

LLNL Legacy: Fostering innovation



Lawrence Livermore National Laboratory
(est. 1952)

Cepheid & Quanta Life:

Miniaturized PCR technology developed at LLNL drove crucial diagnostic platforms for national COVID-19 testing.



Rapid PCR (Cepheid)

Second Sight & Neuralink:

Livermore's foundational technology for vision restoration paved the way for early startups and helped launch Neuralink.



Retinal Implant (Second Sight)

10x Genomics:

Founded by an LLNL alumnus, delivering tools that are actively transforming modern biology

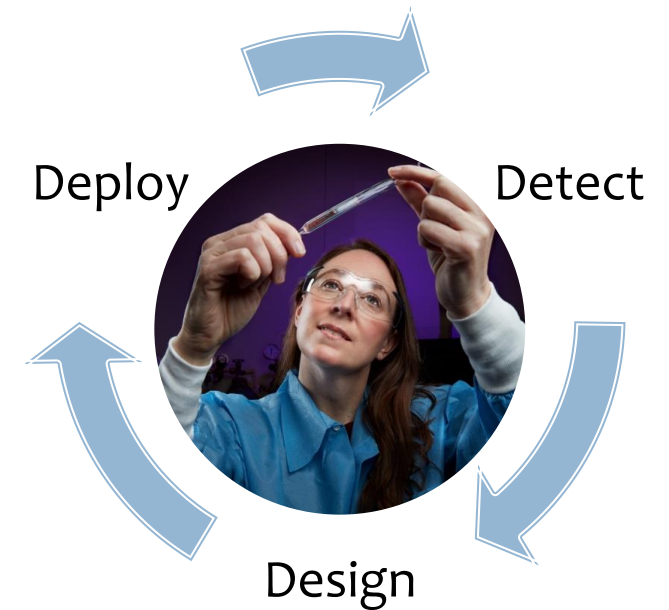


Digital PCR (Bio-Rad)

Biology as an engineering discipline

Detect, Design, Deploy

- We are transitioning to a framework where biology is engineered not just observed
 - **Detect Earlier:** Leveraging data to identify outbreaks—like mpox and measles—weeks ahead of conventional surveillance
 - **Design Faster:** Engineering targeted therapeutics, including SARS-CoV-2 antibodies, in a matter of weeks
 - **Deploy Smarter:** Screening existing drug databases to rapidly discover and deploy new clinical applications



California's Ecosystem: The Engine of Innovation

Unmatched Scale

- The densest life sciences startup economy on Earth, built on 70 years of public investment
- Generates \$394B and supports 1M jobs across massive Northern and Southern California clusters



The Infrastructure:

Research Institutes: Arc Institute, CZ Biohub, Innovative Genomics Institute

Academic Network: 10 UC campuses, 23 CSUs

Federal Research: 4 DOE national laboratories

Securing CA Future: Priorities for Consideration

Connect the Data

- Build AI-ready infrastructure for biological and health data
- Assets already exist: UC Health, 10M+ patients · CDPH wastewater, 36 counties ·
- Analyses run where data sits — local control, logged and auditable.

Models travel; data stays.

Build Shared Infrastructure

- Provide shared computing and automated laboratory capacity
- Biofoundries: AI-guided design + synthesis + automated measurement
- Open to startups, universities, and public health agencies statewide

*Design-build-test: months
→ days*

Signal Demand

- Use standards and procurement to create markets
- Multiyear commitments: wastewater metagenomics · rapid diagnostics · flexible countermeasure manufacturing

Companies build capacity where demand is clear and sustained