



Naval Science and Technology

Blue Coast Small Business Conference

RADM Matthew Klunder
Chief of Naval Research
June 2012



Revolutionary Research . . . Relevant Results

O F F I C E O F N A V A L R E S E A R C H

89 Years of Naval Research

stones
ALL DOMAINS



NTS-2 SATELLITE IN NAVSTAR GPS



TIMATION AND NAVSTAR GPS



CORONAL MASS EJECTION

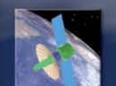


VIRTUAL AT-SEA TRAINING (LIVE-FIRE COMBAT SKILLS)

NOBEL PRIZE TO ONR RESEARCHERS FOR GRAPHENE



FREE ELECTRON LASER



TACTICAL MICROSATellite



DISPLACEMENT UNMANNED UNDERWATER VEHICLE



INTEGRATED TOPSIDE (INTOP)



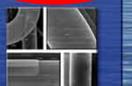
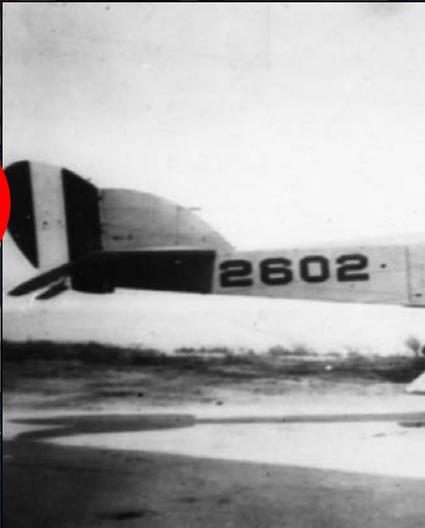
CBR SENSORS FOR FLEET SECURITY



WORLD-RECORD SETTING 33 MJ EMRG SHOT



FIRST UNMANNED AERIAL VEHICLE



GAMMA-RAY RADIOGRAPHY



NRL COMMISSIONED

1920s

1930s

1940s

1950s

1960s

1970s

1980s

HULL ANTI-FOULING COATINGS

1990s

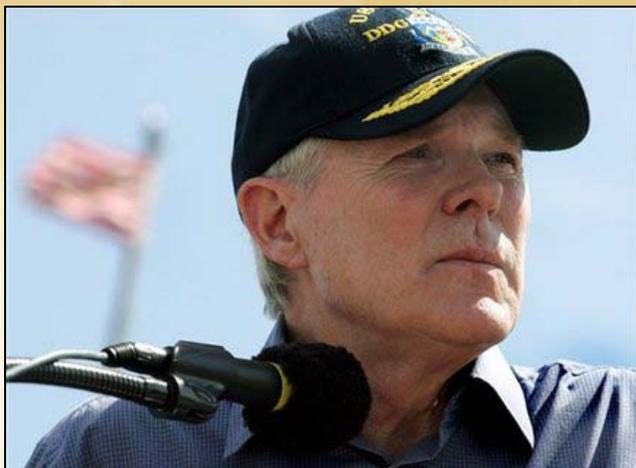
REMOTE ENVIRONMENT MONITORING UNITS

2000s

ANTI-TORPEDO TORPEDO

2010 & BEYOND

From the Top



Ray Mabus, Secretary of the Navy

“Small businesses in emerging industries ... have cutting-edge ideas that are strengthening our country and changing the world.”

“We will innovate to use new technologies and operating concepts to sharpen our warfighting advantage...”



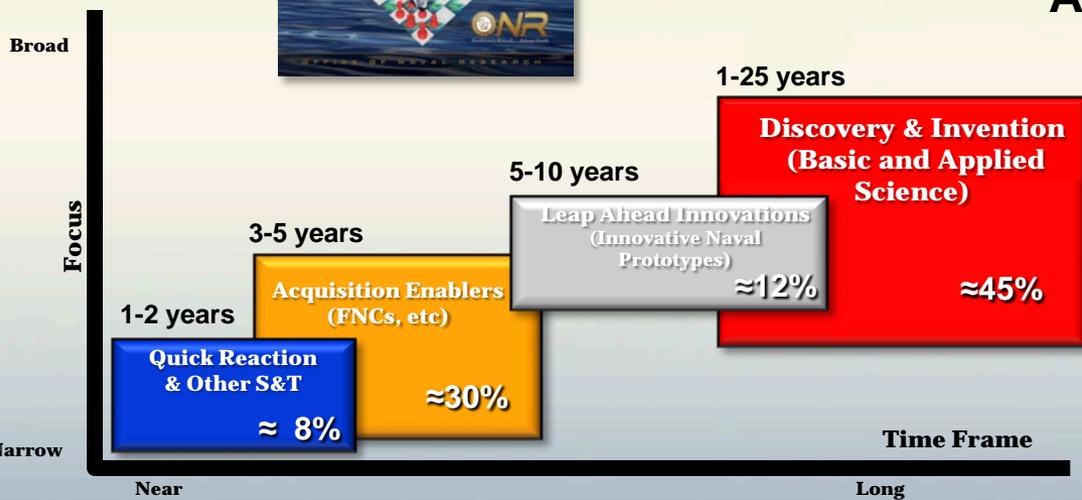
ADM Greenert, Chief of Naval Operations

Technology in Naval History

- The Department of the Navy has historically relied on technology for game-changing advantages:
 - Ship Design in War of 1812
 - Radar in WWII
 - Aircraft Carriers
 - Nuclear Submarines & Deterrence
 - Smart Weapons in Modern Combat
 - Autonomy & Information



S&T Strategic Plan



A2/
AD

S&T Plan Focus Areas:

- Autonomy & Unmanned Systems
 - Assure Access to Maritime Battlespace
 - Information Dominance
 - Expeditionary & Irregular Warfare
 - Power Projection & Integrated Defense
 - Platform Design & Survivability
 - Power & Energy
 - Warfighter Performance
 - Total Ownership Cost
-
- STEM



Tech Solutions



FNCs



INPs



D&I

DON Small Business

- Awarded \$14.2 billion to small business as prime contractors, supporting over 200,000 jobs
- Increased awards to small business by over \$3.5 billion in the past six years, leads DoD
- Navy / U.S. Small Business Administration are promoting opportunities under SBIR.
 - “Green” topics increased from 9% in FY08 to 25% in FY11



Working together to provide affordable products and services to the warfighter

DON Small Business Innovation Research



Program Inception

1982

\$125M
126 Topics
1,311 Proposals

2000

\$196M
221 Topics
3,088 Proposals

2003

\$310M
215 Topics
2,620 Proposals

\$384M
282 Topics
5,286 Proposals

Reauthorization Increase from 2.5% to 3.2% SBIR and .3% to .45% for STTR from 2011 to 2012

2010

2011

2007



How We Execute



ONR Global

FFRDGs

UARCs/Academia

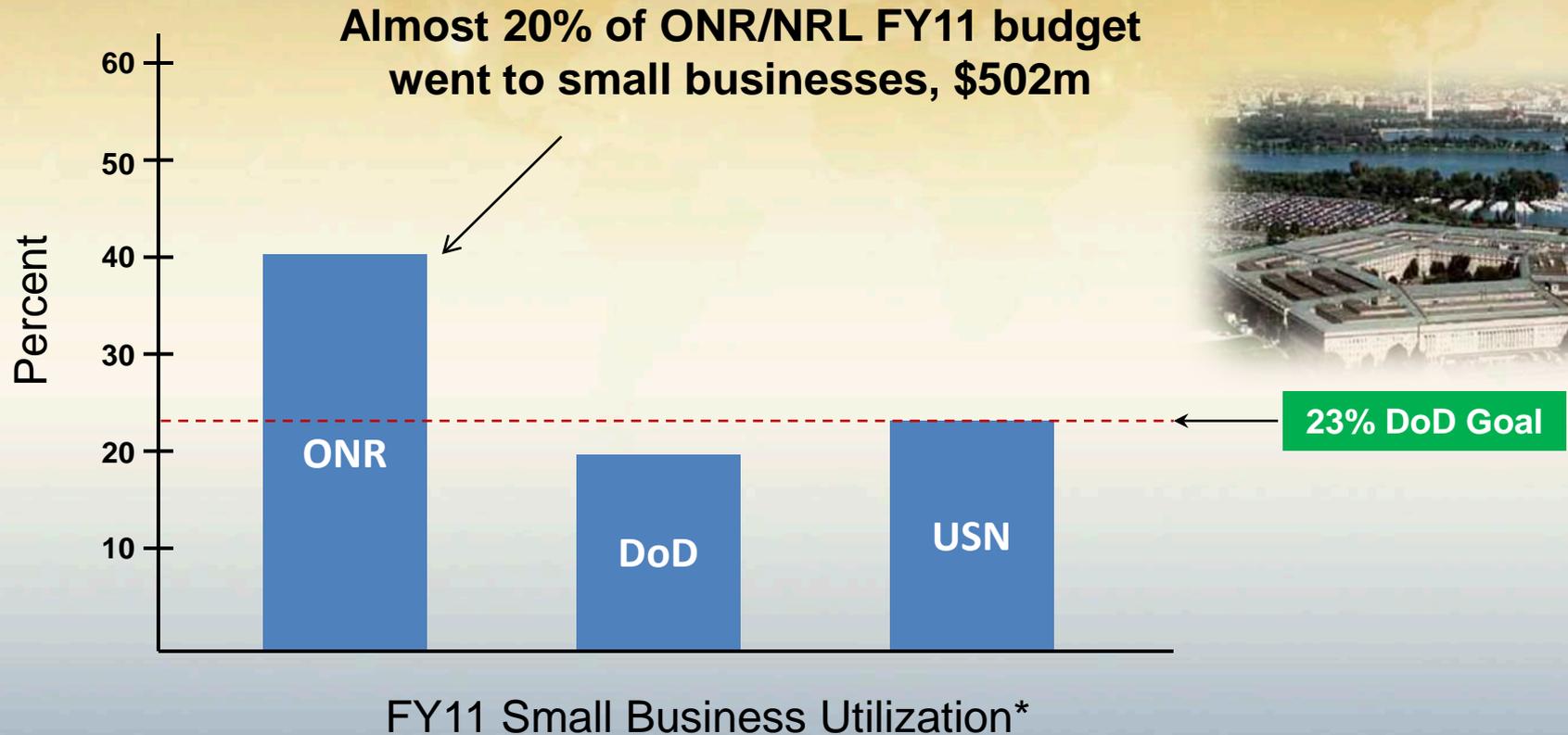
Industry

NRL/Warfare Centers

- 30 Countries
- All 50 States
- 983 Companies
 - ✓ 744 small businesses*
- 412 Universities & Nonprofit Entities
 - 3,340 Principal Investigators
 - 3,000 Grad Students

*Over ~\$75M in SBIR/STTR per year

ONR Small Business Utilization

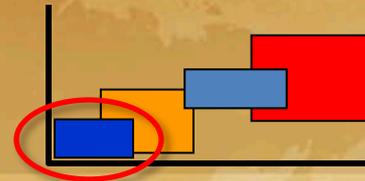


* As Percent of Prime Contract Awards

Navy S&T Counts on Small Business

Accessing ONR

- TechSolutions: COTS solutions (1-2 years)
- Swampworks: Explores high-risk ideas (3 years)
- Future Naval Capabilities: component technology (3-5 years)
- SBIR/STTR: check topics at www.navysbir.com
- Innovative Naval Prototypes: many SBIR/STTRs
- Rapid Innovation Fund BAA (for businesses < 500)
- MANTECH: manufacturing technologies, see www.navymantech.com



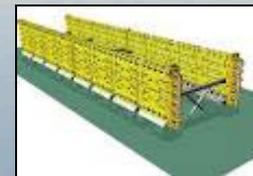
TechSolutions: www.onr.navy.mil/techsolutions

- Solid State Lighting, *Energy Focus*
- Power Management Kit, *Protonex*
- SWOS Trainer, *Aptima*

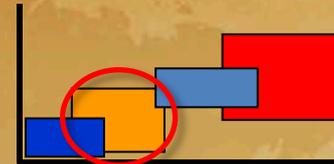


SwampWorks:

- Algorithms for USVs, *Spatial Integrated Systems*
- Water Barrier for port security, *HALO Defense*
- USV for EOD operations, *Hydronalix*



FNC Examples



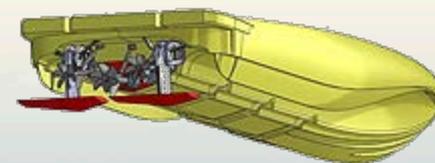
- Advanced Shipboard Desalination, *MECO*



- Neurotrauma Infrascanner, *Infrascan*



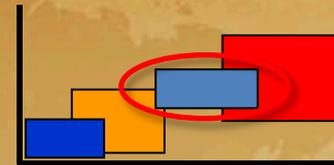
- Ultra Deep-V Hull Boat Design, *Navatek*



- Archerfish, *Applied Physical Sciences*



INP Example SBIR in Railgun



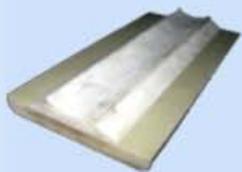
LAUNCHER



Harsh Environment Sensors

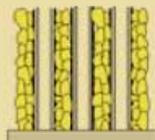


Conductor Rails



High Temp Polymer Composites

PULSED POWER



Safe High-Voltage Cathode Materials



Flexible Cooled Power Conductors

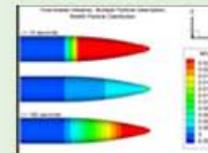


Intermittent Pulsed Power Load Support

PROJECTILE



Materials for Hypersonic Systems



Mission Planning for Hypersonic Munitions



Survivable Electronics

SBIR-Supported Research

- Over \$20m since FY04
- Multi-discipline
- Multi-industry



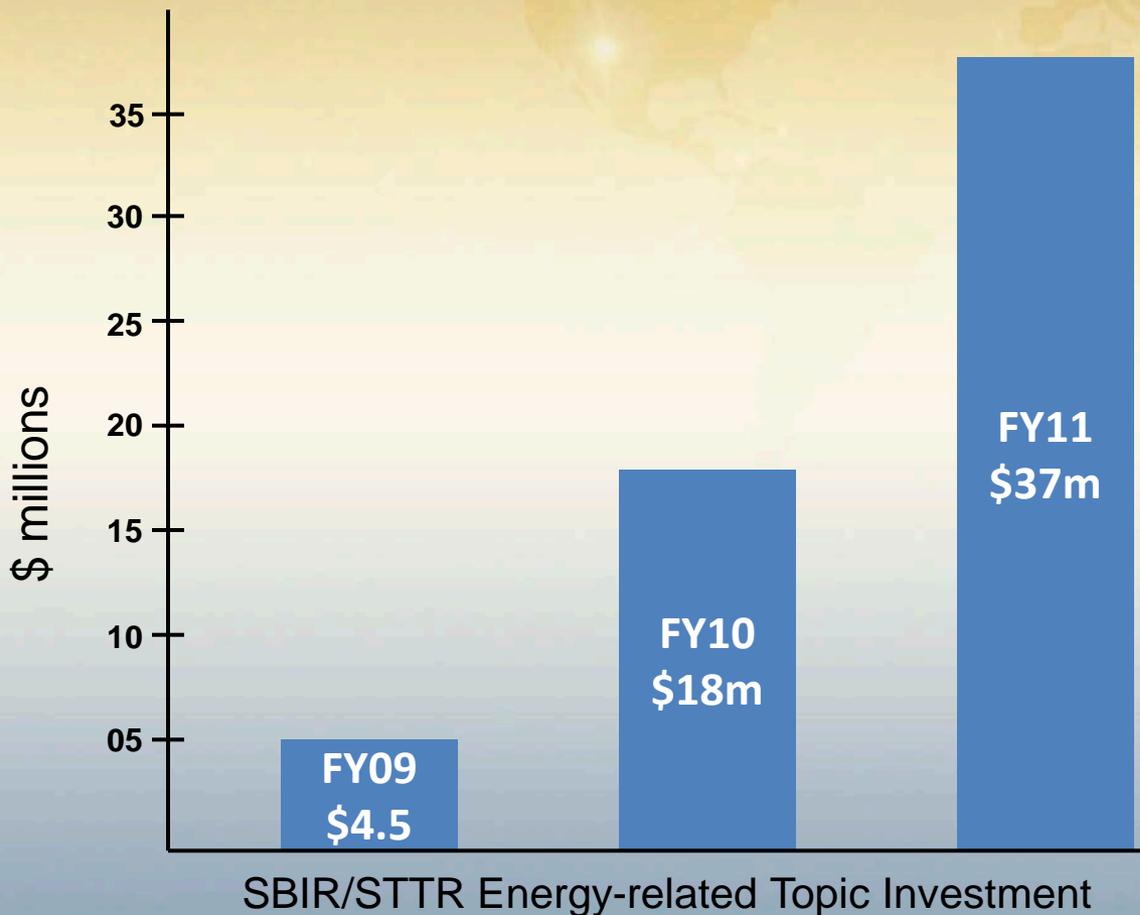
83 Contributing Projects

- 53 Phase I
- 27 Phase II
- 3 Phase III

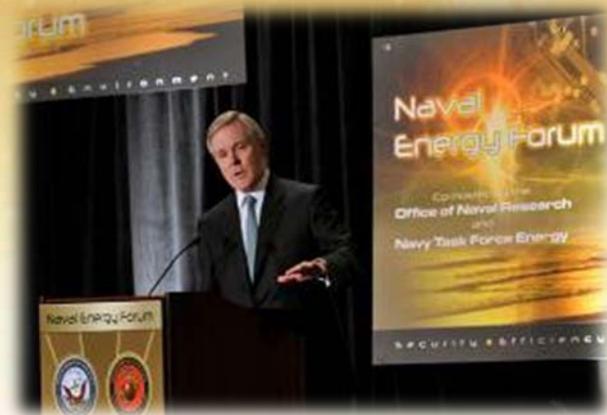
46 SBIR/STTR Tech Providers

- Traditional and non-traditional

Green Technology SBIR/STTR Growth



**MOU between DON/SBA signed Oct 2010*



ONR Naval Energy Forum
October 2009

- **Supporting SECNAV Energy Goals**
- **Promotes energy efficiency and renewable energy use**
- **Future growth opportunity!**

S&T Opportunities

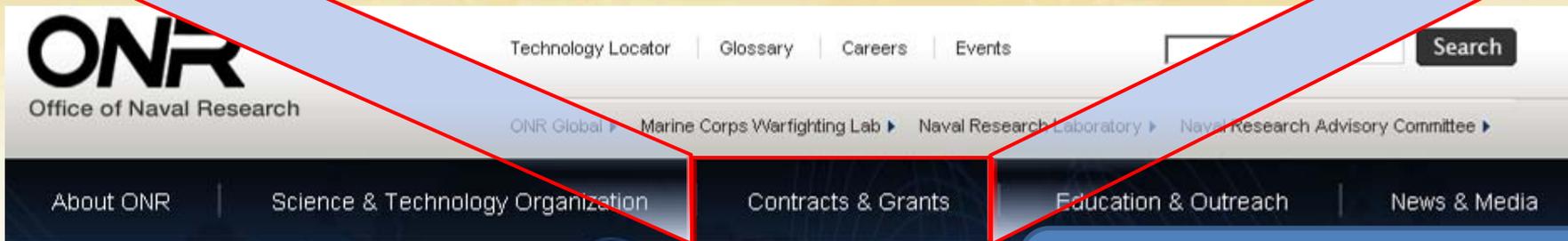
- **Autonomy**
- **Power & Energy**
- **Information Dominance**
- **Directed Energy and Hypervelocity**
- **Warfighter Performance**
- **Total Ownership Cost**

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- **STEM**

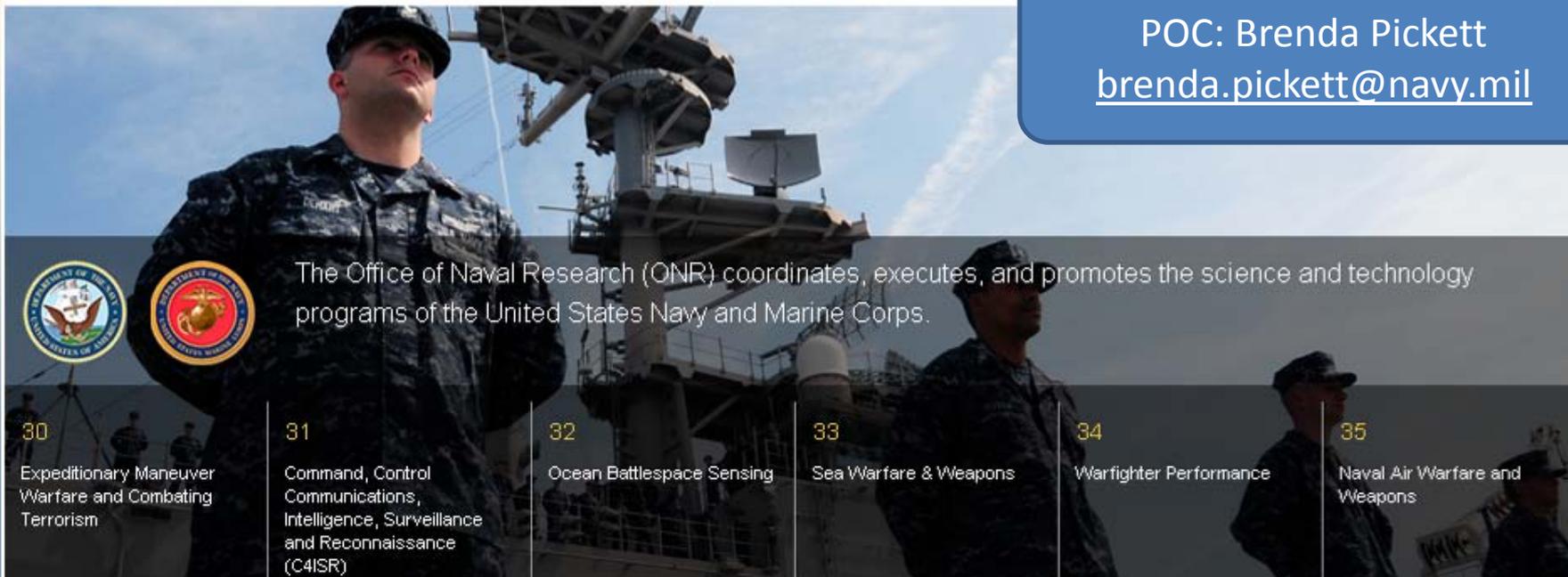


Where to Find Us

<http://www.onr.navy.mil/en/Contracts-Grants/Funding-Opportunities>



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The Office of Naval Research (ONR) coordinates, executes, and promotes the science and technology programs of the United States Navy and Marine Corps.

 <p>30 Expeditionary Maneuver Warfare and Combating Terrorism</p>	 <p>31 Command, Control Communications, Intelligence, Surveillance and Reconnaissance (C4ISR)</p>	<p>32 Ocean Battlespace Sensing</p>	<p>33 Sea Warfare & Weapons</p>	<p>34 Warfighter Performance</p>	<p>35 Naval Air Warfare and Weapons</p>
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2012 ONR Naval S&T Partnership Conference

The 2012 S&T Partnership Conference will provide various avenues to access ONR leaders, program managers, and business operations staff. Don't miss this great opportunity!

Save the Date:

October 22-24, 2012 · Hyatt Regency Crystal City · Arlington, Va.



www.onr.navy.mil/events