



ONR Command Overview

***Dr. Larry Schuette
Director of Research
March 2016***



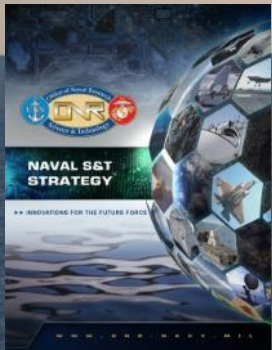


The Office of Naval Research

The S&T Provider for the Navy and Marine Corps



- 4,000+ People
- 23 Locations
- \$2.1B / year
- >1,000 Partners



Discover



Develop



Deliver

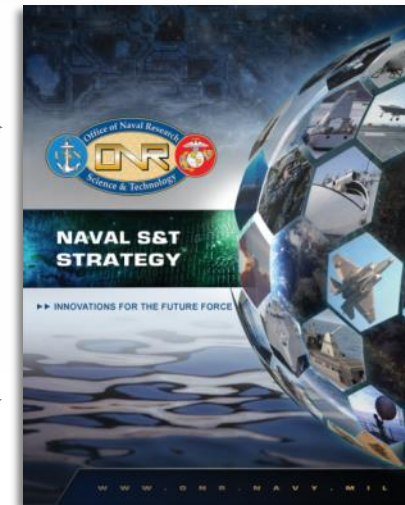
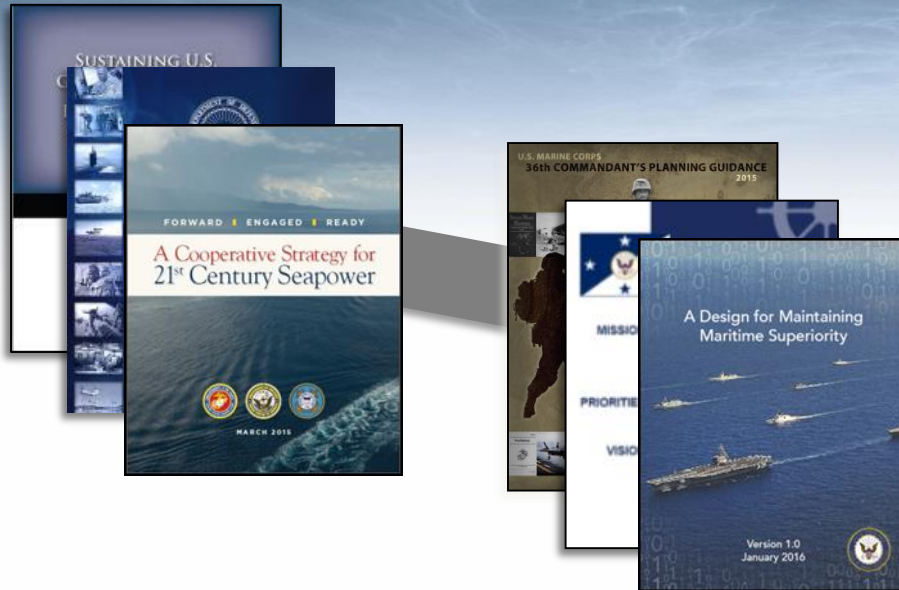


*Technological
Advantage*



Strategic Guidance is the Foundation for our Naval S&T

National & Naval Strategy/Direction



Warfare Enterprise's S&T Objectives + Fleet Warfighting Capability Gaps



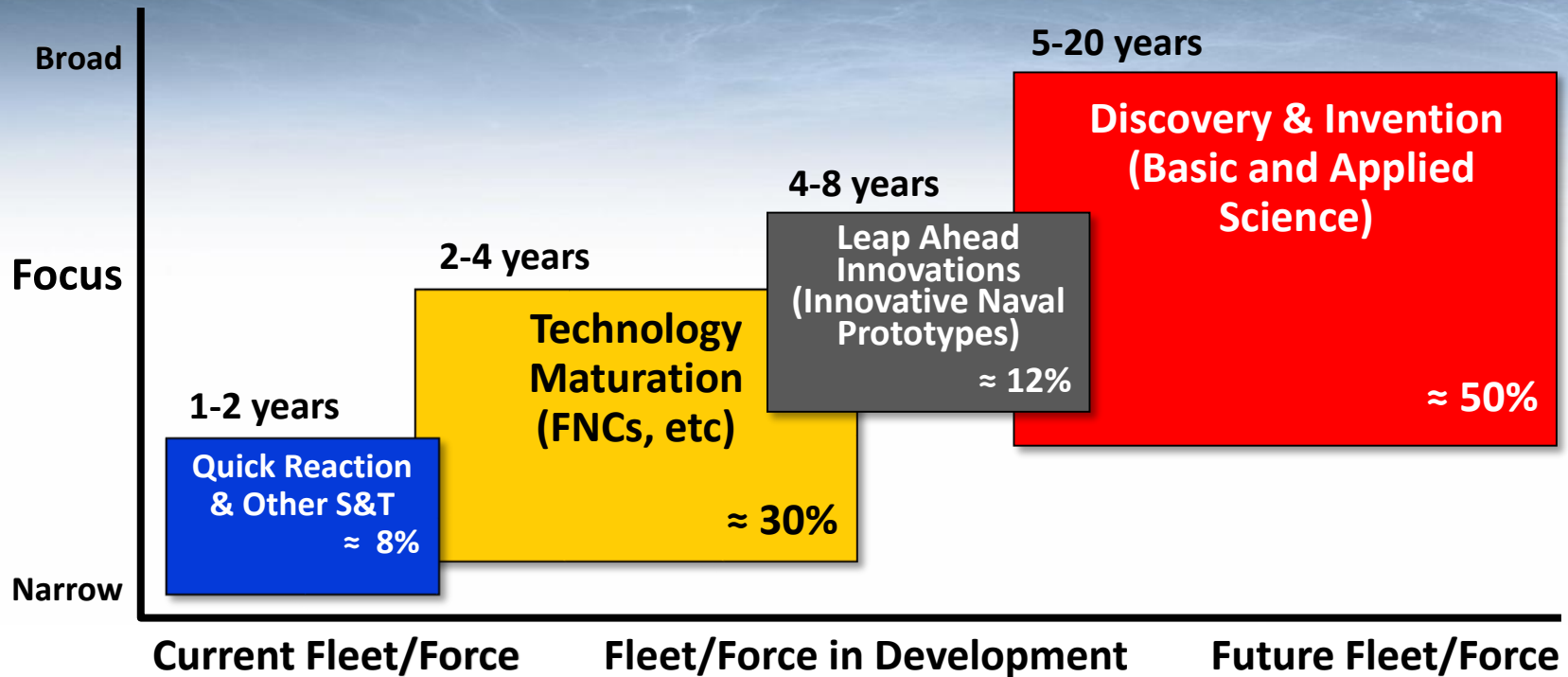
Naval S&T Strategy Focus Areas

- **Assure Access to Maritime Battlespace**
- **Autonomy & Unmanned Systems**
- **Electromagnetic Maneuver Warfare**
- **Expeditionary & Irregular Warfare**
- **Information Dominance - Cyber**
- **Platform Design & Survivability**
- **Power & Energy**
- **Power Projection & Integrated Defense**
- **Warfighter Performance**





Warfighting Capabilities Enabled by S&T Investments





Partnering with the S&T Community



Government



Academia

Universities/Colleges
Domestic/International

Industry

Small/Medium/Large
Companies

Naval S&T Successful Transition Flows: Knowledge, Technology, Capability

| 1-2 years Quick Reaction & Other S&T ≈ 8% | 2-4 years Technology Maturation (FNCs, etc.) ≈ 30% | 4-8 years Leap Ahead Innovations (Innovative Naval Prototypes) ≈ 12% | 5-20 years Discovery & Invention (Basic & Applied Science) ≈ 50% |
|---|--|--|--|
|  <p>SSL-QRC</p> |  <p>GBAD OTM</p> |  <p>Integrated Topside (InTop)</p> |  <p>COAMPS-TC</p> |
|  <p>Transportable Electronic Warfare Module (TEWM) Upgrade</p> |  <p>Data Triage</p> |  <p>Forward Deployed Energy & Communications Outpost (FDECO)</p> |  <p>MURI: Optical Metamaterials</p> |
|  <p>USSV Autonomous Operations</p> |  <p>SEWIP BLK 2</p> |  <p>EMC²</p> |  <p>Graphene</p> |
|  <p>XFC UAV</p> |  <p>Mk18 Family of UUVs</p> |  <p>LDUUV INP</p> |  <p>ZRay Glider</p> |
|  <p>Advance Aircraft Topcoats</p> |  <p>Next Generation Countermeasures Technologies for Ship Missile Defense</p> |  <p>Electromagnetic Railgun (EMRG)</p> |  <p>Embedded Humans</p> |



ONR is part of the NR&DE, Providing Full-Spectrum RDT&E

RDT&E Budget (6.1-6.7)

S&T Budget (6.1-6.3)

| | | | | | | |
|-----------------------------------|-------------------------------------|--|--|---|---|---|
| <p>6.1 Basic Research</p> | <p>6.2 Applied Research</p> | <p>6.3 Advanced Technology Development</p> | <p>6.4 Adv. Comp. Development & Prototypes</p> | <p>6.5 System Development & Demonstration</p> | <p>6.6 RDT&E Management Support</p> | <p>6.7 Operational System Development</p> |
|-----------------------------------|-------------------------------------|--|--|---|---|---|



Naval R&D Establishment

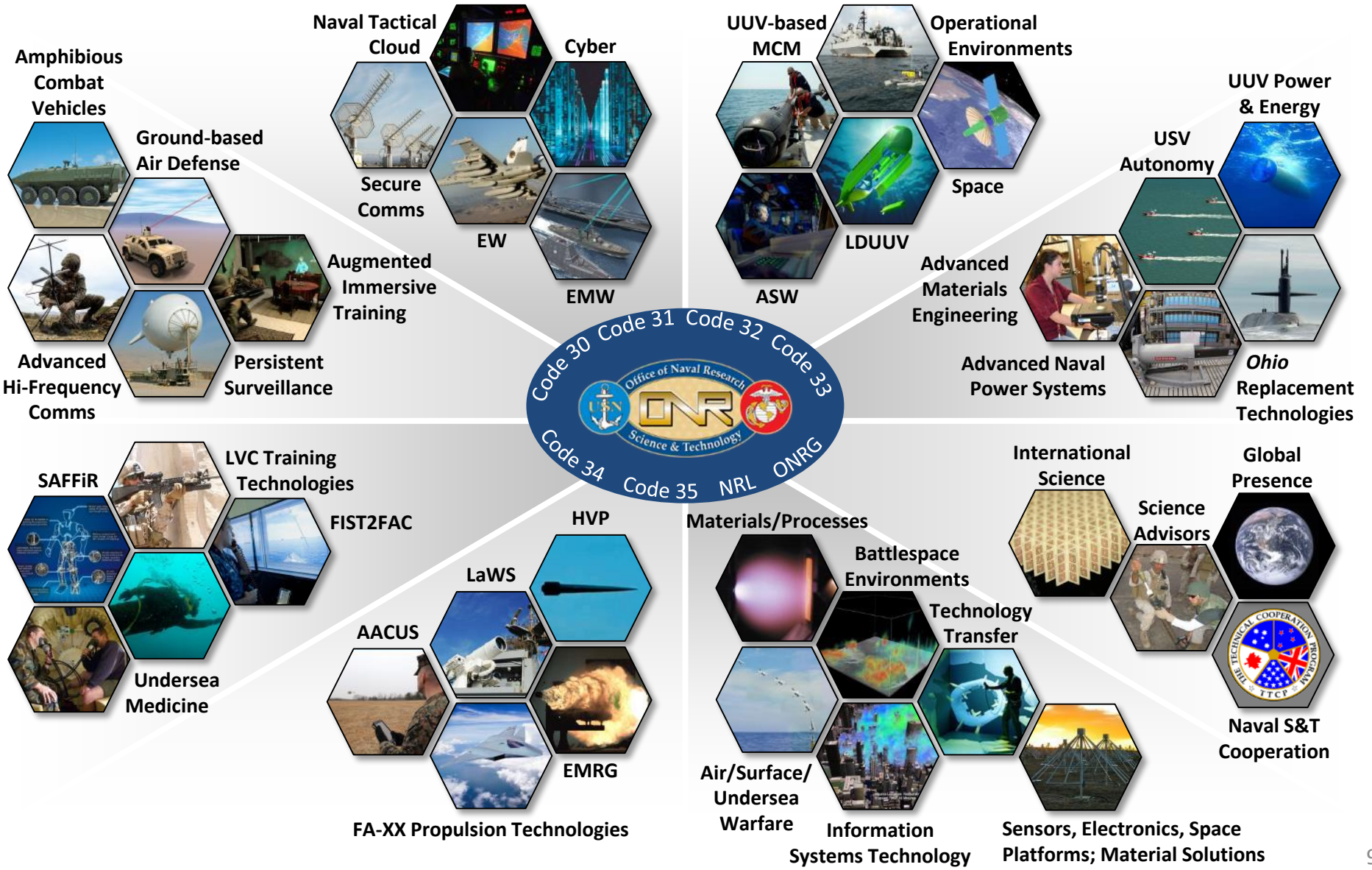
(ONR, SYSCOMs and their Warfare Centers, PEOs)

Office of Naval Research

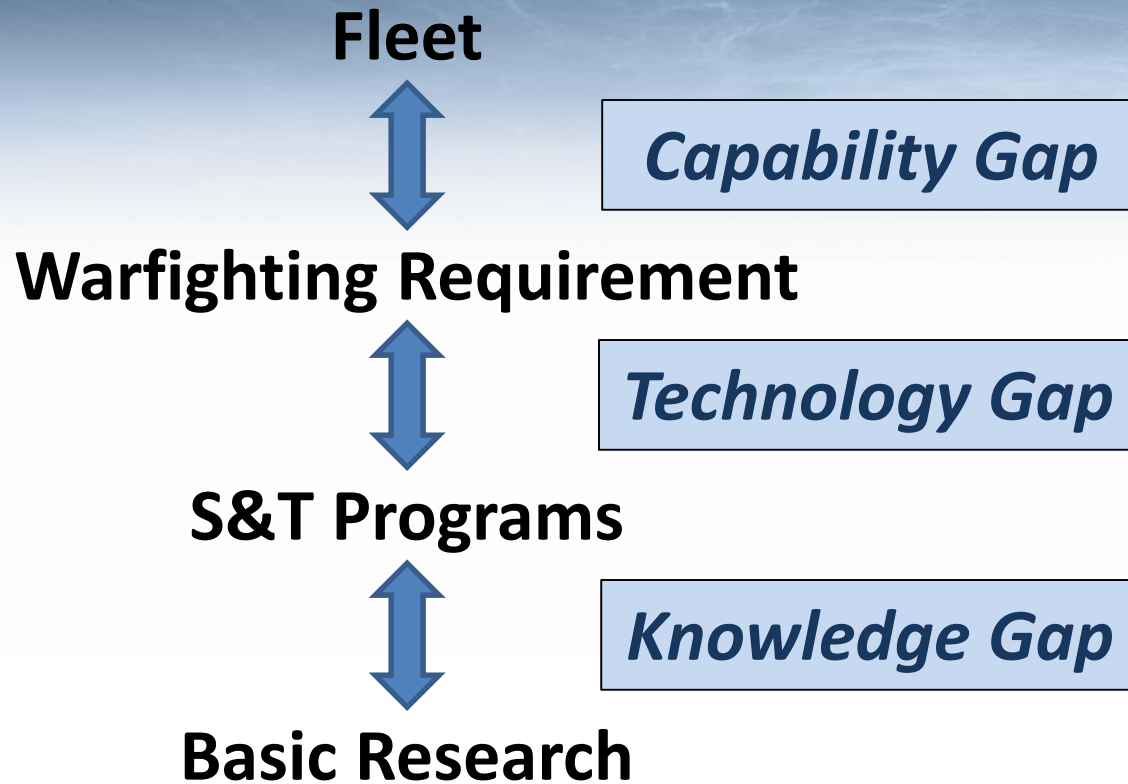




Delivering Science & Technology



ONR Enables Capability



ONR sponsors S&T research:

- a) *Creating new knowledge to ...*
- b) *Develop technology that will ...*
- c) *Fill a capability gap, and ... Deliver results*

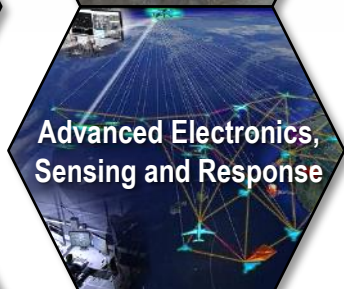
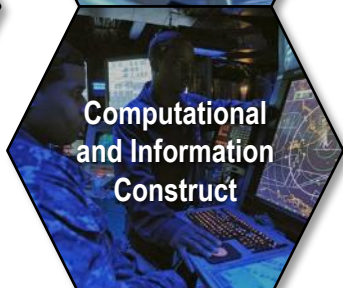
S&T Investment Priorities



Cyber



UxS Maneuver Warfare

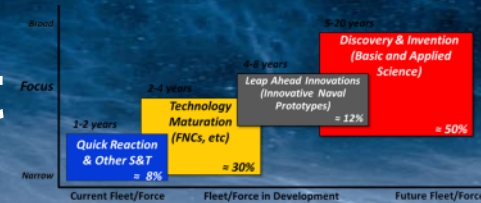


Directed Energy/Electric Weaponry

EM Maneuver Warfare

Synthetic Biology

Portfolio Management



| | Quick Reaction | Technology Maturation | Leap Ahead/INPs | D&I |
|------------------------|----------------|-----------------------|-----------------|---|
| Directed Energy | | | | |
| Cyber | | | | |
| EM Maneuver Warfare | | | | |
| UxS / Undersea Warfare | | | | |
| Synthetic Biology | | | | <p>Visible: START RESPONSE (Yellow/Green dots)</p> <p>Machine Image: START RESPONSE (Red/Blue dots)</p> |



Accelerating S&T Process Through Global Partnership

Washington, D.C. Region

- N9 ★★ ★
- N81 ★★ ★
- C10F ★★ ★

ONRG London
 Commanding Officer
 Technical Director
 Associate Directors

Total Science Advisors: **24**
 Total Associate Directors: **22**

Newport
 CNO SSG ★★ ★★

ONRG Prague
 Associate Directors

ONRG Tokyo
 Associate Directors

San Diego

- C3F ★★ ★
- SURFOR ★★ ★
- I MEF ★★ ★
- NMAWC ★★
- NSMWDC ★

Mayport
 C4F ★★

Norfolk
 FLTFOR ★★ ★★
 AIRFOR ★★ ★
 SUBFOR ★★ ★
 MARFORCOM ★★ ★
 NECC ★★
 NWDC ★

Naples
 NAVAF/NAVEUR/
 C6F ★★ ★

Bahrain
 C5F ★★ ★

Yokosuka
 C7F ★★ ★

Okinawa
 III MEF ★★ ★

Camp LeJeune
 II MEF ★★

Hawaii

- PACOM ★★ ★★
- PACFLT ★★ ★
- MARFORPAC ★★ ★

ONRG Santiago
 Associate Directors

ONRG São Paulo
 Associate Director

ONRG Singapore
 Associate Directors

- ★ Joint Command
- ★ Naval Command
- ★ Marine Corps Command

ONRG co-located with other Service S&T components

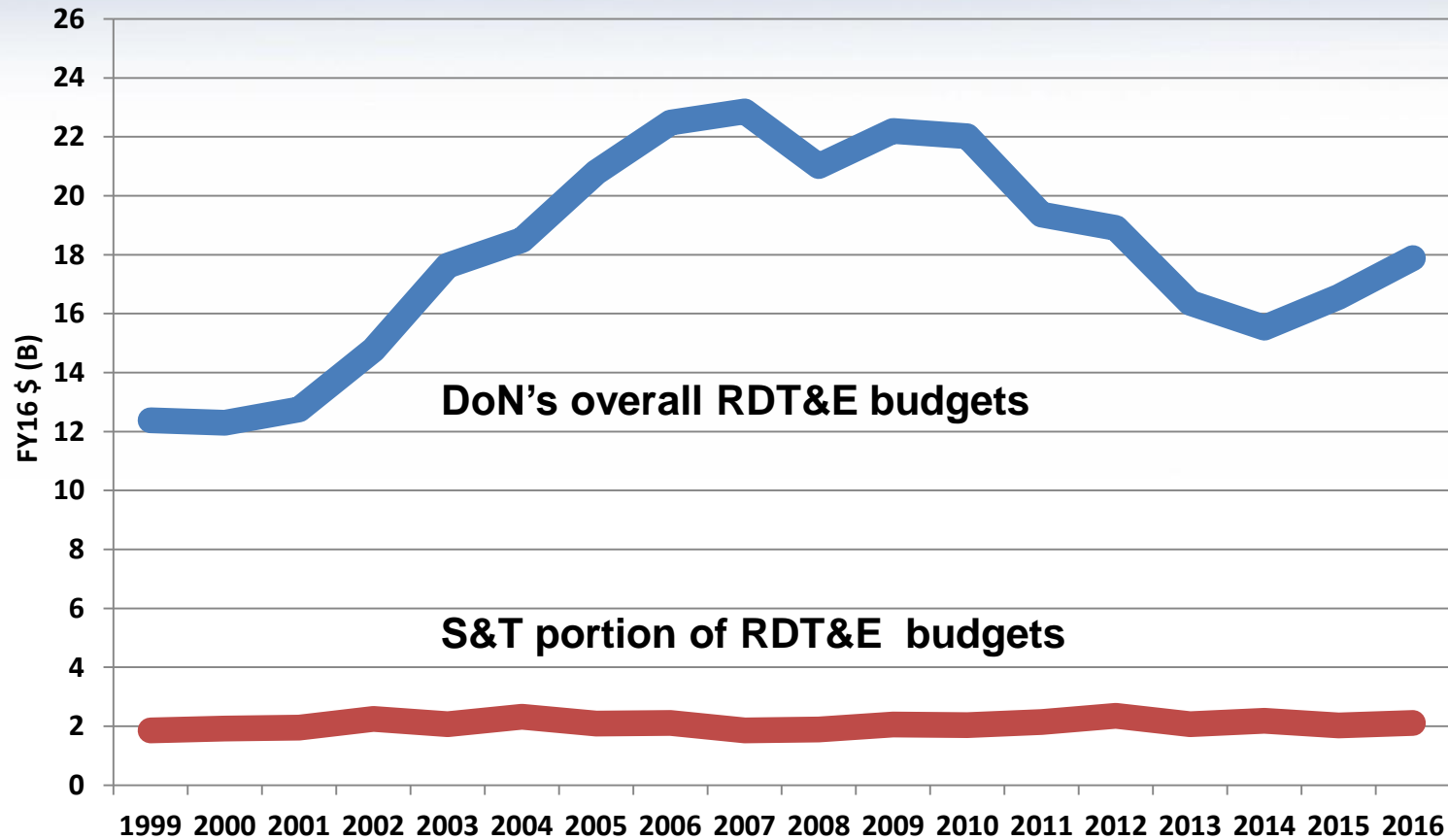
- London (USA/USAF)
- Tokyo (USA/USAF)
- Santiago (USA/USAF)
- Singapore (USA only)

**ONR's Global Offices are the Bridge to International Partnership;
 55 Countries in 2015**



Naval S&T Budget History

RDT&E,N Budgets 1999-2016 (FY16 dollars)



Source: DoN FY99-16 Presidential Budget Requests

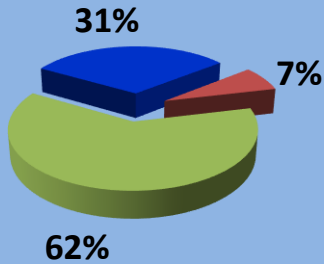


Naval S&T Investment Trend

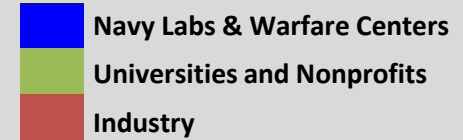
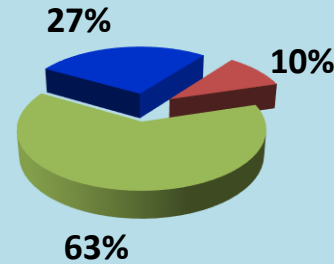
(Funds obligated in each FY)

6.1 Basic Research

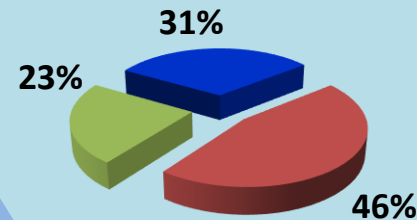
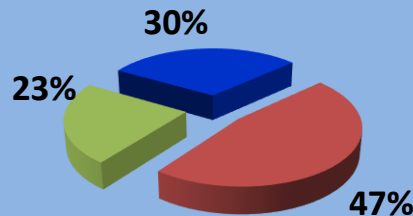
FY10



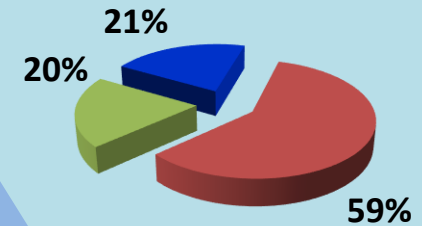
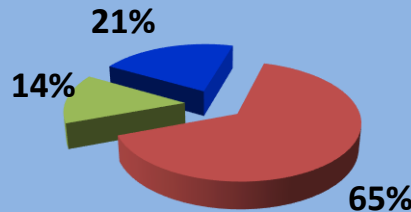
FY16



6.2 Applied Research



6.3 Advanced Technology Development

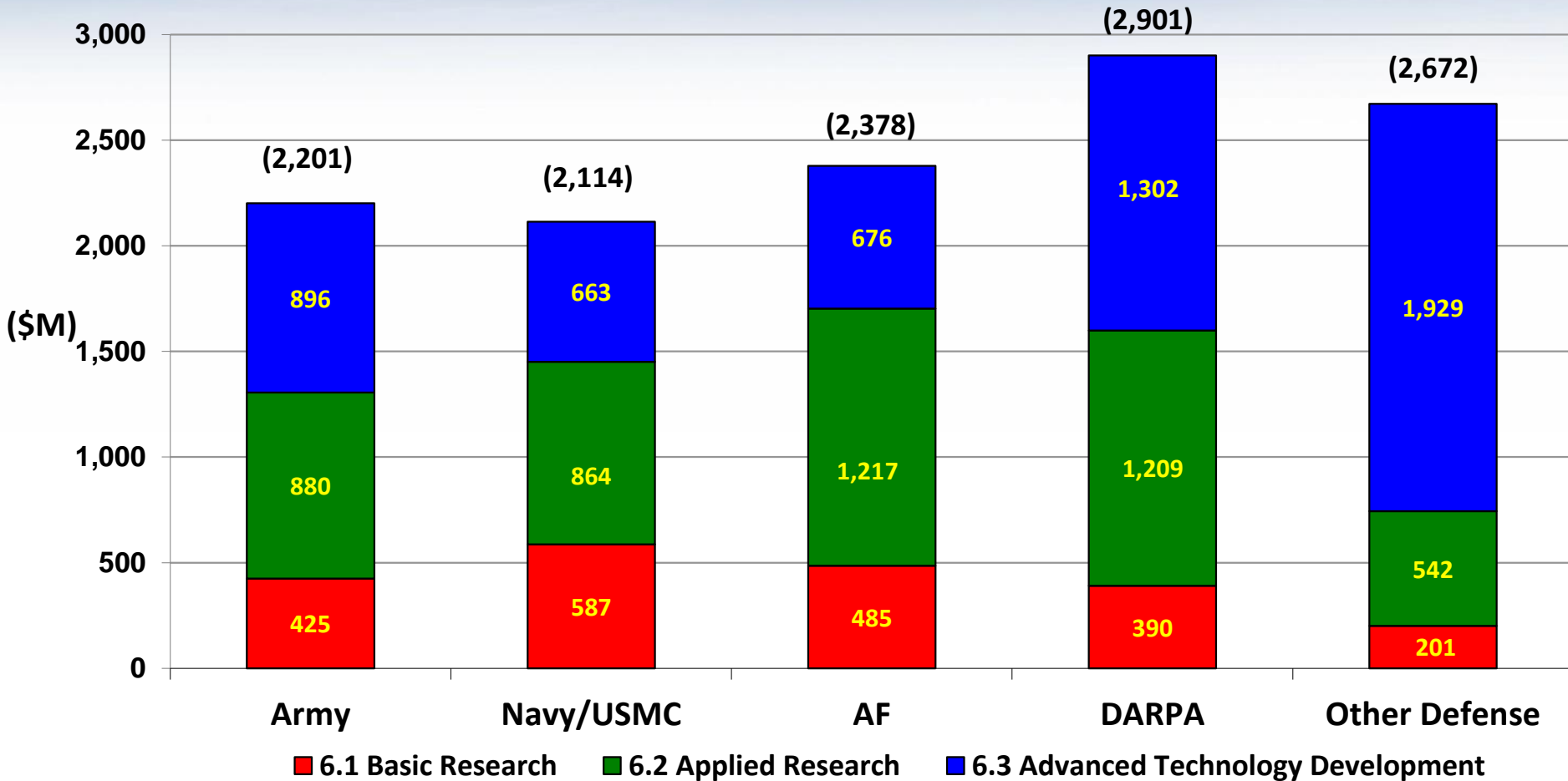


Relatively Constant Investment Balance; Small Shifts in 6.1 & 6.3 Allocations



PB 16 DoD S&T Budget Request (\$M)

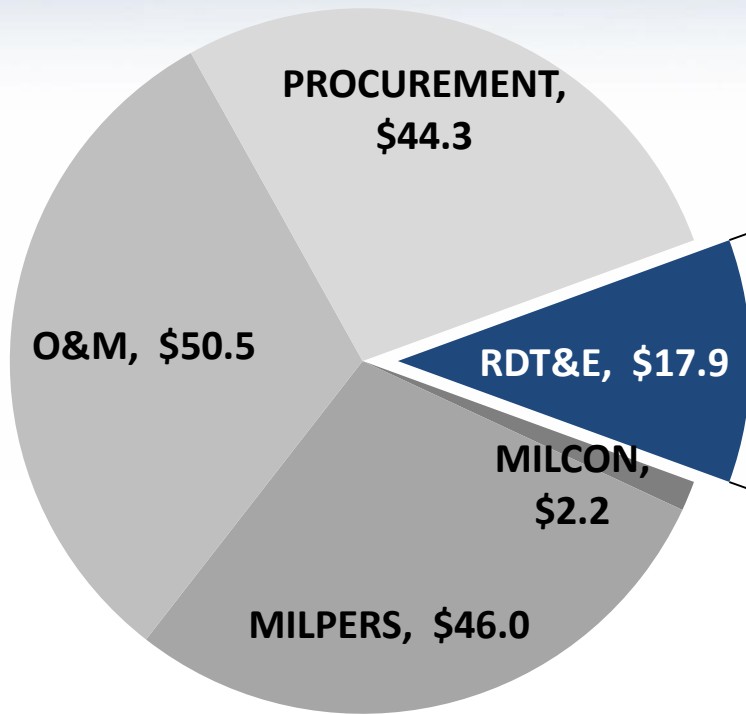
Total FY 2016 DoD S&T Request = \$12.27 Billion



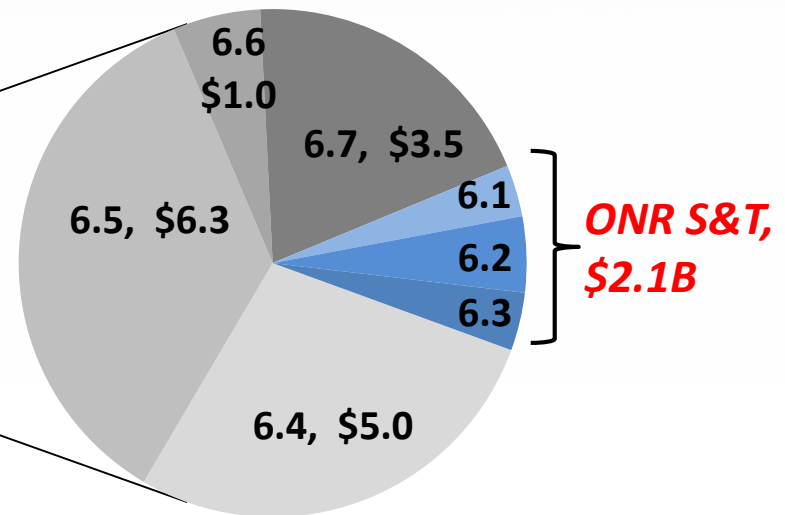


DoN FY16 Budget

FY16 DON Budget (\$160.9B)

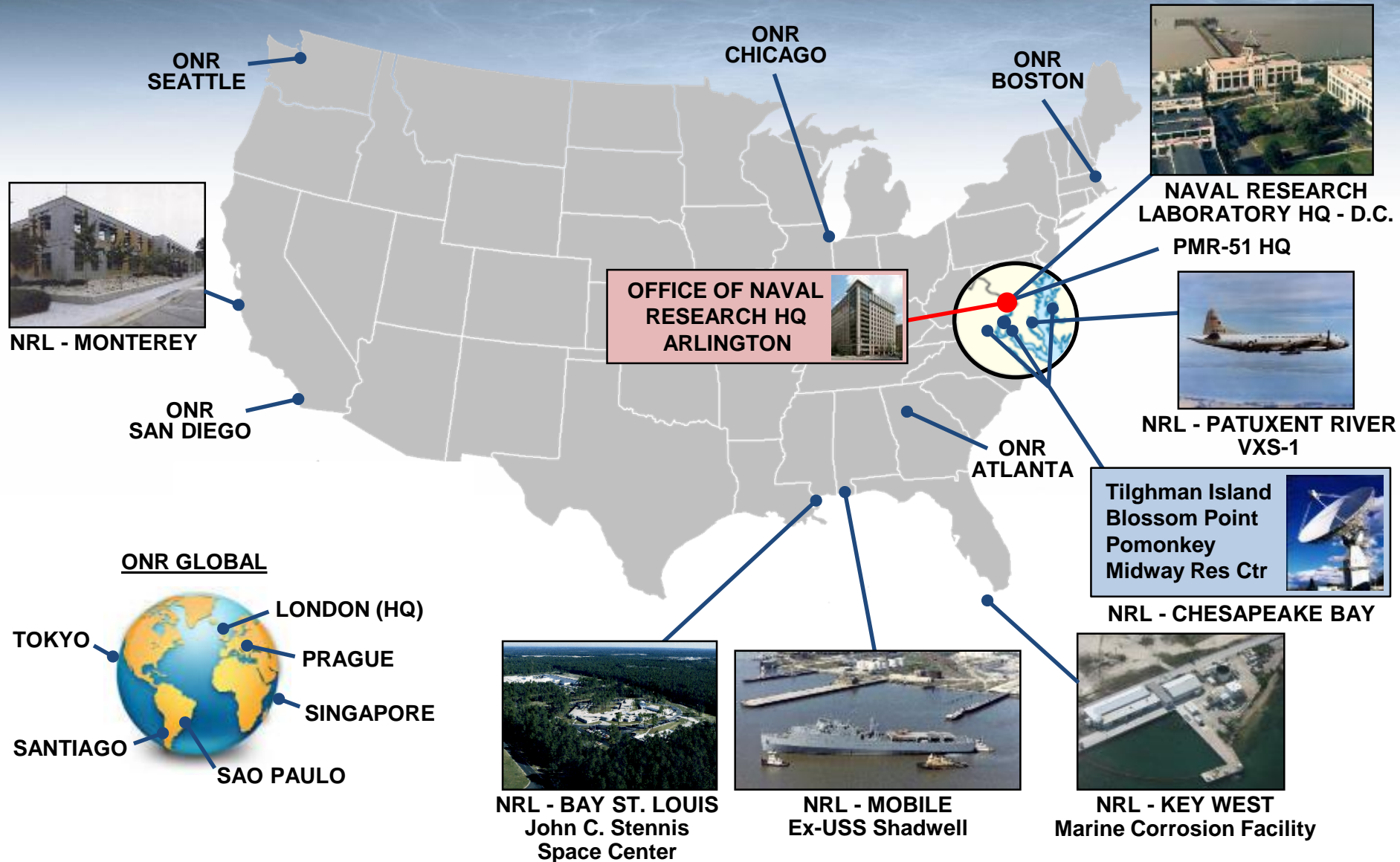


RDT&E Budget (\$17.9B)



Source: DoN FY16 Presidential Budget

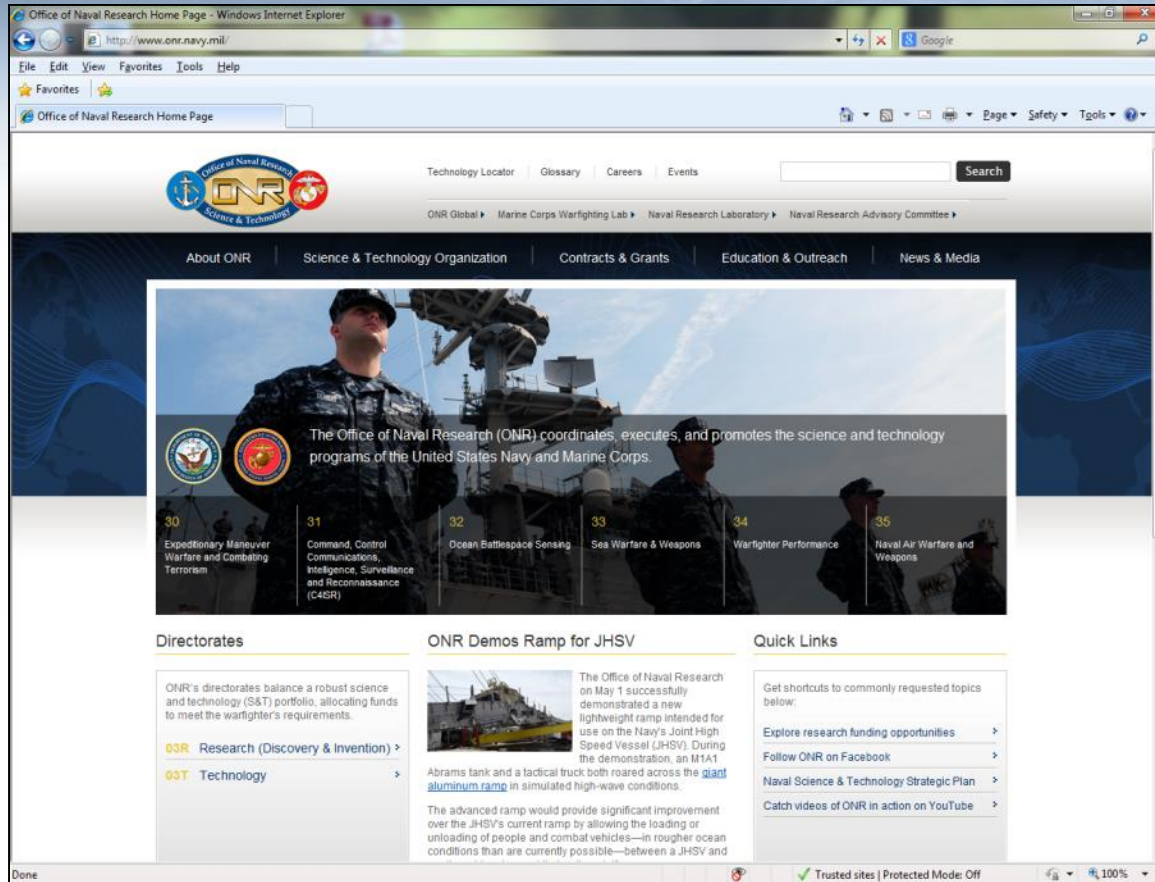
ONR Locations





Where to Find Us Online

You Tube
Broadcast Yourself™



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