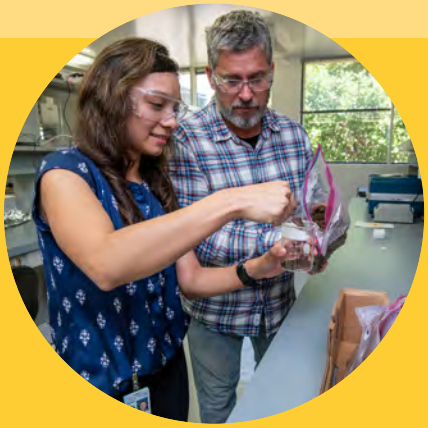
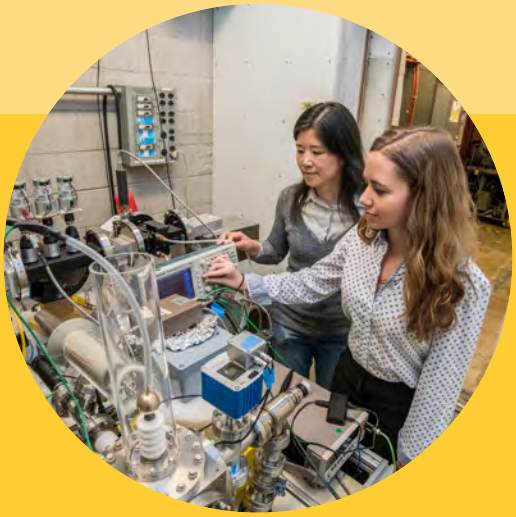
BLUFF / BLUR / CCI / EERE / GEM / SULI / VFP

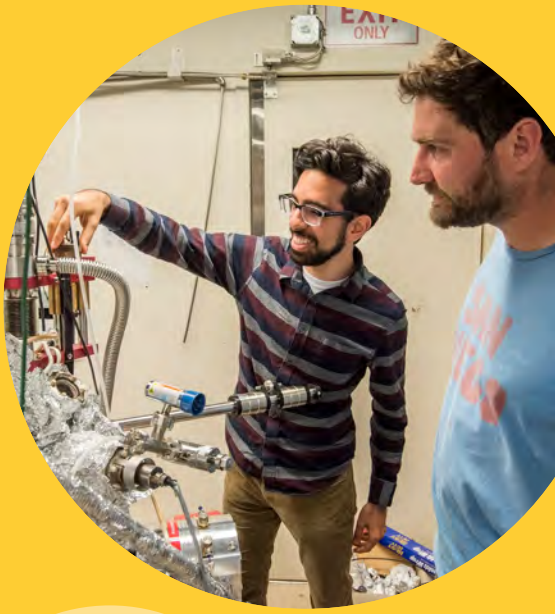
Intern

POSTER SESSION

Summer 2022







Workforce Development & Education
BERKELEY LAB

Wednesday, August 3, 2022
10:00 AM – 12:00 PM
Virtual Poster Session

Workforce Development & Education
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Internship Program Descriptions

Summer 2022

Berkeley Lab University Faculty Fellowship (BLUFF)

BLUFF, a Berkeley Lab program, is a continuation of the Visiting Faculty Program (VFP). Faculty applicants must have completed their three-year appointment in the VFP program to use BLUFF to strengthen their collaborative research relationship with a Berkeley Lab investigator/group.

Berkeley Lab Undergraduate Research (BLUR)

BLUR, a Berkeley Lab program, places undergraduates from accredited community colleges or four-year institutions, post-baccalaureates, and graduate students in paid internships during the summer (10 weeks) or academic semesters (16 weeks) in science and engineering. Participants work with scientists and engineers on projects related to the Lab's research programs. Typically, BLUR participants are students at partnership schools or have an established relationship with Lab scientists and funding sources have been identified from the researchers hosting the interns.

Community College Internship (CCI)

The U.S. Department of Energy's national CCI program provides paid internships during the summer (10 weeks) or academic semesters (16 weeks) to develop technical skills with one of the Lab’s scientists or engineers. CCI is open to any student attending an accredited community college. The CCI program is sponsored and managed by the DOE Office of Science, Office of Workforce Development for Teachers and Scientists (WDTS) in collaboration with the DOE National Laboratories.

The GEM Fellowship Program (GEM)

The GEM Internship Program at LBNL is open to GEM fellows at the Master's and doctoral level, in an effort to cultivate a diverse workforce of the next generation of scientists and engineers.

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Internship Program Descriptions

Summer 2022

Science Undergraduate Laboratory (SULI)

The U.S. Department of Energy's national SULI program provides paid internships during the summer (10 weeks) or academic semesters (16 weeks) to conduct research with one of the Lab's scientists or engineers. SULI is open to any undergraduate student enrolled in an accredited community college or four-year institution, post-baccalaureates, and graduate students in any scientific or engineering discipline. The SULI program is sponsored and managed by the DOE Office of Science, Office of Workforce Development for Teachers and Scientists (WDTS) in collaboration with the DOE National Laboratories.

Energy Efficiency and Renewable Energy (EERE)

The Energy Efficiency and Renewable Energy (EERE) internships are sponsored by the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy Advance Manufacturing Office (EERE AMO) and administered through the Oak Ridge Institute for Science and Education (ORISE). These 10-week summer internship programs provide opportunities to students who are pursuing degrees in science, technology (IT), engineering, or mathematics (STEM majors). Candidates who are selected will have the opportunity to work under the mentorship of program officials and researchers on focused research projects consistent with the mission of the Office of Energy Efficiency and Renewable Energy.

Visiting Faculty Program (VFP)

The U.S. Department of Energy's national VFP places faculty members and up to two undergraduate or graduate students from minority-serving institutions in paid internships with scientists or engineers on projects related to the Lab's research program. Faculty participants build long-term collaborative relationship with DOE research scientists, become familiar with DOE-sponsored research programs, scientific user facilities, and potential funding opportunities. The VFP program is sponsored and managed by the DOE Office of Science's Office Workforce Development for Teachers and Scientists (WDTS) in collaboration with the DOE National Laboratories.

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Berkeley Lab University Faculty Fellowship (BLUFF)

Mariam Samara
Bottom-Up Workflow Using Dissolvable Polyacrylamide Gels to Study Limited Amounts of Protein

St. Mary's College
Moraga, CA
Mentors: Gary Karpen, Jim Pesavento
Biological Systems and Engineering Division
Biosciences Area

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Berkeley Lab Undergraduate Internship (BLUR)

Leslie Benitez Gomez
Simulating the Germanium Crystal Segments of the GRETINA Detector Array

University of California, Merced
Merced, CA
Mentor: Heather Crawford
Nuclear Science Division
Physical Sciences Area

William Bui
Freight Choice Modeling Using Popular Machine Learning Algorithms

Evergreen Valley College
San Jose, CA
Mentors: C. Anna Spurlock, Xiaodan Xu
Energy Analysis and Environmental Impacts Division
Energy Technologies Area

Deon Demby
Nuclear Activation Database of Space Effects Testing

San Francisco State University
San Francisco, CA
Mentors: Lee Bernstein, Larry Phair
Nuclear Science Division
Physical Sciences Area

Stephen Eberly
Examining Effects of the TIG Welding Process on Radiopurity

Saint Mary's College of California
Moraga, CA
Mentors: Alan Poon, Bjoern Lehnert
Nuclear Science Division
Physical Sciences Area

Chukwuemeka Elendu
Simulating a Multi Reflective Time of Fight Device for uses in Heavy Element Chemistry

University of California, Merced
Merced, CA
Mentor: Jennifer Pore
Nuclear Science Division
Physical Sciences Area

Daniel Hernandez-Marquez
Polyethylene Trials

San Jose State University
San Jose, CA
Mentors: Jacklyn Gates, Nicholas Esker
Nuclear Science Division
Physical Sciences Area

Sawyer Kaplan
Calibration of the Berkeley Gas-filled Separator Through Beam Spot Image Analysis

San Francisco State University
San Francisco, CA
Mentor: Jacklyn Gates
Nuclear Science Division
Physical Sciences Area

Abdulla Mammadsoy
Developing and Managing a Database of NucScholar: Labeled Datasets for NLP Algorithms

California State University, Stanislaus
Turlock, CA
Mentors: Bethany Goldblum, Walid Younes
Nuclear Science Division
Physical Sciences Area

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Berkeley Lab Undergraduate Internship (BLUR)

Kacy Mendoza
Analysis and characterization of bismuth incorporated graphene targets

San Jose State University
San Jose, CA
Mentors: Nicholas Esker, Rebecca Abergel
Chemical Sciences Division
Energy Sciences Area

Sanjay Rangavajjhala
Analysis of Soy Highly Variable Nod-Like Receptors

University of California, Berkeley
Berkeley, CA
Mentor: Daniil Prigozhin
Molecular Biophysics and Integrated Bioimaging Division
Biosciences Area

Amanda Sayaseng
Nucleation and crystallization of metal organic frameworks Co-MOF-74 and Co-MOF-274 using infrared spectroscopy

Skyline College
San Bruno, CA
Mentors: Chaya Weeraratna, Musahid Ahmed
Chemical Sciences Division
Energy Sciences Area

Melanie Segura-Guerrero
Development of Novel Nuclear Targetry Methods

San Jose State University
San Jose, CA
Mentors: Jacklyn Gates, Nicholas Esker
Nuclear Science Division
Physical Sciences Area

Gabriella Sonderegger
Monte Carlo Simulation of Mass Measurements of Heavy Element Complexes

San Jose State University
San Jose, CA
Mentor: Jacklyn Gates
Nuclear Science Division
Physical Sciences Area

Ayla Weitz
Measuring the Hubble Constant with Twin Supernovae

University of California, Berkeley
Berkeley, CA
Mentor: Greg Aldering
Physics Division
Physical Sciences Area

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Community College Internship (CCI)

John Cannon
ATLAS Composites Team: Upgrading the World's Largest Particle Detector

Antelope Valley College
Lancaster, CA
Mentors: Giorgio Vallone, Todd Claybaugh
Engineering Division
Physical Sciences Area

Amber Collins
Performance Enhancing Silicon Based Electrolyte Additives for Lithium Ion Batteries at Low Temperature

Merritt College
Oakland, CA
Mentors: Gao Liu, Faiz Ahmed
Energy Storage and Distributed Resources Division
Energy Technologies Area

Sheena Dugao
Vibration Measurements for the ALS-U

Los Medanos College
Pittsburg, CA
Mentors: Arnaud Allezy, Christopher Huschke
Engineering Division
Physical Sciences Area

Cleo Lepart
Searching for Transients with DESIDIFF

Santa Rosa Junior College
Santa Rosa, CA
Mentor: Alex Kim
Physics Division
Physical Sciences Area

Andrew Lindburg
Aqueous Processed Lithium-Ion Batteries

City College of San Francisco
San Francisco, CA
Mentors: Gao Liu, Chen Fang
Energy Storage and Distributed Resources Division
Energy Technologies Area

Thea Bee Petrocelli
Computational Study of Electrolyte Decomposition at Lithium-Ion Battery Cathodes

Cabrillo College
Aptos, CA
Mentors: Kristin A. Persson, Evan Spotte-Smith
Molecular Foundry Division
Energy Sciences Area

Wenhuan Tan
Developing Multidimensional Environmental Deprivation Index and Social Economic

Bellevue College
Bellevue, WA
Mentors: Silvia Crivelli, Xinlian Liu
Computational Research Division
Computing Sciences Area

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The Energy Efficiency and Renewable Energy (EERE)

Raquenel Abreu
An Alternative Approach to Measure Energy Burdens in New York State

Brown University
Providence, RI
Mentor: Jingjing Zhang
Building Technology and Urban Systems Division
Energy Technologies Area

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The GEM Fellowship Program (GEM)

Alexandra Grayson
Estimating the Role of Prominent Community Members in Boosting Equitable U.S. Solar Adoption

Yale University
New Haven, CT
Mentors: Sydney Forrester, Galen Barbose
Energy Analysis and Environmental Impacts Division
Energy Technologies Area

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Science Undergraduate Laboratory Internship (SULI)

Katherine Anderson
Expanding NGEE - Tropics Impact through Science Communications

California State Polytechnic University-Pomona
Pomona, CA
Mentors: Daniel Dores, Jeff Chambers
Climate and Ecosystems Division
Earth and Environmental Sciences Area

Julian Bellavita
Predicting Scientific Data Popularity Using dCache Logs

University of California, Berkeley
Berkeley, CA
Mentors: John Wu, Alex Sim
Computational Research Division
Computing Sciences Area

Julie Bobyock
Optimizing Communications of Berkeley Lab's Earth and Environmental Sciences Area (EESA) Research For a General Audience

University of New Hampshire
Durham, NH
Mentors: Christina Procopiou, Niba Nirmal
Climate and Ecosystems Division
Earth and Environmental Sciences Area

Levi Martin Brown
Enhancing phase contrast reconstructions by combining 4DSTEM holography and ptychography

University of Oregon
Eugene, OR
Mentor: Colin Ophus
Molecular Foundry Division
Energy Sciences Area

Christian Camano
Randomized Methods for Iterative Rigensolvers in the Tensor Train Format

San Francisco State University
San Francisco, CA
Mentor: Roel Van Beeumen
Computational Research Division
Computing Sciences Area

Nuri Capanoglu
Inclinometer Mapping and Slope Stability Monitoring System Development

University of California, Berkeley
Berkeley, CA
Mentors: Jocelyn Walker, Erik Zalkin
Facilities Division
Operations Area

Kenny Chundu
Low Power Electrification: Implementing a Price-based Load Shedding Scheme

University of Virginia
Charlottesville, VA
Mentors: Anand Krishnan Prakash, Daniel Gerber
Building Technology ad Urban Systems Division
Energy Technologies Area

Susan Dudt
Permanent Magnets for Small Bore Accelerators

Bucknell University
Lewisburg, PA
Mentors: Arnaud Allezy, Christopher Huschke
Engineering Division
Physical Sciences Area

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Science Undergraduate Laboratory Internship (SULI)

Kaiwen He
Performance of Various Eigensolvers and Preconditioners for the Symmetric Eigenvalue Problem

University of California, Berkeley
Berkeley, CA
Mentor: Osni Marques
Computational Research Division
Computing Sciences Area

Sydney Hemenway
Hybrid Films from Two-Dimensional Frameworks and Boron Nitride Nanosheets for Dielectric Applications

University of California, Berkeley
Berkeley, CA
Mentors: Yi Liu, Chongqing Yang
Molecular Foundry Division
Energy Sciences Area

Rachel Johnson
Using integrated hydrology simulations to understand runoff generation mechanisms in the presence of micro-topography at the hillslope scale

University of Colorado at Colorado Springs
Colorado Springs, CO
Mentor: Sergi Molins
Energy Geosciences Division
Earth and Environmental Sciences Area

Rahim Kamara
Impact of Friction Laws on Ice Sheet Climate Response

University of Maryland, College Park
College Park, MD
Mentor: Daniel Martin
Computational Research Division
Computing Sciences Area

Noah Patrick Kaplan
Optimization Of WarpX Particle-Mesh Interpolation Using GPU Shared Memory

Whitman College
Walla Walla, WA
Mentor: Andrew Myers
Computational Research Division
Computing Sciences Area

Ifrah Khurram
Disambiguating Expressions of OSA from Heart Failure through Applied NLP Techniques

Fisk University
Nashville, TN
Mentors: Silvia Crivelli, Rafael Zamora-Resendiz
Computational Research Division
Computing Sciences Area

Brianna Liu
Creating and Analyzing Science Communications

University of California, Irvine
Irvine, CA
Mentors: Christina Procopiou, Niba Nirmal
Energy Geoscienes Division
Earth and Environmental Sciences Area

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Science Undergraduate Laboratory Internship (SULI)

Emily Nagamoto
Investigating the Impact of Severe Drought on Water Quality in the Upper Colorado River Basin Using Data-Driven Methods

Duke University
Durham, NC
Mentors: Charuleka Varadharajan, Mohammed Ombadi
Energy Geosciences Division
Earth and Environmental Sciences Area

Kaylee Popovich
Now streaming: Using StorAge Selection functions to trace isotopes through the East River watershed

University of California, Berkeley
Berkeley, CA
Mentor: Matthias Sprenger
Climate and Ecosystems Division
Earth and Environmental Sciences Area

Garima Prabhakar
Analyzing Variable Candidates for the DECam Survey

University of California, Berkeley
Berkeley, CA
Mentor: Peter Nugent
Computational Research Division
Computing Sciences Area

Sierra Raspa
Pulse Interference in Fiber Optics and Guiding Laser Pulses through Curved Capillaries for Plasma Wakefield Particle Accelerators

University of Maryland, College Park
College Park, MD
Mentor: Marlene Turner
Accelerator Technology and Applied Physics Division
Physical Sciences Area

Jeremy Rotenberg
The Impact of Long-Term Precipitation Trends on Water-Table Elevation and Uranium Concentration Near Waste Disposal Sites

University of Vermont
Burlington, VT
Mentors: Zexuan Xu, Satyarth Praveen
Climate and Ecosystems Division
Earth and Environmental Sciences Area

Caitlin Sim
Data Throughput Performance Trends of Regional Scientific Data Cache

University of California, Berkeley
Berkeley, CA
Mentor: Chin Guok
Scientific Networking Division
Computing Sciences Area

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Science Undergraduate Laboratory Internship (SULI)

Isabella Spielmann
Engineering an Efficient Plasmid for Pichia Kudriavzevii (YB-431)

Colorado School of Mines
Golden, CO
Mentor: Henrique De Paoli
Biological Systems and Engineering Division
Biosciences Area

Alexander Steir
Historical Analysis of the Advanced Light Source Vacuum Chamber Performance

University of California, Santa Barbara
Santa Barbara, CA
Mentor: Sol Omolayo
Engineering Division
Physical Sciences Area

Nishat Tabassum
NetPredict Polished up GUI

University of South Carolina
Columbia, SC
Mentor: Mariam Kiran
Scientific Networking Division
Computing Sciences Area

Suchitoto Tabares-Tarquinio
Spectroscopic analysis of Strong Gravitational Lensing Systems

University of San Francisco
San Francisco, CA
Mentors: David Schlegel, Xiaosheng Huang
Physics Division
Physical Sciences Area

Avery Trevino
Statistical Validation of DISCOS Algorithm

University of California, Berkeley
Berkeley, CA
Mentor: Daniel Ladiges
Computational Research Division
Computing Sciences Area

Sung Tat Darwin Tsou
Development of a Solar-Induced Fluorescence System to Capture Plant Dynamics

University of California, Santa Cruz
Santa Cruz, CA
Mentor: Nicola Falco
Climate and Ecosystems Division
Earth and Environmental Sciences Area

Chuanhao (Andy) Tang
Analyzing PEM Behavior through Data Science

University of California, Berkeley
Berkeley, CA
Mentors: Ahmet Kusoglu, Fnu Priyamvada
Energy Storage and Distributed Resources Division
Energy Technologies Area

Laura Zichi
Understanding electrochemical kinetics by combining lattice and homogeneous kinetic Monte Carlo approaches

University of Michigan-Ann Arbor
Ann Arbor, MI
Mentors: Kristin Persson, Evan Spotte-Smith
Molecular Foundry Division
Energy Sciences Area

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Visiting Faculty Program (VFP)

Angela Kayll
Purification and Structural Characterization of a β-amylase 2 Substrate

James Madison University
Harrisonburg, VA
Mentor: Gregory Hura
VFP Faculty Collaborator: Christopher Berndsen
Molecular Biophysics and Integrated Bioimaging Division
Biosciences Area

Tyler McGilvry-James
Artificial intelligence (AI)-enabled computational materials science to model surface dynamics and complex systems

Missouri State University
Springfield, MO
Mentor: Kristin Persson
VFP Faculty Collaborator: Ridwan Sakidja
Molecular Foundry Division
Energy Sciences Area

Amra Mendoza
Unsupervised Deep Learning for Micro-Computed Tomography

Swarthmore College
Swarthmore, PA
Mentor: Juliane Mueller
VFP Faculty Collaborator: Vidya Ganapti
Computational Research Division
Computing Sciences Area

Minh Nguyen
Unsupervised Deep Learning for Micro-Computed Tomography

University of Pennsylvania
Swarthmore, PA
Mentor: Juliane Mueller
VFP Faculty Collaborator: Vidya Ganapti
Computational Research Division
Computing Sciences Area

Aaron Rodriguez
ARTEMIS Code Simulation for Electromagnetic Radiation Interaction with Superconductors

St. Mary's University
San Antonio, TX
Mentors: Zhi Yao, Revathi Jambunathan
VFP Faculty Collaborator: Richard Lombardini
Computational Research Division
Computing Sciences Area

Keegan Sanchez
PMIO: A High-Performance PM-aware Collective I/O Framework for Parallel Applications

Washington State University-Vancouver
Vancouver, WA
Mentor: John Wu
VFP Faculty Collaborator: Xuechen Zhang
Computational Research Division
Computing Sciences Area

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Visiting Faculty Program (VFP)

Mario Vega
DFT Beyond Moore's Law: Hardware Design Specialization for the Future of HPC

University of Houston-Clear Lake
Houston, TX
Mentors: John Shalf, Doru Popovici
VFP Faculty Collaborator: Xiaokun Yang
Computational Research Division
Computing Sciences Area

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and contributions of our partners:

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