Partnering for Innovation and Technology-Based Economic Development

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USDA, Agricultural Research Service
ARS Mission

ARS conducts research to develop and transfer solutions to agricultural problems of high national priority and provide information access and dissemination to…
ARS Mission  (cont’d)

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.
Agricultural Research Service

~2000 scientists,
~100 locations

Frequent stakeholder / customer meetings to help define relevance and priorities

> 850 research projects

~$1.1 Billion budget
ARS Laboratory Locations
ARS Research Capacity and National Priorities in Agriculture (REE)

Nutrition, Food Safety, and Quality
- Human Nutrition (NP #107)
- Food Safety (animal and plant products) (NP #108)
- Quality and Utilization of Agricultural Products (NP #306)

Animal Production and Protection
- Food Animal Production (NP #101)
- Animal Health (NP #103)
- Veterinary, Medical, and Urban Entomology (NP #104)
- Aquaculture (NP #106)

Natural Resources and Sustainable Agricultural Systems
- Water Availability and Watershed Management (NP #211)
- Climate Change, Soils, and Emissions (NP #212)
- Bioenergy (NP #213)
- Agricultural and Industrial Byproducts (NP #214)
- Pasture, Forage and Rangeland Systems (NP #215)
- Agricultural System Competitiveness and Sustainability (NP #216)

Crop Production and Protection
- Plant Genetic Resources, Genomics and Genetic Improvement (NP #301)
- Plant Biological and Molecular Processes (NP #302)
- Plant Diseases (NP #303)
- Crop Protection and Quarantine (NP #304)
- Crop Production (NP #305)
- Methyl Bromide Alternatives (NP #308)

Climate Change
- Mitigation
- Adaptation

Bioenergy
- Sustainability
- Economic viability

Nutrition and Health
- (esp. children)
  - Nutritious and convenient

Food Safety
- Reduce pathogens through detection and suppression

Global Food Security
- Global poverty reduction
- Production & sustainability
1. Stakeholder Workshop to identify priorities
2. National Program developed
3. Program Priorities set
4. Research Project Plans prepared
5. Office of Scientific Quality Review review and certification
6. Research initiated
7. Annual progress reviews
8. Retrospective evaluation

ARS Research Planning Cycle
Input
Assessment
Planning
Implementation
ARS Mission

ARS conducts research to develop and transfer solutions to agricultural problems of high national priority …
Technology transfer in ARS

- Scientific publications
- Trade journals
- Demonstrations/field days
- Public databases
- ARS websites
- Cooperative research and development agreements
- Licensing of technologies
- Commercialization of processes/materials
Goals of ARS Technology Transfer

Transfer of technology is primary objective, not income.

Facilitate research partnerships & adoption of federal research outcomes for the benefit of the U.S. public.

Protect intellectual property primarily if it enhances technology transfer, using the patent system and licensing strategies to enhance the competitiveness of U.S. companies.

Enhance U.S. economic development, global competition, and sustainable economic security.
Partnering to Facilitate Technology Transfer

Enables collaborative evaluation, implementation or development of ARS technologies
Facilitates adoption of ARS technologies by end users and/or commercialization of ARS technologies in the marketplace
Provides access to ARS expertise in research areas of mutual interest
Provides access to specialized facilities (e.g., pilot plants)
Leverages assets/expertise of both parties
Partnering with Industry for Commercialization / R&D

**Licensing**

of protected technologies (including plants) to private sector for commercial production.

**Cooperative Research and Development Agreements (CRADAs)**

establish research partnerships to solve industry problems consistent with ARS mission and priorities.
Goals of USDA Technology Licensing Program

Use the patent system and plant variety protection to facilitate technology transfer

Provide an incentive for investments by the private sector

Support small business enterprises and entrepreneurs

Support investments by U.S. businesses in international markets
Cooperative Research and Development Agreements (CRADA’s)

Background inventions
If exclusive license requested, ARS must publish notice of intention in Federal Register and address all objections.

CRADA subject inventions
Exclusivity allowed without publishing notice of intent
Up to 5 years confidentiality from FOIA
Novel Pilot Plants of the Regional Research Centers

The Power of Partnerships

The Center is eager to explore new partnerships that would expand the use of the SRRC Pilot-Plant facilities. Current areas of research interest include food processing, oilseed extraction, fiber processing and...
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ARS Mission

Conduct research to develop and transfer solutions to agricultural problems of high national priority
Agricultural Technology Innovation Partnership (ATIP)

Partner with economic development entities to enhance the effectiveness & impact of technology transfer.

Enhance the flow of ARS technologies to small businesses & encourage technology-based economic development.
Commercialization of Research Outcomes

ARS assets

Human Capital
Research Capacity

→

Intellectual Assets

→

Intellectual Property

Commercialization of Research Outcomes

ARS assets

Human Capital
Research Capacity

Intellectual Assets
Intellectual Property

Complementary Assets

$T^2$
Commercialization of Research Outcomes

ARS assets

Human Capital
Research Capacity

Complementary Assets

Technical Expertise
Fiscal Resources
Product Registration Expertise
Manufacturing Capacity
Marketing & Distribution Capacity

T²
Commercialization of Research Outcomes

ARS assets

Human Capital
Research Capacity

Intellectual Assets
Intellectual Property

Technical Expertise
Fiscal Resources
Product Registration Expertise
Manufacturing Capacity
Marketing & Distribution Capacity

ARS - CRADA

Complementary Assets

$T^2$
Commercialization of Research Outcomes

ARS assets

Human Capital
Research Capacity

Intellectual Assets
Intellectual Property

Technical Expertise
Fiscal Resources
Product Registration Expertise
Manufacturing Capacity
Marketing & Distribution Capacity

Complementary Assets

ATIP

T²
Goals of ATIP

Provide complementary assets to ARS

- **Guide** local / regional business with research needs to the appropriate ARS scientist across ARS (CRADA opportunities)
- **Triage** business plans of private sector to seek well-qualified candidates for licensing / research partnerships with ARS
- **Acquire** marketing assessments on ARS technologies from 3rd party sources (business schools, entrepreneur programs, angel investors, etc.) for targeted marketing
- **Coordinate** “Technology Showcase” events to facilitate partnerships with private sector companies
Goals of ATIP

Provide complementary assets needed by private sector

• Assist in accessing public / private funds
  • SBIR proposals
  • Angel investors / state funds
  • Manufacturing capacity
• Manage their own seed/venture funds or networks to support CRADA and license partners of ARS
• Assist in problem solving manufacturing capacity
• Network with other ATIP members and other federal PIA networks
Science In Your Shopping Cart

- Beltsville Turkey
- DEET
- Seedless grapes
- Shrinkproof wool
- Roma tomatoes
- Dehydrated potatoes
- New Guinea Impatiens
- Concentrated frozen orange juice
- Perma-press fabrics
- Lactose-free Milk
- Glenn Dale azaleas
- Super-absorbents for diapers
- Leather tanning
Questions ?