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## **ARS Mission**

The Agricultural Research Service conducts research to develop and transfer solutions to agricultural problems of high national priority and provides 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.

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Cover photo: *Results of ARS research can be found in many consumer products.*

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United States Department of Agriculture  
**Agricultural Research Service**  
**Office of Technology Transfer**  
Program Aid 1706

## **Forming Partnerships With the Agricultural Research Service**



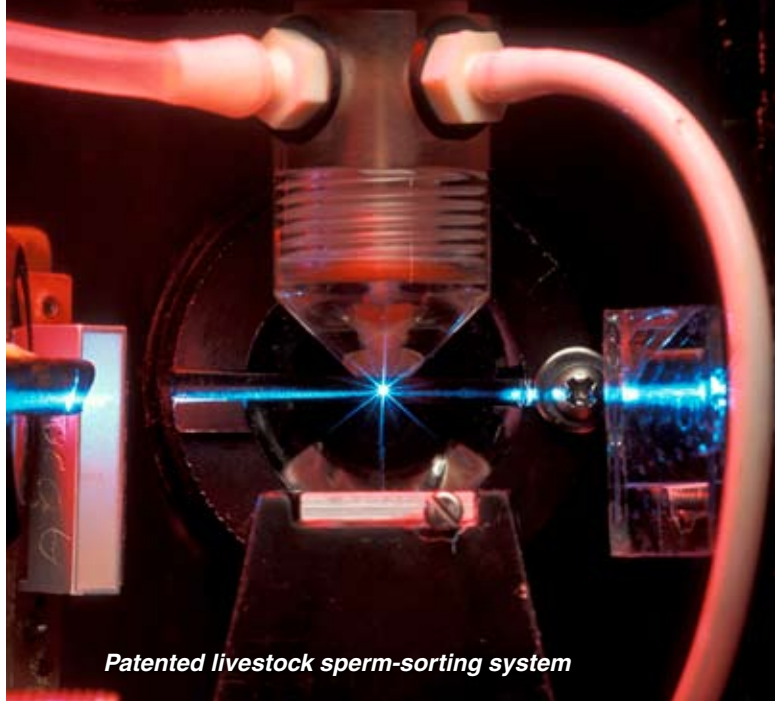
## **Agricultural Research Service (ARS)**

ARS has a successful history of partnering with commercial firms to transfer the fruits of agricultural research to U.S. farmers and consumers. The Federal Technology Transfer Act of 1986 dramatically changed how the Federal government does business, allowing Federal laboratories and industry to form commercial partnerships that enhance the development of new technologies and move them into the marketplace. ARS is a leader in the Federal government in transferring and marketing new technologies developed from its research and has formed numerous partnerships using cooperative agreements. The Office of Technology Transfer (OTT) facilitates and coordinates these partnerships.

## **Cooperative Research and Development Agreements**

A Cooperative Research and Development Agreement (CRADA) is appropriate for a commercial firm seeking to further develop and commercialize an ARS invention, merge ARS technology with its own technology, or jointly discover and develop a new technology. CRADAs provide the cooperator the right to negotiate an exclusive license to inventions made under the agreement, providing confidentiality for information generated under the agreement.

The cooperating firm provides the resources needed to develop and commercialize a new product, process, or service. The firm may fund additional costs to ARS for work done under the agreement, and it may contribute personnel, equipment, or materials. ARS provides research staff, laboratory facilities, materials, equipment, supplies, and other in-kind contributions. Both parties bring their expertise to the agreement, and both conduct some portion of the work. As with its other cooperative agreements, ARS enters into a CRADA only when the objective relates to its mission.



*Patented livestock sperm-sorting system*



*ARS developed 100-percent soy ink.*

### **Benefits of CRADAs to Commercial Firms**

- The right to negotiate exclusive licenses on patented inventions made under an agreement
- Direct access to ARS scientific expertise
- Potential to commercialize new ARS technologies

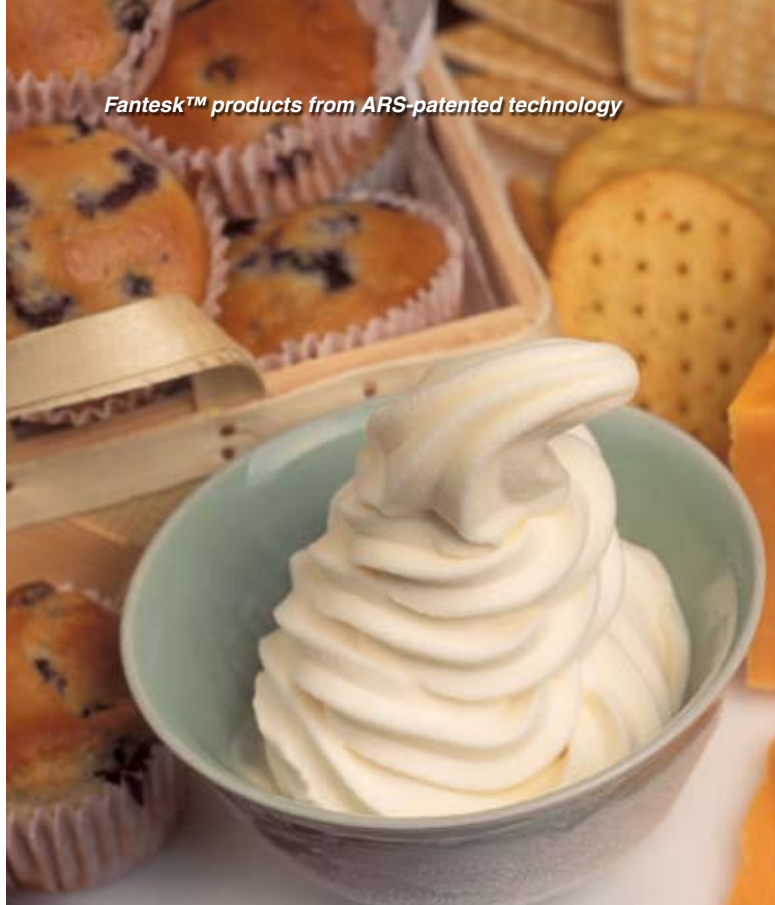
### **Benefits of CRADAs to ARS**

- Wider opportunities for developing and transferring technologies
- Feedback from industry on its research needs
- Increased familiarity with problems related to commercializing a product or process

### **How Commercial Firms Can Initiate a CRADA**

- Search ARS's online databases for information about its research programs (see "Additional Information" section in this brochure)
- Contact ARS scientists responsible for research projects of interest
- Develop a brief proposal with the ARS scientist and the technology transfer coordinator (TTC)
- Obtain appropriate preliminary review and clearance for the proposal in your firm
- Work with the ARS scientist and the TTC to develop a statement of work for the agreement
- Obtain approval for the CRADA and its proposed research plan in your firm

*Fantesk™ products from ARS-patented technology*



*Adhesive from cornstarch*

## Other Types of Agreements

ARS enters into other strategic partnerships with Federal, State, and private organizations to help deliver new technologies to the public. These partnerships are Trust Fund Cooperative Agreements, Reimbursable Cooperative Agreements, Non-funded Cooperative Agreements, Material Transfer Agreements, and Confidentiality Agreements. ARS TTCs can assist with these agreements.

Trust Agreements and Reimbursable Agreements are similar to CRADAs but lack the provision for negotiating an exclusive license and complete assurances of confidentiality. In both agreements, the cooperator provides funds to ARS. In Trust Agreements, ARS receives some or all of the funds when the agreement takes effect. Reimbursable Agreements allow the partner to reimburse ARS as required for the research. Confidentiality provisions apply to the cooperator's proprietary material, but information developed by ARS during either agreement can be withheld from public disclosure to protect intellectual property rights until a patent application is filed.

ARS scientists use Material Transfer Agreements (MTAs) when they want to provide material to someone outside ARS but want to maintain control over the material and avoid public disclosure. MTAs can also be used to bring material into ARS from outside parties for research purposes. Generally, an MTA specifies what the material is and what it can be used for, restricts giving it to a third party without permission, prohibits commercial use, and specifies its disposition.

ARS scientists enter into a Confidentiality Agreement (CA) with cooperators outside the agency when they want to discuss confidential information or data that may have patent potential. CAs are also used when a company needs to discuss confidential information with ARS scientists. A standard CA may be obtained from a TTC or from the ARS Partnering site ([www.ars.usda.gov/Business/Business.htm](http://www.ars.usda.gov/Business/Business.htm)).

*Z-Trim, a zero-calorie fat replacer from corn, is now available for consumers to use in cooking.*



*ARS research is evident in the development or improvement of many products.*



*These apples have been treated with an anti-browning coating developed by ARS.*



## Patent License Program

Many important ARS discoveries are transferred directly to the public without intellectual property protection. Some ARS inventions require significant financial investments and resources from the private sector before the public can benefit from a new, improved product or service. To provide an incentive for such investments, ARS may patent new inventions and transfer technologies to the public through patent licenses.

The ARS Office of Technology Transfer (OTT) administers the U.S. Department of Agriculture's technology licensing program. The ARS technology licensing program grants licenses to qualified businesses and individuals who wish to commercialize ARS technologies. Licenses may be exclusive, nonexclusive, or partially exclusive, and foreign patent rights are available in some cases.

*ARS developed snack bars containing 100-percent fruit.*



*ARS is protecting animal production and health through technology.*



*Lactose-reduced products from ARS technology*



*ARS is developing new uses for kenaf plants.*



## How To Apply for a Patent License

Licensing federally owned inventions is done in accordance with Federal regulations (37 CFR 404). A copy of these regulations can be obtained from the technology licensing program coordinator or the ARS Partnering site ([www.ars.usda.gov/Business/Business.htm](http://www.ars.usda.gov/Business/Business.htm)).

Businesses or individuals who want to commercialize an ARS invention must submit a patent license application. Information provided with the application is used to determine whether the applicant has a sufficient plan for developing and marketing the invention. All business plans are kept confidential.

Patent license application forms are available by mail or may be downloaded from the ARS Partnering site. All patent license applications should be mailed to the technology licensing program coordinator.

### License Provisions

USDA patent licenses are royalty bearing and include provisions for license execution fees, annual license maintenance fees, and patent cost reimbursements. License fees and royalty rates are negotiable. Information submitted by the applicant—including estimates of potential market size, market share, and profitability—is used to help determine fair and reasonable terms. Other factors are also considered, such as scope of the licensed patent, scope of rights granted, and financial and resource investments required for commercialization.

Licensees are required to submit periodic reports detailing the progress made to commercialize licensed patents. After the first sale of royalty-bearing products, licensees are required to submit royalty reports, including information on the quantity of products made, used, and sold, and the royalties due USDA. This information is confidential and not publicly disclosed.

*Lady Liberty's elevator is powered by soy-based fluid developed by ARS.*



*ARS technology helps bring fresher, safer ready-to-eat produce to the supermarket.*



## Special Considerations

Exclusive or partially exclusive patent licenses—including licenses that are co-exclusive (limited number of licensees), exclusive territory (limited to a specific country), and exclusive field (limited to a specific use)—may be granted for non-CRADA inventions, but only after public notice has been made.

## Successful Commercial Partnerships

ARS continues to foster relationships with many businesses throughout the United States and, in so doing, creates new job and economic opportunities. Several ARS technologies have resulted from fruitful partnerships or have paved the way for new partnerships. Many small businesses have built new industries based on ARS research and products. These companies have helped bolster local, State, and national economies.

One of the most commercially successful inventions that led to a new business endeavor is Super-Slurper, an ARS-patented cornstarch absorbent that can hold 2,000 times its own weight in water. Super-Slurper is used in disposable diapers, body powders, batteries, filters, and wound dressings.

A start-up company made its mark on the egg industry thanks to an ARS-patented method to immunize poultry by injecting safe vaccines directly into eggs. This invention revolutionized vaccination of poultry worldwide.

These are just two examples of the many successful partnerships. Through such partnerships, the ARS Office of Technology Transfer helps deliver innovative technologies to a growing world.

*ARS is developing methods to detect foodborne pathogens like Salmonella (petri dish on left).*



*Just a few of the many products made from cornstarch (top) and soybeans (middle)*



*Improved frozen orange juice through ARS research*

## Additional Information

You can learn more about ARS research and partnering opportunities from the resources listed below:

***Agricultural Research Service Home Page*** is the electronic gateway to the principal research agency of the USDA. ARS conducts research of national scope that affects the daily lives of consumers.

**Internet:** [ars.usda.gov](http://ars.usda.gov)

***ARS Partnering Page*** contains information on partnering opportunities, patent licensing program, recently issued patents, and newly filed patent applications.

**Internet:** [ars.usda.gov/Business/Business.htm](http://ars.usda.gov/Business/Business.htm)

***ARS Research Page*** describes ARS's national programs and peer review process. The agency's work falls into four major categories: Animal Production, Product Value, and Safety; Natural Resources and Sustainable Agricultural Systems; Crop Production, Product Value, and Safety; and Nutrition, Food Safety / Quality.

**Internet:** [ars.usda.gov/research/programs.htm](http://ars.usda.gov/research/programs.htm)

***OTT Marketing Staff*** can provide information about technologies available for licensing, partnering opportunities, success stories, information on the ARS Partnering site, and "Technology Alerts" (e-mail notification of available ARS technologies).

**E-mail:** [ottmarketing@ars.usda.gov](mailto:ottmarketing@ars.usda.gov)

***Agricultural Research*** is USDA's science magazine, published monthly by the ARS Information Staff. Articles and photographs are posted monthly on the Web.

**Internet:** [ars.usda.gov/is/ar](http://ars.usda.gov/is/ar)

***Technology Transfer Information Center*** is part of the National Agricultural Library. The Center assists users in finding information by searching national and international databases and other resources.

**Internet:** [nal.usda.gov/ttic](http://nal.usda.gov/ttic)

*Improved quality through biotechnology research*



*Problem solving with biocontrol strategies*



*Better cheese and other dairy products*



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