

# ANNUAL REPORT

2024



Livermore Lab  
FOUNDATION





# A Year of Growth and Impact

## A Message from Sally Allen, Executive Director

As we reflect on the past year, I am proud to share the continued progress of the Livermore Lab Foundation (LLF) in advancing science and inspiring the next generation of scientists and engineers. Our mission remains grounded in supporting innovative research at [Lawrence Livermore National Laboratory](#) (LLNL) and connecting aspiring STEM leaders with transformative opportunities to shape the future of science.

In 2024, we were proud to support our largest student fellowship cohort to date, and to highlight their experiences at our first-annual [Summer Showcase](#). These exceptional students are already contributing meaningfully to their fields of study, and will continue to shape the future of STEM for years to come. Through our fellowship program, we are not only advancing scientific knowledge but also nurturing future science and technology leaders who will take on the world's most complex challenges.

In addition to our student-focused activities, we've worked to expand the reach of LLNL's groundbreaking science. Throughout 2024, we worked with partners across California and beyond to showcase the cutting-edge research taking place at LLNL and discuss pressing challenges and collaborative opportunities in fields like climate, fusion energy, and neurodegenerative diseases. Most notable among our outreach efforts this past year was our national *Roads to Removal* roadshow, a series of regional events designed to build understanding of carbon management opportunities. These gatherings not only helped connect local communities with Lab scientists but also fostered a deeper understanding of the innovative work being done at LLNL, opening doors to new partnerships across the nation.

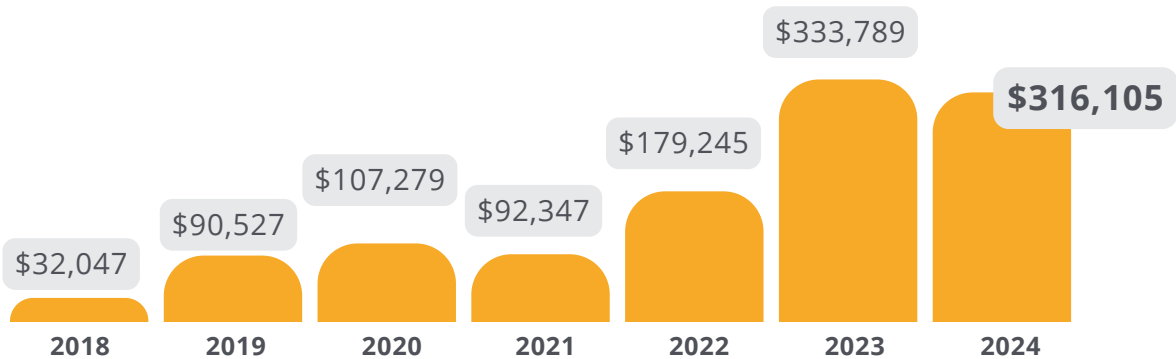
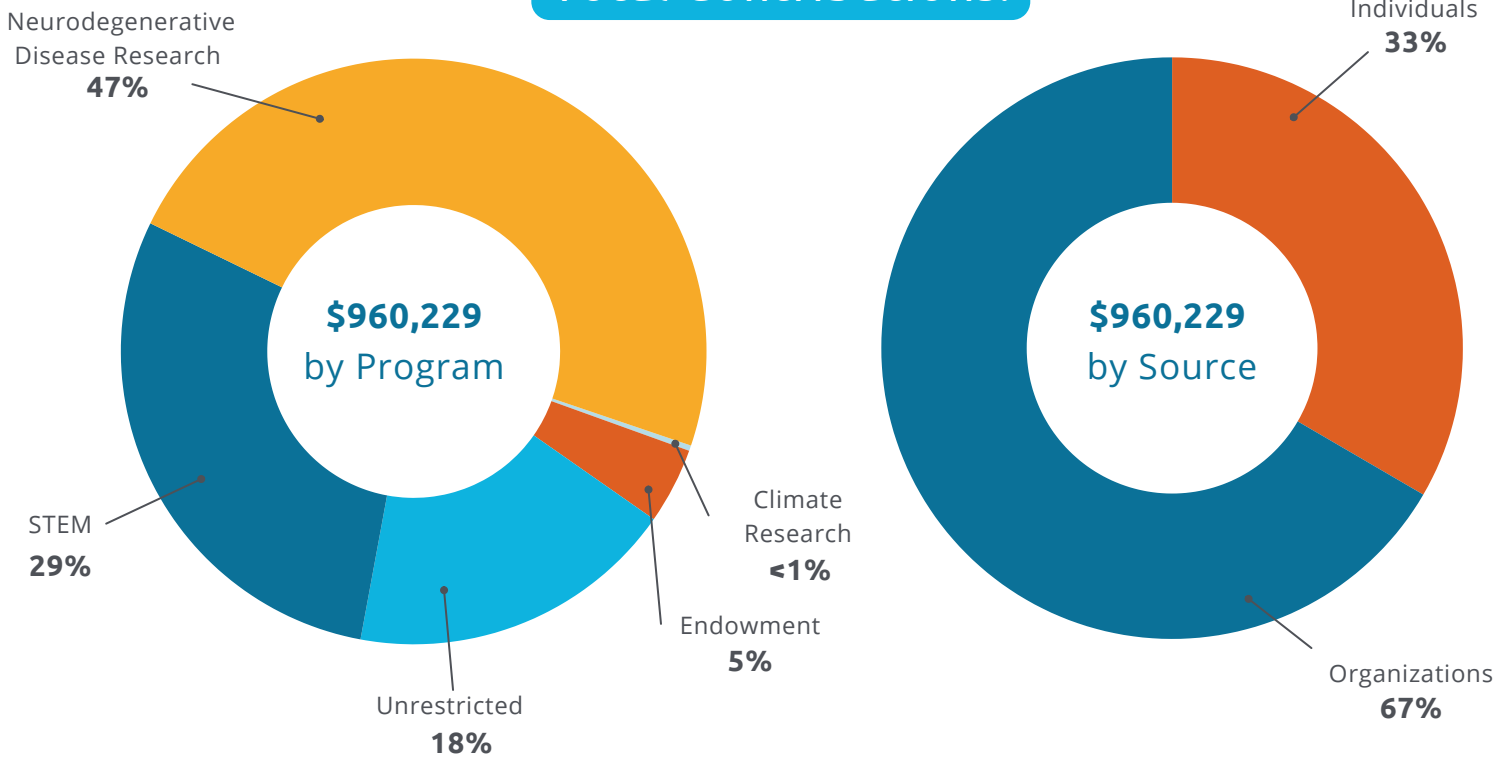
Lastly, we've undertaken a refresh of our [strategic plan](#) to affirm our focus areas and chart a clear course for the next 3-5 years. This updated set of goals and objectives will guide our work as we strive to make an even greater impact. We also hope to continue a steady rise in unrestricted support, which gives us the flexibility to direct funds where they are needed most — whether to invest in critical areas of research or to grow our student programs.

Our efforts and accomplishments would not be possible without the dedication and contributions of our many donors and partners. We are grateful for your continued commitment to our mission, and look forward to achieving exciting progress together in the years ahead!

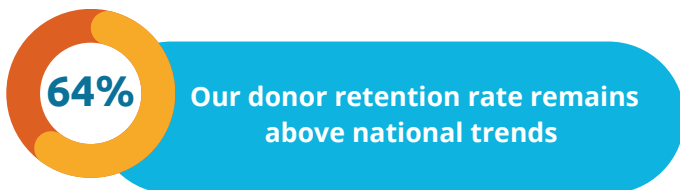
**About the cover:** Featuring a portion of our 2024 LLF Fellows cohort of undergraduate and graduate students supported by our generous donor community.

# 2024 By the Numbers

## Total Contributions:



## Individual Donations Per Year



**Thank You!** Core operating funds from the University of California allowed most gifts and philanthropic contributions to be disbursed in support of LLF's programs. We are grateful to all who supported us in 2024, enabling LLF to reach more students, facilitate new partnerships and programs, and leverage the Lab's unique capabilities for the benefit of California and beyond.

# Understanding Neurodegenerative Disease



LLF Fellow, Amrit Singh Johal, presenting his research project at LLF's Summer Social & Student Showcase.

LLF seeks to advance our collective understanding of neurodegenerative disease to improve diagnoses and treatments. Brain-related disorders such as Alzheimer's, Parkinson's, and ALS affect a growing segment of our aging population. Although certain treatments may help relieve some of the physical or mental symptoms and slow their progression, no cures currently exist. Since 2019, LLF has leveraged LLNL's unique resources to accelerate the research community's efforts to diagnose, understand, and treat these devastating diseases.

In May, LLF partnered with the University of California and LLNL to host a two-day, UC-wide workshop on ALS, and also brought two undergraduate students to the Lab as Life Sciences Fellows: **Prayagee Songhela**, a Biomedical Sciences major at Arizona State University, and **Amrit Singh Johal**, a Business Data Analytics, Molecular Biosciences & Biotechnology major at Arizona State University.

Reinvigorating Innovation in ALS took place on May 16-17, 2024, at the University of California Livermore Collaboration Center (UCLCC), with scientists from all five UC medical campuses (Davis, Irvine, Los Angeles, San Diego, and San Francisco), industry leaders (Precision Neuroscience, IBM, and Denali Therapeutics), ALS patients and their caregivers, and representatives from ALS CURE Project, ALS Network, Target ALS, LLF, as well as state and federal entities. Participants came together to discuss both clinical and research challenges, and forge new research collaborations across disciplines to accelerate innovative ALS research and development.

## Fostering Collective Scientific Progress

Under the mentorship of LLNL's Doris Lam and Anne Caroline Mascarenhas, Prayagee studied the role of the enzyme acetylcholinesterase (AChE)

and the gut microbiome in the development of brain disorders.

Amrit worked with LLNL mentors



LLF Fellow, Prayagee Songhela, presenting her research project to Livermore Mayor, John Marchand, at LLF's Summer Social & Student Showcase.

Vanessa Brisson and Rhona Stuart on bioenergy relevant algal-bacterial interactions in biofuel ponds, and tracked metabolites using imaging and stable isotope probing.



# Accelerating Climate Resilience

## 'On the Road' in 2024

### Roads to Removal - by the Numbers

**1** Comprehensive Roads to Removal Report

**4**

Sponsors -  
Foundation Partners

**5**

Fabulous Regional  
Symposiums

**13**

Strong Academic  
Partners

**38**

Expansive  
Newspaper, Radio, &  
TV Stories

**39**

Technical Briefings  
& Unique Speaking  
Engagements

**68**

Individual Expert  
Authors

**1,318**

In-Person & Virtual  
Symposium  
Registrations

**1,348**

YouTube  
Views

**1,722**

Downloads of  
Climate Now's  
R2R Podcast

**3,143**

Interactive  
County Maps

**118,000**

Unique Visitors to the  
R2R Website

**466,032**

Cross Social Media  
Platform Impressions

2024 was a big year for LLF-hosted climate events. In partnership with LLNL scientists, the message of carbon management was widely disseminated in a series of collaborative symposiums in California, Indiana, North Carolina, Pennsylvania, and Wyoming. The 'road show' was designed to highlight LLNL's 2023 Roads to Removal report, commissioned by the Department of Energy. With support from partners at ClimateWorks Foundation, Breakthrough Energy and Grantham Foundation for the Protection of the Environment, LLF managed the speakers, panels and community engagement at each location. LLNL served as the lead institution on the report, with strong collaboration and expertise from academic institutions nationwide and 68 individual authors.

In November, LLF partnered with LLNL, Innovation Tri-Valley Leadership Group, Startup Tri-Valley and the Chabot-Las Positas Community College District to host a one-day Clean Tech Symposium on the sociological, educational and workforce factors critical to creating a regional energy transformation hub. The symposium was possible thanks to a two-year, \$1-million Climate Action Innovation and Entrepreneurship research award from the University of California. The funding also directly supported research teams at LLNL's Prototyping Enclave Incubator, who mentored four LLF Climate Entrepreneurs Fellows.

## Enabling Climate Conversations



LLNL scientists Tracie Owens (L-R), Brandon Wood, Sarah Baker and Eric Duoss discuss the Lab's Prototyping Enclave Incubator and the opportunities available to local industry at the November 8 symposium at Las Positas College in Livermore.

Learn more: [www.livermorelabfoundation.org/Climate](http://www.livermorelabfoundation.org/Climate)

# Promoting the Promise of Fusion Energy



*Dona Crawford, Board Chair, at LLF's exhibit at September's fusion ignition celebration at San Ramon's City Center*

LLF is working to catalyze understanding, awareness and investment in fusion to address global energy goals. Fusion has the potential to provide a reliable, abundant, safe, and clean global energy source. Repeated achievement of fusion ignition at LLNL's National Ignition Facility (NIF) has also established the fundamental scientific feasibility of laser-driven inertial confinement fusion as a path toward fusion energy. Moving beyond that to the nation's decadal vision of commercial fusion energy will require, among other things, creating pathways and opportunities for the next generation to work in fusion.

In Summer 2024, LLF was pleased to bring two Fusion Fellows to the Lab: **Chenkai Mao**, an electrical engineering PhD student from Stanford University, and **Jaya Sicard**, an undergraduate physics/engineering major from the University of Nevada, Reno.

During Chenkai's summer fellowship, he worked with Lab mentor Dr. Xiaoxing Xia on Micro and Nanoscale 3D printing — a technology that opens the door to applications such as drug delivery, chip-scale cooling, terahertz (THz) meta-materials, and materials for clean energy. For Chenkai, "The fellowship allowed me to focus on research and introduced me to the advanced manufacturing ecosystem and community."

Jaya worked with Dr. Raspberry Simpson, focusing on development of an activation-based diagnostic for measurement of laser-driven ion sources in support of ion fast ignition (IFI). Jaya is grateful to LLF and LLNL for her experience: "The LLF fellowship allowed me to conduct novel research and further develop my career in high energy density physics, and has prepared me for graduate school applications."

## Building Pathways to Fusion Energy

LLF also provided summer research stipends to 15 students working with LLNL's High Energy Density Science (HEDS) Center. Supporting interns in this related research area complements the Lab's efforts to expand the pipeline of students in a field critical to much of the work done at LLNL.

In September, LLF also participated in a special community celebration of LLNL's fusion ignition milestone, hosting a booth featuring the Fusion Fellows, alongside Lab scientists and other local science education programs.



# Inspiring Future STEM Leaders

Since inception in 2016, the Foundation has supported more than 100 students in paid Lab internships in such areas as fusion, life sciences, physics, carbon management, data science and industrial automation. And in 2024, LLF hosted its largest student cohort ever. LLF Fellows are matched with dedicated LLNL mentors, who help them gain valuable hands-on experience and the skills, confidence, networks, and inspiration needed to pursue successful STEM careers. Many LLF Fellows return to the Lab for subsequent summer internships, and some have even been hired at LLNL.

## Opening the Door to Discovery

Each summer, LLF hosts an enriching Fellows Week to facilitate connections, knowledge sharing, and career development for our cohort. The program goes beyond building students' technical skills and exposure to world-class science; it seeks to empower them to consider a rewarding and impactful STEM career, contributing to the nation's critical workforce pipeline needed to solve issues of national and global importance.

In August, LLF honored the 2024 fellows cohort with a special poster session and community celebration at our first-annual Summer Social & Student Showcase event. We are excited to continue this new tradition in 2025!

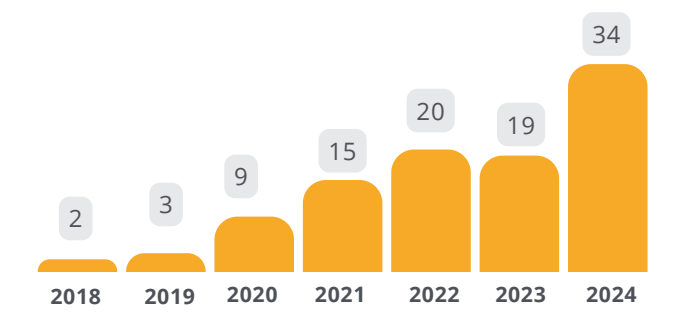


LLF Fellow, Eric Hall, (L-R) with LLNL's Jason Carroll, Mike Wilson and Randy Pico. Eric was one of two Bakersfield College students who worked at LLNL in Summer 2024.

*"The LLF fellowship introduced me to the fascinating world of manufacturing at a world-class R&D facility, showcasing advanced tools and processes while inspiring me to explore how manufacturing technology supports scientific research and national security."*

— **Eric Hall**

2024 Bakersfield College  
Industrial Automation Fellow



**LLF Fellowships Awarded**



# Introducing the 2024 LLF Fellows



HEDS Fellow

**Hamad Afzal**

*University of California,  
Merced*



HEDS Fellow

**Kyla de Villa**

*University of California,  
Berkeley*



Carbon Fellow

**Andrew DeMello**

*Northwestern University*



Davis Family Carbon Fellow

**Ruby Diaz**

*California State  
University, Bakersfield*



HEDS Fellow

**Alexis Diaz**

*University of California,  
Berkeley*



UC Climate Entrepreneurs Fellow

**Maged Elshatoury**

*University of California,  
Merced*



UC Climate Entrepreneurs Fellow

**Tianshi Feng**

*University of California,  
San Diego*



HEDS Fellow

**Jhonnatan Gama**

*Stanford University*



HEDS Fellow

**Sheindel Gamerberg**

*University of California,  
Merced*



Foster Fellow

**Noah Gonzalez**

*Arizona State University*



UC Climate Entrepreneurs Fellow

**Juliana Gonzalez**

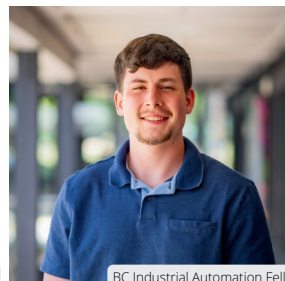
*University of California,  
Irvine*



BC Industrial Automation Fellow

**Eric Hall**

*Bakersfield College*



BC Industrial Automation Fellow

**Wyatt Hunter**

*Bakersfield College*



HEDS Fellow

**Tanja Kovacevic**

*University of California,  
Berkeley*



Data Science Fellow

**Benjamin Le**

*San Jose State University*



HEDS Fellow

**KangHong Li**

*University of California,  
Merced*



HEDS Fellow

**Jonah Madrid**

*New Mexico State  
University*



Early Internship Program Fellow

**Maili Malabey**

*San Jose State University*



Fusion Fellow

**Chenkai Mao**

*Stanford University*



UC Climate Entrepreneurs Fellow

**Jose Martinez**

*University of California,  
Merced*



# Our Largest Cohort Yet!



HEDS Fellow

**Isabella Martinez**

University of California,  
San Diego



HEDS Fellow

**Izaiha Martinez**

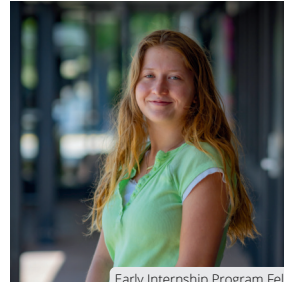
University of Alabama



HEDS Fellow

**Devan Massin**

Columbia University



Early Internship Program Fellow

**Rebecca Munzar**

Pepperdine University



Davis Family Physics Fellow

**Justin Peterson**

California State University,  
Bakersfield



HEDS Fellow

**Derrick Pickrel**

University of California,  
Merced



SIAM Fellow

**Ethan Ramirez**

University of California,  
Berkeley



HEDS Fellow

**Jeremiah Reynoso**

University of Alabama



Early Internship Program Fellow

**Harshitha Sarathy**

University of California,  
Santa Cruz



Fusion Fellow

**Jaya Sicard**

University of Nevada,  
Reno



HEDS Fellow

**Matthew Signor**

University of Rochester



Life Sciences Fellow

**Amrit Singh Johal**

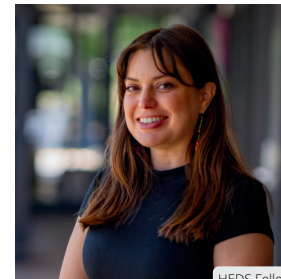
Arizona State University



Shuler Life Sciences Fellow

**Prayagee Songhela**

Arizona State University



HEDS Fellow

**Mercedes Vasquez**

University of California,  
Berkeley

*"The Livermore Lab Foundation Fellowship was a chance for me to give back to both my community and the environment. I'm deeply passionate about community involvement, but I also love understanding the 'big picture.' This experience allowed me to do both while connecting with incredibly talented individuals. I believe this fellowship has changed my career trajectory and I know it will serve me well."*

— **Ruby Diaz**

2024 Davis Family Carbon Fellow  
Cal State University, Bakersfield

# Celebrating Time, Talent & Treasure



Ann Willoughby is one of the Foundation's most dedicated donors and volunteers. As the former Community and K-12 Education Manager at LLNL, as well as retired Chief of Staff for the University of California Office of National Laboratories, Ann has always been passionate about supporting aspiring science and engineering students. Her deep commitment to fostering STEM education aligns closely with LLF's mission to inspire the next generation of leaders in these fields, particularly those who might not otherwise have the opportunity to connect with a national laboratory.

Ann has been an active LLF donor since 2019, but three years ago, she took her involvement to the next level by volunteering her time to review LLF's fellowship applications. In this crucial role, Ann has helped the Foundation expand its outreach to academic partners, enabling LLF to connect with a growing number of applicants from across the country. Her thoughtful approach, combined with her extensive experience in education and community engagement, has been invaluable in ensuring a fair and rigorous review process. Ann's attention to detail and commitment to excellence help ensure program outcomes that align closely with LLF's mission of providing unique opportunities to promising students in STEM.

In addition to her work with LLF, Ann contributes her time and expertise to a variety of other local nonprofits. Her volunteer work spans a range of causes, from supporting women and former foster youth in higher education to promoting community-based mental health services, supporting a foster youth services organization and assisting with Tri-Valley STEM events. She is committed to giving back to the local community, and her impact is felt across many organizations.

Ann's unwavering dedication to education, her meticulous approach to volunteer work, and her commitment to building stronger communities make her an invaluable asset to LLF and many others. Through her contributions, she is truly helping shape a brighter future for countless aspiring STEM leaders, and inspiring others with her commitment to LLF's mission. Thank you, Ann, we appreciate you!

*"We are fortunate to live in a community that advances science and engineering. LLF's exceptional programs engage young people in STEM education and careers, with the goal of developing the next generation of scientists and engineers."*

— **Ann Willoughby**

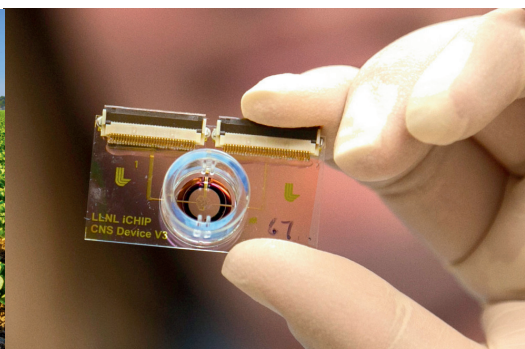
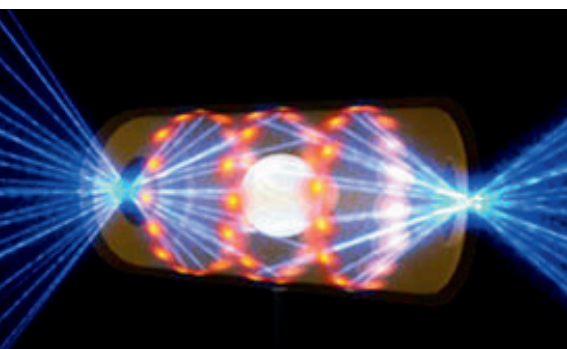
Retired, Chief of Staff, UC Office of National Labs



# Amplifying Science Solutions

## Why LLF, Why Now?

The role of philanthropy in advancing scientific innovation — especially at a national laboratory — has gained increasing recognition in recent years. The establishment of several new national lab-affiliated foundations since LLF's inception demonstrates that philanthropic partners can leverage and complement public investments in Lab research, bridge gaps, and engage the broader community. LLF is honored to work alongside LLNL to apply the Lab's transformative work beyond its core national security mission, addressing some of the world's greatest challenges in energy, climate, healthcare, and more. The Foundation adds unique value by enabling new types of support, partnerships and programs that amplify the impact of LLNL's cutting-edge research for the greater good and enable important opportunities to cultivate the next generation of STEM leaders. As the pace of change accelerates and new technologies emerge at an unprecedented scale, it is more critical than ever to fund great science. Investing today is the key to ensuring a better future for all.



## Join Us with Confidence

We welcome designated or unrestricted gifts of any size. Your investment fuels LLNL's groundbreaking research — with leading-edge experimental capabilities, unparalleled tools, and dedicated researchers who are also mentoring aspiring scientists and engineers. Join us in making an impact by giving online, mailing a check, or using a Donor-Advised Fund. We're happy to help you develop a giving plan that best meets your philanthropic goals. If you have questions or wish to explore specific circumstances surrounding your gift, please contact us at

[info@livermorelabfoundation.org](mailto:info@livermorelabfoundation.org)



**GIVE TODAY**



The Livermore Lab Foundation is honored to have earned top ratings from both Candid / Guidestar and Charity Navigator, and is a proud member of CalNonprofits, acknowledging our commitment to industry best practices and transparency. These recognitions enable donors to give with confidence, assuring that their gifts contribute effectively to advancing our mission.



## Board of Directors

### Dona Crawford

Board Chair, Former LLNL Associate Director of Computation

### Greg Suski

Board Secretary & Treasurer, Former LLNL Associate Deputy Director for Science & Technology

### Catharine Baker

Former California State Assemblymember (CA-16), Director, UC Student & Policy Center

### Kim Budil

Ex Officio Director, LLNL Director

### Michael Carter

Former LLNL Program Director for DoD Technology Programs

### Brett Henrikson

Chief of Staff & Director of National Laboratory Governance, UC Office of the President

### Anantha Krishnan

Senior Vice President, General Atomics, Former LLNL Associate Director of Engineering

### Lori Souza

Former LLNL Associate Deputy Director for Operations

### Jan Tulk

Former LLNL Laboratory Counsel

### June Yu

Vice President for National Laboratories, UC Office of the President

### Carolyn Zerkle

LLNL Principal Deputy Director and Vice President, Lawrence Livermore National Security, LLC

### Charlene Zettel

Regent Emerita, UC Board of Regents and Former California State Assemblymember (CA-75)

## Our Team

### Sally Allen

Executive Director

### Terry Damm

Financial Controller

### Jesse Dupuis

Administrative Assistant

### Susan Houghton

Research Portfolio Manager

### Emily Pezzutti

Marketing & Communications Manager

### Lori Taylor

Operations Manager

## Mission

**Livermore Lab Foundation** advances scientific knowledge and inspires the next generation of science and technology leaders by leveraging philanthropic investments in world-class research, education, and innovation at Lawrence Livermore National Laboratory, a U.S. Department of Energy national security laboratory.



[livermorelabfoundation.org](http://livermorelabfoundation.org)

925.453.9382

[info@livermorelabfoundation.org](mailto:info@livermorelabfoundation.org)

7000 East Avenue, B661/L-794  
Livermore, CA 94550

Find our office at the UC Livermore  
Collaboration Center



The Livermore Lab Foundation is a 501(c)(3)  
nonprofit organization, EIN #81-2567763

© 2024 Livermore Lab Foundation



Learn More About LLF