



Department of Defense Science & Technology Priorities

18 March 2011

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Senior Advisor, ASD / R&E

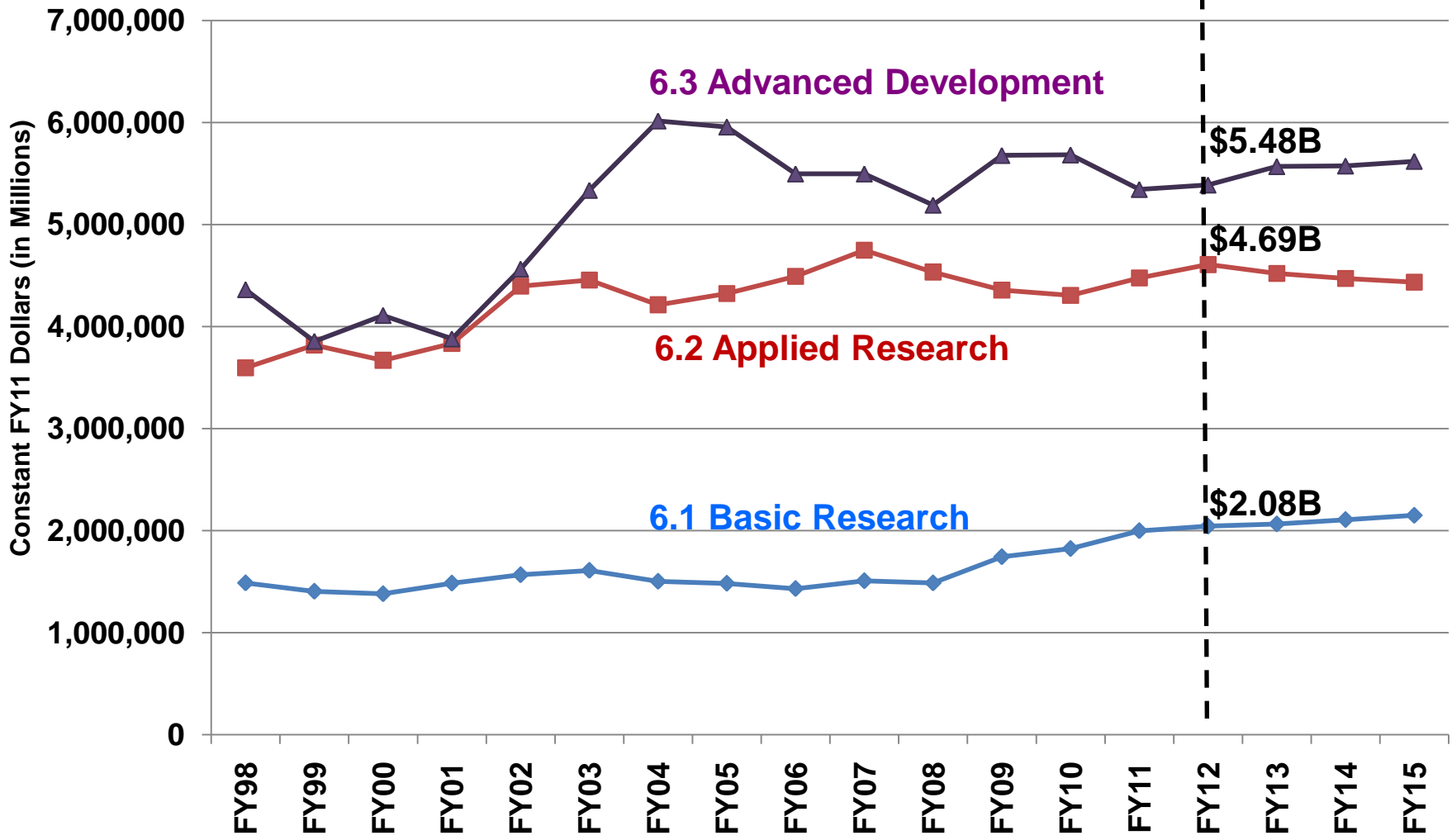


DoD Science & Technology Budget Activity



- President's Budget Requests - in Constant FY11 Dollars -

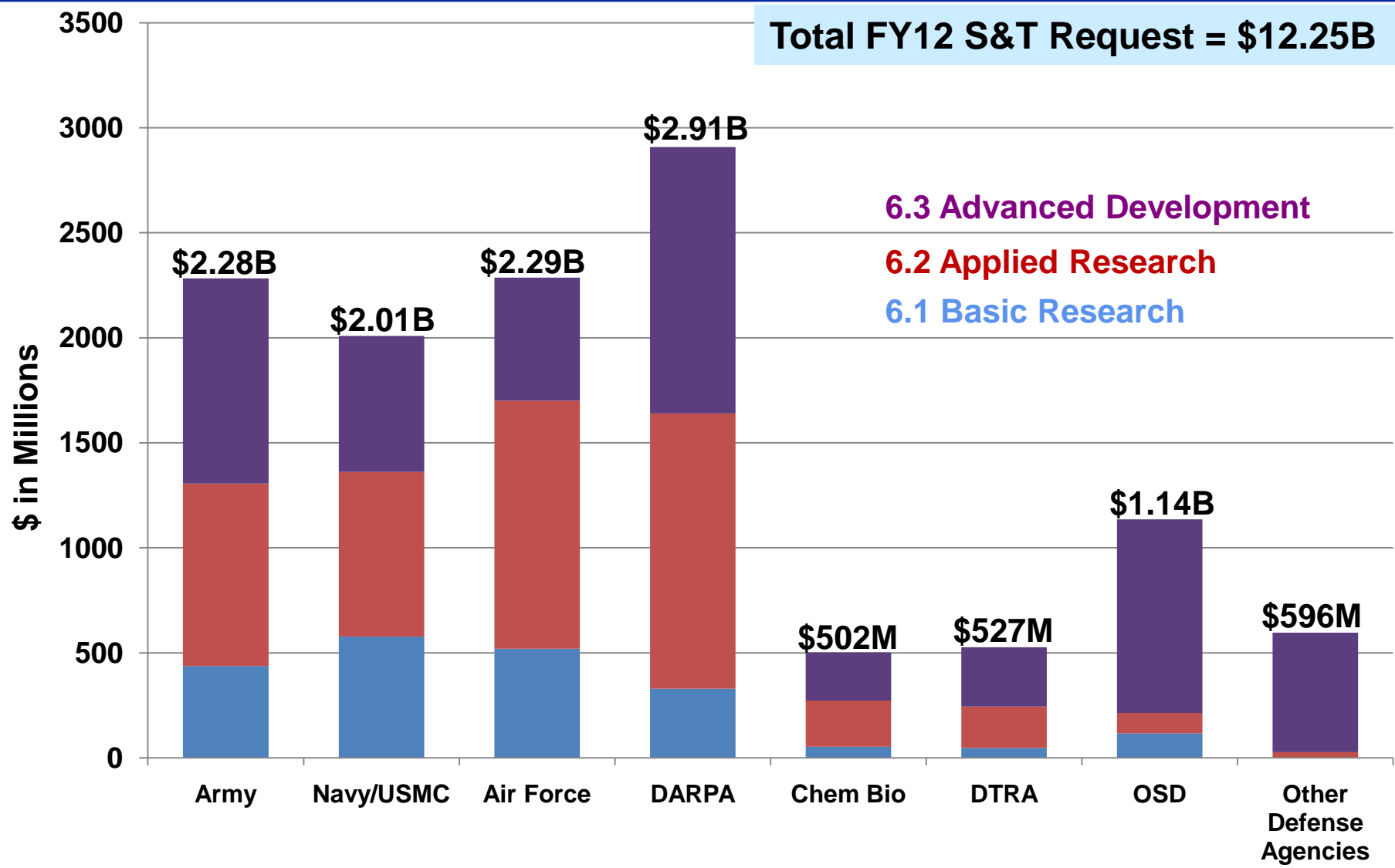
Total FY12 S&T request = \$12.25B





FY12 DoD S&T President's Budget Request

Total FY12 S&T Request = \$12.25B





Globalization of R&D

December 2010

2011 GLOBAL R&D FUNDING FORECAST

Advantage
Business Media

- › Globalization Narrows R&D Gap Between Countries
- › Still In the Lead: U.S. Funds One-Third of Global R&D
- › Fast Growth: China Overtakes Japan at #2
- › Key Industry R&D Sectors Growing



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The Business of Innovation
www.battelle.org

R&D
www.rdmag.com

World R&D Spending: \$1.2T

U.S.: \$405B

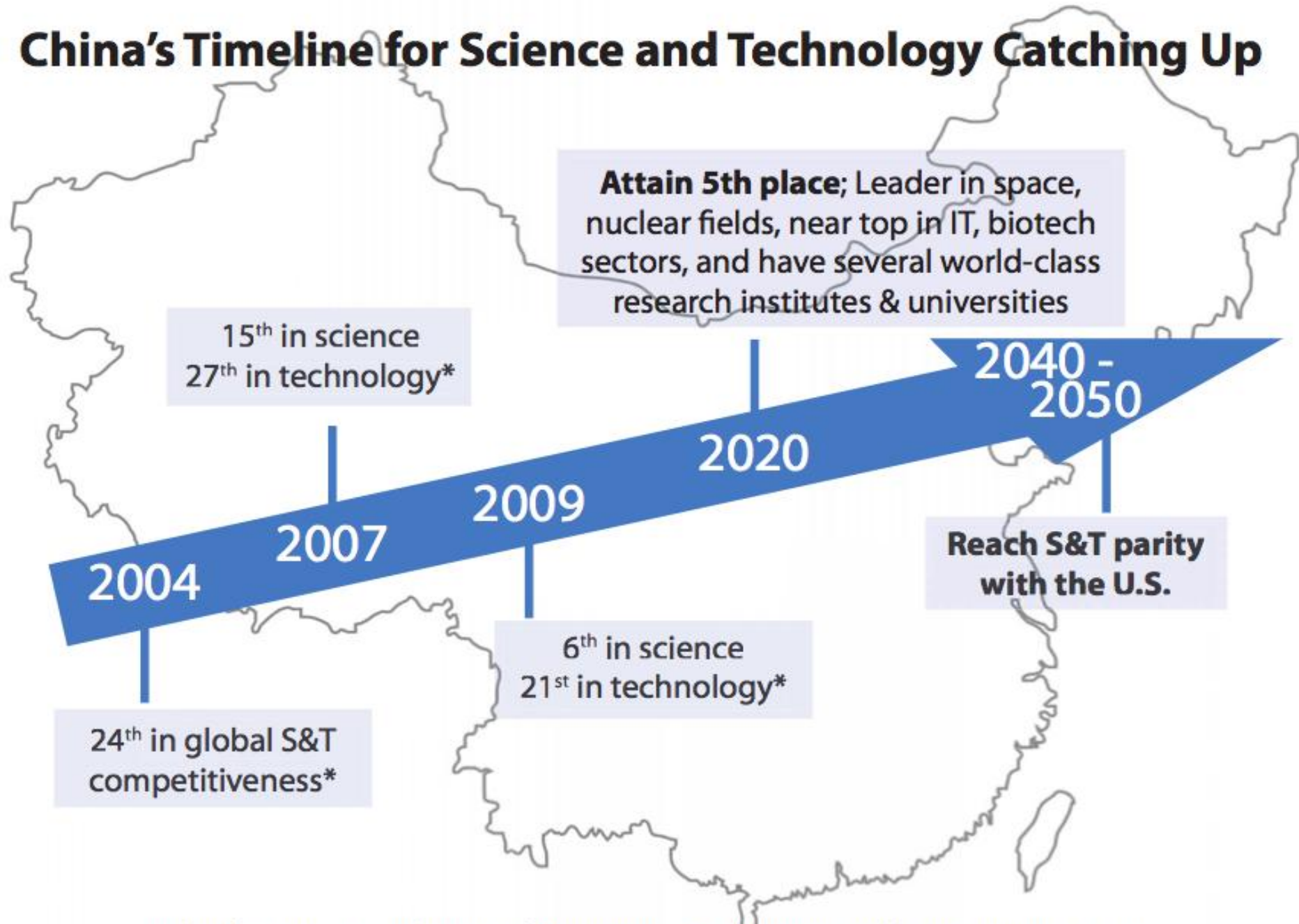
Asia: \$421B

- Japan \$144B
- China \$154B
- India \$36B

Europe: \$276B

Rest of the World: \$36B

China's Timeline for Science and Technology Catching Up



Ranking from International Institute of Management Development's World Competitiveness Report
Source for 2020 box: Statement by COSTIND senior official Wu Weiren, July 2007



S&T Executive Committee (EXCOM)



Lt Gen Larry Spencer
J8



Ms. Kathleen Hicks
DUSD(SPF)



Mr. Zach Lemnios
ASD(R&E)



Mr. Andrew Weber
ASD(NCB)



Mr. Brett Lambert
DASD(MIBP)



Dr. Regina Dugan
DARPA



Dr. Steven Walker
DASAF(STE)



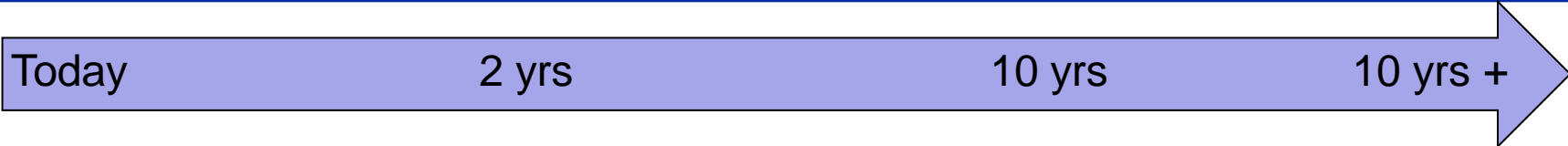
Dr. Marilyn Freeman
SAAL-ZT



RADM Nevin Carr
CNR



S&T Enterprise



Joint Urgent Operational Needs

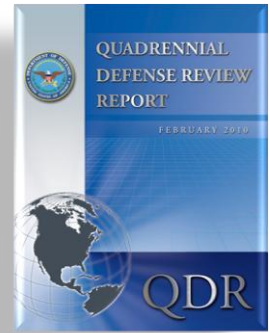
Emerging Capabilities

Emerging Technology / Science

Rapid Fielding

Emerging Capabilities

Basic Research Areas



**QDR
S&T Priorities**



Capability Priorities for FY12-16



Complex Threats

**Electronic Warfare /
Electronic Protection**

**Cyber Science and
Technology**

**Counter Weapons of
Mass Destruction**

Force Multipliers

Data-to-Decisions

**Engineered Resilient
Systems**

Autonomy

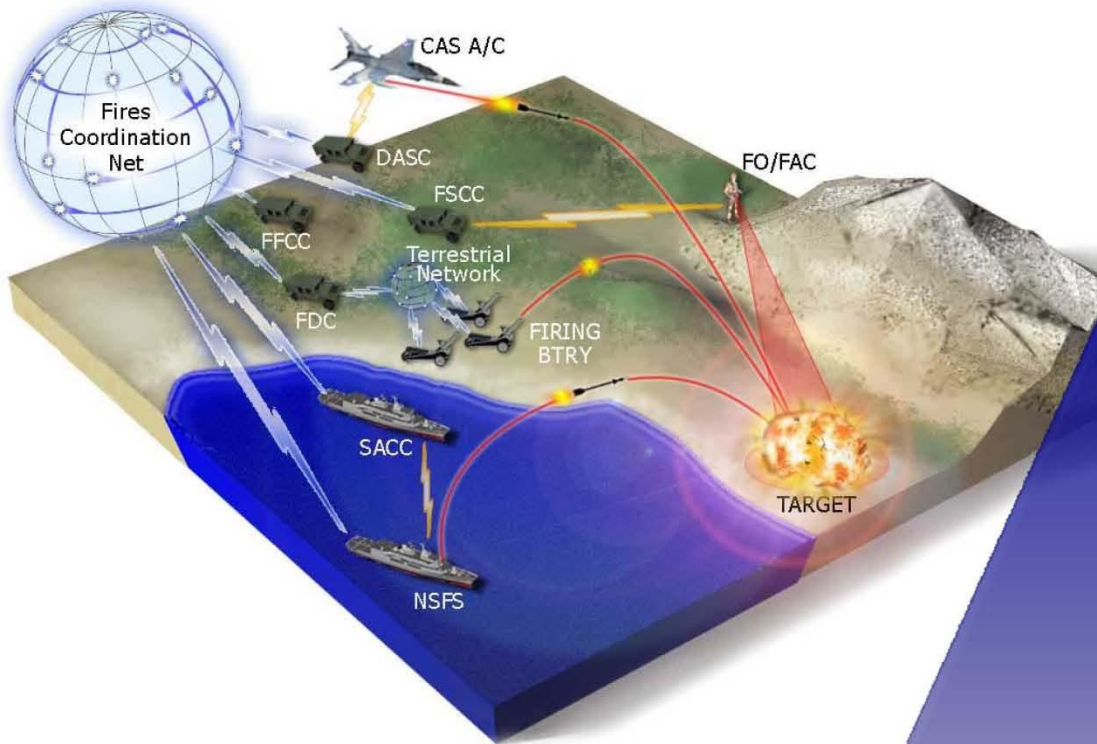
Human Systems



Architecture – Technology Trade Space



Priority Steering Councils



Architectures

Capabilities

Technologies

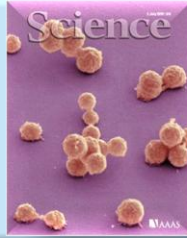
**Architectures Drive Technologies
Technologies Inform Architectures**



High Interest Basic Science Areas



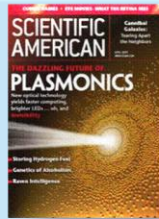
Synthetic Biology



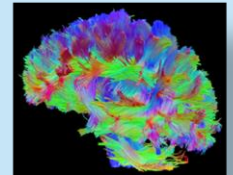
Modeling of Human Behavior



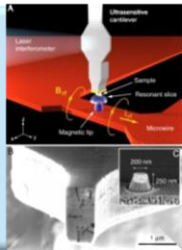
Engineered Materials



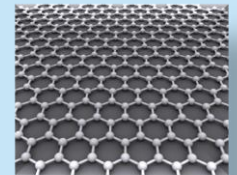
Cognitive Neuroscience



Quantum Systems

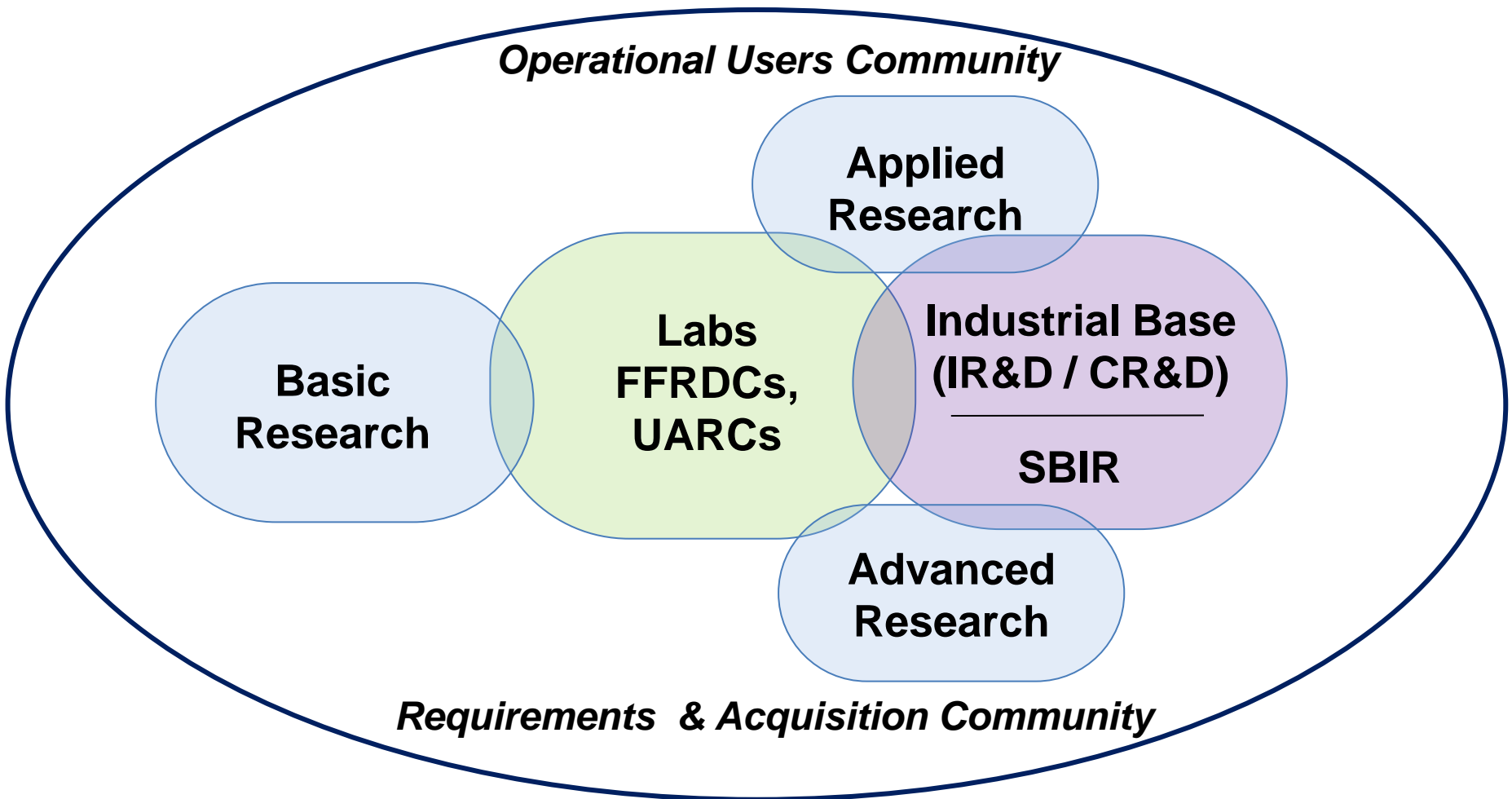


Nano Science and Engineering





Innovation Community



Goal: Align Incentives and Processes to Create A Tightly-Coupled Community



Backups



USD AT&L: New Era

- **Feb. 9, 2011 “The Defense Industry Enters a New Era”**
 - **A strong, vibrant, and financially successful defense industry,**
 - **Structural change largely through market forces but adjusted where the interests of the taxpayer and warfighter require,**
 - **Preserving and enhancing competition,**
 - **Equal attention to the health of smaller and mid-sized companies, spinouts, new entrants, and service providers,**
 - **Encouraging open entry into the defense marketplace, and**
 - **Full advantage taken of the opportunities of globalization**



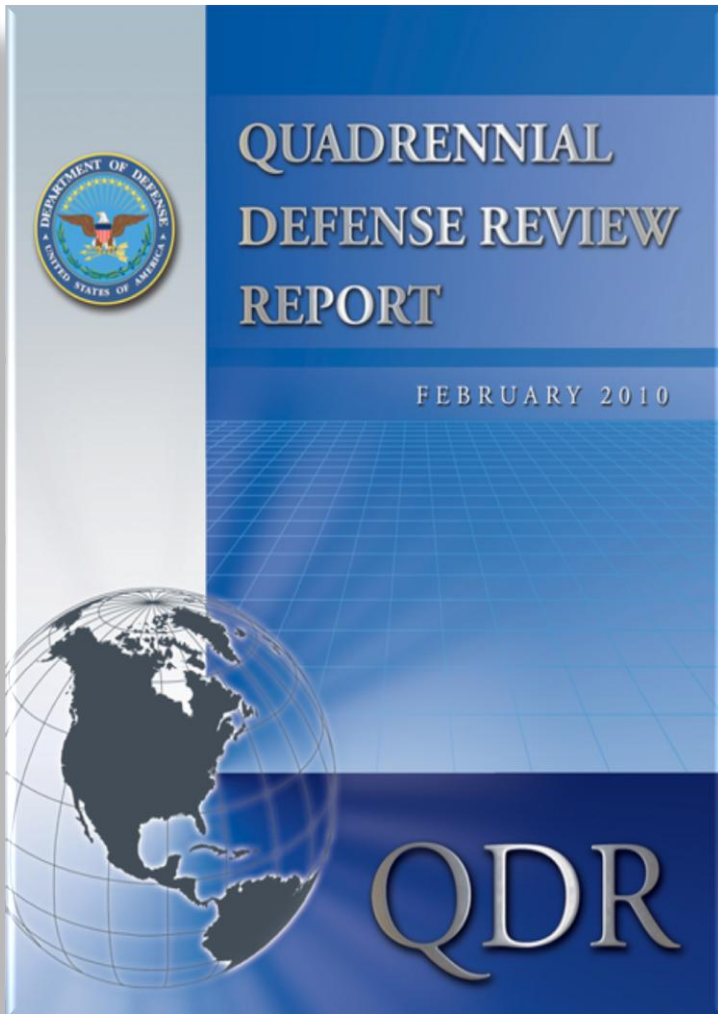
IR&D Goals



- **Reinvigorate industry's independent research and development and protect the defense technology base.**
 - **Better define the Department's needs to our industry partners**
 - **Provide better feedback to industry researchers**
 - **Remove impediments to innovation**
 - **Maintain industry's independence to pursue technologies**



Quadrennial Defense Review Missions Require New Capabilities



1. **Defend the United States and Support Civil Authorities at Home**
2. **Succeed in Counterinsurgency, Stability, and Counterterrorist Operations**
3. **Build the Security Capacity of Partner States**
4. **Deter and Defeat Aggression in Anti-Access Environments**
5. **Prevent Proliferation and Counter Weapons of Mass Destruction**
6. **Operate Effectively in Cyberspace.**

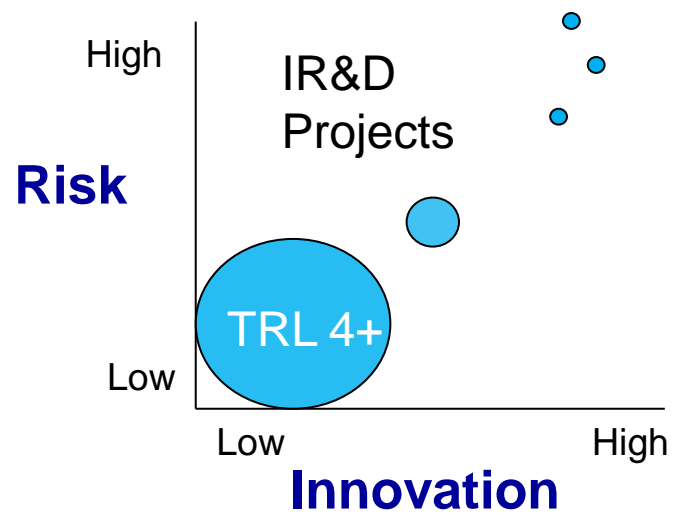
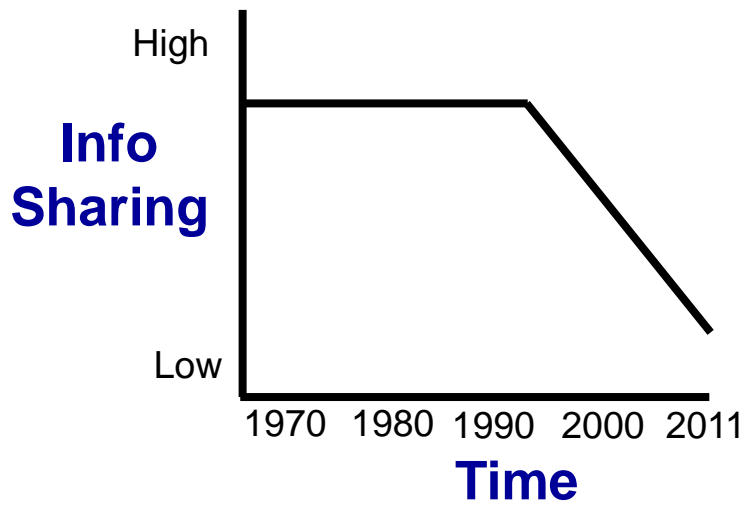


Shaping Industry Independent Research and Development (IR&D)



Industry and Government info sharing about IR&D has been on a decline

Resulting in relatively low risk IR&D investments



New Initiatives to Leverage IR&D to Reinvigorate Innovation

Pilot Project

CRAD / IRAD Integration for Advanced Multi-Role Technology

BAA Requests IR&D Info to Better Align Government and Industry Investments