

Models for Adoption & Commercialization of Public Sector Traits: USDA and the ATIP Foundation

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September 19, 2013

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In the spirit of full disclosure.... A DISCLAIMER

- Dr. Brenner retired from USDA ARS September 30, 2012, having served the last 8 years as Assistant Administrator of ARS for Technology Transfer
- USDA policy and procedures presented here are based on public information current through September 2012, and may not be currently representative and are / have been subject to change since his departure



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Overview

USDA policy on technology transfer and the mechanism to achieve it

Realities of commercialization, and the birth of the ATIP intermediary network

ATIP Foundation...

Emergence of structured research Public-Private Partnerships

USDA Stated Goals of Technology Transfer

- Transfer of technology is *primary objective*, not licensing or licensing income.
- Facilitate research partnerships & *adoption of federal research outcomes for broad U.S. public benefit.*
- Protect intellectual property *primarily* if it enhances technology transfer, using the *patent system that provides incentives for scientists and protection for U.S. industry.*
- Enhance U.S. economic development, *global competition, and sustainable economic security.*

The Research Capacity of ARS

Program Management of ARS (the four "pillars")

Animal Production & Protection	Natural Resources & Sustainable Ag. Systems	Crop Production & Protection	Nutrition, Food Safety/Quality
<p>Food Animal Production</p> <p>Animal Health</p> <p>Veterinary, Medical, & Urban Entomology</p> <p>Aquaculture</p>	<p>Water Availability & Water Management</p> <p>Soil Resource Management</p> <p>Pasture, Forage & Range Land Systems</p> <p>Climate Change, soils & Emissions</p> <p>Agricultural & Industrial Byproducts</p> <p>Agricultural System Competitiveness & Sustainability</p> <p>Bioenergy</p>	<p>Plant Genetic Resources, Genomics & Genetic Improvement</p> <p>Plant Biological & Molecular Processes</p> <p>Plant Diseases</p> <p>Crop Protection & Quarantine</p> <p>Crop Production</p> <p>Methyl Bromide Alternatives</p>	<p>Human Nutrition</p> <p>Food Safety (animal & plant products)</p> <p>Quality and Utilization of Agricultural Products</p>

Models for Developing and Transferring Federal Technologies to the Private Sector

Background Invention
(e.g., developed in USDA)

Seek Private
Sector Interest
For Commercialization

The screenshot shows the USDA Agricultural Research Service website. The main content area displays a patent listing for a "New Method to Make an Industrial Lubrication Fluid". The listing includes the following information:

- Patent Title:** New Method to Make an Industrial Lubrication Fluid
- Projects:** Chemical Systems For Soybean Oil Conversion To Industrial Products
- Midwest Area National Center for Agricultural Utilization Research**
- Docket Number:** 7106
- Serial Number:** 11717524
- Technology Description:** Agricultural Research Service (ARS) scientists in Illinois have developed a way to make a vegetable oil based material using several natural compounds. This technology can be used in formulation of biobased-industrial lubrication fluid, potentially replacing petroleum-based fluids. One of ARS's compounds can be poured at cold temperatures—a property required by the lubrication industry. The compounds also have structures which have the potential to be used to form a new type of surfactant. Many other commercial lubricants and surfactants are available; however, ARS's biodegradable compounds are more environmentally friendly. The technology has been shown to be usable on the small scale. Global lubricant demand is more than 30 million tons annually, and current surfactant use in the United States and Canada is more 3 million tons per year.
- ARS is seeking a cooperative research and development partner to further evaluate the compounds in this invention, as well as conduct extensive lubricant testing. In addition, more research needs to be accomplished to develop the technology's use as a commercial surfactant. Companies that produce surfactants and are looking to**

Marketing Section

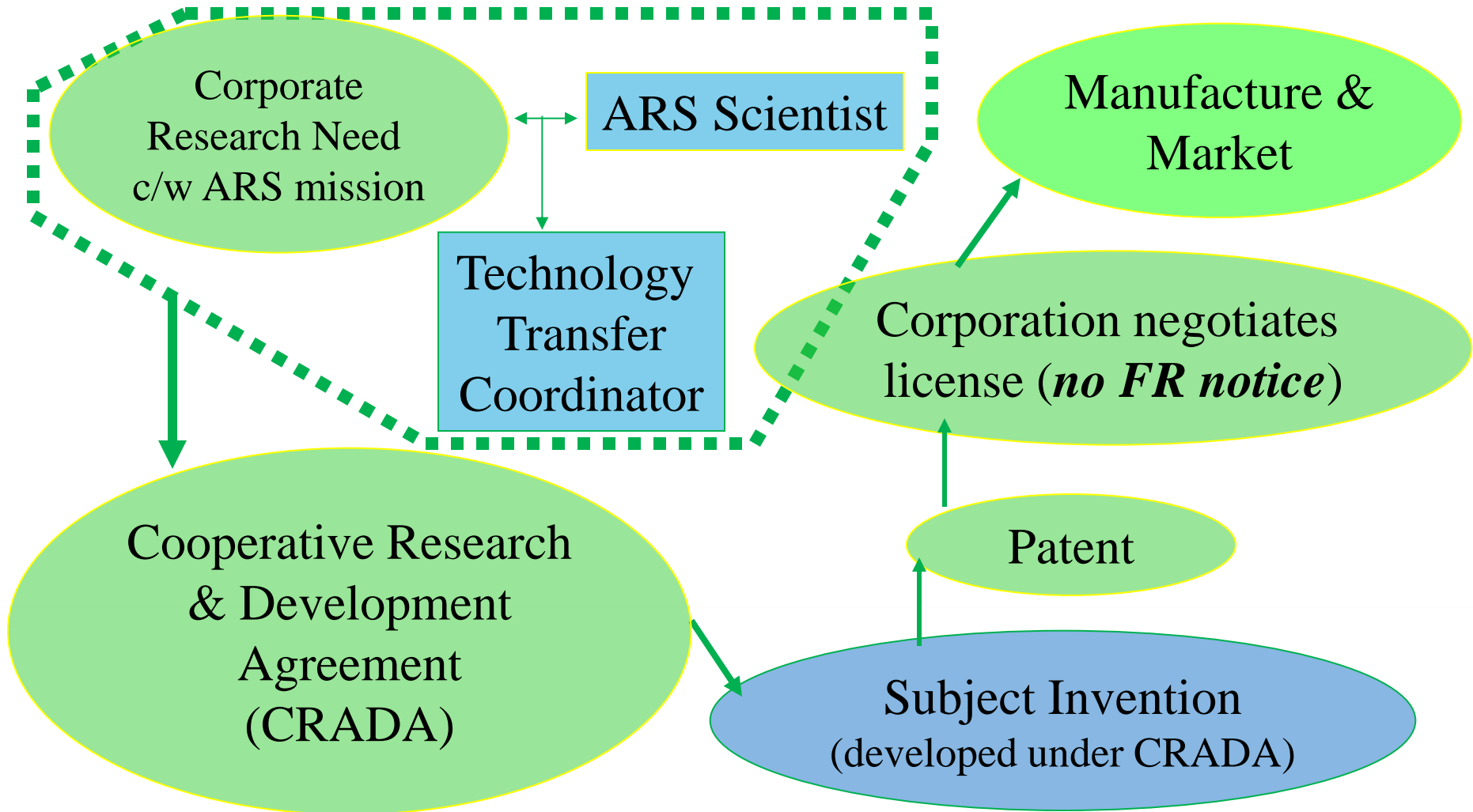
- Creates summary
- Places on OTT website

Federal
Register
Notice

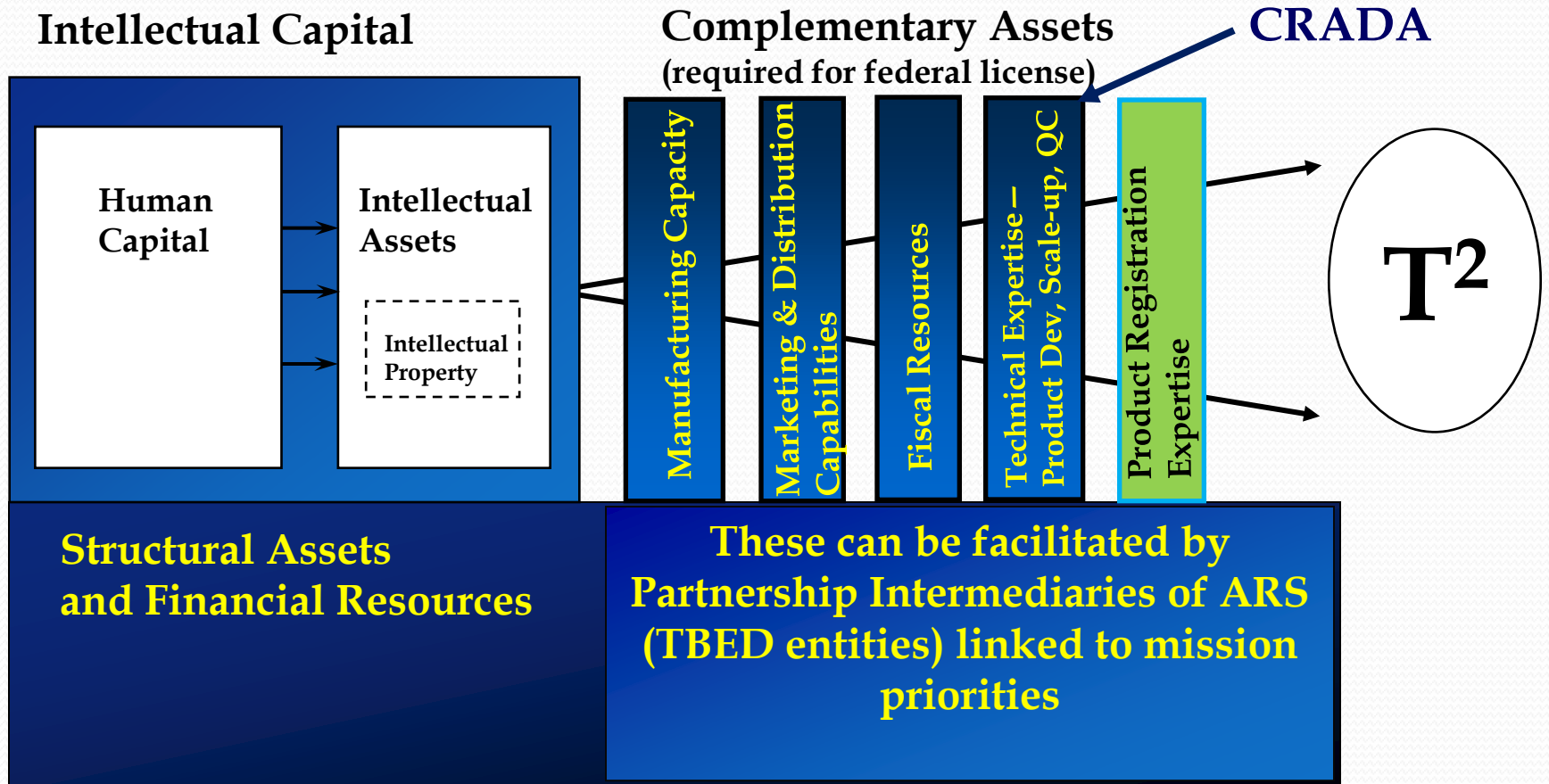
Licensing
Section

Corporate
response

The Federal CRADA Model for Developing and Transferring Technologies to the Private Sector



Model of a Public/Private Partnership for Commercialization of Research Outcomes

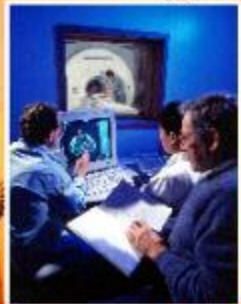
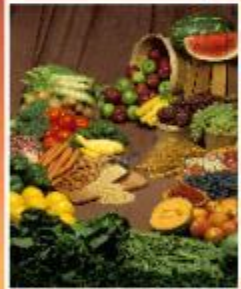


Adapted from Sullivan, P.H., Profiting From Intellectual Capital, John Wiley & Sons, New York, 2000.



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

*Agricultural Technology
Innovation Partnership
(ATIP)*



Agricultural Technology Innovation Partnership (ATIP)

*Partner with economic development entities to
provide complementary business assets and
business expertise to ARS and its private
sector partners*

Assist ARS

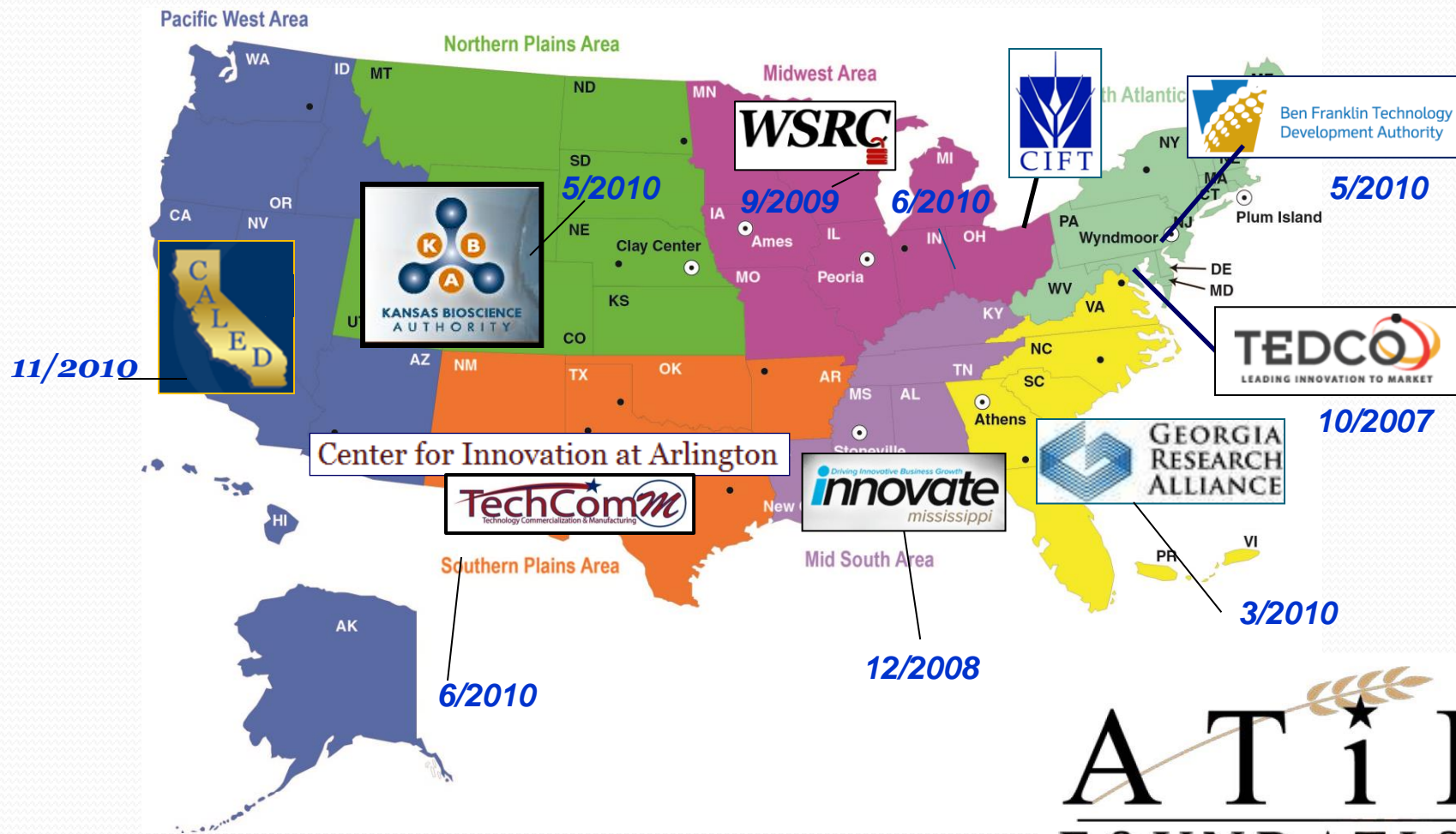
- Identify well-qualified research partners
- Seek well-qualified licensing candidates
- Acquire marketing assessments on technologies
- Coordinate events to facilitate public – private partnerships

Assist ARS Partners

- Accessing funding
- Provide and manage support networks
- Assist and mentor in problem solving

Leveraging Assets: Partnership Intermediaries of USDA ARS

The Agricultural Technology Innovation Partnership (ATIP) Network



ATIP Foundation

- External to USDA (independent), serving as intermediary between agriculture sector and USDA
 - Receives “initiative” requests from USDA
 - Provides requests to USDA from NGO / private sector

ATIP Foundation

-- focus ---

- 1.** Expedite transition of USDA technologies into commercial sector.
- 2.** Host regional events showcasing research capacity and outcomes.
- 3.** Develop industry access to USDA research and research facilities.
- 4.** Increase use of agriculture technology to meet market needs.
- 5.** Seek funding for research, training, and product development to support technology needs of agriculture industry.
- 6.** Provide for development of skilled workers needed to sustain industry growth.

USDA Liaison Committee

7-member committee functions as formal “portal” for communication between USDA and ATIP Foundation

- ARS Deputy Administrators, Office of National Programs
 - managers of the ARS research portfolio for all 4 pillars of research (www.ars.usda.gov/research/programs.htm)
- Assist Administrator of ARS for Technology Transfer
- Representative of the 8 Area Directors
- Under Secretary for REE (or designate)

Liaison Committee Requests to ATIP Foundation for PPP

- “Resilient Economic Agricultural Practices” (REAP) – October, 2012
 - Research to address land management strategies to ensure sustainability for multiple uses (feed, food, fuel, fiber, wildlife / environmental)
- “Branded Foods Nutrient Composition Database” – January, 2013

REAP PPP

Founding Participants

- POET-DSM
- Monsanto
- National Corn Growers Association
- New Holland
- The Nature Conservancy
- Pioneer Hi-bred
- National Wildlife Federation
(pending)
- (ADM pending)

Inaugural meeting, November 3, 2013 (Tri-Societies Conference, Tampa, FL)

Branded Food Products Database for Public Health Public Private Partnership



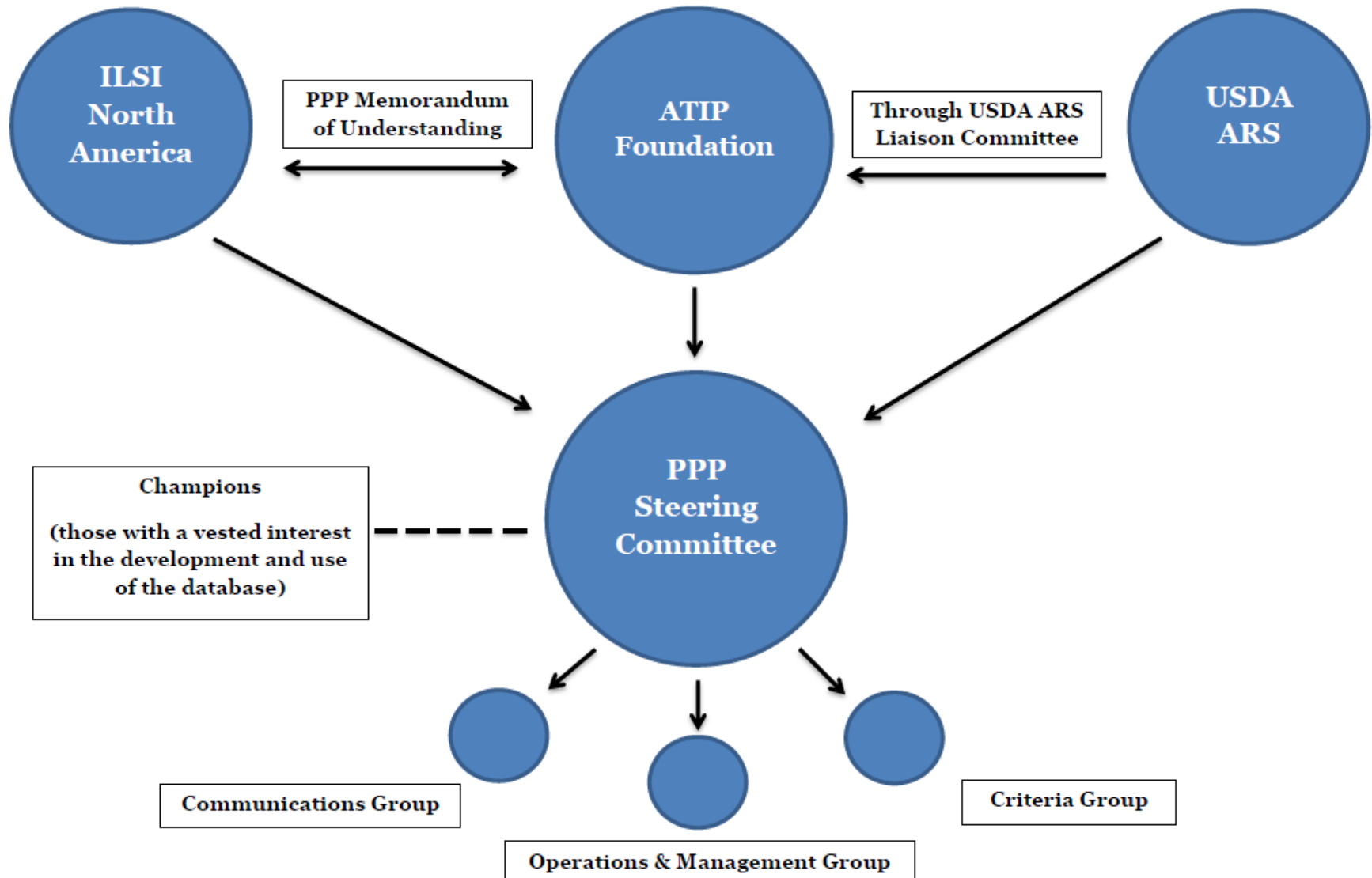
Goal: To enhance the public's health, which is significantly dependent on diet, through increased nutrient knowledge of the nation's food supply.

Work Statement: To ensure that comprehensive, food composition, food industry data will be made available to government, industry, and the scientific community to augment the USDA National Nutrient Database.



Branded Food Products Database for Public Health

Public-Private Partnership Organizational Chart



Listening Sessions

Objective: engage various sectors with interest in nutrition to gain input on what is needed in the augmented USDA Nutrient Database, and how to enlist participation of food manufacturers

- Invitation to end users of database and suppliers of nutrient data (food manufacturers)
 - Approx. 50 participants in-person
 - Concurrent web conference
- October 10 – Cleveland, OH
- November 14 – D.C.
 - Co-sponsored by Government-University-Industry Research Roundtable (GUIRR) of the National Academy of Sciences

The distant roll of thunder...

1. Projected world population in 2050 (9B) will require 40% more protein than is produced today.
2. Our arable lands need to produce more than protein (food, feed, fiber, biofuel, wildlife habitat / environmental value).
3. In addition to limited arable lands, water availability and water quality will further challenge humanity.
4. Research will need to expand significantly to meet these challenges.
5. Under the current budget deficits, federal & state funded R&D likely will diminish.

Public-Private Partnerships are needed to share costs, shape priorities, and enhance likelihood that research outcomes are practical and are adopted.

Thoughts on other PPP initiatives ...

- USDA (ARS) has requested initiatives representing 2 of the 4 pillars of research
 - REAP represents the complexities of land management for multiple uses --- all to the benefit of public good (research executed by ARS and university cooperators)
 - Participation by NGO / corporations will be broadening in 2014
 - “Branded Foods” PPP involves food industry, universities, several federal agencies -- all to the benefit of public health through nutrition
- Should consideration be given to a PPP on “plant genomics and biotechnology”?
 - Participants could include ag sector corporations involved in corn, soybean, wheat, cotton, high value crops, soil remediation crops, biofuels ...
 - Regulatory agencies could be part of the PPP to help define research paths to minimize / simplify regulatory processes

Public-Private Partnership Principles

1. Have a clearly defined and doable goal to improve the health [and well being] of the public
2. Ensure that objectives will meet stakeholder partners' needs, with a clearly defined baseline to monitor progress and measure success
3. Select objective scientific measurements capable of providing common ground for both public- and private-sector research goals
4. Articulate a clear statement of work, rules, and partner roles, responsibilities, and accountability, to build in trust, transparency, and mutual respect as core operating principles

Public-Private Partnership Principles

5. Considering the importance of balance, ensure that all members possess appropriate levels of bargaining power
6. Minimize conflict of interest by recruiting a sufficient number of partners to mitigate influence by any single member and to broaden private-sector perspectives and expertise
7. Adopt research questions and methodologies established by partners with no vested financial interest in them, ideally in the precompetitive space
8. Engage partners who agree upon specific and fundable research question(s) to be addressed by the partnership

Public-Private Partnership Principles

9. Enlist partners who are committed to the long term as well as the sharing of funding and research data
10. Along with government and the private sector, include academics and other members of civil society as partners
11. Be flexible and ensure ongoing transparent communications
12. Consider a third-party convener to ensure equality at the table, clarify rules, establish operational guidelines, and specify funding arrangements

ABOUT

CONCEPT

PREMISE

INTELLECTUAL PROPERTY

RESEARCH & TRAINING

INITIATIVES

GOVERNANCE

FOUNDERS

CONTACT

NEWS



ATIP
FOUNDATION
Agricultural Technology Innovation Partnership

Questions?

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