USDA Agricultural Research Service

> Technology Transfer & Economic Development

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U.S. Dept. of Agriculture

•\$100+ Billion / year budget

 Comprised of 17 different "agencies", and 12 different "offices", e.g.:

- U.S. Forest Service
- Food Safety Inspection Service
- Animal and Plant Health Inspection Service
- Foreign Agricultural Service
- Agricultural Marketing Service
- Cooperative State Research, Education and Extension Service
- •Farm Service Agency
- Agricultural Research Service (ARS)
- •Many have a regulatory or grant-making function -- ARS does not



Agricultural Research Service ARS

- USDA's chief scientific research agency
- \$1.1 Billion annual budget
- 2,100 PhD scientists
- 6,000 other employees
- 1,200 research projects organized into four areas:
 - Animal production, plant production, human nutrition, and natural resource use
- 100+ research locations









Mission of ARS

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
- enhance the natural resource base and the environment
- sustain a competitive agricultural economy, and

• provide economic opportunities for rural citizens, communities, and society as a whole.

Means of Technology Transfer

- Publications
- Seminars / Workshops
- Field Days
- Public Release of Plant Varieties
- Dedication of new technology to the public domain

• Licensing of Intellectual Property Rights (IPR)



Mission: to manage ARS intellectual property and to facilitate research partnerships



Tech Transfer **Success** Fruit & **Vegetable Films** gami Foods[®]LLC

Technology Transfer and Economic Development

 ARS has the ability and wherewithal to help private companies

 ARS can form joint ventures with private companies / consortia to develop new products

ARS can provide business incubator services

Federal Tech Transfer Law

Major reorganization beginning in 1980

- Bayh-Dole Act
- Stevenson-Wydler Act
- Federal Technology Transfer Act
- Many others....
- Empowered Federal Government to:
 - Form joint ventures with private companies
 - exclusively license patent rights to private companies



Patent Licenses

ARS licenses its patents on both exclusive and non-exclusive bases

ARS retains ownership of the patent

Scientist / Inventor shares in the royalties

Technology Transfer Success 100% Fruit Bars







The Global Economy



"... to improve foreign market access for U.S. products, build new markets, and improve the competitive position of U.S. agriculture in the global marketplace..."

WORLD TRADE ORGANIZATION



WTO



orld Intellectual Property Organization

Technology Transfer Success Table Grapes

- David Ramming ARS Plant Breeder
- Multiple patents, both in the U.S. and abroad
- Licensee is CA Table Grape Comm.



Collaborative Research
 ARS works closely with private companies, trade groups, and universities

- Material Transfer and Confidentiality Agreements
- Non-Funded Cooperative Agreements
 Trusts
- CRADAs



Trusts

Partner provides funds to ARS (which are held in a "trust" account)

- Partner generally has no or limited technical expertise
- Intellectual property of secondary consideration
 - i.e. Often used for developing new methods

Sometimes favored by trade/commodity groups

CRADA

Cooperative Research and Development Agreement

 A joint research effort with at least one non-Federal partner

 Usually intended to create a commercial product

Often results in intellectual property

•Often results in exclusive patent license

The CRADA Exchange

The CRADA Partner must have internal research capacity and generally must provide at least one of the following to ARS:

*Funding *Equipment *Materials*Facility Access *Staff (i.e. Post-Doc)

In Exchange, the CRADA Partner will receive:

*Access to ARS technology and expertise*Service from ARS Patent Advisors*Right to negotiate an exclusive patent license

Potential Collaborations Involving Waste Streams

ARS Research priorities include using waste materials as feedstock for value-added products

• The Athletic Biorefinery

 Various ARS Research Projects in need of Private Sector Partners to help develop our Biorefinery Concept

Cellulosic Biorefinery



MSW-to-Ethanol

- Pressurized hot water treatment.
- Reduces volume.
- Isolates recyclables
- Fractionates components





Firelogs from Yard Waste



Technology Transfer Success Domestic Rubber







Guayule Field

latex



Summary

Technology Transfer is essential to the ARS Mission

ARS resources can help create new products, companies, and jobs

Contact Info / brochures in the back

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