

Early Career Programs at LBNL

BESAC Meeting • Horst Simon, LBNL • July 14, 2022



Overview

- Early Career LDRD Program
- Career Pathways Office
- Postdoc Careers



Early Career LDRD Program

Created in FY17: concern about lack of PIs from underrepresented groups among LDRD PIs.

Allocated about 10% of lab LDRD costs. \$225K/year for 2-3 years.

Since FY18 each Area selected and nominated early career PIs based on the strength of their science proposal (6 new per year).

Mentoring plan by Division Director was part of the evaluation process.

Goal:

- **Develop more diverse PIs with early career project leadership experience.**
- **Prepare PIs for successful DOE ECRP proposals.**

A diverse group of highly trained, creative, and committed scientists and engineers

2018



Peter Agbo
Photoelectrochemistry



Zach Marshall
Particle Physics



Carolin Sutter-Fella
Materials for Energy Conversion



Sinead Griffin
Quantum materials

2020



Roel van Beeumen
Applied Math.



Archana Raja
Nanostucture imaging



Gregory Su
Materials @ALS



Hanna Breunig
Technoeconomic analysis



Juliane Mueller
Computational science



Erica Woodburn
Watershed dynamics



Sean Lubner
Thermal Energy



Mengsu Hu
Energy Geosciences



Bin Wang
Modeling EV-Grid interactions



Yu-Hang Tang
Computational chemistry



Heather Crawford
Nuclear Physics



Simon Roux
Viral genomics @JGI

2019



Hang Deng
Environmental Geosciences



Esther Singer
Plant-microbe interactions



Yue Lai
AI/ML for Nuclear Physics



Samuel Blau
Computational chemistry



Sebastian Uhlemann
Geophysical imaging



Emiley Eloë-Fadrosch
Metagenomes @JGI



Anna Spurlink
Environmental Economics



Jeff Donatelli
CAMERA



Aritoki Suzuki
CMB-S4 instrumentation



Kanupriya Pande
CAMERA for Bioimaging



Jennifer Pore
Isotope discovery



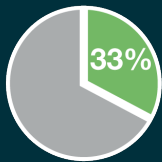
Kateryna Zhalnina
Plant-microbe interactions

2021

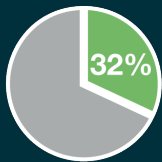
LDRD Diversity Statistics



FY2017



FY2018



FY2019



FY2020

LDRDs led by female PIs

FY2017	\$3,803 K (22%)
FY2018	\$5,207 K (33%)
FY2019	\$5,523 K (32%)
FY2020	\$5,455 K (30%)

(all \$ figures are pre-site-support)

About 14% of our staff scientists and senior scientists are female



Early Career Researchers: Developing the Future of DOE Science



ECRP Awardees



HEP

BES

Early Career LDRD Awards



Stephanie Gilbert Corder
Multimode spectroscopy of 2D
Magnetic Materials



Nichole Hanus
Measuring and Promoting Equity in
Electricity Systems



Yang Liu
Modeling the performance of
accelerator cavities and fusion
devices



Marcos Longo
Integrating remote-sensing data
for remote forests



Dawn Chiniquy
Reducing methane emissions

cyclotronroad



DOE's first fellowship program for technology entrepreneurs, focusing on national energy challenges. CR has fostered 56 companies that have raised over \$400 million in follow-on funding.

Career Pathways Office (CPO)

Created in FY18: consolidated several lab funded career development programs in one office

Allocated 2FTEs

Main Goal: manage an active postdoc program at Berkeley Lab, and support postdoc career development.

This is complementary to the lab funded K-12 programs, and the DOE funded WD&E programs.

Career Pathways Office Programs



Meg Rodriguez - Program Manager

Justin Placencia - Senior Administrator



@LBNLpathways

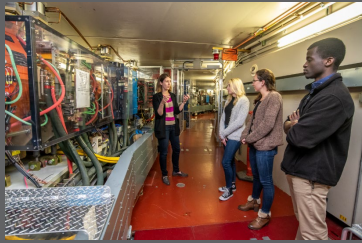


pathways@lbl.gov



pathways.lbl.gov

Bridge Fellowship



- The Berkeley Bridge Graduate Summer Fellowship (Bridge Fellowship) is a graduate student summer program designed to engage top UC Berkeley graduate students in active research roles at Berkeley Lab.
 - started in 2018, with the first cohort at the Lab in the Summer of 2019
 - collaboration between the Berkeley Lab and UC Berkeley's Division of Equity and Inclusion and the Office for Graduate Diversity.
 - introduce students to the critical role that national laboratories play to highlight the career path of working at a national laboratory.

Office of Nuclear Energy FY 2022 Budget Request

Dr. Kathryn Huff
Acting Assistant Secretary for Nuclear Energy

NE R&D Program – Integrated University Program

Integrated University Program

Budget Summary \$ in thousands

	FY 2021 Enacted	FY 2021 Revised	FY 2022 Request	Change (FY22 vs FY21)
Integrated University Program	5,000	5,000	4,000	-1,000



Sarah Stevenson, University of California, Berkeley
2018 IUP Fellow

Mission

The Office of Nuclear Energy (NE) Integrated University Program (IUP) supports the next generation of the nuclear energy workforce. The program provides important educational support to bolster scientific discovery and innovation in nuclear science and engineering (NS&E) programs at United States (U.S.) universities and colleges.

FY 2022 Planned Accomplishments

- Support nuclear science and engineering study and research by fully funding approximately 30 or more multi-year student fellowships and 45 or more single-year scholarships in the nuclear energy field of study. Emphasis placed on increasing involvement of HBCUs/MSIs via meaningful investments in clean energy training and workforce development areas supporting the administration's Justice40 Initiative.
- Support a new scholarship program opportunity that targets two-year applied technical degree programs focused on nuclear energy-related topics. This opportunity will focus on workforce development for nuclear relevant technician training, including nuclear operations, mechanical maintenance, electrical maintenance, chemistry, health physics, and other nuclear energy-related topics. Will coordinate with Nuclear Regulatory Commission IUP planning to avoid redundancy.
- Engage with successful fellows as they enter the nuclear energy workforce to track IUP success. To-date, ~93 percent of fellows who successfully completed since 2009 are working in nuclear energy research or other related positions with industry, national laboratories, or academia.

Early Career Enrichment Program



- The Early Career Enrichment Program (ECEP) expands the Lab's early career researchers' awareness of the diversity of science, engineering, and operations at LBNL and helps them develop meaningful connections with the Lab's leadership, staff and each other.
- The ECEP cohort includes the Lab's Early Career Awardees and Area nominees across Berkeley Lab's six scientific research Areas.
- ECEP started in 2018, and is now in its fourth cohort. The program has supported 69 participants in the past four years.



Postdoc Program



- Provides Postdoctoral Researchers and Visiting scholars with premium research and career development, networking opportunities, and strong community.
- Celebrating Postdocs through various events, CPO is a central resource for them during their appointment (e.g. Postdoc Appreciation events, Orientation, Retirement Workshops, etc.).
- In a joint collaboration, the Postdoc Program and Berkeley Lab Postdoc Association hosted the first annual Postdoc Career Fair in 2019 with over 200 Postdocs in attendance, 13 Industry sponsors, resume clinic, career workshops, and networking activities.
- In February 2020, the Lab's K-12 STEM program together with CPO launched the Teaching Scholars Program.

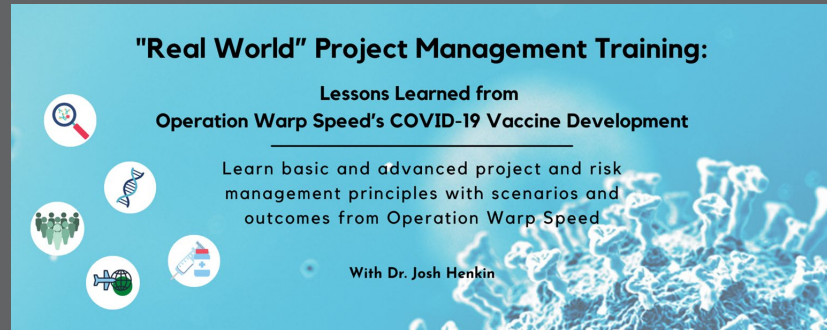
Register for upcoming workshops at postdocresources.lbl.gov



Academic Job Market Series Part 1:
Academic Job Market Overview

Learn about the academic job market and the steps you can take to make yourself an excellent candidate

with Dr. Daniel Olson-Bang

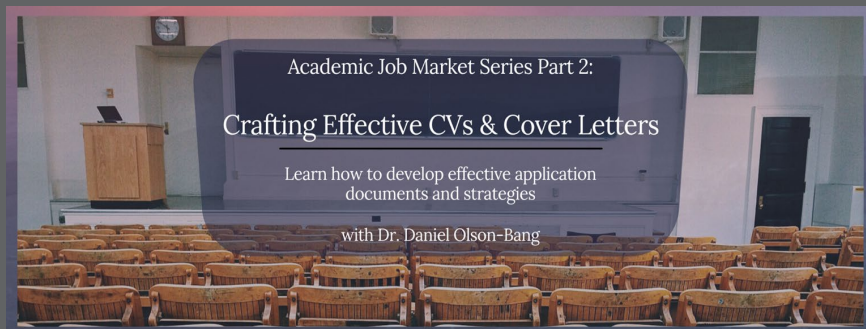


"Real World" Project Management Training:

Lessons Learned from
Operation Warp Speed's COVID-19 Vaccine Development

Learn basic and advanced project and risk management principles with scenarios and outcomes from Operation Warp Speed

With Dr. Josh Henkin



Academic Job Market Series Part 2:
Crafting Effective CVs & Cover Letters

Learn how to develop effective application documents and strategies

with Dr. Daniel Olson-Bang



INFORMATIONAL INTERVIEWING

Learn how strategize and gain insider information on jobs and companies of interest

WITH DR. PATTI MEYER



- The Postdoc Training Grant provides Postdoc employees with the opportunity to be reimbursed for a general training activity once per fiscal year.
- Allows Postdocs to complete professional development trainings to help further their skills.
- Postdocs can use the grant to be reimbursed for professional coaching sessions, workshops outside Berkeley Lab, conference and symposium fees such as the National Postdoc Association annual conference, or annual subscription services like Coursera or edX.

Professional Career Coaches

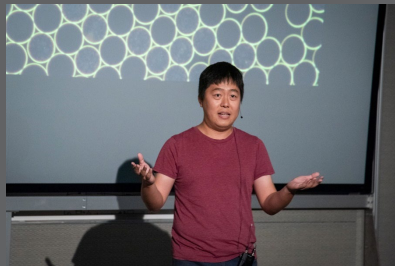
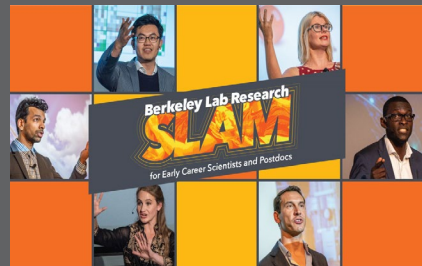


- Coaching clinics & training grant options set up by appointment for topics including:
 - Job hunting in industry
 - Job hunting in Academia
 - Writing in Science
 - General career coaching



- Annual Postdoc Career Fair will be held July 20-22. The career fair is co-organized by Career Pathways Office, Berkeley Lab Postdoc Association, and UC Berkeley.
- The Postdoc Career Fair will highlight the career paths for Postdocs through career panels, professional development, and networking.
- Includes employment pitches, company exhibit booths, and keynote talks.
- <https://postdoc-career-fair.lbl.gov/>

Berkeley Lab Research SLAM

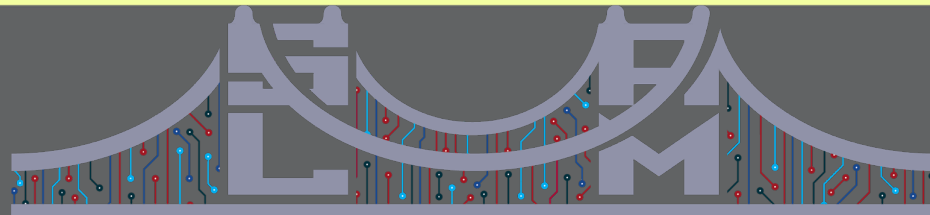


- The SLAM is an annual competition challenging Early Career Researchers to present a compelling three minute presentation of their research in a language appropriate to a broad audience.
- Participants are provided professional coaching workshops to prepare for the SLAM.
- Twelve finalists receive additional training, professional final videos, and headshots.
- Cash prizes are given for First Prize, Second Prize, Third Prize, and a People's Choice winner (selected by the audience). Winners advanced to the Bay Area Research SLAM to compete against SLAM winners from 3 other National Labs





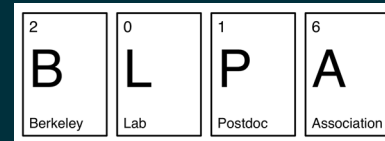
Berkeley Lab Research
SLAM FINALISTS
slam.lbl.gov | #LabSLAM2021 | @LBNLPathways | Sept 23 | 3-4:30pm



BAY AREA RESEARCH SLAM

- The regional Bay Area Research SLAM is a collaboration between Lawrence Berkeley National Lab, Lawrence Livermore National Lab, Sandia National Laboratories, and SLAC National Accelerator Lab.
- Winners from each Lab's respective SLAM competition compete head-to-head for the regional SLAM champion title.
- Look for SLAM sign ups- first deadline will be June 2022!
- BayAreaResearchSLAM.org and slam.lbl.gov

Berkeley Lab Postdoc Association



- ▶ Created in March 2016
- ▶ Run by postdocs for postdocs
- ▶ Associates 1000 postdocs at the Lab

3 Committees:

- ▶ Outreach
- ▶ Lab-Industry Networking Connection
- ▶ Social & Outdoor

Board members supported by volunteers

Maximilian Bremer,
Committee Leader:
Lab-Industry Networking
Connection
Computational Research
Division



Jonelle Basso,
Treasurer
Joint Genome
Institute



Pramod Bhuvankar,
Board Member
Energy Geosciences
Division



Rajiv Prabhakar,
Committee Leader:
Outreach
Chemical Sciences
Division



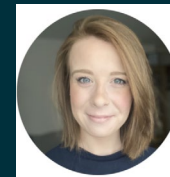
David Halat,
Board Member
Materials Sciences
Division



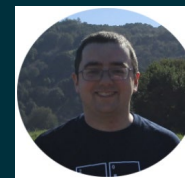
Weronika
Wolszczak,
Board Member
Materials Sciences
Division



Elle Barnes,
Co-chair
Joint Genome
Institute



Alexander Pattison,
Committee Leader
Social & Outdoor
Molecular Foundry



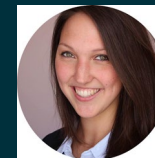
Jibran Zuberi,
Board Member
Energy Analysis &
Environment Impact
Division



Christian Messe
Board Member
Accelerator Technology
& Applied Physics
Division



Lisa Claus,
Co-chair
Computational
Research
Division



Alice Gatti,
Secretary
Computational
Research
Division



Emil Rofors,
Board member
Nuclear Science
Division



Moniruzzaman
Shaikh,
Board Member
Chemical Sciences
Division





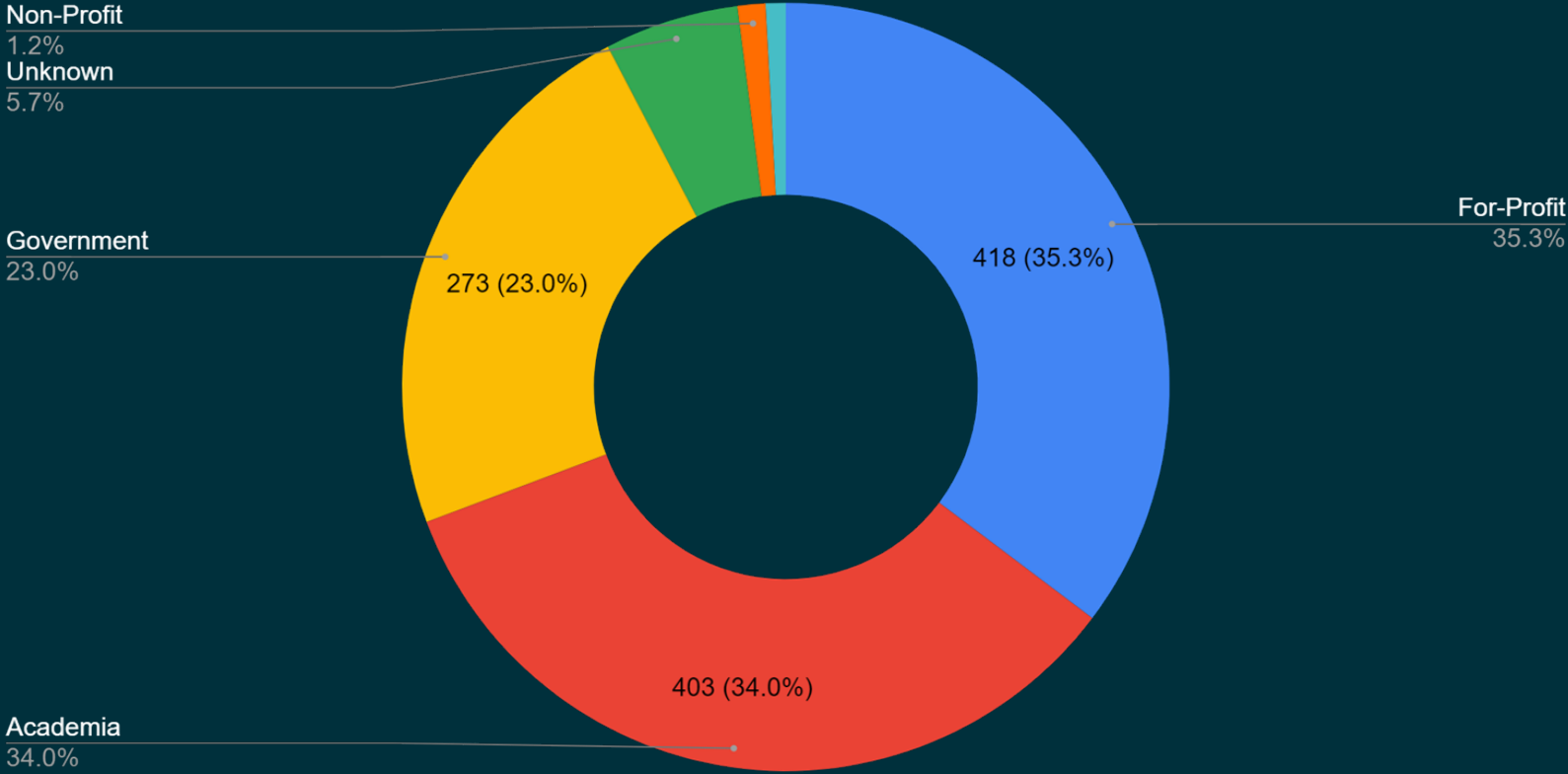
Postdoc Alumni Project



Motivation

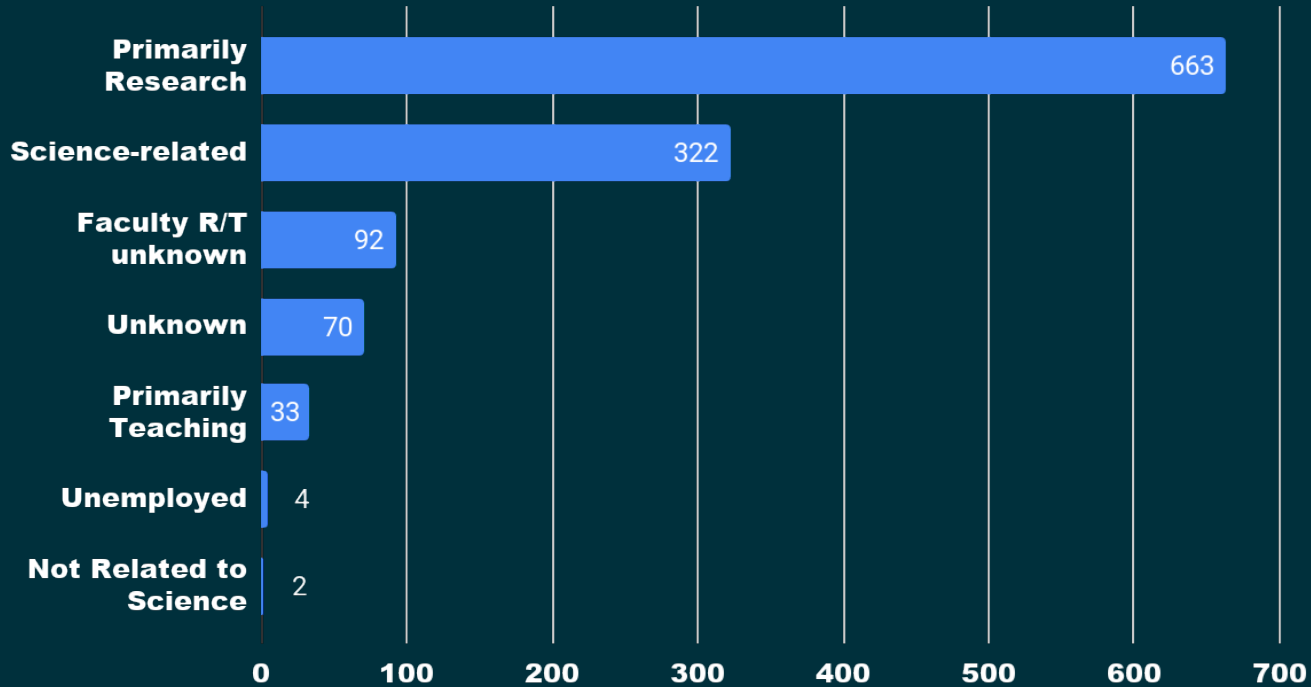
- Berkeley Lab is missing career outcome data for Postdoc Scholars and subsequently a strong alumni network
- Postdocs pursue a wide array of career paths, only 15% transitioning to Berkeley Lab scientific roles (and we want to know where they are!)

First Tier- Workforce Sector

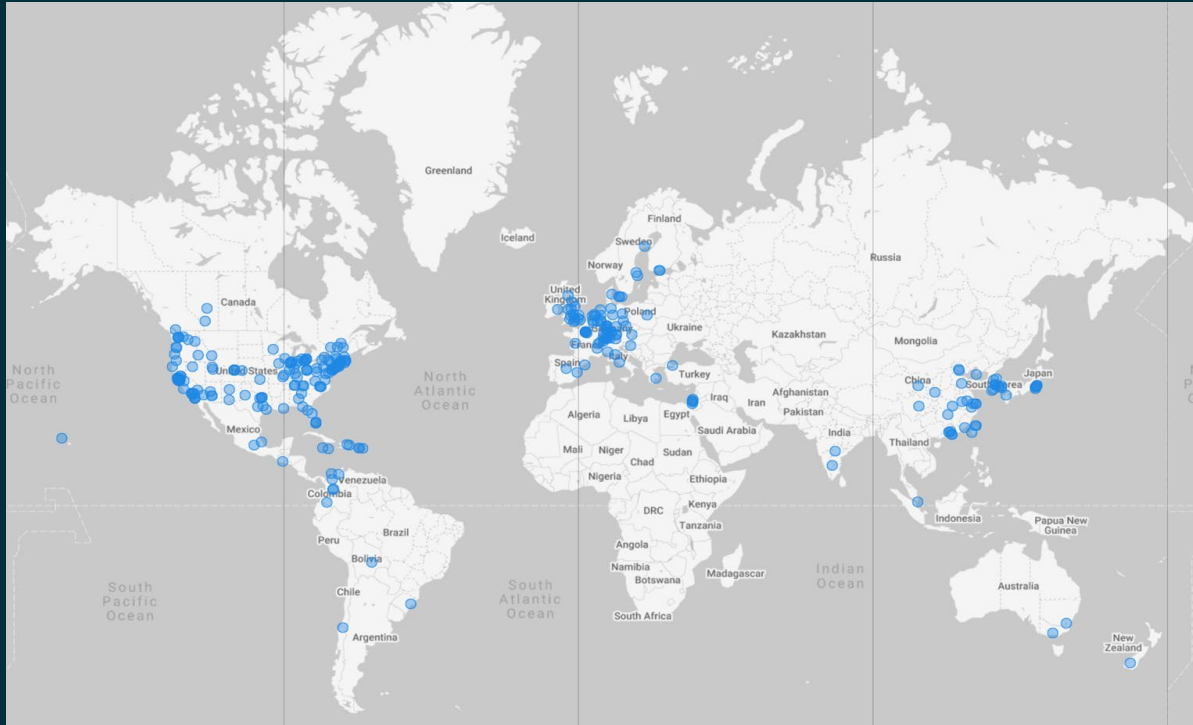


Second Tier- Career Type

Career Type



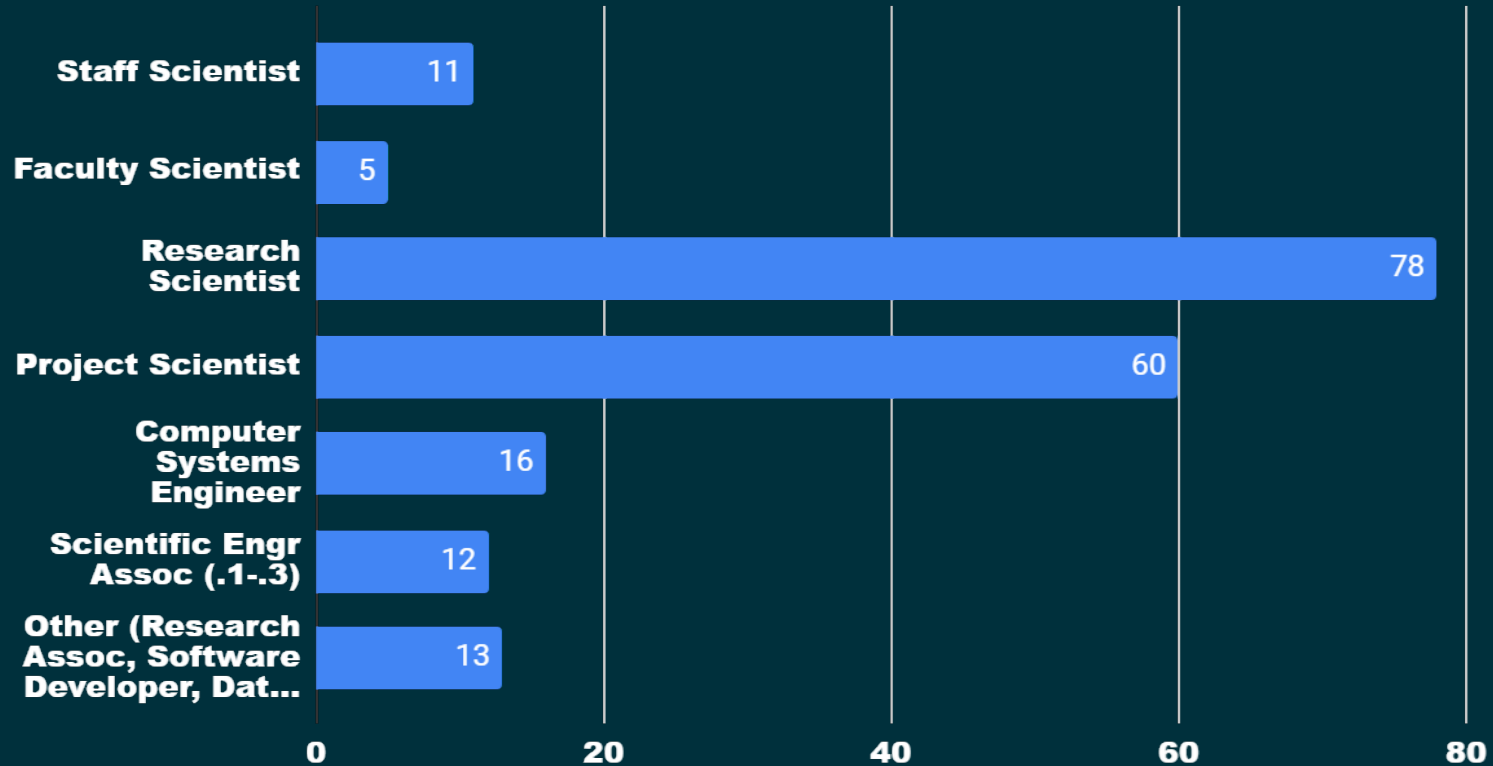
Location by Company



California - 574	Germany - 41	New York - 26
Canada - 10	Illinois - 14	Oregon - 7
China - 60	Israel - 8	Pennsylvania - 12
Colorado - 18	Japan - 11	South Korea - 17
Connecticut - 7	Maryland - 7	Switzerland - 18
England - 13	Massachusetts - 23	Texas - 20
Florida - 9	Michigan - 13	Washington - 14
France - 13	Netherlands - 9	Wisconsin - 9
*67 unknown		

Berkeley Lab Job Distribution

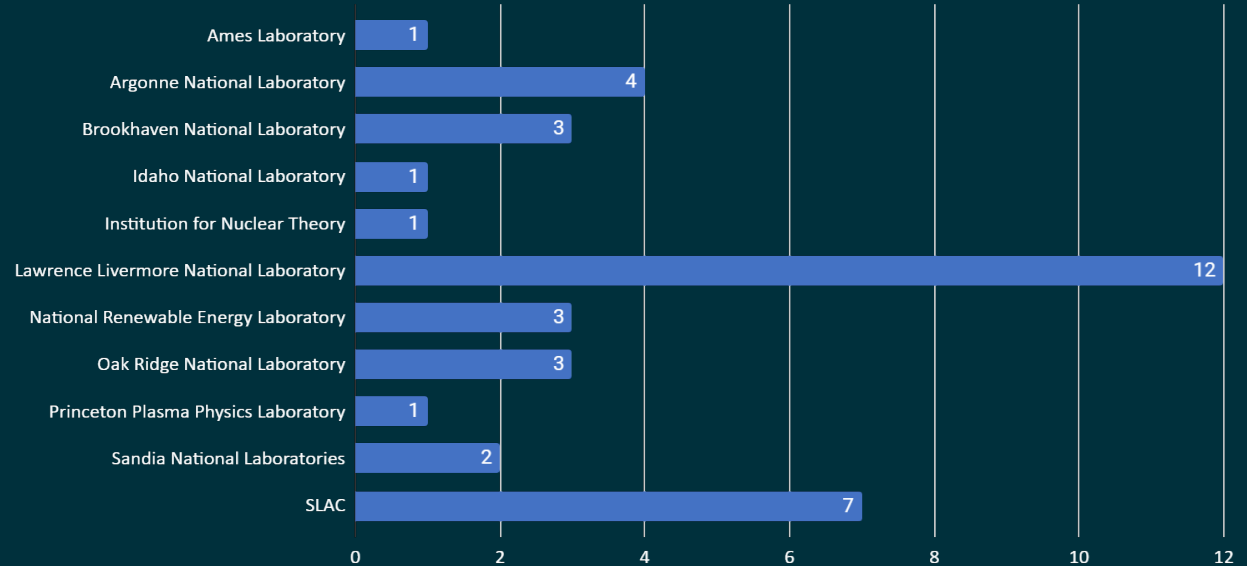
Berkeley Lab Employees



National Laboratory Employees

Ames Laboratory	1
Argonne National Laboratory	4
Brookhaven National Laboratory	3
Idaho National Laboratory	1
Institution for Nuclear Theory	1
Lawrence Berkeley National Laboratory	197
Lawrence Livermore National Laboratory	12
National Renewable Energy Laboratory	3
Oak Ridge National Laboratory	3
Princeton Plasma Physics Laboratory	1
SLAC	7
Sandia National Laboratories	2

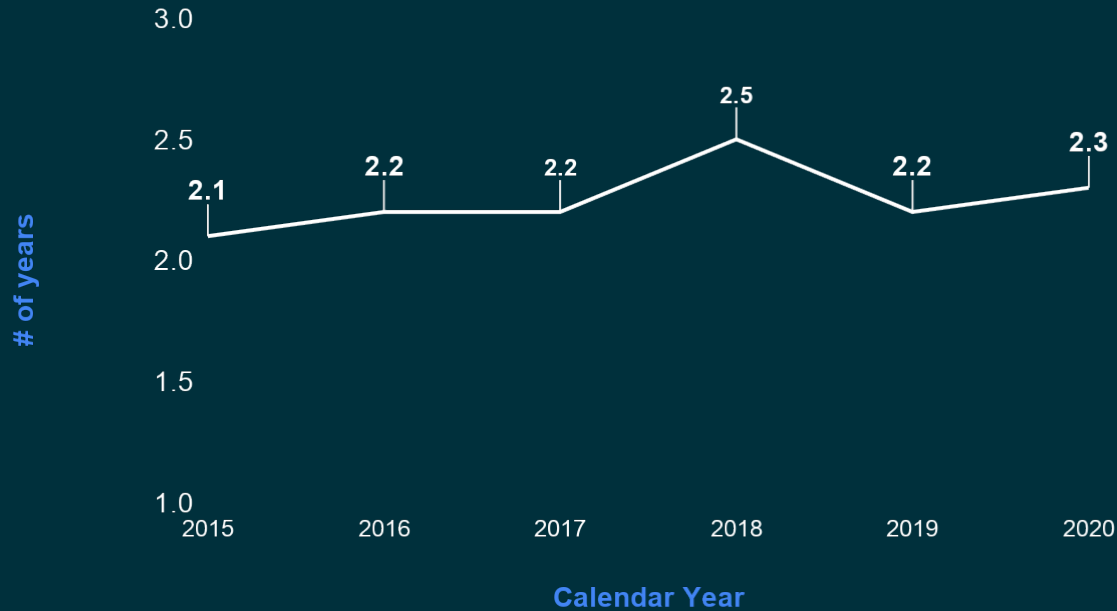
Former Postdocs at National Labs (Excluding Lawrence Berkeley National Lab)



Total: 235 former Postdocs

Average Postdoctoral Tenure

Average Postdoc Tenure



Summary - *Opinion*

Relatively small investment in early career development will have big impact on development of future lab staff.

Particularly important for increasing diversity, and keeping millennials engaged.

DOE SC has done very well with programs such as ECRP and CSGF (ASCR). But needs to develop a plan of how to connect these pieces.

The NLCROs could take this on and discuss how to create multi-lab postdoc programs, and help early career scientists to develop careers that span multiple labs.

Thank you to Meg Rodriguez, Margaret Dick, Bill Johansen, Darren Ho, and Eduardo de Ugarte for contributing to this presentation.