDBERG SCHOLAR

Logan is interested in working on novel power converter design, focusing on applications in renewables integration and implementation. Commercial air travel accounts for a large proportion of pollution and wasted energy all over the world, but new technologies are emerging which have enabled hybrid aircraft. Logan's project focuses on the design optimizations required for a high-power-density, high-efficiency, high-frequency electric drivetrain.



DEPARTMENT OF PLANT & MICROBIAL BIOLOGY

NICHOLAS KARAVOLIAS

ELIZABETH & CLARK CALLANDER SCHOLAR

Nicholas is looking at drought tolerance in cereal crops with the goal of finding discrete gene targets for genetic engineering of monocotyledonous crops for improved water use efficiency. CRISPR/Cas9 mediated editing of genes involved in stomatal development in rice can improve water-use efficiency. As global aridification and erratic rainfalls threaten the food system, improved water-use efficiency and overall photosynthetic capacity are essential to safeguard food security and farmer livelihoods.



DEPARTMENT OF INTEGRATIVE BIOLOGY

LOURENÇO MARTINS

VENETTA & JOHN ROHAL SCHOLAR

VANESSA & THOMAS WHITFIELD SCHOLAR

From a young age Lourenço always knew he wanted to be a biologist, having spent his childhood chasing after the bugs in his family's backyard garden. He is interested in understanding how some species can have a vast species distribution; how one genome is able to cope with vastly different environmental factors like climate. In the Williams lab, he is using genomics to study the evolution of cold tolerance in the willow leaf beetle, *Chrysomela aeneicollis*, whose species distribution ranges from the California coast to the Canadian Rockies. As an immigrant and first-generation college student, Lourenço strives to make the science community more accessible and inclusive to people of all identities.



DEPARTMENT OF MOLECULAR & CELL BIOLOGY

MARIA MCSHARRY
PEGGY NEWTON SCHOLAR

Maria completed her B.S. in Cellular Biology and a B.A. in Spanish at Western Washington University. Her research in Dr. Liana Lareau's lab leverages genetic engineering in budding yeast to better understand how synonymous codon choice impacts protein output. In addition to her lab work, Maria engages the wider community in science: she has a track record of volunteering in K-12 schools as a science fair judge and as a Bay Area Scientists in Schools volunteer. She is a contributing author at GeneBites, in line with her aspiration of making cutting-edge science accessible to a wider audience.



DEPARTMENT OF ELECTRICAL ENGINEERING & COMPUTER SCIENCE

REESE PATHAK
ARCS FOUNDATION SCHOLAR

Reese's current areas of interest include distributed and non-convex optimization problems as well as the estimation problems with deep ties to applied probability, such as matrix completion and community detection. Recently he has been working on algorithms for distributed optimization in large networks. These types of problems arise in many modern applications of statistical learning.



DEPARTMENT OF NUCLEAR ENGINEERING

ROBIN PETER
RAMSAY FAMILY FOUNDATION SCHOLAR

Robin is pursuing research at the intersection of particle physics, quantitative biology, and humanitarian application. She is currently involved in projects in medical imaging, radiation detection, and radiation therapy. Her multidisciplinary interests stem from an eclectic mix of past research endeavors: memory device simulation with IBM Research, construction of a spark chamber, and studies in cuttlefish camouflage.



DEPARTMENT OF ENVIRONMENTAL SCIENCE, POLICY & MANAGEMENT

SOPHIE RUEHR
DOLORES & MIKE McMULLEN SCHOLAR

Sophie's graduate work is focused on the ecosystem-scale dynamics of water cycling. Using data from satellites, she studies the links between the carbon and water cycles over space and time to better understand how the terrestrial land sink may respond to climate extremes in the future. Her research has implications for both sustainable water management and predicting future climate change.



Department of Metabolic Biology & Molecular Toxicology

RACHELLE STARK

ARCS FOUNDATION SCHOLAR

As an undergraduate at UCLA, Rachelle utilized murine models to study the molecular mechanisms behind Duchenne muscular dystrophy, a severe muscle wasting disease. Additionally, she participated in a summer research internship in Dr. Jicheng Gong's lab at Peking University in Beijing, China, where she performed experiments to detect biomarkers of recurrent lung adenocarcinoma. Rachelle enjoyed her molecular biology education but is also intrigued by the relationship between diet and disease, and therefore chose to pursue a Ph.D. in Metabolic Biology.



UNIVERSITY OF CALIFORNIA, DAVIS

Animal Behavior Graduate Group
Department of Biomedical Engineering
Department of Chemistry
Department of Civil & Environmental Engineering
Ecology Graduate Group
Geology Graduate Group
Department of Integrative Pathobiology
Neuroscience Graduate Group
Department of Pharmacology & Toxicology
Population Biology Graduate Group
Department of Soils & Biogeochemistry

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POPULATION BIOLOGY GRADUATE GROUP

JONATHAN AGUIÑAGA

MONTGOMERY ST. FOUNDATION ENDOWMENT FUND SCHOLAR

Jon is a first-generation Mexican American who believes education is his key to a better future. He became the first in his family to graduate college, earn a master's, and enroll in a Ph.D. program. He is broadly interested in behavioral ecology, cognition, animal personality and mathematical modelling and he integrates ideas and techniques from across these fields to investigate the drivers of mixed-species grouping. He is deeply committed to outreach and teaches biological models and coding to high school students in the Davis Young Scholars program. In his free time, he enjoys landscape photography, playing with his dog, cooking, dancing, and watching movies.



DEPARTMENT OF PHARMACOLOGY & TOXICOLOGY

PETER ANDREW

DEBORAH MANN SCHOLAR
IN MEMORY OF ROSS GORDON

Peter's research interest is to better understand the processes that drive epilepsy. His current project is focused on understanding the role of neuroinflammation in acquired epilepsy following acute intoxication with organophosphate pesticides. He is a three-time ARCS Scholar and was a recipient of the 2020 Graduate Student Achievement Award by the Northern California Regional Chapter of the Society of Toxicology. When not in the lab, Peter enjoys biking and cooking.



DEPARTMENT OF CHEMISTRY

LILIA BALDAUF

AGILENT TECHNOLOGIES SCHOLAR

Lilia is a second-generation Mexican-American and the first in her family to pursue a graduate education. She graduated from the University of San Diego and was funded for summer undergraduate research in the Ronald E. McNair Post-Baccalaureate program. Currently, she works on functionalizing the surface of fullerenes (aka buckyballs) with the goal of using synthetic techniques to open the surface of the fullerene and insert a paramagnetic metal inside. She has published two papers, one in Nanoscience, on elucidating the complex structures of fullerene cocrystals. Additionally, Lilia is heavily involved in outreach for under-represented groups and helped develop a chemistry co-class to assist marginalized students and to increase their representation in STEM.



ECOLOGY GRADUATE GROUP

MATTEA BERGLUND
ARCS FOUNDATION SCHOLAR

Mattea integrates field and lab techniques to study human impacts on aquatic ecosystems. Through collaboration with stakeholders, she aims to conduct management-relevant research. Her prior research spans algae, viruses, salt marshes, artificial reefs, and hatcheries. At UC Davis, Mattea is investigating the impact of habitat change on the salmon microbiome, with the goal of better understanding how habitat change impacts salmon health. Mentorship, community engagement, and equity work are central to Mattea's research program; she strives to create research opportunities for undergraduates, collaborate with community organizations, and increase accessibility in research.



DEPARTMENT OF BIOMEDICAL ENGINEERING

ALENA (LANEY) CASELLA
BARBARA A. WOLFE SCHOLAR

Laney's broad research interests are in the development of biomaterials to promote the clinical translation of engineered tissues. She is especially interested in using conductive biomaterials to promote nerve cell survival and regeneration in biologically challenging conditions. Currently, she is working to develop an electrically and mechanically tunable hydrogel platform to both direct cell behavior and provide more insight about the specific benefits of using electroactive materials for medical applications. Outside of the laboratory, Laney is involved in the Biomedical Engineering Student Association, where she has served in various leadership positions, and STEM for Girls, an outreach event that engages minority students in underserved communities. In her spare time, Laney enjoys reading, watching movies, and exploring ways to live more sustainably.



DEPARTMENT OF CHEMISTRY

SAVANNAH CONLON
LISA & DEREK KIRKLAND SCHOLAR

Savannah is currently working on elucidating fundamental features of the MUTYH and NEIL DNA repair enzymes. She has developed several new approaches for studying these enzymes through unique cellular repair assays to reveal insight into the enzyme's unique ability to repair various modified or damaged bases in human cells. She recently presented her work at ACS San Diego, where she was selected for presenting in the Division of Biological Chemistry National Awards, while also receiving the Women's Chemist Committee Travel Award. In addition, she maintains an active role in supporting her graduate student community, serving on several various departmental committees, STEM outreach activities, and as Chair of the Chemistry Graduate Student Association



DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING

ELEANOR FADELY
LAKESIDE FOUNDATION SCHOLAR

Eleanor is passionate about connecting fundamental scientific concepts and applied engineering tools to improve environmental quality. Her research focuses on the ubiquitous biogeochemical process of manganese biomineralization, which is the formation of reactive manganese oxide nanoparticles by microorganisms. These biominerals can remove or degrade toxicant metals and organic compounds in contaminated water and waste streams. Eleanor uses “soil-on-a-chip” microfluidic reactors to investigate how parameters such as fluid flow rate and oxygen availability control manganese biomineralization in porous media, such as soils and sediments, and how they may be optimized for in situ bioremediation applications. Prior to beginning her Ph.D. research, Eleanor worked for a consulting company specializing in water quality monitoring at waste disposal sites. Outside of the lab, Eleanor enjoys running, rock climbing, and exploring California.



DEPARTMENT OF SOILS & BIOGEOCHEMISTRY

JANE FUDYMA
ARCS FOUNDATION SCHOLAR

Jane is researching soil viral ecology in natural systems. More specifically, her research focuses on understanding the fate and transport of viruses in complex soil matrices, how the heterogeneity of soil and viruses can dictate where a virus can move, and how these properties affect small scale ecological processes. Before graduate school, she received her B.S. in General Science from Seattle University, spent nearly five years working in mining bioremediation, and spent two years in academia in an environmental metabolomics lab. In her spare time, she enjoys skiing, dispersed camping, playing soccer, and attending live music.



DEPARTMENT OF INTEGRATIVE PATHOBIOLOGY

BROOKE GENOVESE
MARCIA & MAX MESSMER SCHOLAR

Brooke is a fellow within the UC Davis Wildlife Health Center. In the lab, she studies the immune dynamics and spillover of zoonotic viruses in natural reservoir hosts, including bats. Prior to her graduate training, Brooke worked on several emerging disease research and scientific capacity building efforts that sought to identify novel zoonotic viruses with pandemic potential. A first-generation college student, Brooke currently serves as a Co-PI on a pilot grant aimed at advancing diversity, equity, and inclusion (DEI) in academia. Her long-term career aspirations are to advance our understanding of host-virus ecology for high-consequence viruses and improve human and animal health in vulnerable ecosystems and communities. In her free time Brooke enjoys making homemade pasta and live music concerts.



GEOLOGY GRADUATE GROUP**ELIZABETH GRANT**
ARCS FOUNDATION SCHOLAR

Elizabeth studies magma assembly and storage timescales at volcanoes in New Zealand. She uses a suite of geochemical tools, including radioisotope chemistry, to understand the timescales on which these large eruptions are built prior to eruption. Most recently she spent a year working with the U.S.G.S. conducting phase equilibrium experiments to determine the pressure and temperature conditions at which caldera-forming magmas are stored in the crust. Elizabeth is a native of Seattle and obtained her B.S. in geology at the University of Washington. Outside of academia she enjoys dance, theatre, and music.

**ANIMAL BEHAVIOR GRADUATE GROUP****CARLY HAWKINS**
KATHERINE HELLMAN BLACK ENDOWMENT FUND SCHOLAR

Carly seeks to understand how birds choose their mates in a socially complex mating system, where males and females form pair-bonds and work together to raise offspring, but the genetics of the offspring reveal that many are sired by males other than the male raising them. She is interested in how males vary in their mating tactics when choosing whether to pursue additional mating opportunities at the expense of caring for the nest within their pair-bond. Carly completed her M.S. at The College of William & Mary, where she studied the effects of noise pollution on the social behavior of birds in Australia. As a first-generation college student, Carly is committed to undergraduate mentorship on campus and in the field. Outside of academia, Carly loves to bake, hike, and play with her sassy cat named Moop.

**ANIMAL BEHAVIOR GRADUATE GROUP****MEREDITH LUTZ**
MARIE & BARRY LIPMAN SCHOLAR

Meredith's research examines how animal societies respond to environmental change over multiple temporal and spatial scales. Since 2015, she has conducted a long-term comparative study on lemur social behavior in the Maromizaha Protected Area, in collaboration with local managers, scientists, guides, and graduate students from University of Antananarivo. To complement her field research, she is also undertaking a phylogenetic comparative analysis to explore the range of documented behavioral flexibility across primates. Meredith is also part of the inaugural cohort of the Future Undergraduate Science Educators program. Meredith is passionate about providing opportunities for undergraduates to get involved in research, by mentoring six students on their senior theses and co-leading a team of 185 additional interns in the phylogenetic comparative analysis of behavioral flexibility.



DEPARTMENT OF BIOMEDICAL ENGINEERING

ABBY NIESEN

BETTY & BRUCE ALBERTS SCHOLAR

LESLIE & GEORGE HUME SCHOLAR

Abby seeks to optimize patient outcomes after knee replacement such that the artificial knee joint functions as well as the natural knee joint. She currently has six first-author, peer-reviewed journal publications which propose new methods to improve the accuracy of measuring in vivo knee implant micromotions and evaluate limitations of current metrics used to predict early implant loosening. At Davis, Abby was a finalist in the 2021 Grad Slam and was recently accepted to the prestigious Professor's for the Future Program where she will develop a series of workshops to empower women in STEM.



ECOLOGY GRADUATE GROUP

JULIA OWEN

ARCS FOUNDATION SCHOLAR

Julia studies the evolution and ecology of wildlife using genetic and genomic tools. She recently published a study using DNA from scats to identify individual bears and estimate their abundance in the Tahoe Basin. Her current research uses whole genome sequencing to illuminate the evolutionary history of the spotted skunk species complex. Julia has been awarded several fellowships/scholarships, including a prestigious Provost's Undergraduate Fellowship, and has presented her research at multiple National and regional conferences. She is committed to helping other first-generation college students and other underserved populations, having mentored over 30 undergraduates in multiple retention programs on campus. Julia enjoys running and is currently training for her first marathon.



DEPARTMENT OF PHARMACOLOGY & TOXICOLOGY

NATHANIAL CHASE STEVENS

DEVLIN FAMILY ENDOWMENT FUND SCHOLAR

Chase is a toxicologist at heart. He uses large-scale metabolism data and a range of toxicology tools to understand the impact of air pollution on lung function in animal models and has published his results in peer-reviewed journals as well as at multiple conferences. Starting his academic career at University of North Carolina, he entered the graduate program at UC Davis in 2017. He has won multiple fellowship and poster awards and is dedicated to research and outreach. As member of several scientific organizations, he teaches courses both on the academic level and in professional education.



NEUROSCIENCE GRADUATE GROUP

TANNER STEVENSON
NIANTIC CHARITABLE FUND SCHOLAR
COMMERCE VENTURES SCHOLAR

Tanner has been fascinated by the brain ever since learning about deep brain stimulation (DBS) as an undergraduate studying Biomedical Engineering. After searching for his calling by working first as a R&D engineer at a neurotechnology startup and then as a software engineer for Agilent Technologies, Tanner has found his true passion pursuing neuroscientific research. His research interests lie at the intersection of experimental and computational neuroscience, where he is using methodologies from both disciplines to understand how biological networks of neurons can flexibly retrieve, maintain, and modify information for the purposes of intelligent behavior. To this end, Tanner is collaborating on an innovative multi-disciplinary project investigating the role dopamine plays in flexibly updating or maintaining information in working memory. Outside the lab, Tanner enjoys getting outdoors by hiking, running, biking, or swimming, and he loves to spend time with his wife and newborn son.



DEPARTMENT OF CIVIL & ENVIRONMENTAL ENGINEERING

MICAH SWANN
MARY ANN PEOPLES SCHOLAR

Micah is a passionate environmental advocate who has dedicated his career to improving water resource management in the face of stresses from population growth and climate change. During his tenure at UC Davis, Micah has led lake monitoring and modeling programs spanning the trophic spectrum from nutrient impaired systems in Northern California to the pristine lakes in Northern Patagonia. This experience has taught him the importance of utilizing numerical modeling to understand how water bodies are changing at the system scale. After completing his degree, Micah plans to continue this work by developing integrated monitoring programs for lakes and their watersheds around the world that can both provide a holistic view of current watershed conditions as well as foresight into how these systems will change in the future.



UNIVERSITY OF CALIFORNIA, MERCED

Department of Cognitive & Information Sciences
Department of Environmental Systems
Department of Physics

DEPARTMENT OF ENVIRONMENTAL SYSTEMS

HOPE HAUPTMAN

CONNIE & ROBERT LURIE SCHOLAR

Hope's research centers around 1,2,3-Trichloropropane (TCP) a suspected legacy contaminant and probable human carcinogen that contaminates thousands of wells in the United States, Europe, and Asia. Hope aims for clean drinking water for all. She uses machine learning to predict TCP levels in groundwater and will evaluate household treatments and almond-based carbon to remove TCP from drinking water. She has published a systematic review of TCP treatment technologies and a policy paper. She taught high school science for ten+ years and was a U.S. Peace Corps volunteer in Kenya. Hope volunteers at a community garden and pantry to provide fresh produce for those in need.



DEPARTMENT OF COGNITIVE & INFORMATION SCIENCES

ZUNAIRA IQBAL

GEORGIANA DUCAS ENDOWMENT FUND SCHOLAR

Zunaira graduated from UC Davis in 2019 with a B.S. in Psychology with an emphasis in biology. Inspired by her work at UC Davis in cognitive neurolinguistics, Zunaira's research passion is at the intersection of bilingual language processing and neurobiology. Currently, her work looks at understanding how Spanish-English bilinguals phonetic representations differ from English monolinguals, through both behavioral and EEG experiments. She is part of UC Merced's NSF Research Traineeship (NRT) Program, through which she has received several fellowships. Outside research, Zunaira enjoys watching movies, journaling, art, and taking care of her house plants.



DEPARTMENT OF PHYSICS

ALAUNA WHEELER

CHRIS SIMPSON BRENT & BRUCE BRENT SCHOLAR
IN MEMORY OF DOROTHY LEWIS SIMPSON

A 5th-year Ph.D. candidate and mother to a 3-year-old (with #2 on the way), Alauna's research interests include soft matter and self-assembly of biological systems. Her current projects include a study of the self-assembly of nanoparticles in a liquid crystal solvent undergoing a phase transition, self-assembly of the COVID viral particle, and the effect of e-cigarette chemical additives on lung surfactants. She also recently published a collaborative paper on the structure of electrosensory gels in cartilaginous fishes. She is the recipient of many honors and awards, including the 2020-2021 Outstanding Physics TA Award. Pre-Ph.D., Alauna spent 3+ years as a rocket propulsion and testing engineer. Her current outreach focuses on conducting hands-on science activities for elementary students using common household items. She is developing an accompanying YouTube channel so kids everywhere can do the activities at home with their adults. She is also a bargaining team member for the new UC Student Researcher's Union, negotiating for more equitable working conditions. Alauna enjoys small boat sailing, visiting national and state parks with family, and board games for 3-year-olds.



UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Department of Bioengineering
Department of Biological & Medical Informatics
Department of Biomedical Sciences
Department of Cell Biology
Department of Developmental & Stem Cell Biology
Department of Epidemiology & Translational Science
Department of Neuroscience
Department of Oral Craniofacial Sciences
Department of Pharmaceutical Science & Pharmacogenomics

DEPARTMENT OF NEUROSCIENCE

JESSICA BLUMENFELD

FREDERICK & KATHRYN BARON SCHOLAR

Jessie is interested in understanding the cellular pathways underlying neurodegenerative diseases. She began her studies at MIT, where she majored in bioengineering with a minor in neuroscience. Following graduation, she joined Denali Therapeutics where she assessed the efficacy of therapeutics for various neurodegenerative disorders. Now as a third-year neuroscience graduate student at the Gladstone Institutes, Jessie seeks to understand how APOE4 may drive neuronal vulnerability in Alzheimer's Disease. In particular, she investigates how neuronal MHC-I – an immune factor seemingly regulated by APOE expression – mediates downstream AD pathologies. Beyond lab, Jessie enjoys cooking, traveling, SCUBA diving, and exploring San Francisco.



DEPARTMENT OF BIOENGINEERING

GAUREE CHENDKE

KAYLA AND JAMIE GRODSKY MEMORIAL SCHOLAR

Gauree is interested in applying principles of fundamental biology to design clinically relevant medical implants. Prior to joining graduate school, Gauree demonstrated expertise in using biomaterials for drug delivery and designing clinically translational devices for enhancing treatments used for Type I Diabetes. Her thesis work builds off her previous research, as she focuses on further understanding cell-material interactions, notably with the immune system. Specifically, Gauree has created an independent, niche project that explores how biomaterials can be designed to modulate the local immune microenvironment and promote tissue regeneration post transplantation of material implants.



DEPARTMENT OF ORAL CRANIOFACIAL SCIENCES

JESSICA COOK

ARCS FOUNDATION SCHOLAR

After completing her B.S. in Biology at UCLA, Jessica began pursuing dual DDS/PhD degrees at UCSF in 2018. Her project focuses on uncovering the subpopulations of fibroblasts within the oral mucosa and deconvoluting their roles in the efficient wound healing that occurs in the oral mucosa, a project with strong translational potential that Jessica hopes to apply in her clinical work. Jessica is also a NIDCR F30 recipient and a UCSF Discovery Fellow. In her free time, she prefers to be outdoors, either rock climbing or backpacking, or just relaxing and reading a book.



DEPARTMENT OF PHARMACEUTICAL SCIENCE & PHARMACOGENOMICS

JACQUELINE ERNEST

VIVIAN LOH NAHMIAS SCHOLAR

PAULA RANTZ SCHOLAR

Jackie is broadly interested in early clinical drug development and developing quantitative models to predict clinical trials. Currently, she is applying principles of pharmacokinetics and pharmacometrics to predict drug concentrations of multidrug regimens into the lungs of patients with tuberculosis. She has been awarded the Presidential Trainee Award at the American Society of Clinical Pharmacology and Therapeutics in 2021 and was a Top Poster Ribbon Recipient at the annual meeting. Jackie is passionate about teaching and was awarded the Dean's Apple Award for Teaching two times for her work as Teaching Assistant. Jackie hopes to pursue a career in clinical pharmacology.



DEPARTMENT OF BIOLOGICAL & MEDICAL INFORMATICS

AMANDA EVERITT

CAROL & DIXON DOLL SCHOLAR

GAIL SMELICK SCHOLAR

Amanda studies the molecular mechanisms underlying human neurodevelopment, and in particular, how the dysregulation of these mechanisms may contribute to neurodevelopmental and psychiatric disorders. Towards this end, Amanda's career goals center on the development and improvement of bioinformatic frameworks which allow researchers to maximize the information gained from their experiments. Her current research focuses on transcription factors and how machine learning frameworks can improve their binding site predictions. Outside of research, Amanda prefers to be outdoors, either gardening, backpacking, or reading.



DEPARTMENT OF BIOMEDICAL SCIENCES

JOE GERMINO

CONNIE & ROBERT LURIE SCHOLAR

Joe's research interests center around gaining a better understanding of the mechanisms responsible for regulating the complex interactions of the immune system to prevent uncontrolled immune responses that could be detrimental to the host's health while still maintaining adequate host defense. Joe is also interested in extending his education in computational biology from his undergraduate degree at Washington University in St. Louis by developing and applying cutting edge bioinformatics tools, particularly in the field of single-cell multiomics, to help answer some of the longstanding questions about immune tolerance alongside traditional wet lab approaches.



DEPARTMENT OF PHARMACEUTICAL SCIENCE & PHARMACOGENOMICS **KETRIN (KATIE) GJONI**
JANE FULLER GILLESPIE MEMORIAL SCHOLAR

Katie completed her B.S. in Chemistry at UC Berkeley and transitioned to full time research on gene editing approaches for targeting macular degeneration using in vitro cell models. She then developed an interest in bioinformatics and joined the department of pharmaceutical sciences and pharmacogenomics to study functional genomics. In the Pollard lab, she focuses on functional consequences of the 3D organization of the genome. Her initial work involved lamina associated domains across developmental cell types. Her current goals are to decipher noncoding disease-causing variants that disrupt 3D genome folding in disease. Outside of graduate school, Katie enjoys backpacking, skiing, surfing, and park days with friends.



DEPARTMENT OF BIOLOGICAL & MEDICAL INFORMATICS **MIGUEL GUARDADO**
DR. & MRS. BERNARD M. KRAMER ENDOWMENT FUND SCHOLAR

Miguel is a computational biologist whose research focuses on dismantling disparities inside precision medicine by addressing inequities in the development and application of genomic technologies and methods. While most of the thesis work will involve understanding the basic science of complex traits, his research is also focused on investigating respiratory diseases caused from preterm birth through computational omics approaches. Miguel seeks to advocate for historically excluded communities in academia and the industry of computational biology. Miguel is additionally on the executive board of the Associated Students of the Graduate Division at UCSF and is an HHMI Gilliam Fellow.



DEPARTMENT OF NEUROSCIENCE **RACHEL O'SULLIVAN**
ARCS FOUNDATION SCHOLAR

Rachel majored in biology with a concentration in neuroscience at Williams College. After graduation, she worked at a biotech startup, Kallyope, studying the gut-brain axis and exploring novel cell-types along this axis that could be targeted by therapeutics. Now, at UCSF, she is interested in understanding the heterogeneous circuitry of the ventral hippocampus (vHPC). vHPC sends non-overlapping projections to many downstream brain areas and ultimately promotes the selection of a diverse array of motivated behavioral responses. She wants to identify how these projections differ in terms of the emotionally salient information they encode and the adaptive reactions they promote. Outside of lab, Rachel loves to spend time outdoors, skiing, biking, running, and surfing.



DEPARTMENT OF CELL BIOLOGY

MANUELA RICHTER
MJ WHITEHOUSE, MD & MICHAEL HEFFERNAN SCHOLAR

Manuela received her B.S. in Biology from Stanford University where she worked on chromatin biology. She then spent two years as a scientist at EpiBiome Inc. before starting graduate work at UCSF in Fall 2017. She is broadly interested in self-organization and its mechanistic underpinnings. In her thesis work, she is asking how the cell sets the size of its internal structures. Specifically, she is using cell biological and biophysical approaches to uncover how the mammalian spindle sets its size to perform its function. Manuela is an NSF GRFP recipient, speaks four languages, and loves puzzles and the outdoors.



DEPARTMENT OF DEVELOPMENTAL & STEM CELL BIOLOGY

LAUREN SCHECHTMAN
MERRILL RANDOL SCHOLAR

Lauren discovered her passion for stem cell and developmental biology as a research assistant in the Barlow lab at CU Anschutz, which studies taste receptor cell development and regeneration. At UCSF, she aims to further explore the cellular and molecular mechanisms regulating stem cells with the hope of building on these findings in the context of regenerative medicine treatments. As a new member of the Roose lab, she plans to investigate epithelial regeneration in the context of the intestinal stem cell niche. Lauren is also passionate about scientific mentoring and teaching. In her free time, she enjoys hiking, volleyball, scuba diving, yoga, and exploring the Bay Area.



DEPARTMENT OF EPIDEMIOLOGY & TRANSLATIONAL SCIENCE

CAROLYN SMITH HUGHES
ALLISON & ANEEL BHUSRI SCHOLAR

Carolyn is passionate about helping to improve experiences of care and clinical outcomes for birthing persons and their infants in the US and around the world. As a survivor of severe intrapartum and postpartum complications and birth trauma, Carolyn focuses on research in the provision of person-centered prenatal, maternity, and postpartum care; the social and clinical causes of hypertensive disorders of pregnancy (HDPs); and strategies to improve outcomes among those who experience HDPs. In her free time, Carolyn enjoys cooking, long walks, reading, and learning about sea creatures with her 3-year-old son and husband.



UNIVERSITY OF CALIFORNIA, SANTA CRUZ

Department of Astronomy & Astrophysics
Department of Biomolecular Engineering
Department of Chemistry
Department of Computer Science & Engineering
Department of Earth & Planetary Sciences
Department of Ecology & Evolutionary Biology
Department of Environmental Studies
Department of Microbiology & Environmental Toxicology
Department of Molecular, Cell & Developmental Biology
Department of Ocean Sciences
Department of Physics
Science Communications Master's Program

DEPARTMENT OF ECOLOGY & EVOLUTIONARY BIOLOGY

STEPHANIE ADAMCZEK

EILEEN D. & LISA C. LUDWIG ENDOWMENT FUND

Stephanie's academic and professional career prioritizes conservation, basic scientific knowledge, and equitable learning opportunities. Her research balances an improved understanding of the mechanisms driving health, behavior and fitness with practical management applications for conservation. She has five first-authored publications, nine co-authored publications, and has presented her work at international conferences and workshops. Stephanie's dissertation examines how individual growth and attainment of large body size influences fitness outcomes and resilience to disturbance in harbor porpoises and northern elephant seals and uses a combination of advanced statistical methods, computer programming, and empirical data derived from field work. In addition to her research interests, Stephanie prioritizes mentorship and teaching to train the upcoming generation of scientists and has taken part in important initiatives such as Skype a Scientist, Frontiers for Young Minds, and Women in Science and Engineering.



DEPARTMENT OF EARTH & PLANETARY SCIENCES

WILL CHAPMAN

ARCS FOUNDATION SCHOLAR

Will specializes in understanding processes of erosion and sediment transport in rivers. His research, which focuses on how rivers both respond to and reflect changes in land use and climate, combines careful fieldwork, analysis of high-resolution topographic data, and big data analysis. Will's first project, for example, explored how a coastal California river still records the legacy of 19th century forestry practices. Currently, Will is exploring a fundamental problem in fluvial geomorphology: how do non-perennial rivers in arid settings move the same amount of sediment as perennial rivers in temperate settings, despite having far less water? Both subjects pertain to Will's core interest in the interactions between geologic forces, natural ecosystems, and humans.



SCIENCE COMMUNICATIONS MASTER'S PROGRAM

SEAN CUMMINGS
ARCS FOUNDATION SCHOLAR

Having completed reporting internships at Mountain Journal and the Santa Barbara Independent and written for the Stanford Daily and regional newsletters of the Sierra Club and Audubon Society, Sean is thrilled for the chance to develop his skills as a science and environmental journalist at UC Santa Cruz. He hopes to focus on stories about biodiversity, extinction, conservation, climate change, and the intersection of human society with these topics, practicing longform, narrative-style writing whenever possible. Sean is grateful not only to ARCS but also to the Scholarship Foundation of Santa Barbara for their support and to the Outdoor Writers Association of America for awarding him a Bodie McDowell Scholarship. He holds a B.A. in Environmental Humanities with Honors from Whitman College



DEPARTMENT OF MOLECULAR, CELL & DEVELOPMENTAL BIOLOGY

JERRY TYLER DEWITT
EDINA JENNISON SCHOLAR

Tyler's research is focused on discovery of the molecular mechanisms that control cell growth and size, with the goal of understanding why nearly all cancer cells have severe defects in control of cell size. In addition to being an exceptional researcher, Tyler has an uncommon commitment to leadership, service and teaching that impact science and society beyond his research. A major focus of his work has been to help build an inclusive and supportive environment where everyone feels welcome and has an equal chance to pursue their dreams and be successful.



DEPARTMENT OF ASTRONOMY & ASTROPHYSICS

ROSA EVERSON
GORDON AND BETTY MOORE FOUNDATION SCHOLAR

Rosa is active in one of the most challenging and novel areas of modern astrophysical research: the evolution of binary stellar systems, including black holes and neutron stars. An NSF Graduate Research Fellow, she has won a number of awards for her research. Through membership in the AAS National Osterbrock Leadership Program and Lamat Institute, Rosa works vigorously to support the promotion and retention of women and historically marginalized students in STEM.



DEPARTMENT OF ENVIRONMENTAL STUDIES

FRANCIS JOYCE
JOAN D. MCCAULEY ENDOWMENT FUND SCHOLAR

Francis studies ecological processes affecting recovery in tropical forests to inform restoration and conservation strategies. His dissertation focuses on factors limiting the recruitment of late-successional tree species in former agricultural land in southern Costa Rica that was restored almost two decades ago using different methods. He is also analyzing long-term monitoring data to understand how bird communities change in restored forests over time. He cares deeply about undergraduate STEM education and has mentored four students from the US and Costa Rica as they develop their own field research projects. In his free time, he enjoys trail running, scuba diving, and observing wildlife.



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DEPARTMENT OF ECOLOGY & EVOLUTIONARY BIOLOGY

MATTHEW KUSTRA

LIBBY TYREE TAYLOR & BARRY TAYLOR SCHOLAR

Matthew's dissertation focuses on how cryptic female choice—a process where females bias fertilization to specific males—influences the evolution of male behavior and the creation of new species. He is also developing mathematical models to understand how microbes can influence the evolution of life-history strategies in marine invertebrates. Outside of research, Matthew is developing a web app for Cambodian fishing communities to visualize their own fisheries data. He is dedicated to mentorship and teaching, exemplified by the numerous students he has mentored and the weekly programming workshops he co-leads. In his free time, Matthew enjoys scuba diving, hiking, climbing, and cooking.



DEPARTMENT OF ASTRONOMY & ASTROPHYSICS

JOSEPH MURPHY

WREYFORD FOUNDATION SCHOLAR

Joey is interested in what the population of precisely characterized “exoplanets” (planets orbiting stars other than the Sun) can tell us about the physical processes that govern planet formation and evolution in our galaxy. He is a member of the TESS-Keck Survey (TKS), a large, multi-institution Doppler survey of promising planet candidates discovered by NASA's Transiting Exoplanet Survey Satellite. His work with TKS includes observing with the HIRES spectrograph on the Keck I telescope as well as the characterization of small planets amenable to future atmospheric observations. Prior to starting his graduate work at UC Santa Cruz, Joey received his undergraduate and master's degrees from Stanford University, where he studied the variable accretion processes of young stars. Beyond research, Joey is exploring the duality of his identity as a Native Hawaiian working in observational astronomy.



DEPARTMENT OF CHEMISTRY

JONATHAN PHILPOT

JI ING SOONG ENDOWMENT FUND SCHOLAR

Prior to starting his graduate work, Jon gained research experience as an undergraduate at Cal Poly Humboldt on projects related to bioanalytical chemistry and enantioselective biocatalysis. His current research interests are to answer fundamental molecular level questions that could impact our everyday lives by using structural biology to draw connections between structure and function in the molecular circadian clock, which ultimately controls our physiology and behavior. His predoctoral research focuses on the mammalian circadian clock, using biophysical methods such as X-ray crystallography and NMR to interrogate the interactions between core clock components that give rise to ~24-hour rhythms. Particularly, he is focused on the interaction between PERIOD2 (PER2) and Casein Kinase 1TM (CK1TM), trying to understand how CK1TM regulates PER2 turnover and its activity as a transcriptional repressor. Before he began his journey to become a successful research scientist, Jon worked for many years as a carpenter/woodworker and in his free time he still enjoys making furniture.



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

REILLY RAAB

ARCS FOUNDATION SCHOLAR

Reilly is interested in socially responsible applications of machine learning. He is currently exploring the dynamics of prejudiced social norms in a multiagent setting as well as the long-term effects of fairness interventions using reinforcement learning. Reilly advanced to PhD candidacy with honors in Spring 2022, published a spotlight paper with NeurIPS (2021), and has helped run a seminar series for ethics and algorithms for over a year. Outside of research, Reilly programs his own digital guitar effects and has brought his telescope to student events for impromptu star parties.



DEPARTMENT OF MOLECULAR CELL & DEVELOPMENTAL BIOLOGY

MAYS MOHAMMED SALIH

LINDA DYER MILLARD SCHOLAR

Prior to enrolling in the graduate program, Mays developed a variety of bench, communication and leadership skills through research and professional positions. Her current educational track allows her to develop and grow her skills as an immunologist with a focus on immune response regulation. Studying mechanisms of immune regulation will help better understand how organisms respond to pathogens and mechanisms by which inflammatory and autoimmune diseases arise and ways to target them via therapeutics. Mays also leads and participates in many student outreach activities to promote diversity in STEM and support fellow graduate students.



DEPARTMENT OF MOLECULAR CELL & DEVELOPMENTAL BIOLOGY

NOLAN SMYTH

GOLDMAN SACHS SCHOLAR

Nolan is a fourth-year graduate student in physics who works at the intersection of dark matter, black holes, astro-particle physics, and machine learning. He is a recipient of the National Science Foundation's Graduate Research Fellowship, one of the most competitive and prestigious awards for graduate students in the natural sciences. As an institutional representative for the Mentorship Alliance, he works to create institutional support for mentorship in STEM at UCSC and partnering institutions. Outside of physics, Nolan is a passionate musician, writing, recording, and independently releasing his own music, as well as an avid pickleball player.



DEPARTMENT OF OCEAN SCIENCES

RAE TAYLOR-BURNS

WILDCAT COVE FOUNDATION SCHOLAR

Rae's general research interests include climate adaptation, hydrodynamic modeling, coastal science and policy, physical oceanography, and coastal engineering. For her Ph.D. she studies the influence of marshes on wave transformation in a sheltered estuary, the impacts of stakeholder identified marsh restoration on flooding in San Mateo County CA, and the interactions between marsh habitat and levee failure in San Francisco Bay. Rae has worked at the Cape Cod National Seashore Lab, at the Provincetown Center for Coastal Studies, and with the Central Coast Wetlands Group. She has been honored as a California Sea Grant Graduate Research Fellow and in 2020 was the Norris Center Artist in Residency.



DEPARTMENT OF MICROBIOLOGY & ENVIRONMENTAL TOXICOLOGY

MICHAEL TREBINO
JILL H. KRAMER SCHOLAR

Michael has been studying mechanisms and regulation of biofilm formation and virulence in *Vibrio cholerae*, the causal organism of the acute diarrheal disease cholera. He has been investigating the role of one of the major signal transduction pathways in biofilm formation. This regulatory system links biofilm formation of *V. cholerae* to environmental survival and virulence. Michael's proposed studies will provide novel insights into *V. cholerae* biofilm formation during infection and transmission. He has been productive in his work and has communicated his scientific findings at departmental seminars and scientific meetings. In the future, Michael plans to work on projects designed to develop of targeted-therapeutics to combat infectious diseases.



DEPARTMENT OF BIOMOLECULAR ENGINEERING

KATERYNA VOITIUK
AGILENT TECHNOLOGIES SCHOLAR

Kateryna has a background in computer hardware, software, networks, and digital technology. She is curious about how the brain processes information from the bottom up. Her interest moved her into neural interfaces, closed-loop neuroscience, and biologically inspired machine learning algorithms. Currently, she studies neural connectivity in 3D stem-cell-derived organoid and connectoid models of brain regions. Kate also works to translate research to enhance science education: from undergraduate course development to teaching high school biology students to design and conduct remote-controlled laboratory experiments through the Internet of Things (IoT). She also mentored the undergraduate NeuroTechSC team on the silent speech interface project, which won first place in the NeuroTechX competition. Kate enjoys hiking, cooking, reading sci-fi, nonfiction, philosophy, and psychology.



SCIENCE COMMUNICATIONS MASTER'S PROGRAM

ANNA MARIE YANNY
ARCS FOUNDATION SCHOLAR

Anna Marie completed her Behavioral Neuroscience B.S. from Western Washington University (WWU) in 2018, where she graduated as the Department's Outstanding Graduate. After graduation, she spent four years conducting genetic cell types research at the Allen Institute for Brain Science. While at the Allen Institute, Anna Marie's research comparing cell types in the human brain to those of other mammals was published in the journal *Nature*. Her science communication pieces have been featured in the *Seattle Times* and the Allen Institute news. When she's not writing about science, Anna Marie writes for poetry open mics. She also enjoys biking, lake swimming, climbing, hosting trivia events and searching for the best cake her city has to offer.



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Lee Dickinson, Advanced Visual Production
Deborah Greenwood, Leanne Reiter, and Carol Schimke of the ARCS office
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NORTHERN CALIFORNIA CHAPTER
FOUNDED OCTOBER 22, 1970

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(as of 12/2022)

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ARCS FOUNDATION ENDOWMENT FUND

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The Northern California Chapter Endowment was established in 1987 with \$10,000 to initiate provision for a perpetual source of funds for science scholarships. Subsequent gifts have substantially increased the corpus of the Endowment. There are two types of Endowment assets: (1) permanently restricted per donor instructions, and (2) as designated by the ARCS Foundation Northern California Chapter Board from large, unspecified donations and excess funds raised.

The Endowment offers an excellent vehicle for memorial funds and planned giving. The ARCS Foundation NCC Endowment Fund provides for establishment of named funds. Named funds established and fully funded to date are as follows:

- Katherine Hellman Black Fund
- Devlin Family Fund
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- Dr. and Mrs. Bernard Kramer Fund
- Robert Lansdon Trust Fund
- Eileen D. and Lisa C. Ludwig Fund
- Jack Lund Fund
- Joan Diehl McCauley Fund
- Montgomery Street Foundation Fund
- Nordstrom Fund
- Ji Ing Soong Fund

In addition, the following named funds have been established by Barbara Wolfe and are in the process of being funded:

- Linda Dyer Millard Fund
- Barbara A. Wolfe Fund

If you would like more information regarding the ARCS Foundation Endowment, please call the ARCS office at 415-561-6537.

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Report of Independent Auditors

To the Board of Directors of

Achievement Rewards for College Scientists Foundation, Inc.
Northern California Chapter:

Opinion

We have audited the accompanying financial statements of ARCS Foundation, Inc., which comprise the statement of financial position as of June 30, 2022, and the related statement of activities, functional expenses, and cash flows for the year then ended, and the related notes to the financial statements.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of ARCS Foundation, Inc. as of June 30, 2022, and the changes in its net assets and its cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinion

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Our responsibilities under those standards are further described in the Auditors' Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of ARCS Foundation, Inc. and to meet our other ethical responsibilities in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about ARCS Foundation, Inc.'s ability to continue as a going concern within one year after the date that the financial statements are available to be issued.

Auditors' Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditors' report that includes our opinion. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with generally accepted auditing standards will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements, including omissions, are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

CERTIFIED PUBLIC ACCOUNTANTS ♦ WWW.NOVOCO.COM

In performing an audit in accordance with generally accepted auditing standards, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of ARCS Foundation, Inc.'s internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about ARCS Foundation, Inc.'s ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control related matters that we identified during the audit.

Novogradec & Company LLP

Walnut Creek, California
December 2, 2022

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ACHIEVEMENT REWARDS FOR COLLEGE SCIENTISTS
FOUNDATION, INC.
NORTHERN CALIFORNIA CHAPTER
STATEMENT OF FINANCIAL POSITION
June 30, 2022

	Net Assets without Donor Restrictions	Net Assets with Donor Restrictions	Total
ASSETS			
Cash and cash equivalents	\$ 101,769	\$ -	\$ 101,769
Contributions receivable	95,685	-	95,685
Endowments, at fair value	4,584,028	3,866,821	8,450,849
Prepaid expenses and deposits	515	-	515
	<u>4,781,997</u>	<u>3,866,821</u>	<u>8,648,818</u>
Total assets	\$ 4,781,997	\$ 3,866,821	\$ 8,648,818
NET ASSETS			
Without donor restrictions	197,969	-	197,969
Board designated endowment fund	4,584,028	-	4,584,028
Restricted endowment fund	-	3,866,821	3,866,821
	<u>4,781,997</u>	<u>3,866,821</u>	<u>8,648,818</u>
Total net assets	\$ 4,781,997	\$ 3,866,821	\$ 8,648,818
Total liabilities and net assets	\$ 4,781,997	\$ 3,866,821	\$ 8,648,818

see accompanying notes

ACHIEVEMENT REWARDS FOR COLLEGE SCIENTISTS
 FOUNDATION, INC.
 NORTHERN CALIFORNIA CHAPTER
 STATEMENT OF ACTIVITIES
 FOR THE YEAR ENDED JUNE 30, 2022

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	Net Assets without Donor Restrictions	Net Assets with Donor Restrictions	Total
SUPPORT AND REVENUE			
Grants and contributions	\$ 893,113	\$ 1,010	\$ 894,123
Membership dues and fees	54,200	-	54,200
Scholar awards event	677,072	-	677,072
Field trips and other events	4,764	-	4,764
Endowment loss, net	(546,262)	(478,692)	(1,024,954)
Interest	-	-	-
Amounts appropriated for expenditure	-	-	-
Total support and revenue	<u>1,082,887</u>	<u>(477,682)</u>	<u>605,205</u>
EXPENSES			
Program services			
Scholar awards	1,085,000	-	1,085,000
Other program services	352,603	-	352,603
Supporting services			
Management and general	159,717	-	159,717
Fundraising	46,156	-	46,156
Total expenses	<u>1,643,476</u>	<u>-</u>	<u>1,643,476</u>
DECREASE IN NET ASSETS	(560,589)	(477,682)	(1,038,271)
NET ASSETS			
Beginning of the year	<u>5,342,586</u>	<u>4,344,503</u>	<u>9,687,089</u>
End of the year	<u>\$ 4,781,997</u>	<u>\$ 3,866,821</u>	<u>\$ 8,648,818</u>

see accompanying notes

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ACHIEVEMENT REWARDS FOR COLLEGE SCIENTISTS
FOUNDATION, INC.
NORTHERN CALIFORNIA CHAPTER
STATEMENT OF FUNCTIONAL EXPENSES
FOR THE YEAR ENDED JUNE 30, 2022

	Program Services	Supporting Services		Total Expenses
		Management and General	Fundraising	
Expenses				
Grants and other assistance	\$ 1,433,243	\$ -	\$ -	\$ 1,433,243
Salaries and wages	-	103,537	26,101	129,638
Accounting and legal	-	10,313	-	10,313
Office expenses	-	14,524	-	14,524
Occupancy	-	13,742	-	13,742
Insurance	-	2,495	-	2,495
Member events	-	7,084	-	7,084
Member communications	4,360	3,029	-	7,389
Community outreach	-	-	20,055	20,055
Miscellaneous	-	4,993	-	4,993
Total expenses	<u>\$ 1,437,603</u>	<u>\$ 159,717</u>	<u>\$ 46,156</u>	<u>\$ 1,643,476</u>

see accompanying notes

**ACHIEVEMENT REWARDS FOR COLLEGE SCIENTISTS
 FOUNDATION, INC.**
NORTHERN CALIFORNIA CHAPTER
STATEMENT OF CASH FLOWS
FOR THE YEAR ENDED JUNE 30, 2022

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CASH FLOWS FROM OPERATING ACTIVITIES:	
Decrease in net assets	\$ (1,038,271)
Adjustments to reconcile decrease in net assets to net cash used in operating activities:	
Net realized and unrealized losses	1,024,954
Increase in contributions receivable	(61,796)
Decrease in advance payments	<u>(2,719)</u>
Net cash used in operating activities	<u>(77,832)</u>
CASH FLOWS FROM INVESTING ACTIVITIES:	
Purchases of investments	<u>(1,010)</u>
Net cash used in investing activities	<u>(1,010)</u>
NET DECREASE IN CASH AND CASH EQUIVALENTS	(78,842)
CASH AND CASH EQUIVALENTS AT BEGINNING OF YEAR	<u>180,611</u>
CASH AND CASH EQUIVALENTS AT END OF YEAR	<u>\$ 101,769</u>

see accompanying notes
 6

ACHIEVEMENT REWARDS FOR COLLEGE SCIENTISTS
FOUNDATION, INC.
NORTHERN CALIFORNIA CHAPTER
NOTES TO FINANCIAL STATEMENTS
June 30, 2022

1. Organization

Achievement Rewards for College Scientists Foundation, Inc., Northern California Chapter (the "Organization") was formed in October 1971 and incorporated in November 1973 for the purpose of funding science scholarships for students of high achievement at Northern California universities.

2. Summary of significant accounting policies and nature of operations

Basis of accounting

The Organization prepares its financial statements on the accrual basis of accounting consistent with accounting principles generally accepted in the United States of America ("US GAAP").

Basis of presentation

The Organization is required to report information regarding its financial position and activities according to the following net asset classifications:

Net assets without donor restrictions: Net assets that are not subject to donor-imposed restrictions and may be expended for any purpose in performing the primary objectives of the Organization. These net assets may be used at the discretion of the Organization's management and the board of directors.

Net assets with donor restrictions: Net assets subject to stipulations imposed by donors and grantors. Some donor restrictions are temporary in nature, which will be met by actions of the Organization or by the passage of time. Other donor restrictions are perpetual in nature, whereby the donor has stipulated the funds be maintained in perpetuity.

Donor-restricted contributions are reported as increases in net assets with donor restrictions. When a restriction expires, net assets are reclassified from net assets with donor restrictions to net assets without donor restrictions in the statement of activities.

Estimates

The preparation of financial statements in accordance with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

Cash and cash equivalents

Cash and cash equivalents include all cash balances on deposit with financial institutions and highly liquid investments with a maturity of three months or less at the date of acquisition.

Concentration of credit risk

The Organization maintains its cash in bank deposit accounts, which, at times, may exceed federally insured limits. The Organization has not experienced any losses in such accounts. The Organization believes it is not exposed to any significant credit risk on cash and cash equivalents.

ACHIEVEMENT REWARDS FOR COLLEGE SCIENTISTS
FOUNDATION, INC.
NORTHERN CALIFORNIA CHAPTER
NOTES TO FINANCIAL STATEMENTS
June 30, 2022

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2. Summary of significant accounting policies and nature of operations (continued)

Contributions and accounts receivable

Contributions received are recorded as net assets without donor restrictions or net assets with donor restrictions, depending on the existence and/or nature of any donor-imposed restrictions. Contributions that are restricted by the donor are reported as an increase in net assets without donor restrictions if the restriction expires in the reporting period in which the contribution is recognized. All other donor-restricted contributions are reported as an increase in net assets with donor restrictions, depending on the nature of restriction. When a restriction expires (that is, when a stipulated time restriction ends or purpose restriction is accomplished), net assets with donor restrictions are reclassified to net assets without donor restrictions and reported in the statements of activities as net assets released from restrictions.

Unconditional promises to give that are expected to be collected within one year are recorded at net realizable value. Unconditional promises to give that are expected to be collected in future years are recorded at the present value of their estimated future cash flows. The discounts on those amounts are computed using risk-adjusted interest rates applicable to the years in which the promises are received. Discount amortization is included in contribution revenue. Conditional promises to give are not included as support until the conditions are met.

As of June 30, 2022, the Organization's contributions receivable consisted of unconditional promises to give in the amount of \$95,685.

Management considers receivables to be fully collectible. If amounts become uncollectible, they are charged to operations in the period in which that determination is made. Accounting principles generally accepted in the United States of America require that the allowance method be used to recognize bad debts; however, the effect of using the direct write-off method is not materially different from the results that would have been obtained under the allowance method.

Fair value measurements

The Organization applies the accounting provisions related to fair value measurements. These provisions define fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date, establish a hierarchy that prioritizes the information used in developing fair value estimates and require disclosure of fair value measurements by level within the fair value hierarchy. The hierarchy gives the highest priority to quoted prices in active markets (Level 1 measurements) and the lowest priority to unobservable data (Level 3 measurements), such as the reporting entity's own data. These provisions also provide valuation techniques, such as the market approach (comparable market prices), the income approach (present value of future income or cash flows) and the cost approach (cost to replace the service capacity of an asset or replacement cost).

ACHIEVEMENT REWARDS FOR COLLEGE SCIENTISTS
FOUNDATION, INC.
NORTHERN CALIFORNIA CHAPTER
NOTES TO FINANCIAL STATEMENTS
June 30, 2022

2. Summary of significant accounting policies and nature of operations (continued)

Fair value measurements (continued)

A financial instrument's categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement. The three levels of valuation hierarchy are defined as follows:

- Level 1:* Observable inputs such as quoted prices (unadjusted) for identical assets or liabilities in active markets.
- Level 2:* Inputs other than quoted prices for similar assets and liabilities in active markets, and inputs that are observable for the asset or liability, either directly or indirectly, for substantially the full term of the financial instrument.
- Level 3:* Unobservable inputs that reflect the Organization's own assumptions.

Investments

Investments in marketable securities with readily determinable fair values and all investments in debt securities are reported at their fair values in the accompanying statement of financial position. Realized and unrealized gains and losses are included as a component of net investment income on the accompanying statement of activities.

Transfers of assets to a recipient organization

The Organization will occasionally transfer assets to a recipient organization. When the Organization specifies itself or its affiliate as the beneficiary, the Organization reports the transfer as a decrease in the asset transferred and an increase in another asset.

Endowment funds

In August 2008, Financial Accounting Standards Board ("FASB") provided guidance on the net asset classification of donor-restricted endowment funds for a not-for-profit organization that is subject to an enacted version of the Uniform Prudent Management of Institutional Funds Act of 2006 ("UPMIFA"). This guidance also improves disclosures about an organization's endowed funds (both donor-restricted endowment funds and board-designated endowment funds) whether or not the organization is subject to UPMIFA.

The Organization is subject to the required disclosures in that the Organization classifies its unrealized gains and losses on donor-restricted endowed funds as net assets with donor restrictions. As of June 30, 2022, no fund balances were below the historical gift amount. The Organization is subject to additional disclosures regarding endowment funds, which are further detailed in Note 6.

Income taxes

The Organization is exempt from federal income taxes under Internal Revenue Code Section 501(c)(3) and from California income and franchise taxes under Revenue and Taxation Code Section 23701(d). It has also been determined by the Internal Revenue Service that the Organization is not a private foundation within the meaning of Internal Revenue Code Section 509(a).

ACHIEVEMENT REWARDS FOR COLLEGE SCIENTISTS
 FOUNDATION, INC.
 NORTHERN CALIFORNIA CHAPTER
 NOTES TO FINANCIAL STATEMENTS
 June 30, 2022

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2. Summary of significant accounting policies and nature of operations (continued)

Income taxes (continued)

The preparation of financial statements in accordance with accounting principles generally accepted in the United States of America requires the Organization to report information regarding its exposure to various tax positions taken by the Organization. Management has determined whether any tax positions have met the recognition threshold and has measured the Organization's exposure to those tax positions. Management believes that the Organization has adequately addressed all relevant tax positions and that there are no unrecorded tax liabilities. Federal and state tax authorities generally have the right to examine and audit the previous three years of tax returns filed. Any interest or penalties assessed to the Organization are recorded in operating expenses. No interest or penalties from federal or state tax authorities were recorded in the accompanying financial statements.

Revenue recognition

Membership dues are deferred and recognized in the appropriate membership year. Special event ticket sales are deferred and recognized when the event takes place.

Functional expenses

The costs of providing program services and other activities have been summarized on a functional basis in the statement of activities. Accordingly, certain costs have been allocated among program services, administrative and support, and fundraising services benefited. Such allocations are determined by management on an equitable basis.

Subsequent events

Subsequent events have been evaluated through December 2, 2022, which is the date the financial statements were available to be issued, and there are no subsequent events requiring disclosure.

3. Liquidity and availability of financial assets

The Organization's financial assets available for general expenditure, that is, without donor restrictions limiting their use, within one year of the statement of financial position date, comprise the following:

Cash and cash equivalents	\$	101,769
Contributions receivable		95,685
Investments, at fair value		<u>4,584,028</u>
Total	\$	<u>4,781,482</u>

The Organization regularly monitors liquidity required to meet its operating needs and other contractual commitments, while also striving to maximize the investment of its available funds. Additionally, the Organization operates with a balanced budget and anticipates generating sufficient revenue to cover general expenditures.

ACHIEVEMENT REWARDS FOR COLLEGE SCIENTISTS
FOUNDATION, INC.
NORTHERN CALIFORNIA CHAPTER
NOTES TO FINANCIAL STATEMENTS
June 30, 2022

4. Endowments and fair value measurements

The Organization's endowment, established in 1988, exists in perpetuity to produce income to supplement current fundraising for the Organization's annual scholar awards. Its endowment includes both donor-restricted endowment funds and funds designated by the Board of Directors to function as endowments. As required by accounting principles generally accepted in the United States of America, net assets associated with endowment funds, including funds designated by the Board of Directors to function as endowments, are classified and reported based on the existence or absence of donor-imposed restrictions.

The Organization has adopted investment and spending policies for endowment assets that attempt to provide a predictable stream of income to supplement fundraising for scholar awards as needed. Endowment assets include those assets of donor-restricted funds that the organization must hold in perpetuity as well as board-designated funds. Under this policy, as approved by the Board of Directors, the endowment assets are invested in a manner that is intended to produce results that meet or exceed the performance results of the S&P 500 index while assuming a moderate level of investment risk. The Organization expects its endowment funds, over time, to yield an average rate of return of approximately 5-10%. Actual returns in any given year may vary from this amount.

To satisfy its long-term performance objectives, the Organization utilizes a total return strategy in which investment returns are achieved through both capital appreciation (realized and unrealized) and current yield (interest and dividends). The Organization targets a diversified asset allocation that places an emphasis on equities and fixed income investments to achieve its long-term return objectives within prudent risk constraints.

The Organization maintains a policy of appropriating no more than a 5% annual distribution of its endowment fund's average fair value over the prior 16 quarters. In establishing this policy, the Organization considered the long-term expected return on its endowment and expects the current spending policy will maintain the corpus of the endowment assets held in perpetuity as well as provide additional growth through new gifts and investment return.

As of June 30, 2022, endowment net assets consisted of the following:

	Without donor restrictions	With donor restrictions	Total
Donor-restricted endowments	\$ -	\$ 3,866,821	\$ 3,866,821
Board-designated endowments	<u>4,584,028</u>	-	<u>4,584,028</u>
Total	<u>\$ 4,584,028</u>	<u>\$ 3,866,821</u>	<u>\$ 8,450,849</u>

For the year ended June 30, 2022, changes in endowment net assets consisted of the following:

	Without donor restrictions	With donor restrictions	Total
Endowment net assets, beginning of year	\$ 5,130,290	\$ 4,344,503	\$ 9,474,793
Net investment return	(546,262)	(478,692)	(1,024,954)
Contributions	-	1,010	1,010
Total	<u>\$ 4,584,028</u>	<u>\$ 3,866,821</u>	<u>\$ 8,450,849</u>

ACHIEVEMENT REWARDS FOR COLLEGE SCIENTISTS
 FOUNDATION, INC.
 NORTHERN CALIFORNIA CHAPTER
 NOTES TO FINANCIAL STATEMENTS
 June 30, 2022

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4. Endowments and fair value measurements (continued)

The return on the endowments for the year ended June 30, 2022 was a net loss in the amount of \$(1,024,954), which is comprised of the following:

	Without donor restrictions	With donor restrictions	Total
Interest and dividends	\$ 134,285	\$ 157,029	\$ 292,314
Fees	(29,150)	(24,781)	(53,931)
Net realized/unrealized loss	(651,397)	(610,940)	(1,262,337)
Total	\$ (546,262)	\$ (478,692)	\$ (1,024,954)

Donor-restricted endowments measured and recognized at fair value are comprised of the following as of June 30, 2022:

	Level 1	Level 2	Level 3	Fair Value Measurements
Money market funds	\$ 107,084	\$ -	\$ -	\$ 107,084
Fixed income	887,536	-	-	887,536
Equities	1,682,056	-	-	1,682,056
Bond funds	195,635	-	-	195,635
Equity funds	907,374	-	-	907,374
Exchange traded funds	62,866	-	-	62,866
Real estate investment trusts	23,770	-	-	23,770
Total assets	\$ 3,866,821	\$ -	\$ -	\$ 3,866,821

Board-designated endowments measured and recognized at fair value are comprised of the following as of June 30, 2022:

	Level 1	Level 2	Level 3	Fair Value Measurements
Money market funds	\$ 175,353	\$ -	\$ -	\$ 175,353
Fixed income	918,398	-	-	918,398
Equities	2,438,170	-	-	2,438,170
Bond funds	176,839	-	-	176,839
Equity funds	782,419	-	-	782,419
Exchange traded funds	58,344	-	-	58,344
Real estate investment trusts	34,505	-	-	34,505
Total assets	\$ 4,584,028	\$ -	\$ -	\$ 4,584,028

ACHIEVEMENT REWARDS FOR COLLEGE SCIENTISTS
FOUNDATION, INC.
NORTHERN CALIFORNIA CHAPTER
NOTES TO FINANCIAL STATEMENTS
June 30, 2022

5. Contingencies

The severity of the impact of a novel strain of coronavirus (“COVID-19”) on the Organization’s operations will depend on a number of factors, including, but not limited to, the duration and severity of the pandemic and the extent and severity of the impact on the Organization’s employees and donors, all of which are uncertain and cannot be predicted. The Organization’s future results could be adversely impacted by delays in collections. Management is unable to predict with absolute certainty the impact of COVID-19 on its financial condition, results of operations, or cash flows.

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Federal Form 990 available upon request.