



# Naval Science and Technology

*Gold Coast Small Business Conference*

08 August 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

# Report Documentation Page

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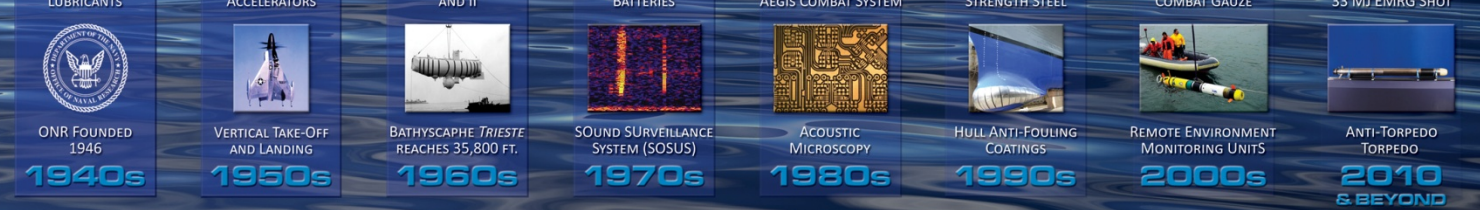
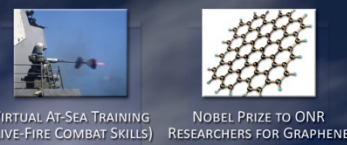
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## Naval S&T Milestones

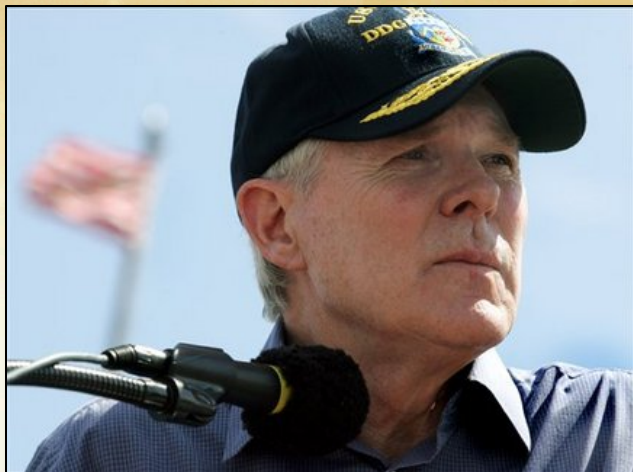
ACCOMPLISHMENTS ACROSS ALL DOMAINS



MULTISTATIC RADAR TESTED AT NRL	PLAN-POSITION INDICATOR	FIRST FAR-ULTRAVIOLET SPECTRUM OF THE SUN	VANGUARD I LAUNCHED	AQUEOUS FILM FORMING FOAMS (AFF)	EXCIMER LASER TECHNOLOGY	GLOBAL ATMOSPHERIC PREDICTION SYSTEM	HIGH-STRENGTH LOW-ALLOY STEELS	DRAGON EYE UAV	INTEGRATED TOPSIDE (INTOP)
FIRST UNMANNED AERIAL VEHICLE	URANIUM 235 PRODUCTION	PRINCIPLES OF MODERN FRACTURE MECHANICS	PROJECT WHIRLWIND DIGITAL COMPUTER	FIRST U.S. INTELLIGENCE SATELLITE	FAR ULTRAVIOLET LUNAR CAMERA	SIDEWINDER AIR-TO-AIR MISSILE	NEURAL NETWORKING COMPUTER CHIPS	FIRST OPERATIONAL GLOBAL OCEAN MODEL	CBR SENSORS FOR FLEET SECURITY
GAMMA-RAY RADIOGRAPHY	FIRST CONCEPT FOR A NUCLEAR SUBMARINE	SYNTHETIC LUBRICANTS	PARTICLE ACCELERATORS	SEALAB I AND II	LITHIUM BATTERIES	CONTRIBUTED TO AEGIS COMBAT SYSTEM	ULTRA-HIGH STRENGTH STEEL	QUIKCLOT® COMBAT GAUZE	WORLD-RECORD SETTING 33 MJ EMRG SHOT
NRL COMMISSIONED	FIRST U.S. RADAR PATENTS	ONR FOUNDED 1946	VERTICAL TAKE-OFF AND LANDING	BATHYSCAPHE TRIESTE REACHES 35,800 FT.	SOUND SURVEILLANCE SYSTEM (SOSUS)	ACOUSTIC MICROSCOPY	HULL ANTI-FOULING COATINGS	REMOTE ENVIRONMENT MONITORING UNITS	ANTI-TORPEDO TORPEDO
1920s	1930s	1940s	1950s	1960s	1970s	1980s	1990s	2000s	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...”***



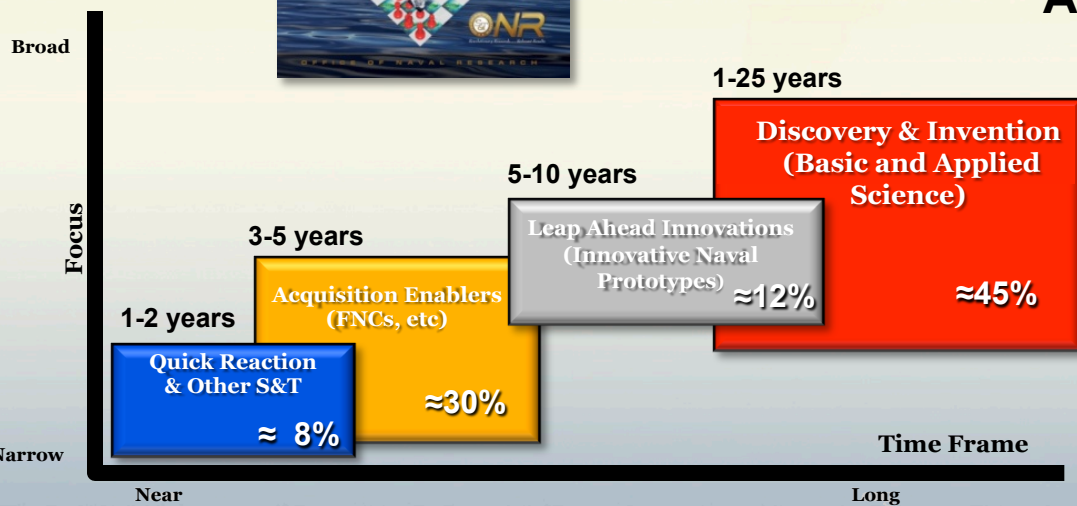
ADM Greenert, Chief of Naval Operations

# 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



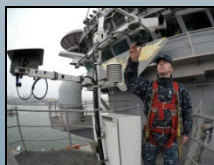
# S&T Strategic Plan



A2/  
AD

## S&T Plan Focus Areas:

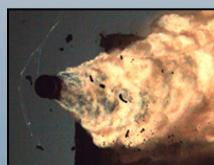
- Autonomy & Unmanned Systems
  - Assure Access to Maritime Battlespace
  - Information Dominance
  - Expeditionary & Irregular Warfare
  - Power Projection & Integrated Defense
  - Platform Design & Survivability
  - Power & Energy
  - Warfighter Performance
  - Total Ownership Cost
- 
- STEM



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

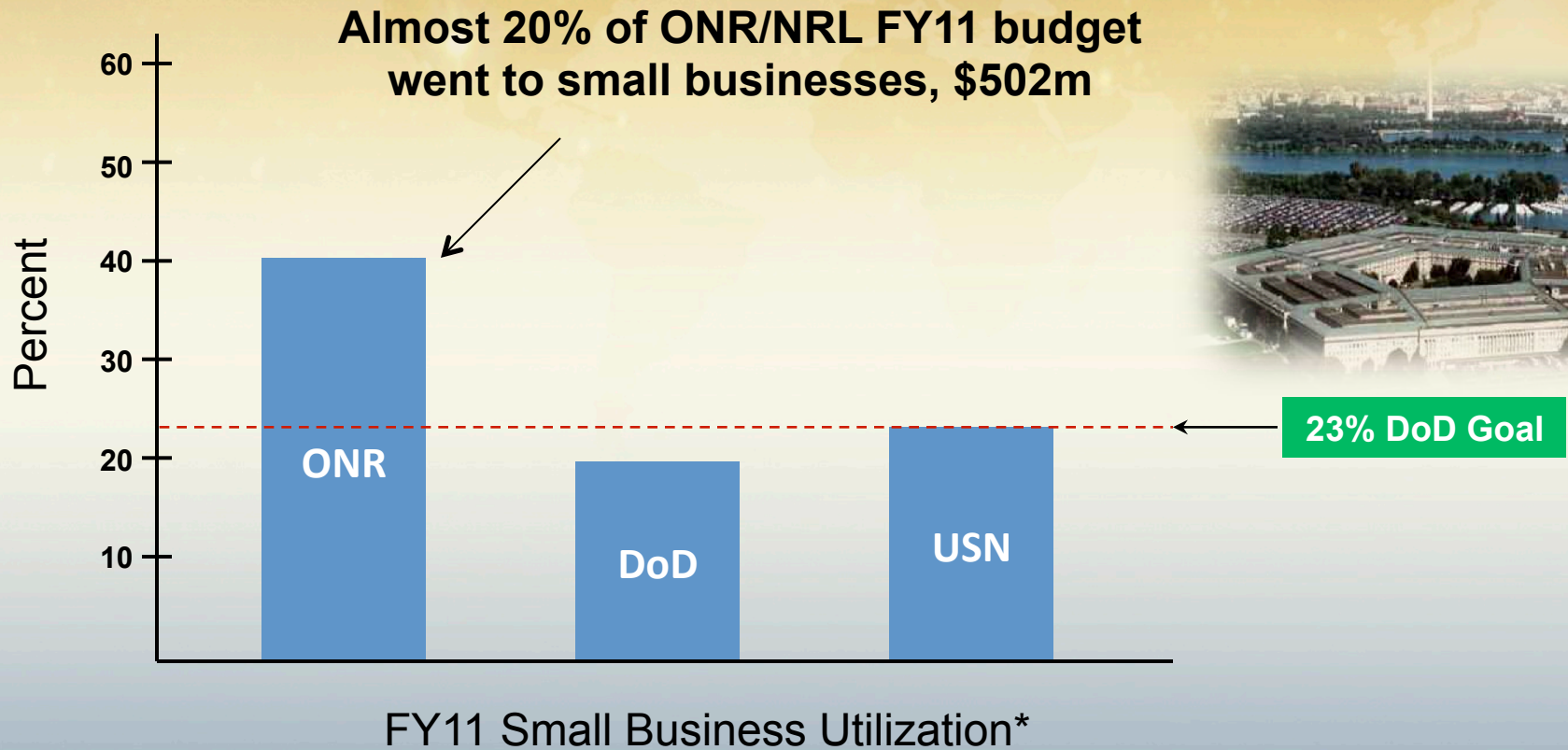
Industry

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



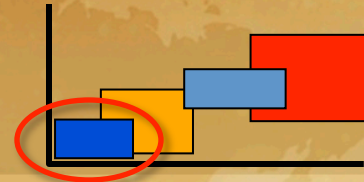
\* As Percent of Prime Contract Awards

**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](http://www.navysbir.com)
- Innovative Naval Prototypes: many SBIR/STTRs
- Rapid Innovation Fund BAA (for businesses < 500)
- MANTECH: manufacturing technologies, see [www.navymantech.com](http://www.navymantech.com)

# Examples



TechSolutions: [www.onr.navy.mil/techsolutions](http://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



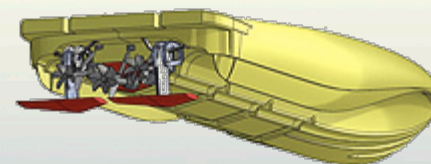
- Advanced Shipboard Desalination, *MECO*



- Neurotrauma Infrascanner, *Infrascan*



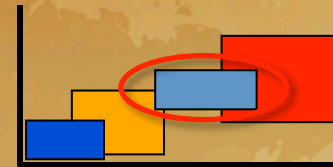
- Ultra Deep-V Hull Boat Design, *Navatek*



- Archerfish, *Applied Physical Sciences*



# INP Example SBIR in Railgun



This example was discussed at the event. Contact ONR Public Affairs for more information.

## SBIR-Supported Research

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

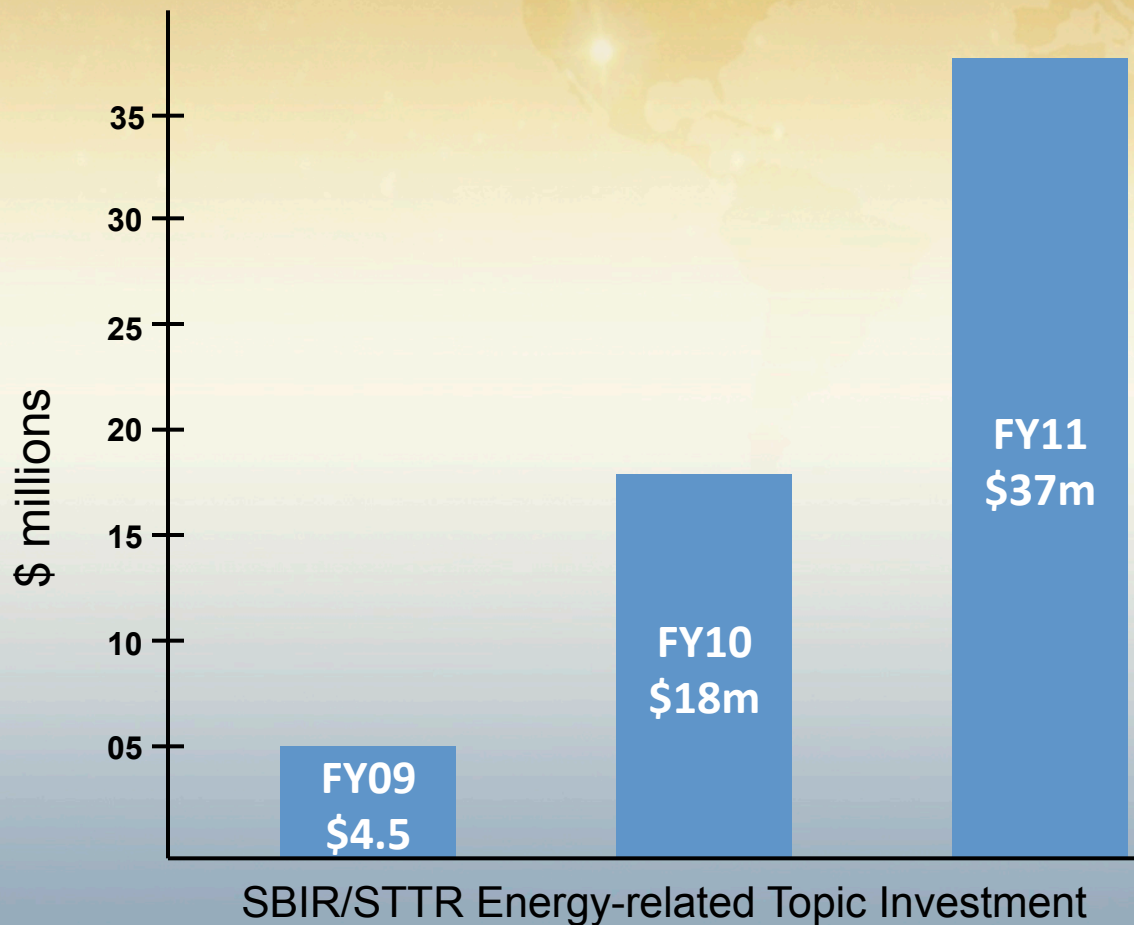
## 83 Contributing Projects

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

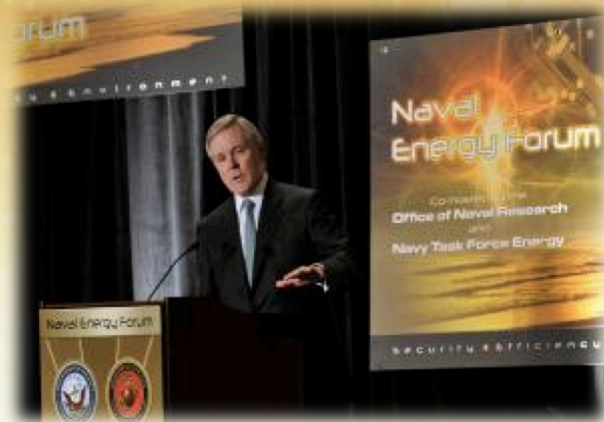
## 46 SBIR/STTR Tech Providers

- Traditional and non-traditional

# Green Technology SBIR/STTR Growth



*\*MOU between DON/SBA signed Oct 2010*



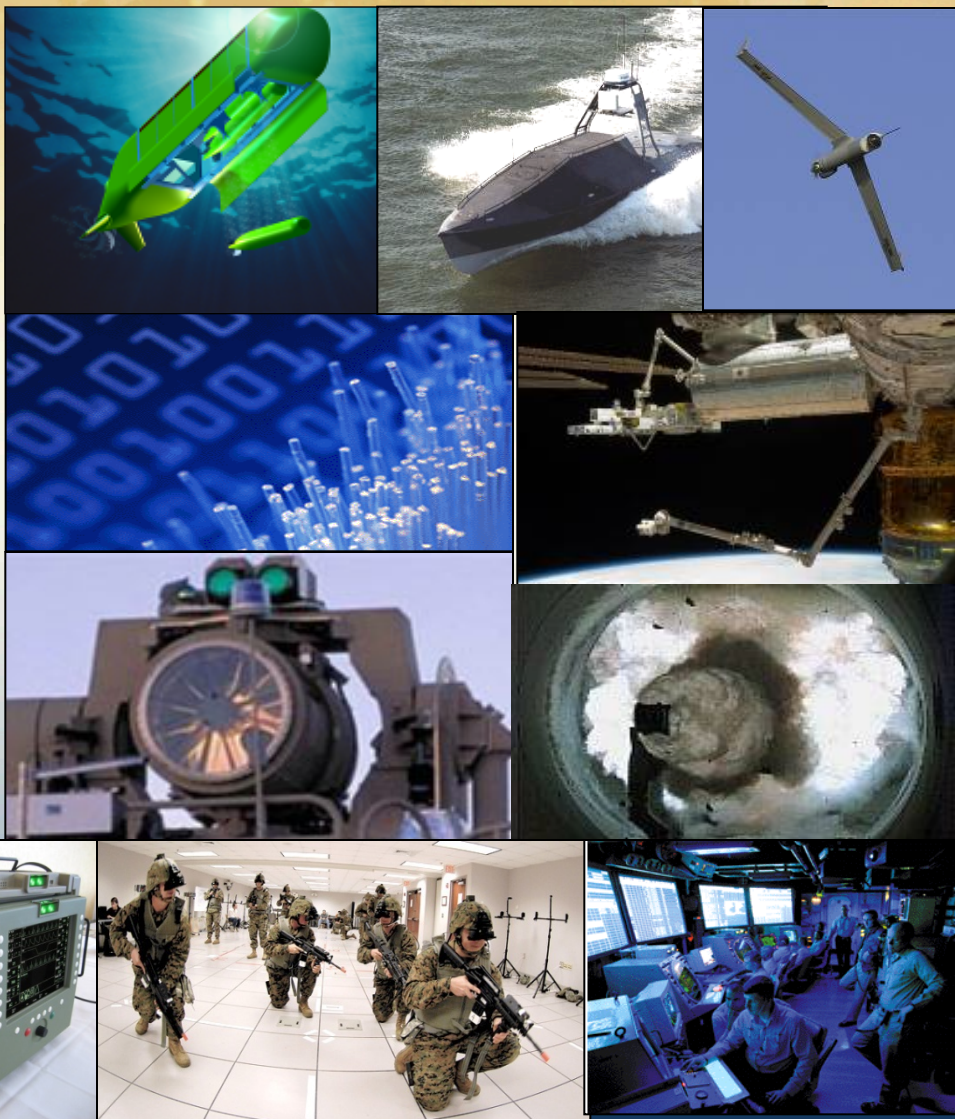
ONR Naval Energy Forum  
October 2009

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

# S&T Opportunities

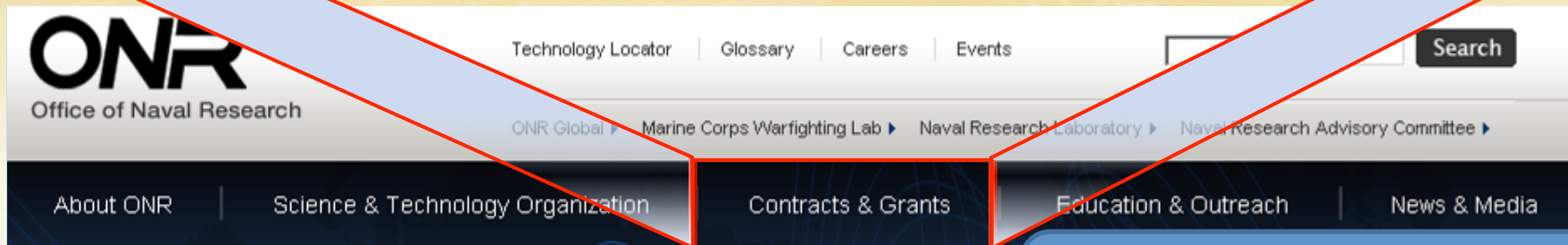
- **Autonomy**
- **Power & Energy**
- **Information Dominance**
- **Directed Energy and Hypervelocity**
- **Warfighter Performance**
- **Total Ownership Cost**

- 
- **STEM**

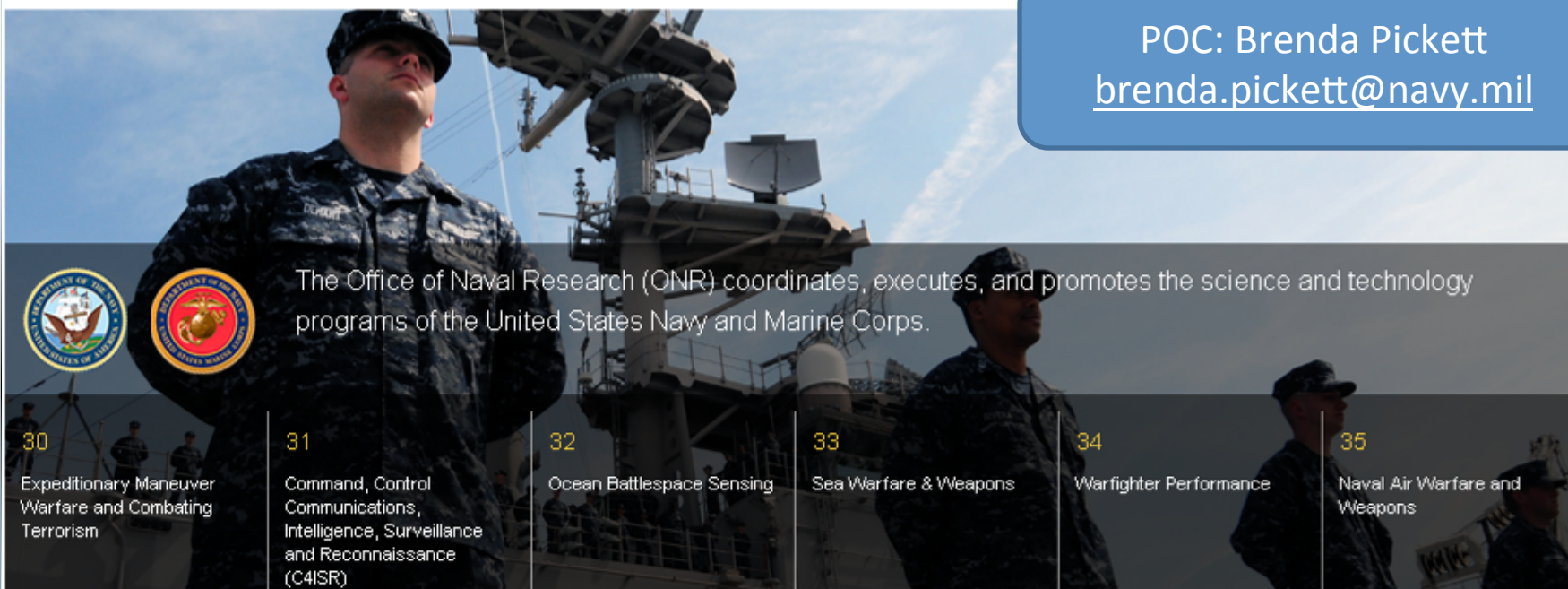


# Where to Find Us

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



POC: Brenda Pickett  
[brenda.pickett@navy.mil](mailto:brenda.pickett@navy.mil)



# 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](http://www.onr.navy.mil/events)