

2012
**ONR Naval
S&T Partnership
Conference & ASNE Expo**

Naval Science & Technology Strategic Plan

RADM Matthew Klunder
Chief of Naval Research



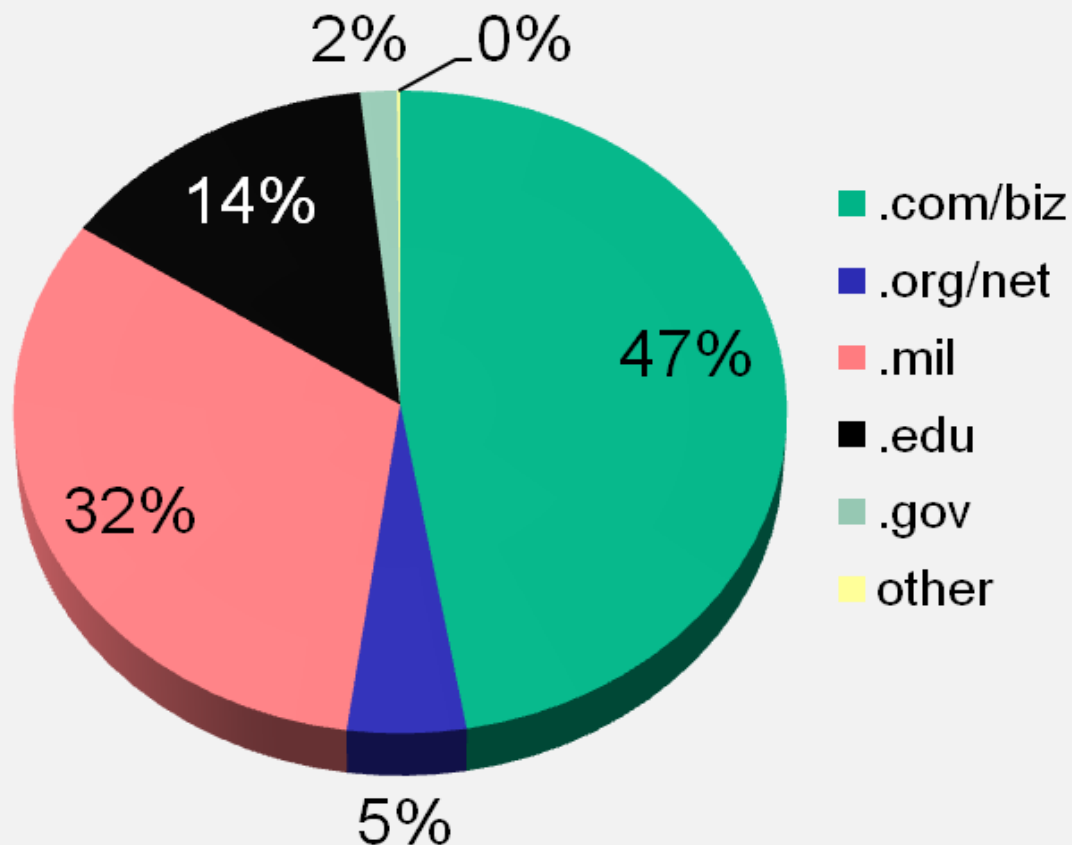
O F F I C E O F N A V A L R E S E A R C H

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 22 OCT 2012		2. REPORT TYPE		3. DATES COVERED 00-00-2012 to 00-00-2012	
4. TITLE AND SUBTITLE Naval Science & Technology Strategic Plan				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Office of Naval Research, 875 N. Randolph Street, Suite 1425, Arlington, VA, 22203-1995				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES Presented at the ONR 2012 Naval Science and Technology (S&T) Partnership Conference and ASNE Expo on Oct. 22-24, 2012, Arlington, VA.					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 18	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			



Welcome!

Demographics





Global Context

- Continuing Conflict in Afghanistan
- WMD Proliferation
- Violent Extremists and Non-State Actors
- Rising Peer Competitors
- Security of Global Commons (Cyber/Piracy)
- Climate Change & Natural Disasters
- Revised Defense Strategy, Re-Balance to Pacific
- Budget Pressures

An Uncertain Dynamic Environment

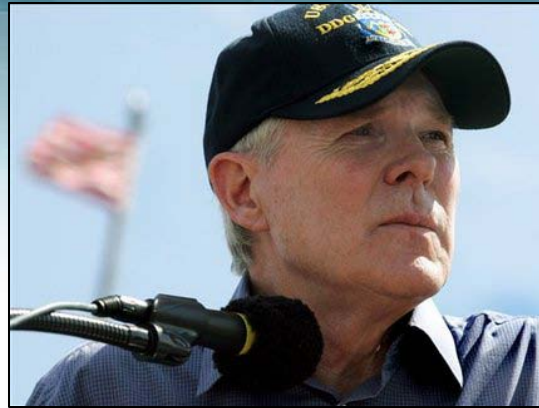


Leadership Response



General Amos
Commandant of the USMC

“...experimentation and innovation, will help our Nation maintain global relevance by developing solutions that continue to outpace emerging threats.”



Honorable Ray Mabus
Secretary of the Navy

“To keep our technological advantage, we plan to invest in science and technology and research and development to maintain the knowledge base and keep it moving forward.”



Admiral Greenert,
Chief of Naval Operations

“The reach and effectiveness of ships and aircraft will be greatly expanded through new and updated weapons, unmanned systems, sensors and increased power.”

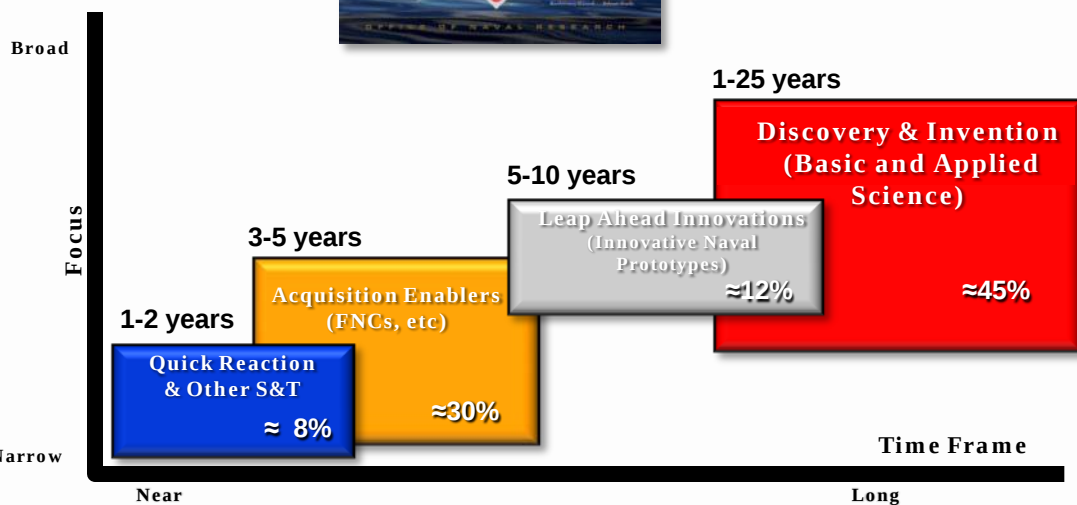


S&T Strategic Plan



S&T Plan Focus Areas:

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



Tech Solutions



FNCs



INPs



D&I



Autonomy



**Perception and
Intelligent
Decision
Making**



**Scalable and
Robust
Distributed
Collaboration**



**Human/Unmanned
Systems Collaboration**



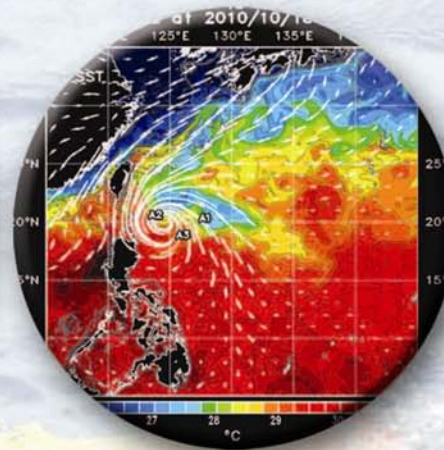
**Intelligence Enablers
and Architectures**



Assure Access



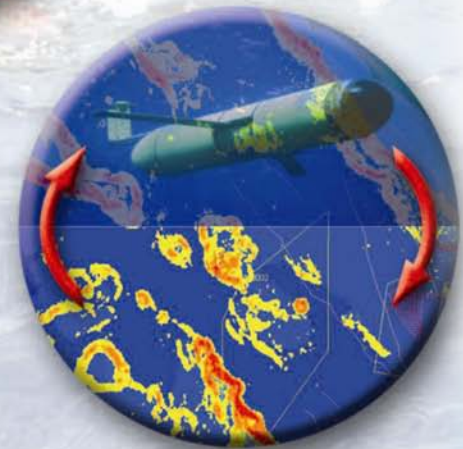
**Improved
Autonomous
Sensing**



**Environmental
Predictive
Capabilities**



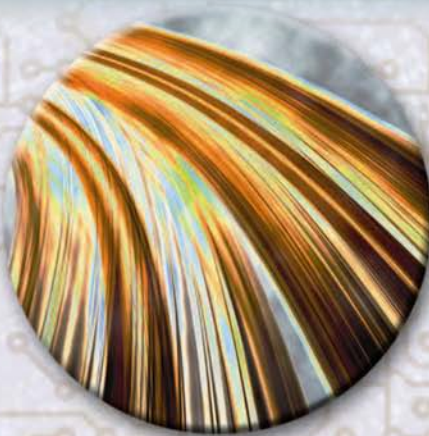
**Undersea
Dominance**



**Adaptation to
the Environment**



Information Dominance



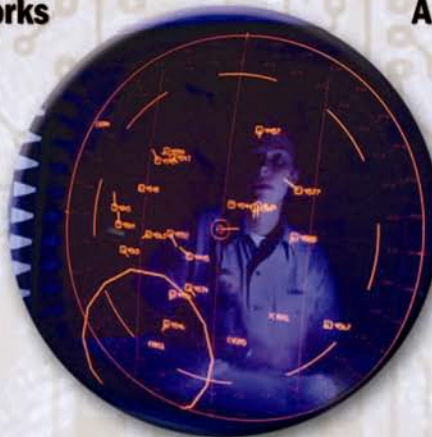
**Communications
and Networks**



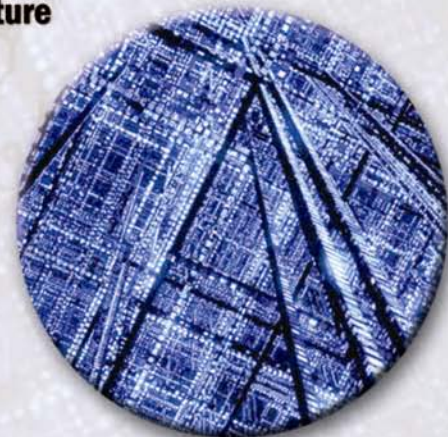
**Computational Environment
Architecture**



**Computer Network
Operations**



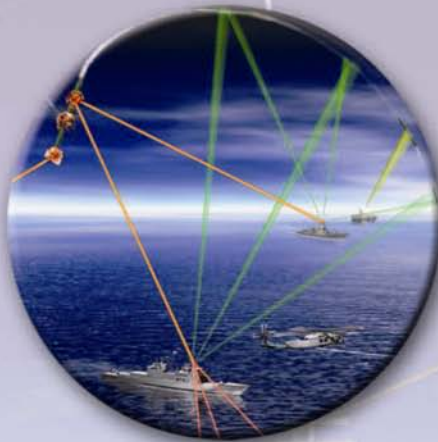
**Information Space for Integrated C2, ISR,
and Combat Systems Decision Making**



**Spectrum
Dominance**



Power Projection



**Integrated
Layered Defense**



**Time-Critical
Precision Strike**



**Future Naval
Fires**



**Extended Threat
Neutralization**



Expeditionary Warfare



**Influence
Operations**



**Expeditionary
and Distributed
Operations**



**Irregular Warfare
Battlespace Awareness**



**Irregular Threat
Countermeasures**



Platform Design Research Areas



**Optimized Payload
Capabilities**



**At-Sea
Sustainment**



**Advanced
Mobility**



**Affordable Fleet/Force
Modernization**



Power & Energy Research Areas



**Energy Security/
Alternative Fuels**



**Energy
Systems**



**Efficient
Power**



**Pulsed
Power**



Warfighter Performance



**Human System
Design and
Decision
Support**



**Bio-Engineered
Systems**



**Manpower, Personnel,
Training and Education**



**Warfighter Health
and Survivability**



Total Ownership Cost



**Life-Cycle and
Sustainment Cost**



**Platform
Affordability**

**Crew Manning and
Operational Capabilities**



Key Challenges

- Threats in the undersea domain
- Fully integrating manned/unmanned systems
- Cyberspace and ensuring the electromagnetic spectrum
- Improved ship, aircraft and weapon effectiveness
- Enabling affordability and reliability
- Warfighter Performance (Training and Medical)





ONR-Global Operating Forward

ONRG-DC

ONR Global Liaison Office
CNO Executive Panel
CNO(N2/N6)
FLT/CYBERCOM/COMTENTHFLT
CNO(N81)

Mechanicsburg
NAVSUP

ONRG-London - ADs
Technical Director
Executive Officer

Naples
COMUSNAVEUR
COMUSNAF
COMSIXTHFLT

ONRG-Prague - ADs

Newport
CNO SSG

Norfolk
COMUSFLTFORCOM
COMNAVAIRFOR
COMSUBFOR
COMMARFOR
COMSECFLT
COMNECC
COMNWDC

Camp Lejeune
CG II MEF

ONRG-Tokyo - ADs

Yokosuka
C7F

Okinawa
CG III MEF

Bahrain
COMNAVCENT
COMFIFTHFLT

ONRG-Singapore - ADs
Commanding Officer

ONRG-Santiago - ADs

Develop Partnerships
Leverage Global S&T Advances
Avoid Technology Surprise



Naval STEM

Many opportunities for partnerships:



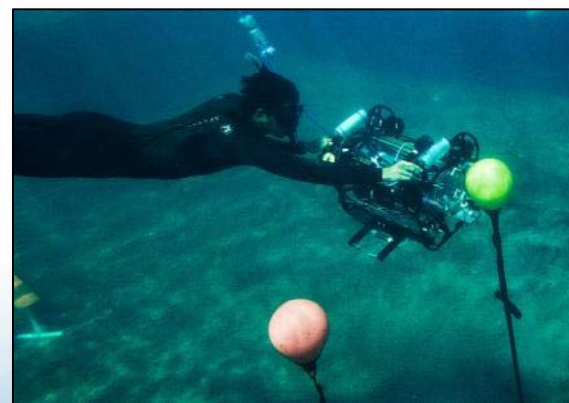
STEM Camps



FIRST Robotics



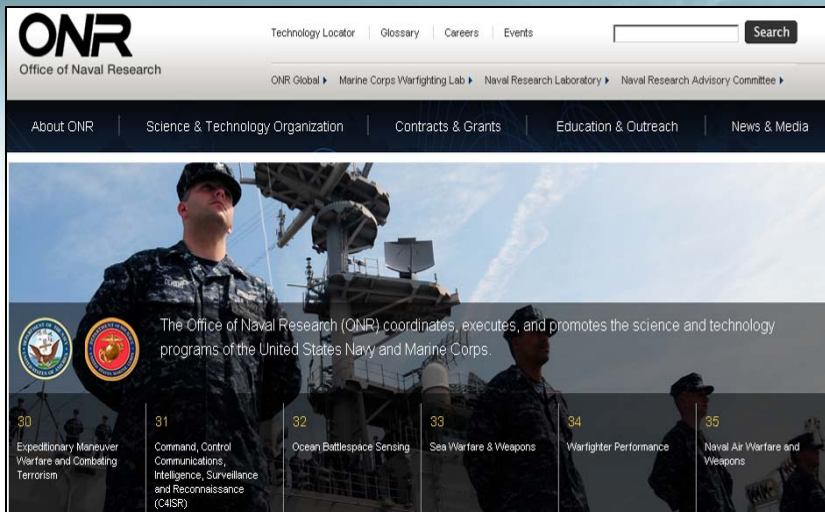
RoboBoat



RoboSub



Stay in Touch



www.onr.navy.mil



Coming Soon:

- Focus Area Forums
- At ONR
- Watch for the announcement!