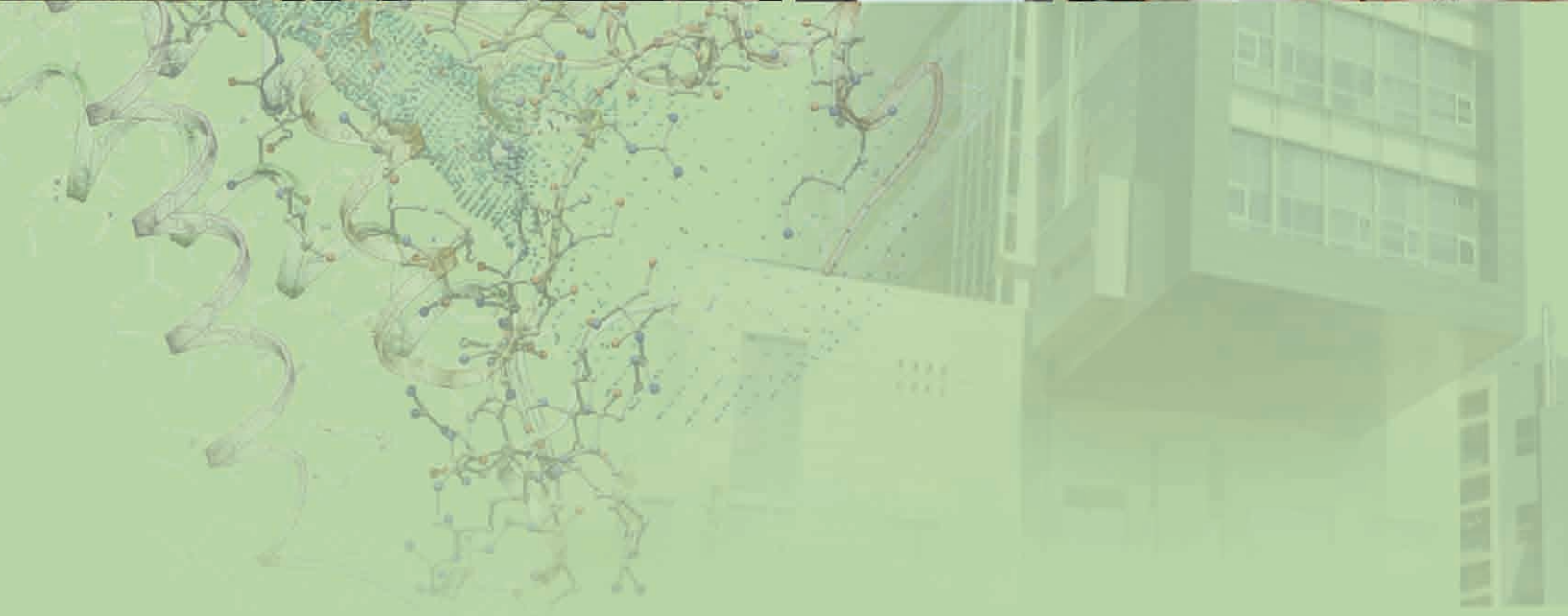
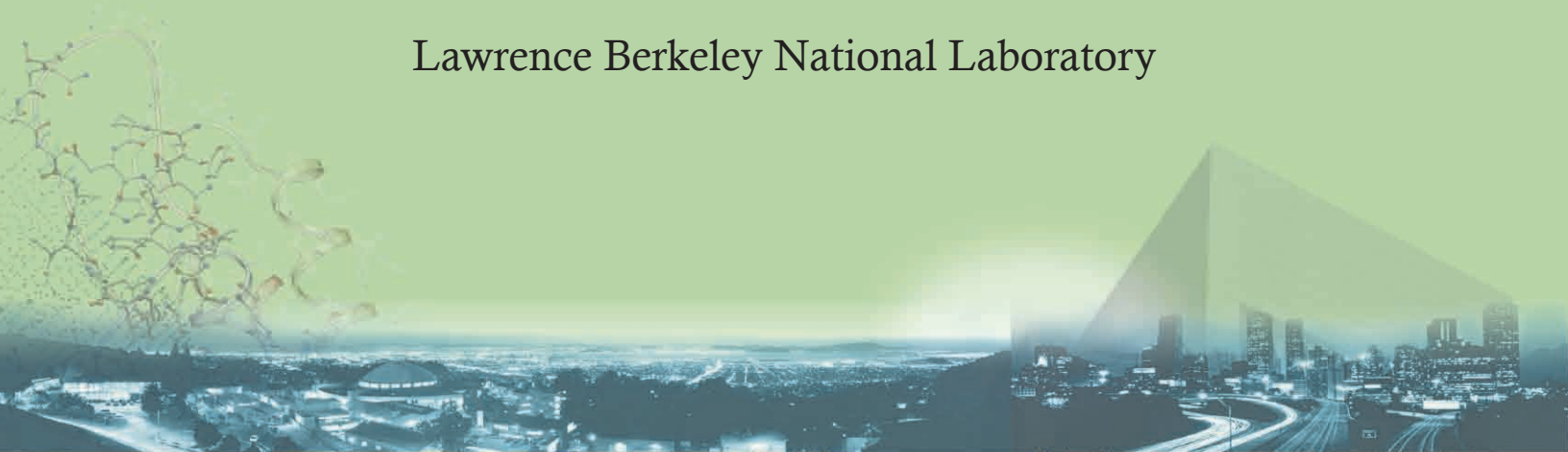


# PartnerSmart

with

Lawrence Berkeley National Laboratory



## Technology Transfer

*From Berkeley Lab to the Marketplace*



# Partnering with *Berkeley Lab*



## Lawrence Berkeley National Laboratory



Dr. Steven Chu  
Director, Berkeley Lab

Lawrence Berkeley National Laboratory, also known as Berkeley Lab, is located in the hills above the University of California, Berkeley campus, adjacent to the San Francisco Bay. It is funded by the Department of Energy with an annual budget of approximately \$500 million and has been a leader in science and engineering research for over 70 years.

### Science at Berkeley Lab

Berkeley Lab conducts non-classified research across a wide range of scientific disciplines with key efforts in:

- Biosciences
- Advanced Materials
- Nanoscience
- Biofuels, Solar; and Energy Efficiency
- Medical Imaging
- Fuel Cells and Batteries
- Software and Information Technology

## Technology Transfer at Berkeley Lab

Our research produces innovative technologies with commercial value. **The Technology Transfer and Intellectual Property Management Department** moves technologies from the Lab to the marketplace to benefit society and the U. S. economy. We accomplish this by developing and managing an array of partnerships with the private sector including licensing, collaborative research, and sponsored research.

We license cutting-edge technologies to companies, including start-ups, that have the financial, R & D, manufacturing, marketing, and managerial capabilities to successfully commercialize Lab inventions. In addition, we ensure that inventions receive proper intellectual property protection, and we serve as the Lab resource on industry relations.



*We have been fortunate to have the opportunity to work with LBNL to license our search and discovery technology. SeeqPod and its users have directly benefited from the Lab's rich resources, technical knowledge, and world-class staff. I'd encourage other entrepreneurs and computer scientists to work with LBNL, and would welcome the chance to do so again.*

—Kasian Franks, co-founder and CEO, SeeqPod Inc.



# Frequently Asked Questions

## How can I find out about technologies available for licensing?

- Visit our index of available technologies at: <http://www.lbl.gov/tt/techs/index.html>
- Sign up for our customized new technology email alerts at: <http://www.lbl.gov/tt>
- Write us at [TTD@lbl.gov](mailto:TTD@lbl.gov) or call 510-486-6467

Berkeley Lab broadly disseminates information about licensing opportunities via the Web, scientific journals, and promotional mailings sent to both corporate executives and the media.

## What if I am interested in an area of research, but there is no particular technology listed?

We will try to match you with a scientist doing work in your area of interest.

## How does Berkeley Lab choose a licensee?

Berkeley Lab seeks licensees who are most able to bring a technology to market. The criteria we use to qualify a licensee are:

- R&D capabilities
- Financial resources
- Management commitment
- Experience in relevant markets

## How long does it take Berkeley Lab to negotiate a license?

Every license is different. The time depends upon the complexity of the transaction. It generally takes a few months.

## How much does a license cost?

Our licensing fee structure is in line with that of

other academic institutions. The cost of a license is based on:

- The market value of the technology
- Common licensing practices in the relevant industrial sector
- Additional development costs involved in bringing the technology to market
- The scope of the field of use or geographic region

## The financial terms include:

- An issue fee, which is nonrefundable and due upon execution of the agreement
- A running royalty fee, which is most commonly based on a percentage of sales
- A minimum annual royalty fee
- Other financial terms appropriate to the technology and market, such as milestone payments

We endeavor to find win-win solutions and are experienced in working with small businesses and start-ups. We sometimes accept equity as part of a licensee's financial commitment.

## What other requirements are in Berkeley Lab licenses?

We are committed to ensuring that our licensed technologies are commercialized so that the public ultimately benefits. Berkeley Lab licensees must meet mutually agreed upon performance requirements that reflect diligent progress towards commercialization.

## What is the typical length of a license?

Berkeley Lab licenses usually run for the life of the patent although other terms are available.

# FAQs

## Can I get an exclusive license from Berkeley Lab?

Licenses may be exclusive, exclusive for a particular field of use or geographic region, or non-exclusive.

In all Berkeley Lab agreements, the U.S. government is granted a fully paid-up, non-transferable, non-exclusive license to use the invention for government purposes only, as is the case with other federally funded inventions.

## Will Berkeley Lab allow me to sublicense?

Generally, yes, if you have an exclusive license.

## Do I have to manufacture in the U.S.?

Under an exclusive license, the technology must be substantially manufactured in the U.S. for sales to the U.S. market.

## Will Berkeley Lab assign all patent rights to my company?

No, Berkeley Lab retains patent ownership of its technologies. Your company will be granted a license to use the technology.

## Is Berkeley Lab technology ready for immediate commercialization?

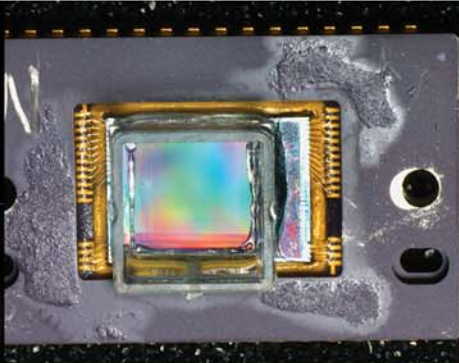
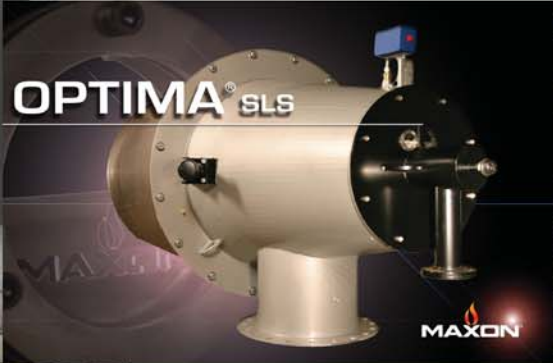
It usually takes at least a year, and often longer, to develop the technology into a commercial product.

## Are licenses available to non-U.S. companies?

Yes, although as a federally-funded facility, Berkeley Lab has a preference for U.S. companies.



# A Track Record of *Success*



**PHENIX** is automated macromolecular crystallography software that determines protein structure with increased throughput and efficiency. It is widely used for biotech discovery and is being developed in partnership with an industry consortium.

**EnergyPlus** is an energy simulation software program that models heating, cooling, lighting, ventilation, and other energy flows within a building. Close to 50,000 architects, engineers, and others have downloaded the software and over 25 companies have entered into commercial distribution licenses.

**Electromagnetic Geological Mapping** software minimizes the risk in finding offshore fossil fuels by converting signals from electromagnetic imaging of hydrocarbon reservoirs into 3-D maps. The software has been licensed to multiple companies, including ExxonMobil, Shell International, ConocoPhillips, and Chevron Energy.

**Ultra-Clean Low Swirl Combustion** is a combustion method that emits very low levels of nitrogen oxide pollutants when applied to heat and electric power generating systems of all sizes. Maxon Corporation has commercialized burners for industrial heating and drying based on this technology.

**Ion Mobility Analysis** is a low cost, rapid method for early detection of cardiovascular disease risk. It is licensed to Quest Diagnostics and Berkeley HeartLab.

**Gas-filled Panels** are honeycombed layers of aluminized plastic filled with a low conductivity gas or air. They can be used as inexpensive insulation for buildings, containers, electronic appliances, and vehicles and have been licensed to two companies, GFP Holdings and Cold Pack System.

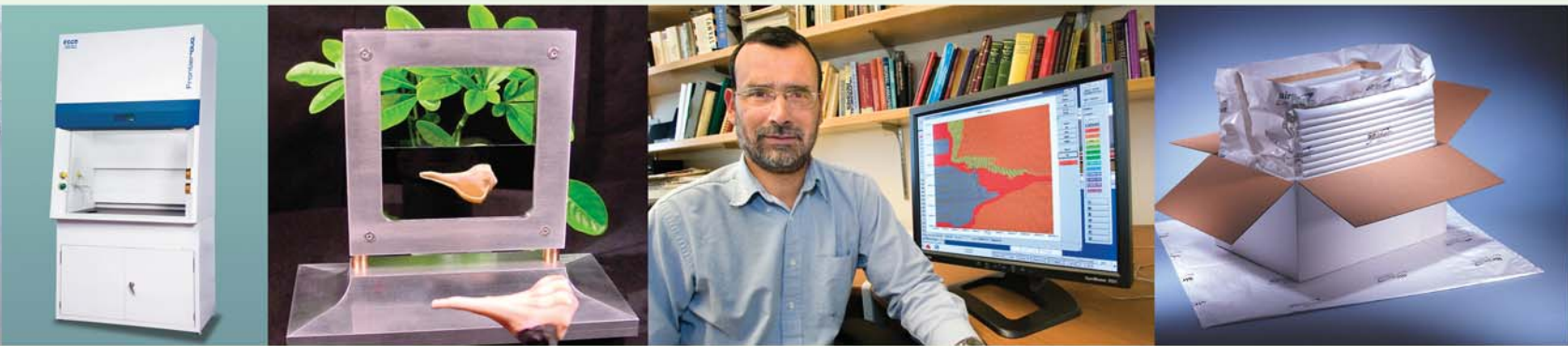
“By partnering with Dr. Cheng and Berkeley Lab, we have been able to introduce industry-best technology at a reasonable price while compressing our time to market. Our experiences with LBNL licensing have been very satisfying and profitable while introducing innovative clean-combustion technology to our nation’s energy infrastructure.

—Jeffrey Rafter, Senior Marketing Manager, Maxon Corporation



# Success

The Technology Transfer Department is staffed by professionals experienced in managing, marketing, and licensing intellectual property, as well as in patent prosecution. Over the last fifteen years, we have executed over 400 licenses, and more than twenty start-up companies have been launched based on technologies developed at the Lab. We work with companies small and large, domestic and foreign, to promote the use of Berkeley Lab inventions to benefit the public.



## Selected Start-ups

**Symyx Technologies** was founded on a combinatorial chemistry technology developed at Berkeley Lab and is currently traded on Nasdaq (SMMX).

**WaterHealth International** delivers clean water to the most remote, underserved communities throughout the world using ultra violet light disinfection technology.

**SeqPod**, a media search, recommendation, and discovery services company that focuses on results that are “playable,” is based on an algorithm that mimics human cognition.

**RSL Energy** is commercializing full spectrum solar cells that may achieve practical efficiencies far above the state of the art.

**Nanosys** has licensed Berkeley Lab’s nanocrystal technology for solar cell and electronics applications. The company is currently focusing on high performance, flexible electronics.

**Carrier Aerospace** uses an aerosol-based duct sealing system to greatly increase energy efficiency in residential and commercial buildings throughout the country.

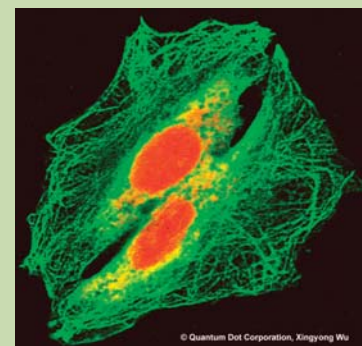
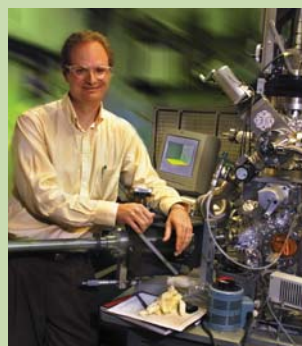
## Tapping Into Talent at UC

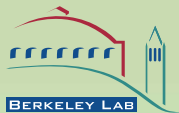
**Over 250 Berkeley Lab scientists** have joint faculty appointments at **UC Berkeley** or **UC San Francisco**.

**The Joint BioEnergy Institute (JBEI)** is a partnership between Berkeley Lab, UC Berkeley, UC Davis, the Carnegie Institution for Science, and Sandia and Lawrence Livermore national laboratories to create advanced biofuels from the cellulose in plants.

**The Energy Bioscience Institute (EBI)** is a collaboration between Berkeley Lab, UC Berkeley, the University of Illinois, and BP to search for solutions to global energy challenges.

Berkeley Lab has a collaborative **cancer research program** with **UCSF’s Comprehensive Cancer Center**.





## Many Ways to Work with Berkeley Lab

The Technology Transfer Department serves as a focal point to foster productive relationships between the Lab and the private sector. There are many ways for industry to work with Berkeley Lab.

### License intellectual property

Through technology licensing, industry helps translate new discoveries into commercially viable products and processes.

### Sponsor research

A company may sponsor research at Berkeley Lab when capabilities and interests match. This provides industry with an excellent way to leverage their research activities.

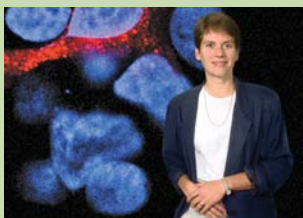
### Access six state-of-the-art user facilities

([www.lbl.gov](http://www.lbl.gov))

Our user facilities provide state-of-the-art instruments, techniques, and scientific staff to assist with advanced studies and they are available for use by both industry and academic institutions.

1. **Advanced Light Source** (ALS)
2. **Molecular Foundry** (a nanostructures user facility)
3. **National Energy Research Scientific Computing Center** (NERSC)
4. **National Center for Electron Microscopy** (NCEM)
5. **The Joint Genome Institute** (JGI)
6. **88-Inch Cyclotron**

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*There is nothing more satisfying than seeing the knowledge we produce in our basic research applied in a manner that impacts society; [it] is a key step in the process of economic growth as well.*

—Carolyn Bertozzi, Director, Molecular Foundry and inventor of material for contact lenses

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We are ready to talk *with you.*

Contact us at:

Lawrence Berkeley National Laboratory  
One Cyclotron Road, MS 90R1070  
Berkeley, CA 94720

Telephone: 510-486-6467

Email: [TTD@lbl.gov](mailto:TTD@lbl.gov)

Sign up to receive our customized new technology alerts at  
<http://www.lbl.gov/tt>

**Selected companies we've worked with:**

Abbott Laboratories  
Adelphi Technology  
AltaGen Bioscience  
AMD  
Affymetrix  
Amgen  
Anadarko Petroleum  
Applied Materials  
Battelle  
Berkeley HeartLab  
Bio-Rad Laboratories  
Boeing  
Bristol-Myers Squibb  
Cargill  
Cell Signaling Technology  
Cellular Bioengineering  
Chevron Energy  
Chiron  
Coldpack

ConocoPhillips  
CooperVision  
Dakota Technologies  
Digirad  
Dow Chemical  
DuPont  
Eli Lilly and Company  
ExxonMobil  
Electric Power Development  
Fairchild Semiconductor  
Ford Motor  
Genentech  
Genzyme  
General Motors  
Fi-Foil Company  
Gilead Sciences  
GlaxoSmithKline  
Hewlett-Packard  
Honeywell International

IBM  
Ikerlan  
Intel  
Johnson Controls  
Johnson & Johnson  
Lockheed Martin  
MAXON  
MedImmune  
Merck & Co.  
MKS Instruments  
Microsoft  
Mobotec USA  
Monsanto  
National Semiconductor  
Novartis  
Pathway Diagnostics  
PPG Industries  
Praxair  
Procter & Gamble

Pfizer  
Quest Diagnostics  
Raytheon Technical Services  
Roche  
RoseStreet Labs  
Schlumberger Technology  
Seagate Technology  
Shell  
Shimadzu  
Siemens  
Sigma-Aldrich  
Statoil  
Synamem  
Taisei  
Takeda Pharmaceutical  
Target  
United Technologies  
Wells Fargo  
Wyeth-Ayerst Research

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