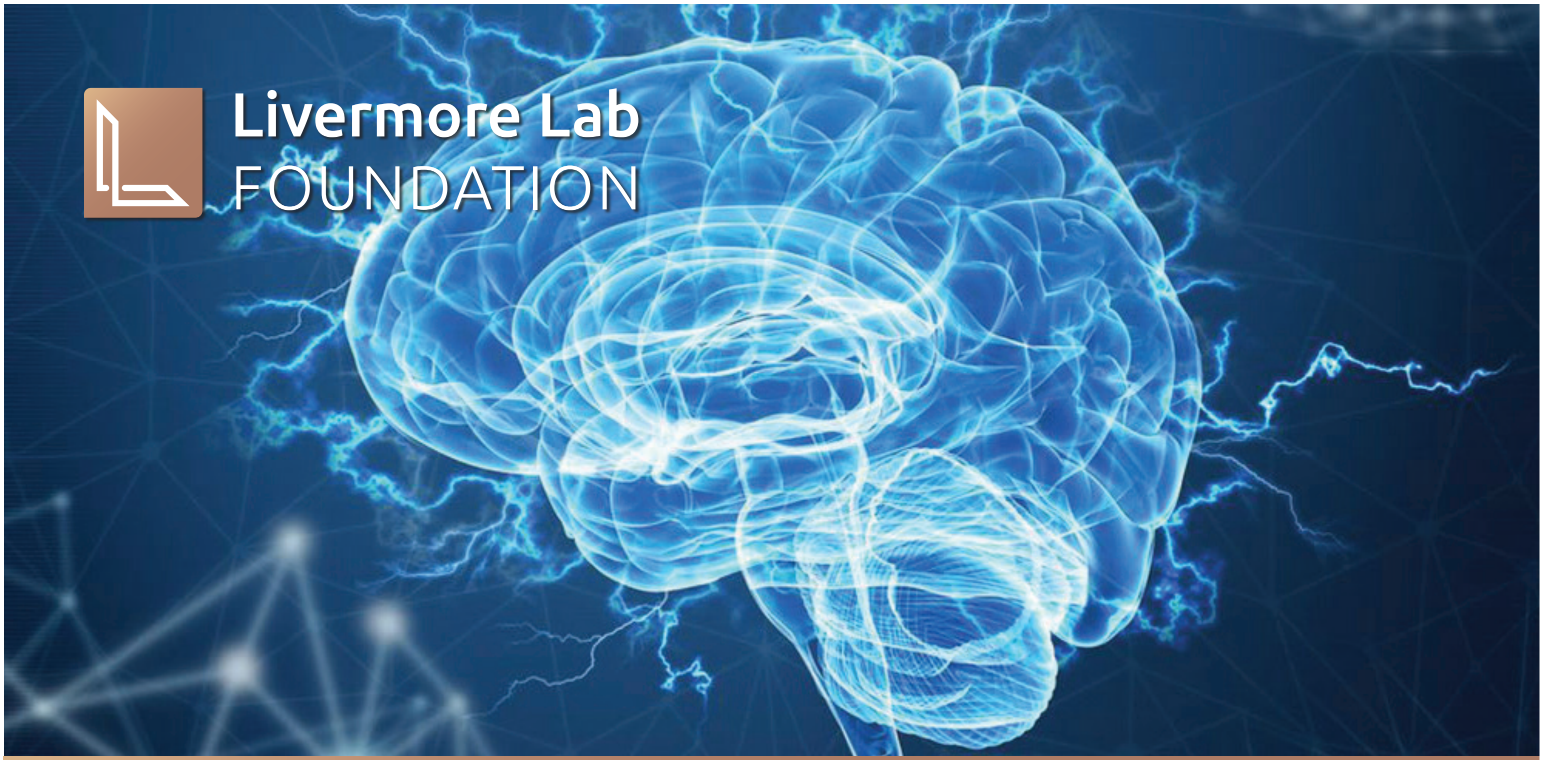
Livermore Lab
FOUNDATION



Tackling a Deadly Disease

Amyotrophic Lateral Sclerosis (ALS)

Personal stories from the local community often underscore the importance of scientific advances that have implications for broader society. Such is the case for the second major research initiative LLF launched in 2019. In 2017, Mike Piscotty, a Laboratory employee, and his son Stephen Piscotty, an outfielder for the Oakland A's, founded the ALS Cure Project in honor of Mike's wife and Stephen's mother Gretchen, who died from amyotrophic lateral sclerosis (ALS), also called Lou Gehrig's disease.

The ALS Cure Project raises funds for research into improved treatment and, eventually, a cure for this fatal disease. In June 2019, the Livermore Lab Foundation joined the cause, seeking public and private research partners to support those efforts.

"The LLF board felt this was an important program to launch as one of our initial research investments," said Dona Crawford, President. "The Foundation and Lab are partnering to explore academic and industry research collaborations and leverage LLNL's computing capabilities to identify causal factors for ALS. One of the greatest challenges in ALS research is to identify the elusive biomarkers for the disease."

Mike Piscotty, (left), CEO and Founder, ALS Cure Project with Dr. Amy Gryshuk, LLNL Director, Strategic Engagements & Alliance Management. Gryshuk is leading Lab efforts to develop multidisciplinary research collaborations and accelerate options and therapies.

LLF is funding the Laboratory to pursue multidisciplinary partnerships with research hospitals, universities and other organizations whose expertise, when combined with LLNL's core competencies, will help improve understanding of the disease and assist with the development of new therapies and treatments.

> ***"The promise of this effort brings hope to an ALS community struggling to find both a treatment and a cure."***
>
> *—Mike Piscotty*
> *CEO and Founder, ALS Cure Project*

Building on the success of this initial effort, the ALS Cure Project donated to the Livermore Lab Foundation to apply LLNL's world-class data analytics capabilities to ALS clinical data sets to help evaluate ALS risk and associations in various populations.

"The Lab is applying a multidisciplinary approach to conduct a longitudinal, multi-modal machine learning ALS study that we believe will be a game changer," said Mike Piscotty. "We are grateful to the Livermore Lab Foundation for these important partnerships."

A Closer Look at ALS

- Amyotrophic lateral sclerosis (ALS), more commonly known as Lou Gehrig's disease, is a progressive neurodegenerative disease that attacks nerve cells and pathways in the brain and spinal cord.
- Every day, an average of 15 people are newly diagnosed with ALS – more than 5,600 people per year. As many as 30,000 Americans may currently be affected. Annually, ALS is responsible for two deaths per 100,000 people.
- ALS usually strikes people between the ages of 40 and 70. Those afflicted have included baseball great Lou Gehrig as well as theoretical physicist, cosmologist, and author Stephen Hawking.
- The average life expectancy of a person with ALS is two to five years from time of diagnosis.
- Very little is known about the disease. There are no known biomarkers.

Data sources: als.org, alscure.net

Leveraging LLNL's Capabilities

LLNL uses High-Performance Computing, Bioengineering, and Bioassays to Contribute to the ALS Research and Clinical Communities

Identifying Biomarkers

Understanding Cellular Mechanisms

Investigating the Influence of Genetics

Developing New and Effective Treatments

☎ 925.453.9382
info@livermorelabfoundation.org
livermorelabfoundation.org

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