

# DHS/S&T Overview for NAS

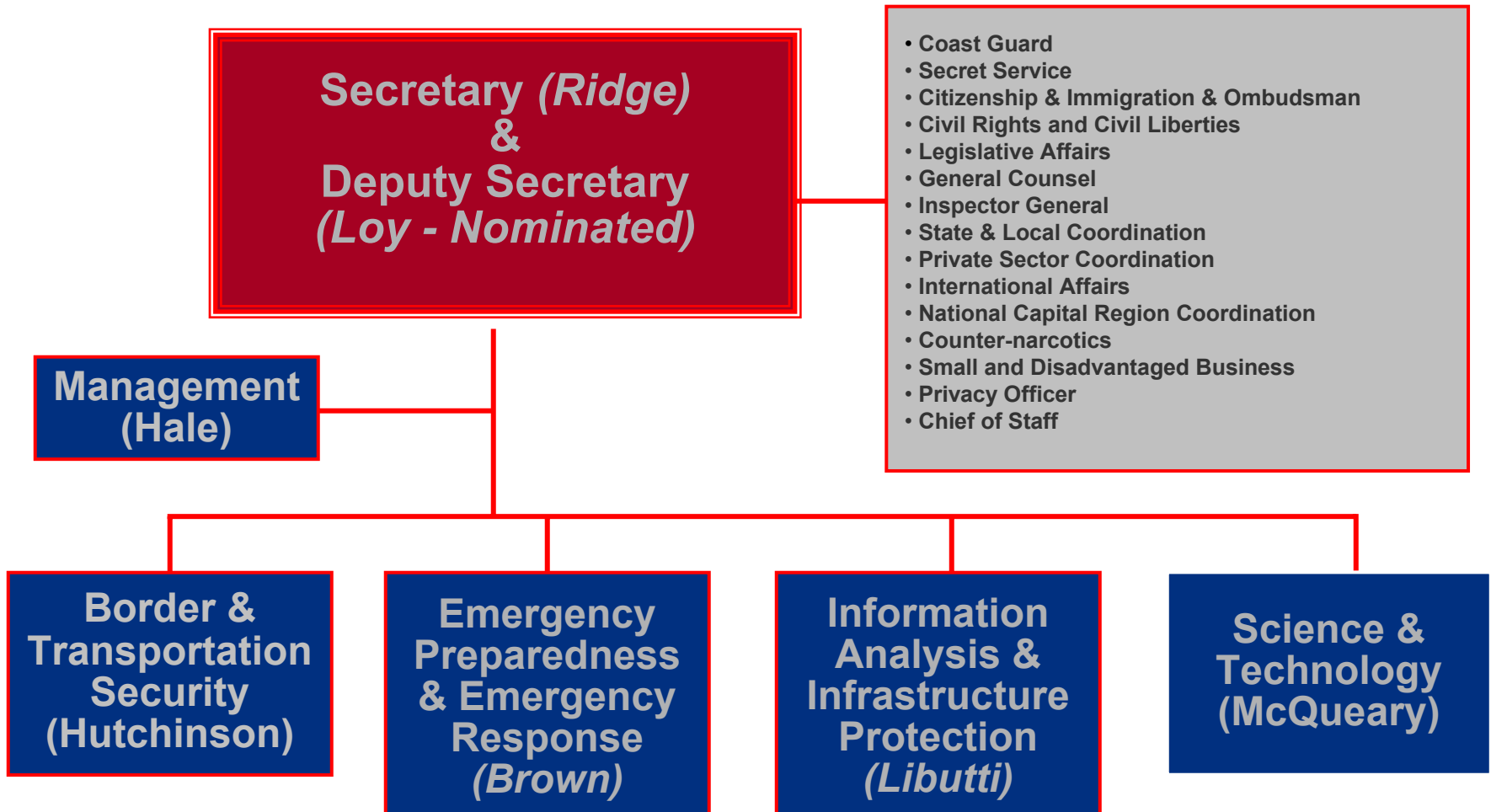
Federal Stewardship in Service to Homeland Security

January 29, 2004

# What is Homeland Security?



# General DHS Organizational Structure



# Creation of A New S&T Mission



Conduct, stimulate, and enable research, development, test, evaluation and timely transition of homeland security capabilities to federal, state and local operational end-users.

# S&T is the advocate for CBRN countermeasures



# Role of DHS S&T

- To integrate science and technology in fulfillment of national policy objectives to protect the homeland
- **Considerations:**
  - Threats are expansive
  - Consequences are momentous
  - Resources are not unlimited
  - Previous efforts driven by discrete agency missions and stakeholders
- **Implication:**
  - First Step: characterize the threat and understand of the impacts
  - Will allow interagency community to marshal USG resources against highest-consequence threats
  - Will facilitate formation of innovative public-private partnerships

# Research, Development, Testing and Evaluation (RDT&E)



Delivering Capabilities  
to Operational End-Users

# Office of R&D Vision

**We envision** ... a national RDT&E system that is both distributed, to promote regional leadership and create core competencies, and integrated, in service to operational end-users of homeland security technologies, processes and systems.

**We envision** ... a national S&T base with extensive breadth in newly conceived disciplines and deepened roots in historic capabilities.

**We envision** ... both the seamless integration of science and technology expertise in planning and operational response.

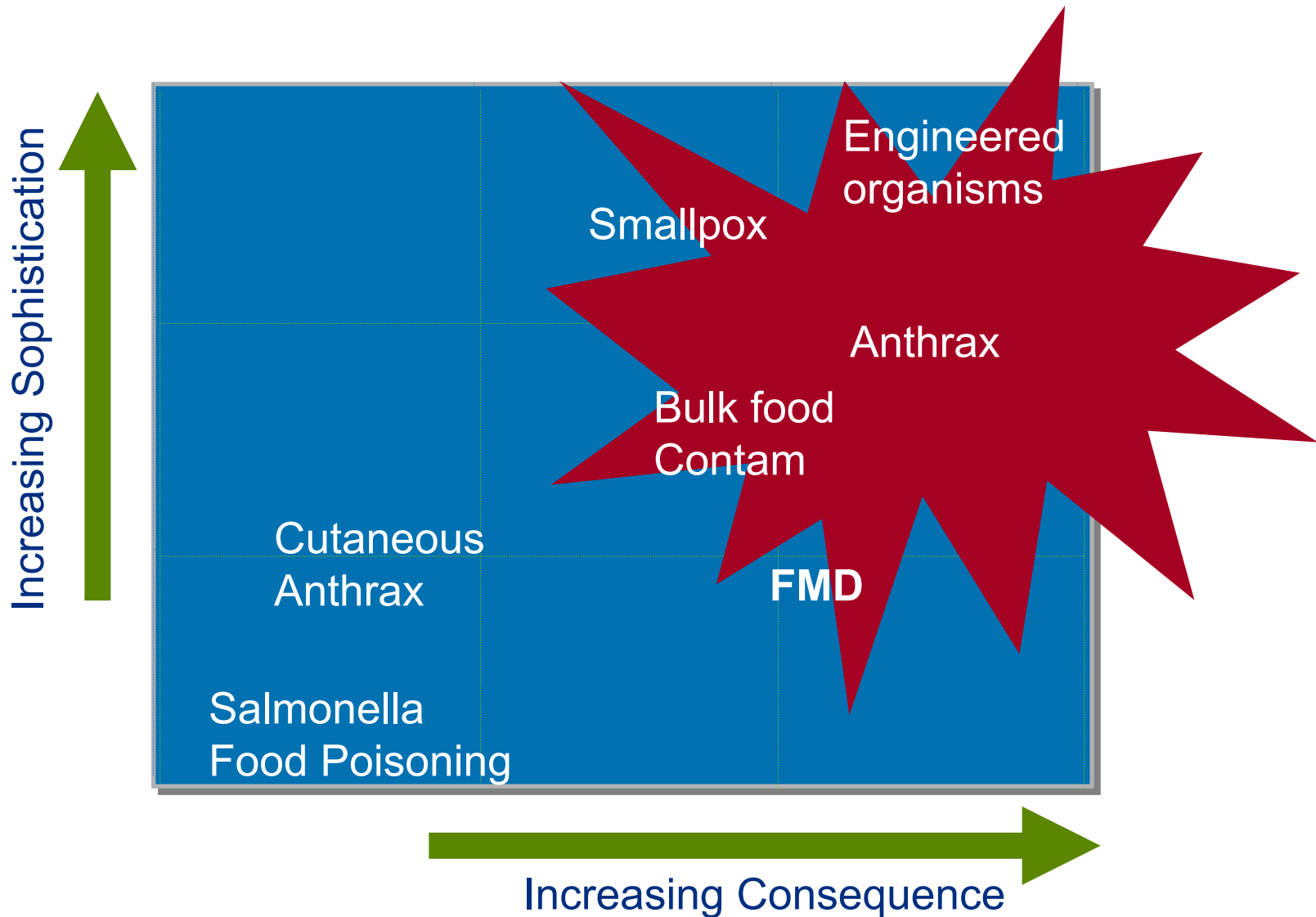
# Meeting National Objectives

- Anticipate, Prevent, Respond to and Recover from Terrorist Attacks through Mission-focused Research, Development, Testing and Evaluation
- Transfer Technologies and Capabilities to Operational End Users
- Create an Enduring National Capability through Federal Stewardship of the Homeland Security Complex

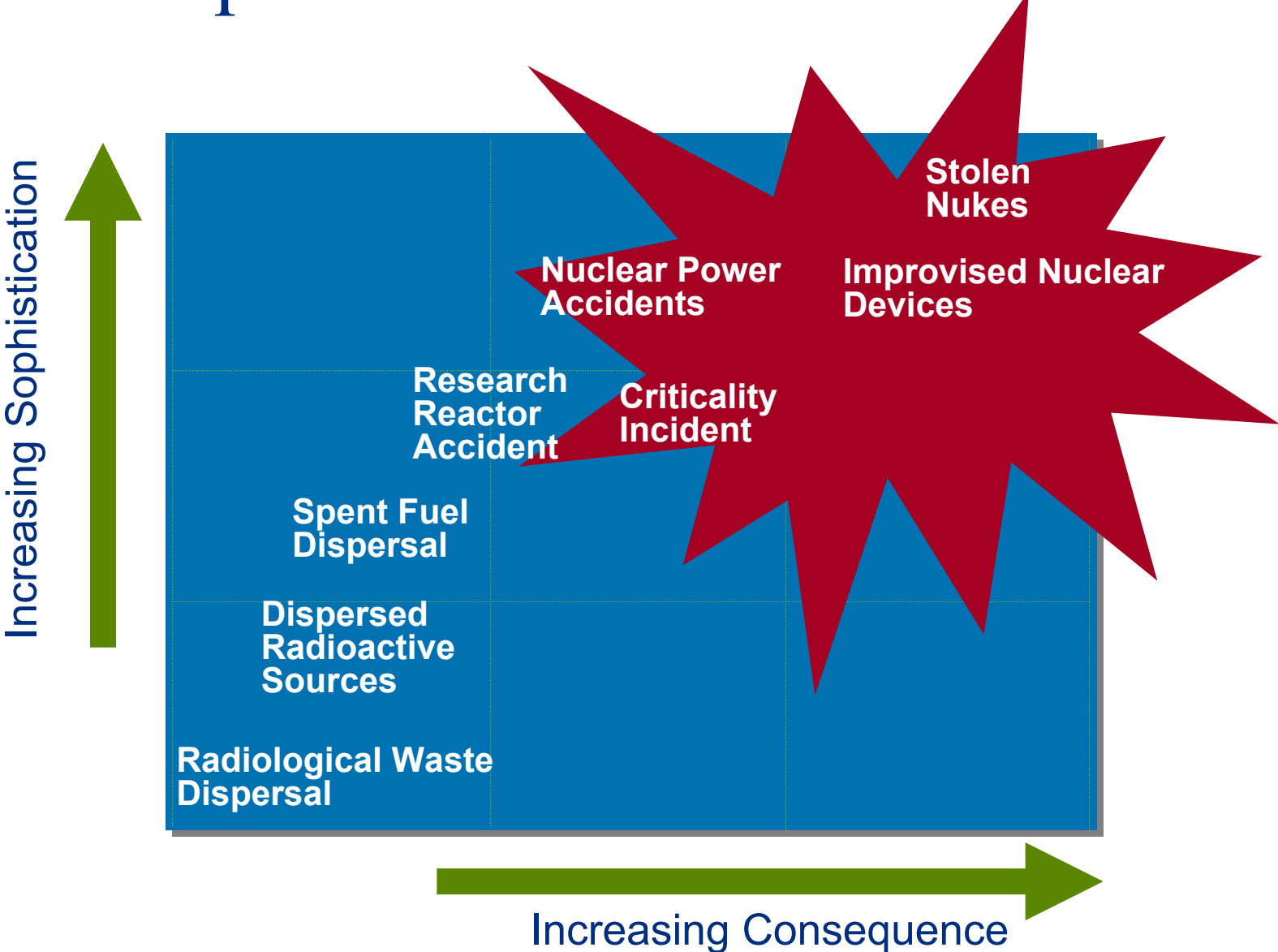
# S&T Research Agenda

- Bio-Countermeasures
- Chemical Countermeasures
- Radiological and Nuclear Countermeasures
- Standards
- SAFECOM
- Threat and Vulnerability, Testing and Assessment
- Critical Infrastructure Protection
- Homeland Missions

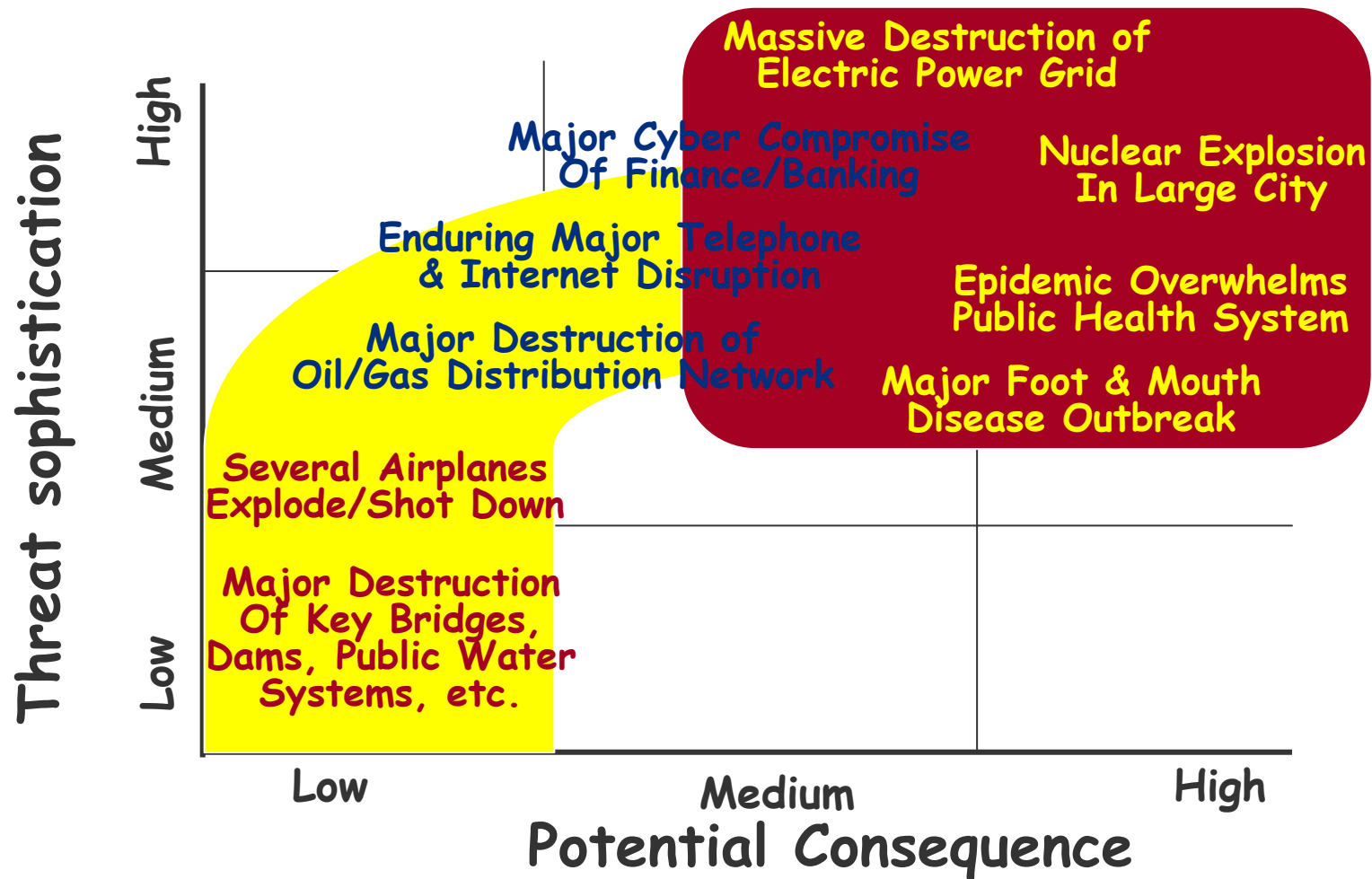
# High Consequence Biological Threats



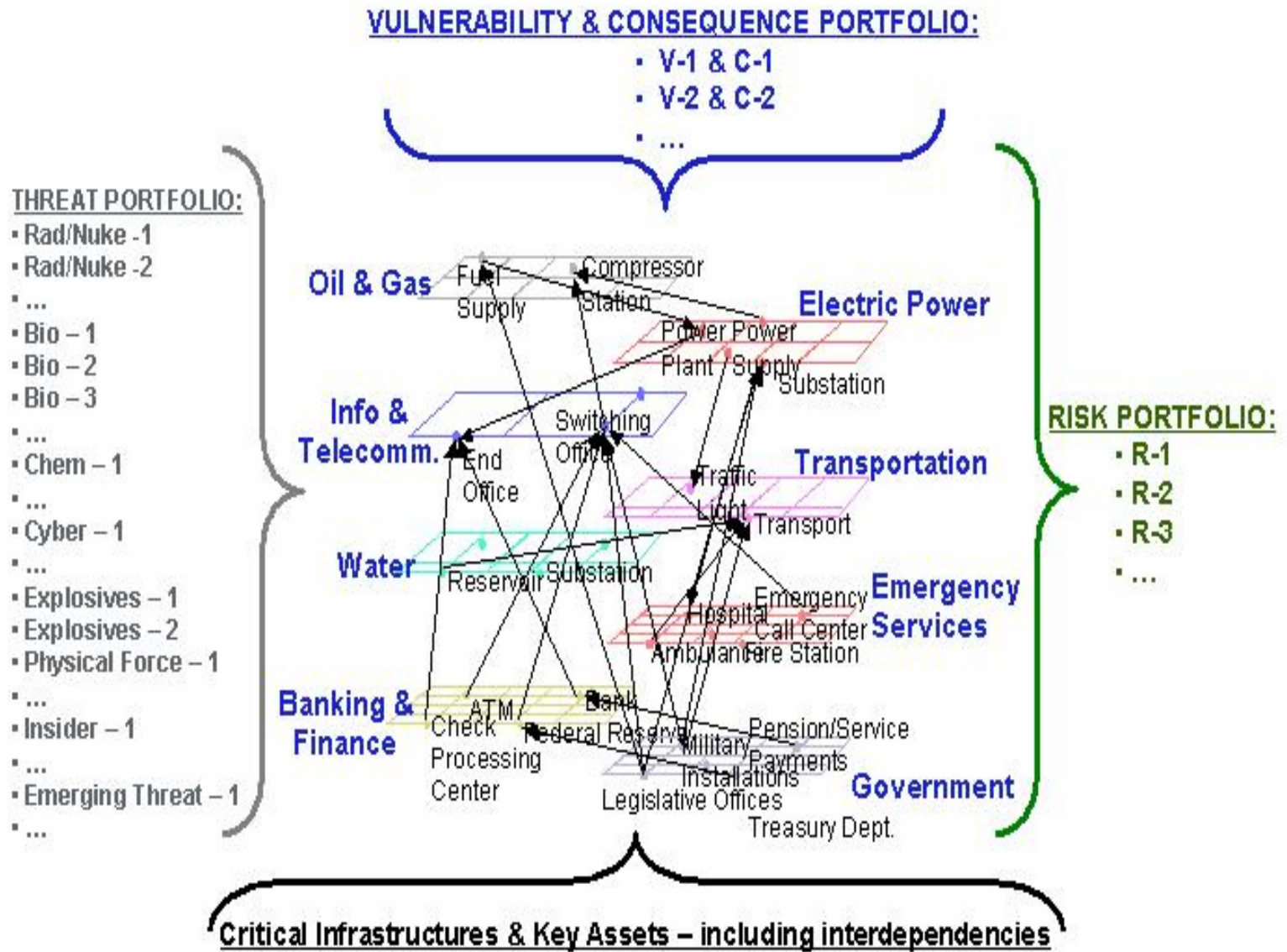
# High Consequence Rad/Nuc Threats



# Notional Threats to CIP



# Managing CIP Sector Interdependencies

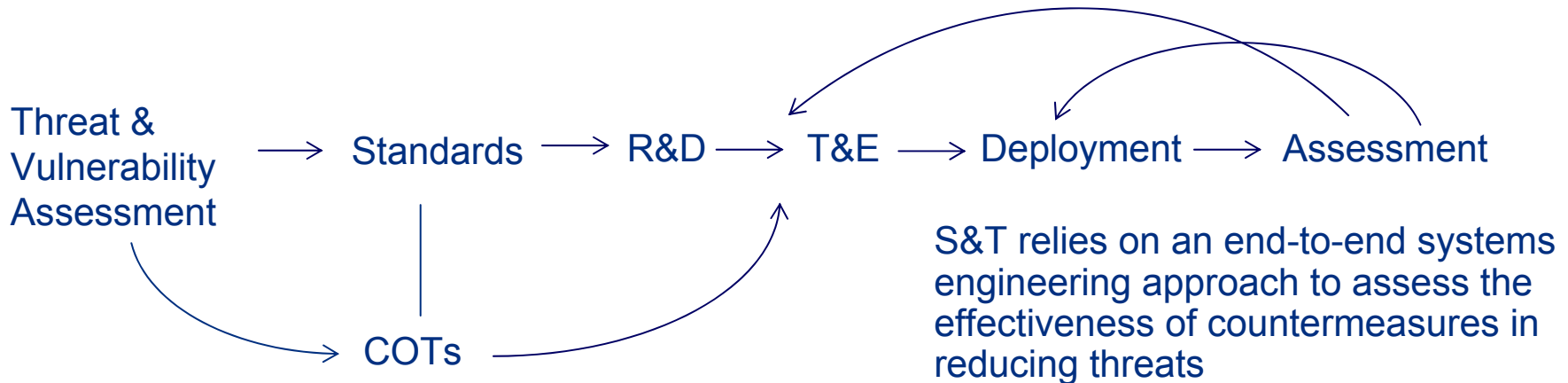


# Meeting National Objectives

- Anticipate, Prevent, Respond to and Recover from Terrorist Attacks through Mission-focused Research, Development, Testing and Evaluation
- **Transfer Technologies and Capabilities to Operational End Users**
- Create an Enduring National Capability through Federal Stewardship of the Homeland Security Complex

# Role of Partnerships in Executing RDT&E

- Through strategic partnerships, S&T leverages existing technologies and related research sponsored by other government agencies
- S&T is mission-focused; partnerships with end-users allow S&T to impact the entire RDT&E process



# Meeting National Objectives

- Anticipate, Prevent, Respond to and Recover from Terrorist Attacks through Mission-focused Research, Development, Testing and Evaluation
- Transfer Technologies and Capabilities to Operational End Users
- Create an Enduring National Capability through Federal Stewardship of the Homeland Security Complex

# Federal Stewardship Extends to People, Places and Programs



# ORD Programs & Assets

- Programs Offices

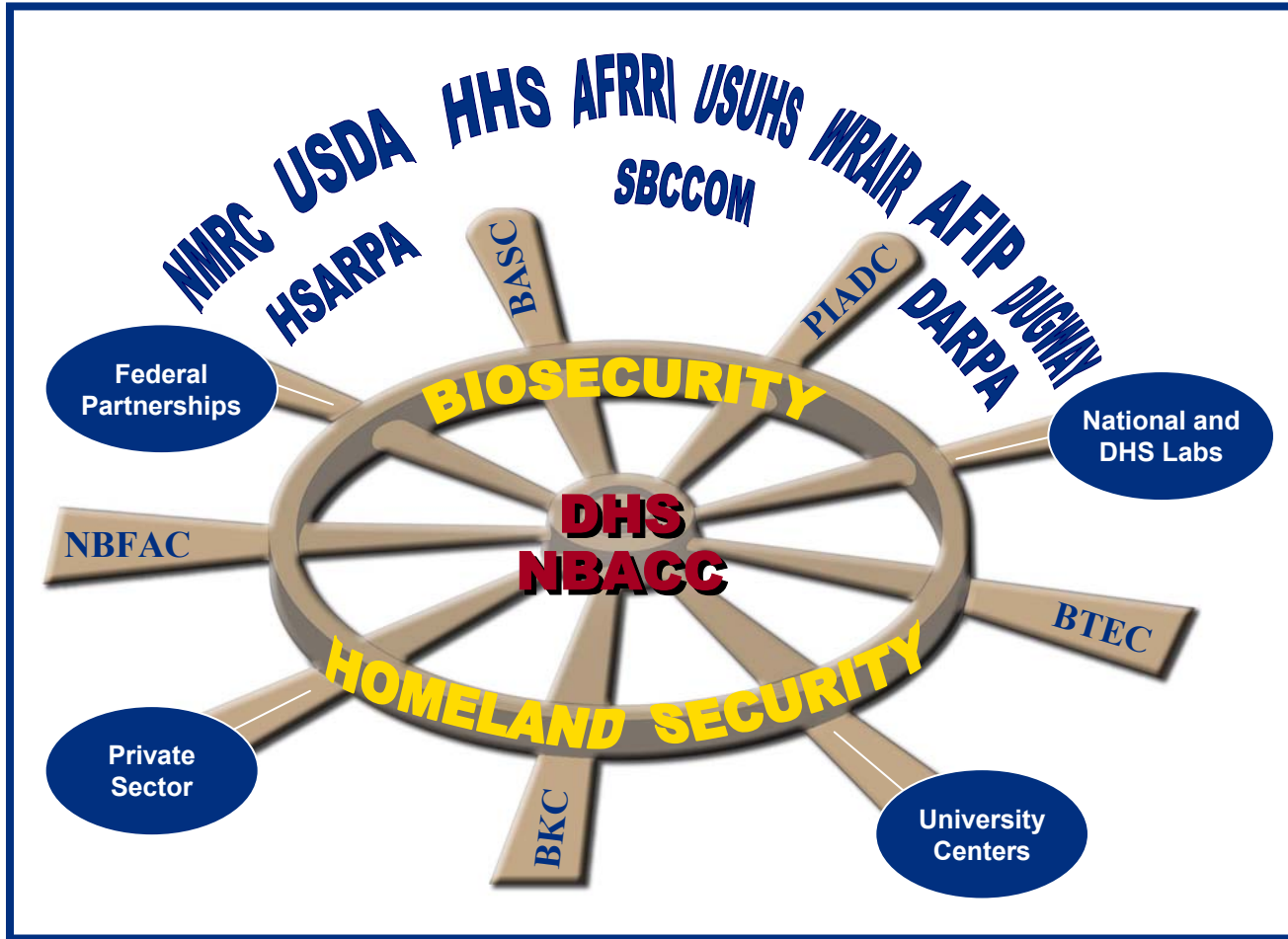
- National Biosecurity Research Program Office
- University Programs
- WMD Operations and Incident Management
- Standards

- Assets

- National Biodefense Countermeasures and Analysis Center
- Plum Island Animal Disease Center
- National Laboratories
- DHS Laboratories
- University-Based Homeland Security Center(s)

# NBACC Hub and Spoke Concept

NBACC Hub and Spoke System



Physical and Virtual Structures

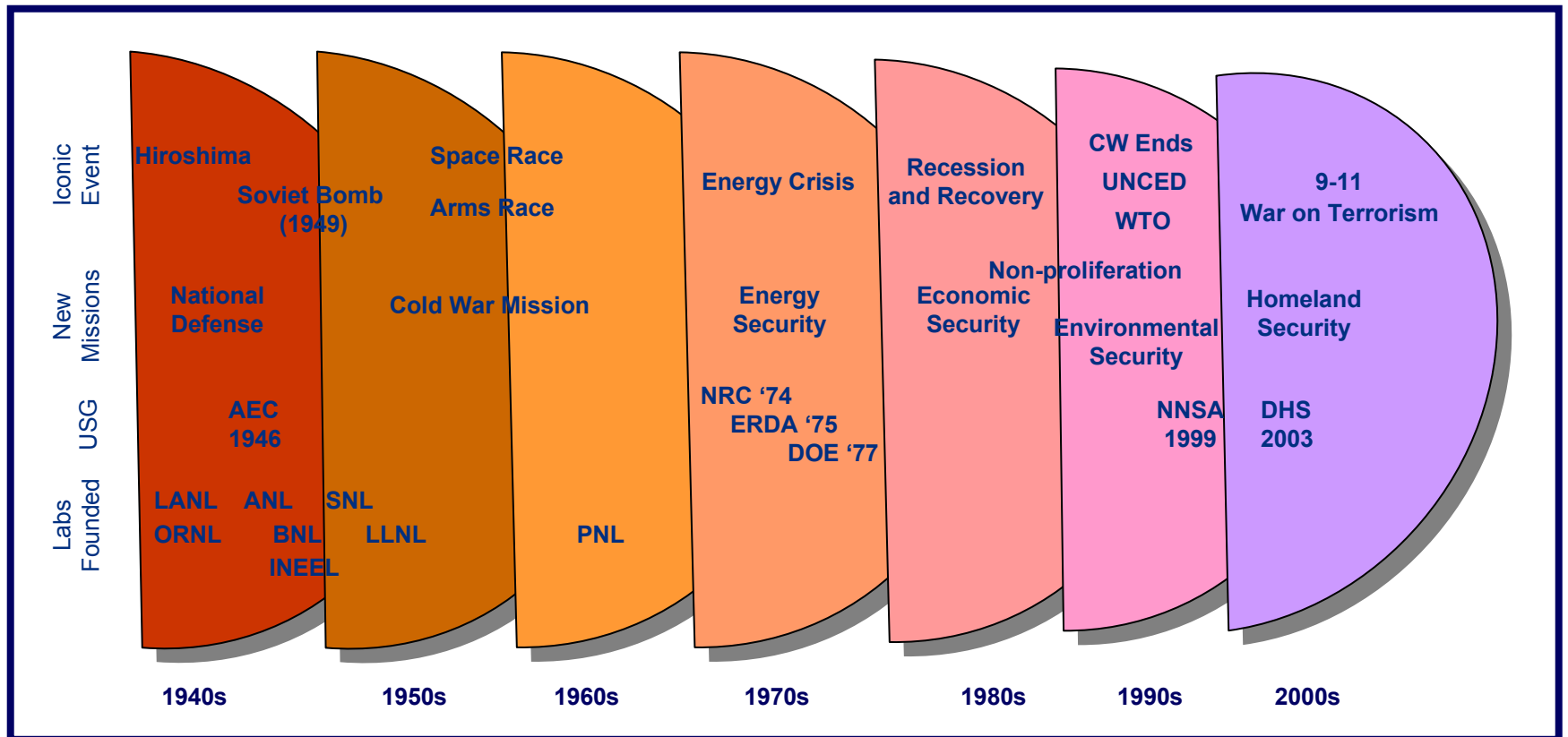
# Plum Island Animal Disease Center

- High level biocontainment facility for the study of agricultural threat agents
- Testing and Evaluation (T&E) facility for assessment of countermeasures
- Foreign Animal Disease (FAD) diagnosis and confirmation; training for FAD diagnosticians
- International surveillance of emerging and exotic diseases
- Characterization of agricultural biothreat agents for detection, countermeasure development and attribution
- Ensuring availability of Foot and Mouth (FMD) vaccine stockpile for North America



# National Laboratories

A Historic Alliance ... Positioned for the Future



# Academic community is an important partner

- Applying cutting-edge science and technology to real-world problems through HSARPA projects
- Adding important cross-cutting research component to S&T through university-based Homeland-Security Centers
- Encouraging the development of the first and next generation of researchers in areas relevant to homeland security through the DHS Scholars and Fellows program

# University-Based Homeland Security Centers

- Mission-focused and targeted to research areas that leverage multidisciplinary capabilities
- Will fill scientific and knowledge gaps
- Complements project-focused research funded by the Homeland Security Advanced Research Projects Agency
- Partnerships are strongly encouraged; expected to coordinate efforts locally and regionally
- First center announced November 25; solicitation for broad agency announcement in area of agricultural biosecurity announced December 12.



## Homeland Security Center for Risk and Economic Analysis of Terrorism Events

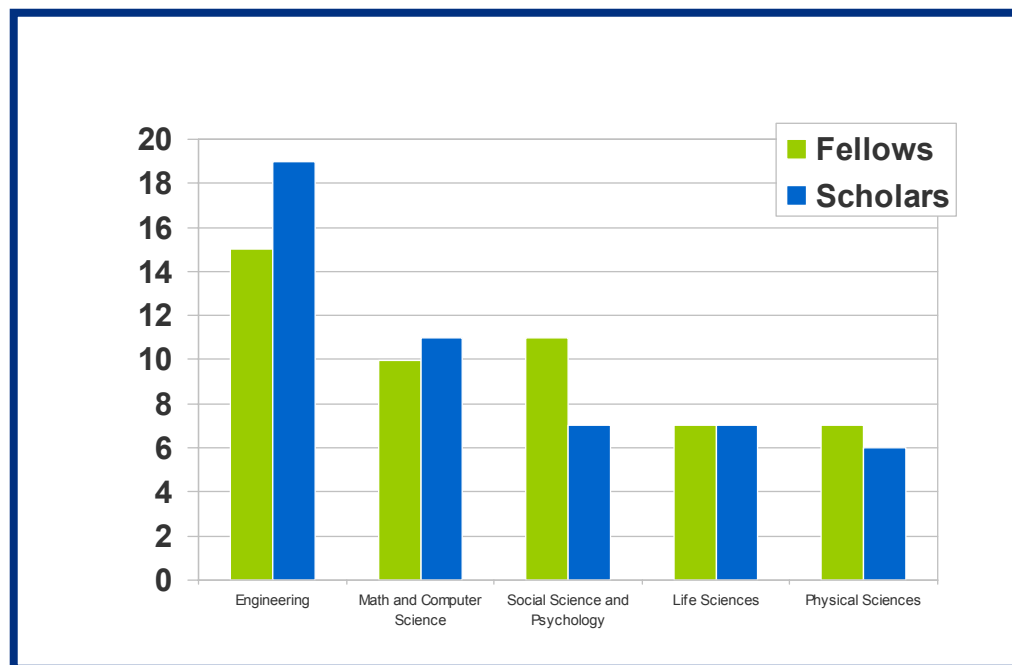
- Will develop modeling capabilities that cut across general threats and targets, represented by application areas such as electrical power, transportation and telecommunications
- Will develop tools for planning responses to emergencies, to save lives and reduce economic impacts
- Headed by faculty with USC's School of Engineering and School of Policy, Planning and Development
- Team includes experts from across the country, and partnerships with universities including New York University, University of Wisconsin at Madison, and University of California at Berkeley

# DHS Scholars and Fellows

- Supports development and mentoring of the next generation of scientists
- Provides scholarships for undergraduate students and fellowships for graduate students pursuing degrees in areas beneficial to the homeland security mission
- Students receive professional mentoring and are provided an internship opportunity
- Students are encouraged to consider careers in public service that will provide an enduring capability for homeland security
- Awards for 03-04 academic year announced earlier this year; Washington orientation held last month
- Call for applications for 04-05 academic year will be announced soon

# Homeland Security Scholars and Fellows

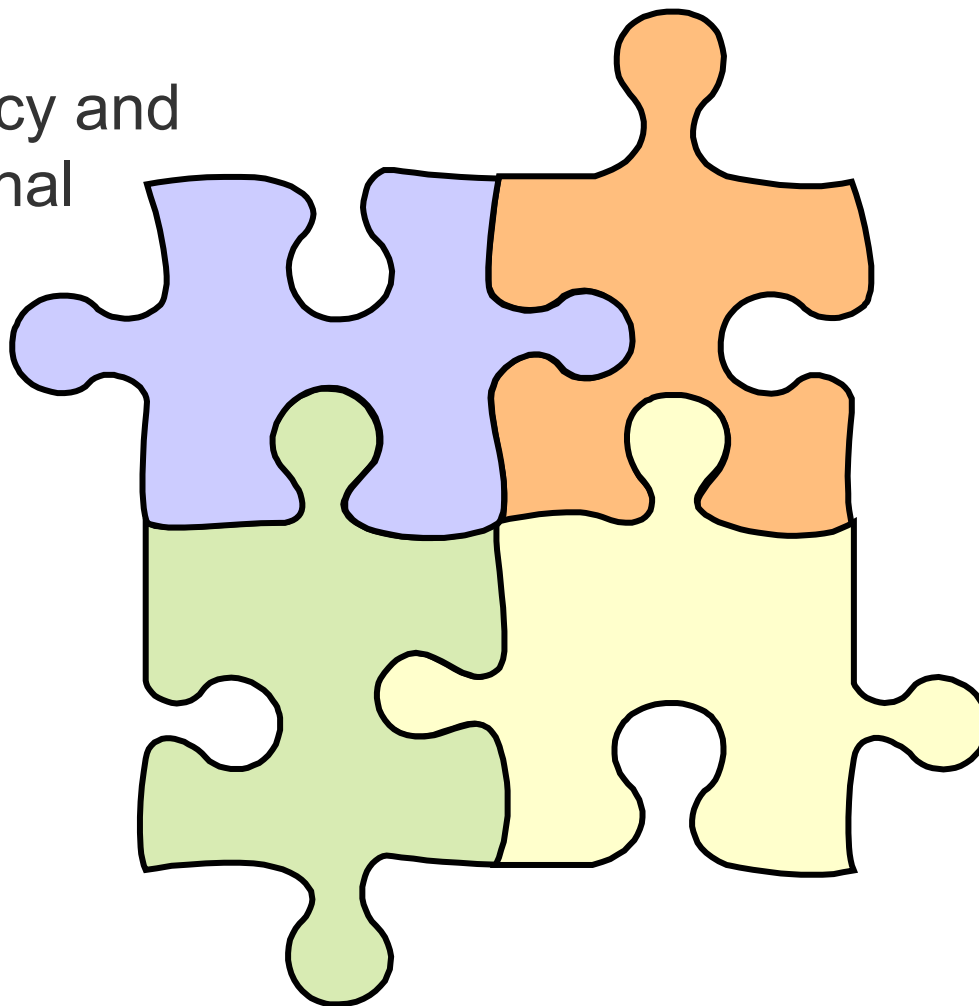
- 2003 Class
  - 50 Scholars and 50 Fellows in engineering, math/computer science, social sciences and psychology, life sciences, and physical sciences
- 2004 Class
  - Initiate competition for 2004 Class
  - Establish Internships
  - Lay foundation for alumni network



# Partnerships are Key

Interagency and  
International

Private Sector



State and  
Local

Universities and  
Research  
Institutes