

# Berkeley Lab Researcher Handbook For Researchers Protect Your Invention

## ***First Steps***

Maintaining a lab notebook, timely reporting of inventions and software, and avoiding premature public disclosure of your inventions are all essential to meeting your obligations as a Berkeley Lab employee or guest.

## ***Keep a Lab Notebook***

Keep a record of your research by regularly using a lab notebook. This can prove critical for the protection of your intellectual property. Lab notebook guidelines:

- Use ink, not pencil, on consecutive pages in a bound notebook having numbered pages
- Date entries, identify subject matter, and explain relevant formulas and graphics
- Don't alter entries — make a new entry rather than erasing
- Periodically have someone look over your entries and witness by adding their signature and date adjacent to the phrase, "Read and understood by," at the bottom of each page, especially for initial descriptions of inventions

## ***Report Your Invention/Software/Tangible Research Products***

If you believe that you have invented something that is unique and may be commercially useful, or developed computer software that you wish to distribute outside the Lab, submit a Record of Invention (ROI) or Software Disclosure form online, via the [Innovation Portal](#). If a manuscript is available that describes the invention or the software, please attach it to the form. Occasionally, computer software is an embodiment of an invention. If you believe that your software is an embodiment of an invention, submit an ROI. Tangible research products that may be commercially valuable should be disclosed on a ROI form. Once the Innovation and Partnerships Office has reviewed your ROI, a staff member will contact you and a decision will be made as to whether or not a patent application will be filed. Simply submitting a ROI does not protect intellectual property rights.

## ***Protect Your Intellectual Property***

In order to protect worldwide patent rights, do not make any public disclosures – written, electronic, or oral descriptions of the invention to any non-LBNL employees before a patent application is filed. Contact the Patent Group at x7058 for advice before you publish or present.

Publication and pursuing a patent are fully compatible if the inventor submits a Record of Invention (ROI) with adequate time for IPO's review and action prior to the publication.

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If you need to discuss your invention with non-Lab personnel before a patent application is filed, a Nondisclosure Agreement (NDA) may be required. As of January 25, 2016, all NDA requests must be made online. Go to the [Innovation Portal](#) to start the process.

### ***Pre-Publication Review***

In order to identify inventions before they appear publicly, all publications describing work by Laboratory personnel or done with Berkeley Lab facilities, funds, or equipment must be reviewed and cleared by the Patent Group before they may be sent outside the Lab, except for disclosure to certain government and University of California personnel. For details regarding this policy, see Berkeley Lab's RPM.

To initiate this review, a Berkeley Lab author submits the manuscript document to the Report Coordination office. Patent review occurs prior to the document receiving an LBNL report number.

Possible inventions should be reported before the document is ready for publication by submitting a Record of Invention (ROI) online using the [Innovation Portal](#). If you have questions, please call the Patent Group at x7058.

### **The Technology Transfer Process**

This is a detailed look at the steps involved in moving an invention from the Lab to the marketplace. *Researchers are encouraged to contact the Patent Group at x7058 to discuss any research that may have produced an invention.*

#### ***1. Invent or Develop Software or Produce Tangible Research Product***

The transfer of technology begins with an invention, development of computer software, or a tangible research product, i.e., the tangible results of research created at the Lab that are not materials commercially available. Many are biological materials, such as cell lines and transgenic animals, but can also include research results such as chemical compounds used in imaging. Berkeley Lab frequently transfers tangible research products to others for free research use under a Material Transfer Agreement (MTA), and also provides such material for commercial use under a commercial contract called a bailment agreement. Berkeley Lab has entered into bailment agreements for all the examples of tangible research products listed above, and more besides. As of January 25, 2016, all requests for MTAs (in or out) must be made online. Go to the [Innovation Portal](#) to start the process

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We focus here on inventions in describing the process and point out any major differences that apply to other forms of intellectual property.

**What is an invention:** A patentable invention is a new and useful process, machine, article of manufacture, composition of matter, or an improvement thereof.

It must be:

- **Novel** – unique or different from what has been previously published, patented, or practiced
- **Useful** – serves some purpose, and
- **Non-obvious** – sufficiently different from what has come before it that it would not be obvious to someone having ordinary skill in the field to which the invention pertains.

## **2. Report The Invention/ Software**

The next step is for Lab researchers to report the invention or software to the Innovation and Partnerships Office. The invention report is not a patent application and in and of itself secures no intellectual property rights. It is used by the Lab to make a decision as to whether to proceed with a patent application.

**Why Report:** The Lab's contract with DOE requires that the Lab report all Lab inventions. If you have created a tangible research product that may have commercial use, disclose an online Record of Invention (ROI) or Software Disclosure via the [Innovation Portal](#), even if you think it may not be patentable. Any public disclosure of your invention prior to the date of the Lab filing a patent application will forfeit the opportunity to file a patent in most foreign countries; one year after a publication, all patent rights are barred. Furthermore, the Software Disclosure and Abstract Form provides information necessary for the Lab to comply with DOE requirements for any external distribution of software, including under an open source license.

**How to Report:** The inventor or software developer submits a Record of Invention (ROI) form or a Software Disclosure and Abstract Form online, via the [Innovation Portal](#). These forms include a technology description and list of those who contributed to the invention or software. If you have any questions, call the Patent Group at x7058.

**When to Report Software:** A Software Disclosure and Abstract Form must be submitted to the Innovation and Partnerships Office before any external distribution of the software program. Particularly if the LBNL software developers have incorporated any third-party software into their code, it's preferable to submit the Software Disclosure several weeks prior to the projected date of first distribution.

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***When to Report an Invention:*** A ROI form must be submitted to the Innovation and Partnerships Office before an invention is publicly presented (via the internet, a talk, poster, or any other means of communication). A good rule of thumb is to report once a first draft of a publication or public presentation has been completed, and ideally at least two months before any expected web or hardcopy publication, or presentation. The ROI form should be submitted:

- **Before** a written description of the invention has been submitted to a publisher or conference
- **Before** a written description of the invention appears in an LBNL report, press release, or a written report which will be available to people outside LBNL and DOE
- **Before** a public demonstration of the invention
- **Before** selling or offering to sell the invention
- **Before** regular use of the invention at LBNL or elsewhere except for testing and development
- **Before** a public disclosure, such as in a talk or in a poster or slide presentation, when the audience is not restricted to people from LBNL, UC, DOE, or DOE contractors.

***Public Disclosure:*** A public disclosure, which may start the one year clock ticking for patent rights in the U.S. and precludes patent rights elsewhere, is not confined to publications. Any written or oral disclosure, even to a single person, may constitute a public disclosure. Disclosures to Lab or UC employees do not count as public disclosures. If a disclosure is to be made to others, contact the Innovation and Partnerships Office so that a Non-Disclosure Agreement may be formed to ensure that such a disclosure is not a public disclosure.

***Nondisclosure Agreements:*** Often companies that are interested in licensing a technology will want to talk to the inventors to gain additional information. An inventor can protect an invention by discussing it with third parties outside the Lab only after a Nondisclosure Agreement (NDA) has been put in place. As of January 25, 2016, all NDA requests must be made online. Go to the [Innovation Portal](#) to start the process.

***Publications:*** The Innovation and Partnerships Office is committed to protecting inventions without interfering with or unnecessarily delaying academic publication. Publication and pursuing a patent are fully compatible if the inventor submits a Record of Invention with adequate time for Innovation and Partnerships Office review and action prior to the publication. Please refer to “Patent Pre-Publication Review” earlier in this handbook.

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### ***3. Technology Assessment***

Innovation and Partnerships Office staff, sometimes in conjunction with a patent attorney, will contact the inventors or software developers to assess the technology and determine whether the Lab should seek patent protection or, with respect to software, determine how best to distribute it outside of the Lab. Issues that will be considered are:

- How the technology relates to the state of the art in its field
- The technology's stage of development
- Potential commercial applications
- Level of interest from industry

### ***4. Patent / Copyright***

At Berkeley Lab, we protect inventions and computer software for a number of reasons.

- Companies often limit their technology investments to those with strong intellectual property protection so that they will be able to have exclusive rights to the technology for a period of time.
- By making a technology more attractive, patent protection increases the chances that the technology will be commercialized and benefit the public who funded the research through tax dollars;
- Intellectual property protection ensures that the Lab and researchers receive credit for technology and a fair return for any profits it may generate.

There are two types of intellectual property protection frequently used at the Lab:

- Rights associated with patents vary from country to country. Within the U.S., **Patents** permit the owner of the patent to exclude others from making, using, selling, offering to sell, or importing the invention for a limited period of time.
- **Copyright** protects original works of authorship. At the Lab, copyright is mostly used to protect journal articles, books, software, videos, scientific photos, and engineering drawings. Generally copyrighted works created at the Lab fall in the category of "work for hire," and as such the copyright endures for a term of 95 years from first publication.
- If you have written a book and would like to publish it, contact the Innovation and Partnerships Office at x 6467 for assistance with the contracting process.

If you have developed software and if you think you might want to distribute your software outside of the Lab even if you only plan to share the software with other academic institutions, please [contact us](#).

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**How to Report:** Complete the online Software Disclosure and Abstract Form via the [Innovation Portal](#).

**When to Report:** Generally, software should be reported when it is complete or as soon thereafter as possible. Software **must** be reported before you can distribute it to anyone outside of the Lab or DOE. If you wish to distribute the software immediately upon completion, we suggest you provide the Innovation and Partnerships Office with an advance copy of a Software Disclosure and Abstract Form two months ahead of time so any issues can be resolved in a timely fashion.

**Guidelines When Writing Code:** Try to avoid inserting code that was written outside of the Lab, such as freeware, open source code, shareware, and especially, commercial packages. Using non-LBNL code in your software without written permission to do so may make it difficult or impossible to distribute your software outside the Lab.

If your project does require that you incorporate third party software, be sure to document where you obtained the code and what legal terms apply to its use, e.g. download and keep a copy of the software license. You should also keep records of the individuals who contributed work on the code and what funding supported its development.

## **Types of Patents**

**Provisional U.S. Patent Application:** When an invention appears to have commercial potential, the Lab may first file a provisional patent application, which is less costly than a regular U.S. patent application, and allows the Lab a year in which to promote the technology to gauge the level of industry interest. During that time, an invention will be considered “patent pending.” It is in researchers’ best interest to describe the invention as thoroughly as possible on the ROI to help the Patent Attorney claim the broadest possible protection in the provisional patent application.

**Regular U.S. Patent Application:** Within a year after filing a provisional application, if the invention continues to show commercial promise, Berkeley Lab may file a regular patent application. Your role, as an inventor, is to provide the scientific and technical input to the patent attorney in order to ensure that the invention is fully described.

**Foreign Patent Application:** The Lab may decide to file for foreign patent rights. In such cases, reporting of your invention before any public disclosure is of critical importance.

## **Patenting Timelines:**

- The opportunity to obtain patent rights in the U.S. ends one year from initial publication.

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- The opportunity to obtain patent rights in most foreign countries ends immediately upon the first date of public disclosure.
- The provisional patent application must be converted to a regular patent application within one year.
- The examination and issuance of a regular patent by the US Patent and Trademark Office (USPTO) takes about three or more years from the date of filing.
- When a patent is issued, patent maintenance fees are due about every 4 years. If a maintenance fee is not paid, the patent expires. If a patent is not licensed at these junctures, it may be reevaluated to determine whether to pay the maintenance fee.
- Generally, the patent term is 20 years from the initial date of filing.

### **5. Market**

Once the decision to protect the technology has been made, IPO's outreach group promotes the technology by writing a non-confidential summary of the technology that describes its applications and advantages, placing this technology promotion on the IPO website, and in some cases sending it out electronically to companies in the target market. Promoting Lab technologies has several goals:

- Identify licensees that are well-qualified to develop the technology and bring it to market
- Gather industry feedback as a barometer of commercial interest
- Provide all companies with an opportunity to license publicly-funded technology
- Generate public awareness of the Lab, its research programs, and its contributions to society and the economy

The marketing group values suggestions from researchers regarding companies to approach. A significant percentage of our licensees have been identified by Berkeley Lab inventors and software developers.

### **6. License**

**Invention and Software Licensing:** When a company declares an interest in licensing a Lab technology, the Innovation and Partnerships Office licensing staff evaluates the potential for that company to successfully develop the technology and bring it to market. A desirable licensee is able to marshal the requisite financial, R & D, manufacturing, marketing and managerial capabilities and commitment. A capable and qualified licensee is critical to

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ensuring that technologies developed at the Lab are successfully commercialized and that the public ultimately benefits from these innovations.

Once a company is found to possess the necessary capabilities, the licensing staff negotiates a licensing agreement. Technologies may be exclusively licensed to one company, or they may be licensed to more than one company, depending upon various aspects of an invention. Licenses may also be exclusive or non-exclusive for a particular field of use or geographic region.

**Conflict of Interest:** It is important that Berkeley Lab inventors and licensing staff not allow their personal financial interests to influence or appear to influence the licensing decision. Inventors should be aware of the requirements of the Laboratory for disclosure of economic interest. More detailed information about LBNL's conflict of interest policies is available in the Lab's RPM.

**Licensees' Responsibilities:** The signing of a license agreement is the beginning of a long term relationship. The Innovation and Partnerships Office monitors the licensee's performance for the duration of the license and the licensee submits periodic financial and development reports to the TTD. See [Licensing](#) for more information.

**Other types of IP:** In addition to handling inventions and software, the Innovation and Partnerships Office handles the licensing of other types of intellectual property. Those most commonly produced at the Lab are books and tangible research products. Tangible research products that may be used for commercial purposes should be disclosed using the online Record of Invention or Software Disclosure form using the [Innovation Portal](#), even if it is not patentable. If you have written a book and intend to publish it under a royalty-bearing contract, contact the Innovation and Partnerships Office at x6467 for assistance with the contracting process.

**Material Transfer Agreements:** Research materials that you produce may be transferred at no-cost for evaluation or for non-commercial research under a Material Transfer Agreement (MTA). A MTA is also needed to obtain non-commercially available research materials from other institutions. As of January 25, 2016, all MTA requests must be made online. Go to the [Innovation Portal](#) to start the process.

### ***7. Royalties***

Technologies licensed by existing companies and startups and copyrighted software and books generate royalties for Berkeley Lab. The revenue generated is first applied toward reimbursing the costs of intellectual property protection, such as patenting costs or copyright registration fees. For inventions disclosed after September 30, 1997, 35% of the net income



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is paid to the inventors, 15% goes to the originating division for research, and 50% is used to support Lab research via the central research pool.

For more on royalties see Berkeley Lab's RPM.

## ROYALTY NEWS

### FY14

The Laboratory's FY14 royalty income reached **\$4.07 million**, more than double the total for FY13. Of that total, the Laboratory distributed over \$1.27 million to 128 researchers who created licensed inventions and copyrighted software / books. Royalties were distributed to inventors in February 2015.

### FY13

In FY13, licensed inventions and copyrighted software and books earned royalties of **over \$2 million**, and 126 Berkeley Lab inventors received a total of over \$683,000. For the complete story, go [here](#). For a list of inventions and researchers receiving royalties, go to the [2014 Royalty Distribution Handout](#).



Recipients present for the FY13 royalties ceremony

*(From l-r): Robert Cheng, Ted Chang, Steve Holland, Erik Page, Paul Alivisatos, Arie Shoshani, Pavel Afonine, Jay Keasling, Dominique Loque, Duo Wang, Peter Zwart, David Bailey, Nathan Hillson, Christian Kohler, Steve Selkowitz, Ling Zhu, Andre Anders, Paul Adams, Horst Simon, Ashok Gadgil, Nigel Moriarty, Joanna Chen, Jeffrey Warner.*

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**FY12**

In FY12, licensing income from Berkeley Lab inventions, software and books totaled **\$2.7 million**. The inventors' share of about \$657,000 was distributed among 113 Berkeley Lab scientists and authors. For the complete story, go [here](#).

**FY11**

In FY11, licensed Berkeley Lab inventions, software and published books yielded royalties of over **\$3.6 million**. The researchers' share of the royalties, totaling over \$1.1 million, was distributed among 136 Berkeley Lab scientists. For the complete story, go [here](#).

**FY10**

In FY10, Berkeley Lab inventions and copyrighted software and books earned **\$2.6 million** in royalties with 165 researchers receiving a total of \$718,000. For the complete story, go [here](#).