

Patents and Cooperative Agreements

A Plain Language Guide



Office of Technology Transfer
Agricultural Research Service
United States Department of Agriculture

Patents

The primary goal of ARS is to conduct research to help solve problems for U.S. agriculture. Transferring the resulting technologies to agricultural industries is also an important function. Patents, licensing of those patents, and cooperative agreements are important parts of technology transfer. Transferring technology to the marketplace is not the agency's sole responsibility. The initiative starts with ARS scientists.



What Is a Patent and What Can Be Patented?

If an invention meets specific legal criteria, the U.S. Patent and Trademark Office may grant a patent. A patent gives its owner the right to exclude others from using the invention in the United States for up to 20 years from the date the patent application is filed. Patent laws vary from country to country.

To be patented in the United States, an invention must be new and useful, and also not an “obvious” extension of existing technology. *Obviousness* is a legal concept that describes what would be easily understandable to someone with ordinary skills in the field of the invention—a biochemical process to a biochemist, a mechanical device to a mechanical engineer, and so on. *Obviousness* is a complex area and should be discussed on a case-by-case basis with a patent advisor.

Under U.S. patent law, any new process, machine, design, composition of matter, or new or useful improvement of these, may be patented. This includes living organisms, as well as macro and molecular components of organisms.



Why Does ARS Patent Inventions?

Patenting an invention enables ARS and other Federal agencies to grant exclusive, partially exclusive, or nonexclusive patent licenses. The way the invention is licensed depends on which approach will most effectively promote its use. Exclusive licensing means that ARS can give one company the right to use a specific ARS invention. A partially exclusive license includes licenses that are co-exclusive (limited number of licensees), exclusive territory (limited to a specific country), and exclusive field (limited to a specific use). A nonexclusive license means ARS can give any number of eligible licensees the right to use an invention.

Exclusive licensing may be preferred over nonexclusive licensing; otherwise a company may have little incentive to invest in further development or commercialization costs for an ARS invention. Before Congress authorized exclusive licensing, most companies were unwilling to take the financial risks involved in bringing Federal technologies to market. Companies were reluctant because, without financial protection, other companies could compete in the same markets without paying any of the development costs. These economic realities meant that many ARS inventions went undeveloped and unused.



What Does an ARS Employee Gain From Having a Patent?

ARS recognizes patents as documentation of an employee's research accomplishments and productivity when evaluating his or her performance. Patents are considered with other technology transfer achievements. ARS inventors also share revenue received by ARS from each licensed invention—up to a maximum of \$150,000 per inventor, per year.

If ARS decides not to apply for patents in the United States or elsewhere, and does not otherwise intend to promote inventions commercially, then inventors may seek departmental release to retain the patent rights for themselves.



What Does the Scientist Need To Do?

Most ARS research produces new facts, discoveries, and information that may not be patentable. Even so, you should be aware of patent possibilities in your research. Learn to recognize commercial potential in every aspect of your work, even if the research results don't have obvious commercial application. For example, if you're studying the habits of moths, don't overlook the improved insect trap you developed to catch them. It could have commercial potential beyond your immediate needs and may be worth patenting. Don't dismiss inventions that don't work the way you wanted. They may have other unanticipated uses.

Keep proper records. Notebooks and other records are essential in case you have to prove who invented something first. See *Recordkeeping*.

Be discreet. Releasing untimely information about your invention may jeopardize patent rights. See *What Can You Write About Your Invention?* and *What Can You Say and Share About Your Invention?*

If you're working on a project that you think may become patentable, consult your patent advisor immediately.



How Should You Report Your Inventions?

Invention reports should be submitted electronically through the Agricultural Research Information System (ARIS), the successor to the Research Management Information System (RMIS). As soon as a report is entered, a paper copy must be signed and dated by the inventor(s) and a witness and forwarded to the patent advisor. ARIS electronically transmits invention reports through supervisory channels for clearance. You should submit your invention reports early—preferably, before preparing your formal scientific manuscript to report your research.



What Happens After You Submit an Invention Report?

Once a patent advisor receives an invention report, he or she makes a preliminary determination about patentability. Invention reports that show promise go before patent committees, made up of ARS scientists, that make recommendations to the patent advisor. Patent committees meet as needed. Patent committees consider commercial interest, market size, role of a patent in transferring the technology, scope, and enforceability.

If the patent committee decides to pursue patent protection for the invention, the patent advisor obtains detailed technical information from the inventor for use in preparing the patent application.

The patent advisor notifies the inventor when the patent application is submitted to the U.S. Patent and Trademark Office and when an official filing date is received. The filing date is when legal protection of the invention begins.



What Can You Write About Your Invention?

Publishing detailed information about your invention before the patent application is filed in the U.S. Patent and Trademark Office constitutes prior disclosure. The manuscript approval and acceptance process is not considered prior disclosure.

There are ground rules concerning prior disclosure: domestic patent rights are unaffected if a patent application is filed with the U.S. Patent and Trademark Office within 1 year of publication, public use, or sale of the invention. *No such grace period exists for foreign rights.* To obtain foreign patents, oral and written disclosure cannot come before the date your U.S. patent application is filed.

Publication is considered prior disclosure only if enough information is given to enable someone to copy your results using conventional techniques. You can usually say what your invention will do and how it works, but you should not mention specific details. Here again, this is a gray area best discussed on a case-by-case basis with your patent advisor.

Publication includes refereed journal articles, abstracts distributed at professional meetings, Current Research Information System (CRIS) annual reports (ARS Form 421), and interpretive summaries listed in the Technology Transfer Automated Retrieval System (TEKTRAN) database. Internet and other electronic versions of these media made publicly available are considered public disclosure.

Written descriptions of your invention that haven't been distributed or made available to the public don't constitute prior disclosure. Evaluation write-ups (Research Evaluation Grade System Case Write-ups) are an example of such unpublished descriptions and may be as detailed as is appropriate.



What Can You Say and Share About Your Invention?

Sharing information that fully describes the invention can cause loss of patent rights. Printed publication or oral disclosure of an inventive concept, whether in a formal talk or as a spontaneous exchange over coffee, has the potential to cause immediate loss of foreign patent rights. Confidential correspondence, exchanging ideas with colleagues (with the understanding that the information is not to be shared with a third party), and oral discussion in program reviews don't constitute public disclosure. It's also okay to discuss your research in detail with the ARS Information Staff. All material released to the media by the Information Staff is cleared beforehand, but be sure to tell the Information Staff when ARS is applying for a patent on your invention.

Once the information is in printed form, you have a 1-year grace period to file a U.S. patent application. The material on ARS Form 115, *Request To Submit Manuscript for Publication*, will be published on the TEKTRAN database, unless you answer “yes” to the question, “Due to patent potential, is retention of intellectual property rights desired?” Only then will the form be withheld from the database.

When discussing your invention in public or with news media representatives, use the same discretion you use in your published reports. Keep in mind that technology transfer depends in part on an appropriate amount of publicity about your work. So being overly conservative—refusing to say anything about your invention—is usually not the best policy.

You may safely discuss all the details of your invention under any of the following conditions:

- The patent application has been submitted to the U.S. Patent and Trademark Office.

- You have already published complete information on your invention.
- You know that your U.S. patent application will be filed within a year and no foreign patents will be filed.

Information relating to an invention may be shared with prospective licensees, prospective industry cooperators, or other non-ARS requesters under a Confidentiality Agreement (CA). Likewise, scientists may provide samples of materials to others under a Material Transfer Agreement (MTA); see *Other Types of Agreements*. If you are in doubt about which details to keep private, you should discuss them with your patent advisor.



Recordkeeping

Keeping good records is basically an extension of keeping good research notes.

Use a permanently bound notebook and ARS Form 1, which is an official laboratory notebook. Always use a pen, and if errors are made, draw a simple line through them—do not erase or white out any information.

It's a good idea to sign and date any pages that describe critical research for a potential invention. Also, ask a noninventor who has the background to understand your work to sign them. This will help prove who made an invention first, should a conflict arise.

Relevant documents should be attached to the notebook, or cross-referenced if attachment is impractical. Photos, graphs, spectra (instrumental readings from lab equipment), and other computer printouts are examples of documents you might cross-reference. Use your notebook to index data stored on computer media, such as floppy disks.

Cooperative Research and Development Agreements (CRADAs)

CRADAs are used in cooperative research to further develop and commercialize an ARS invention, merge ARS technology with the cooperator's technology, and/or jointly discover and develop new technology. They differ from other ARS research contracts and agreements because they give the cooperator the first right to negotiate an exclusive license on patented inventions made under the agreement, and they assure confidentiality of proprietary information. The ARS scientist is authorized to work closely with the CRADA partner to help commercialize technology based on jointly performed research.

Under a CRADA, the cooperator may or may not provide funds. As with other ARS cooperative agreements, ARS enters into a CRADA only when the objective reflects the agency's mission.

ARS policy is to take full advantage of the Technology Transfer Act of 1986 (Public Law 99-502) and Executive Order 12591, which charges agencies to promptly fulfill the Technology Transfer Act. While the Office of Technology Transfer (OTT) provides guidance and assistance, scientists are the key to fulfilling this policy and are responsible for completing and transferring their own research.

Scientists should seek opportunities for CRADAs with industry. CRADAs must meet three conditions:

1. The work must be jointly performed and consistent with the ARS mission.
2. There can be no conflicts of interest.
3. All potential cooperators must be given fair consideration.



Funding

Cooperative research with a private company is an addition, expansion, or continuation of an in-house project. None of the funding expected from a CRADA can be used to cover deficits in base funding of research programs. Additional funding might be used to cover costs for another research associate, technician, special equipment, and so on.



Procedures

The following procedures are carried out according to the requirements of the Technology Transfer Act. The goal is to finalize the terms of the agreement within 6 weeks after ARS scientists and cooperators agree on the activities to be conducted. This means that all parties must deal promptly with all documents.

1. The ARS scientist and cooperator determine what research will be done cooperatively.
2. The ARS scientist confers with the research leader, center/institute director, area director, and appropriate national program leader.
3. The scientist and cooperator develop a plan of work briefly describing what the cooperator and ARS will do together and what each will do separately to achieve agreement objectives. An estimated budget is developed. Copies of the plan of work and estimated budget are forwarded to the area's technology transfer coordinator (TTC). The TTC provides sample CRADAs on request.
4. The TTC works with the scientist and cooperator to develop an appropriate draft CRADA using preapproved provisions. Provisions that are not preapproved are forwarded to the authorized departmental officer (ADO) for review and approval. The ADO is the official delegated authority who signs and administers CRADAs

for ARS. The TTC keeps the area director and appropriate national program leader informed.

5. The TTC monitors and coordinates subsequent negotiations and clearances for development of the CRADA.
6. Once an acceptable CRADA is completed, the following steps are taken:
 - All CRADAs require an approved ARS Form 425.
 - CRADAs where cumulative payments to ARS exceed \$25,000 also require approved forms AD-416 and AD-417.
 - The TTC sends the CRADA through the area director to the ADO.
 - If changes are needed, the ADO expedites revisions.
7. The ADO ensures that clearances (for conflicts of interest and similar matters) are obtained. The ADO sends the final version of the agreement to the cooperating firm for signature.



Other Types of Agreements

ARS enters into other types of agreements that help develop and commercialize ARS inventions. They are Trust Fund Cooperative Agreements, Reimbursable Cooperative Agreements, Memorandums of Understanding, Material Transfer Agreements, and Confidentiality Agreements. TTCs assist in preparing and negotiating these agreements.

Trust Fund Cooperative Agreements and Reimbursable Cooperative Agreements are similar to CRADAs but do not allow negotiation for an exclusive license. Also, confidentiality is considered in accordance with Freedom of Information Act

provisions. In both agreements, funds come from the cooperator. These agreements are handled by the ADOs.

A Memorandum of Understanding is similar to a Trust Fund Cooperative Agreement, but no money changes hands; other resources such as staff, supplies, or equipment may be exchanged.

Scientists should use Material Transfer Agreements (MTAs) when they want to provide material to someone outside of ARS but also want to maintain control over the material and avoid public disclosure. An MTA is also used to bring material from outside parties into ARS for research purposes. Generally, an MTA specifies what the material is and how it can be used, restricts giving it to a third party without permission, prohibits its commercial use, and provides for its disposition. The MTA must be signed by the cooperator's representative, the ARS scientist and their research leader, and then approved by the TTC.

Scientists should use a Confidentiality Agreement (CA) with someone outside the agency when they want to discuss unpublished information or data that may have patent potential, or if they want to share a patent application before the patent is issued. CAs are also used when a company needs to discuss confidential information with an ARS scientist. Discussing information within ARS is not public disclosure and does not require a CA, but ARS staff should not discuss confidential information with non-ARS employees. Copies of MTAs and CAs are available from a TTC or the OTT web site. CAs are signed by the cooperator's representative and the ARS scientist. Any changes to the CA are approved by the TTC.

For further information, call or write:

**Assistant Administrator for
Technology Transfer**

USDA, ARS, Office of Technology Transfer
1400 Independence Avenue, SW
Whitten Building, Room 324-A
Washington, DC 20250
Phone: (202) 720-3973
Fax: (202) 690-4658

**Deputy Assistant Administrator for
Technology Transfer**

USDA, ARS, Office of Technology Transfer
5601 Sunnyside Avenue, Room 4-1159
Beltsville, MD 20705-5131
Phone: (301) 504-6905
Fax: (301) 504-5060

ARS Patent Advisors

**Beltsville, North Atlantic, and South
Atlantic Areas**

USDA, ARS, Office of Technology Transfer
5601 Sunnyside Avenue, Room 4-1188
Beltsville, MD 20705-5131
Phone: (301) 504-6532
Fax: (301) 504-5060

**Midwest, Southern Plains, Northern Plains,
and Mid South Areas**

USDA, ARS, Office of Technology Transfer
National Center for Agricultural
Utilization Research
1815 N. University Street
Peoria, IL 61604
Phone: (309) 681-6513
Fax: (309) 681-6688

Pacific West Area

USDA, ARS, Office of Technology Transfer
Western Regional Research Center
800 Buchanan Street
Albany, CA 94710
Phone: (510) 559-6067
Fax: (510) 559-5736

Cooperative Research and Development Agreements

Authorized Departmental Officer
USDA, ARS, Office of Technology Transfer
5601 Sunnyside Avenue, Room 4-1159
Beltsville, MD 20705-5131
Phone: (301) 504-5172
Fax: (301) 504-5060

Technology Transfer Coordinators

Beltsville Area

USDA, Agricultural Research Service
BARC-West, Building 003, Room 208
Beltsville, MD 20705-2350
Phone: (301) 504-6421
Fax: (301) 504-6001

Midwest Area

USDA, Agricultural Research Service
2150 Pammel Drive, Room 118
Ames, IA 50011
Phone: (515) 294-7762
Fax: (515) 294-8125

Mid South and South Atlantic Areas

USDA, Agricultural Research Service
950 College Station Road
Athens, GA 30605-2720
Phone: (706) 546-3496
Fax: (706) 546-3401

North Atlantic Area

USDA, Agricultural Research Service
600 Mermaid Lane, Room 1032
Wyndmoor, PA 19038-8598
Phone: (215) 233-6610
Fax: (215) 233-6777

Northern and Southern Plains Areas

USDA, Agricultural Research Service
1201 Oakridge Drive, Suite 150
Fort Collins, CO 80525
Phone: (970) 229-5528
Fax: (970) 229-5531

Pacific West Area

USDA, Agricultural Research Service
800 Buchanan Street
Albany, CA 94710
Phone: (510) 559-5641
Fax: (510) 559-6091

Cotton Technology Transfer and Education Coordinator

USDA, Agricultural Research Service
141 Experiment Station Road
Stoneville, MS 38776
Phone: (662) 686-5255
Fax: (662) 686-5372

Check the Office of Technology Transfer web site
for updates at <http://ott.ars.usda.gov>

ARS Mission Statement

As the in-house research arm of the U.S. Department of Agriculture, the Agricultural Research Service has a mission to conduct research to develop and transfer solutions to agricultural problems of high national priority and provide information access and dissemination to ensure high-quality, safe food and other agricultural products, assess the nutritional needs of Americans, sustain a competitive agricultural economy, enhance the natural resource base and the environment, and provide economic opportunities for rural citizens, communities, and society as a whole.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call 202-720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.

April 2002