The Office of Naval Research - Science and Technology in Support of the US Navy and Marine Corps

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Office of Naval Research
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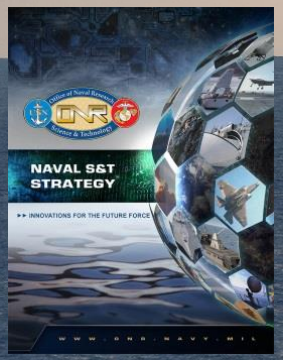
The Office of Naval Research

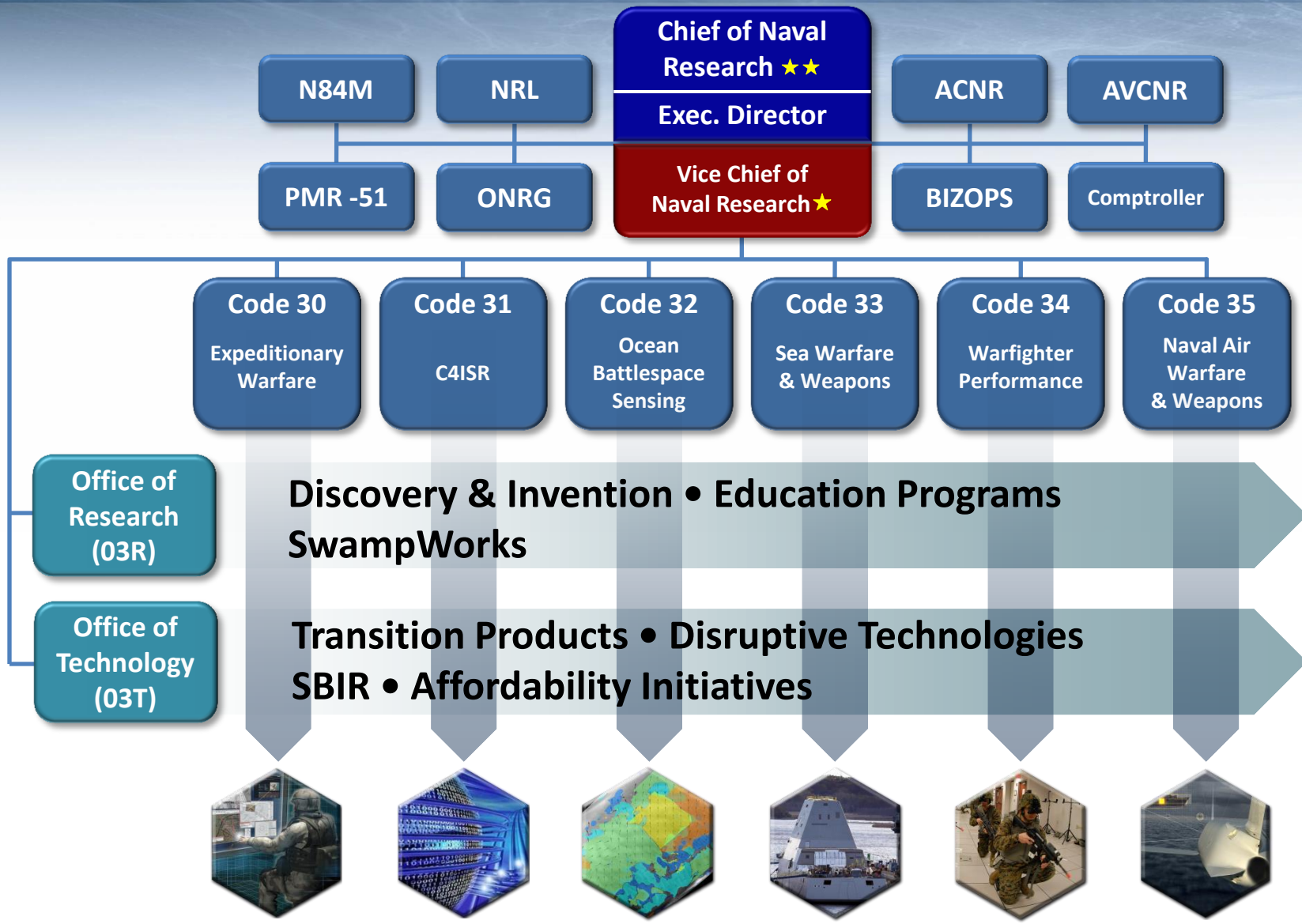
The S&T Provider for the Navy *and* Marine Corps

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

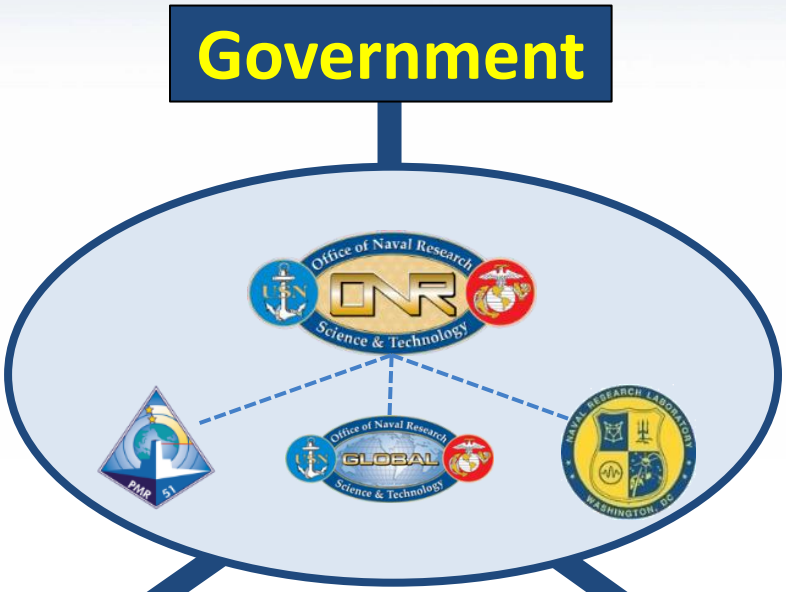


Discover → Develop → Deliver → Technological Advantage

ONR Organization



Partnering with the S&T Community



1000 Universities/Colleges
Domestic/International

Small/Medium/Large
Companies

ONR Enables Capability

Fleet

Capability Gap

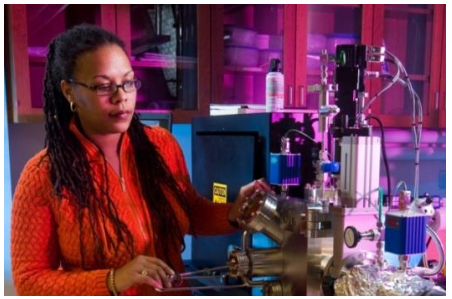
Warfighting Requirement

Technology Gap

S&T Programs

Knowledge Gap

Basic Research



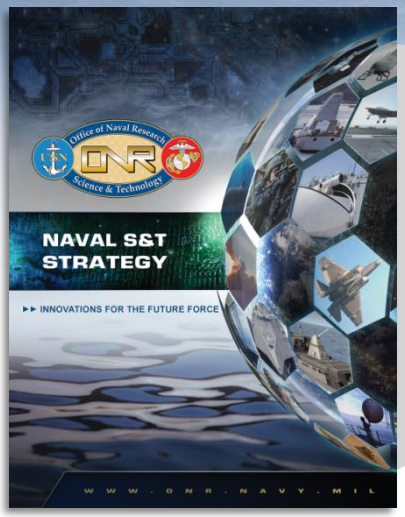
ONR sponsors S&T research:

a) Creating new <u>knowledge</u> to …

b) Develop <u>technology</u> that will …

c) Fill a <u>capability</u> gap, and … <u>Deliver results</u>

Warfighting Capabilities Enabled by S&T Investments



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*
- *Strike & Integrated Defense*
- *Warfighter Performance*

Focus

Broad

Narrow

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 and Applied Science) ≈ 50%

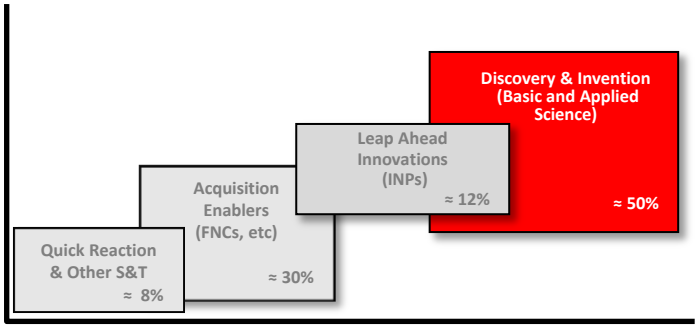
Current Fleet/Force | Fleet/Force in Development | Future Fleet/Force

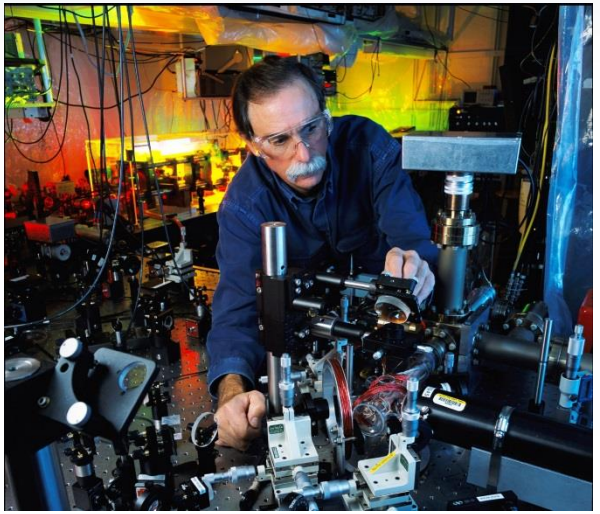
Portfolio is balanced across near, mid and long term S&T investments

Discovery & Invention

Discovery & Invention S&T is the essential foundation required for advanced technology

- Focused on 5-20 years out
- Basic Research and early Applied Research
- All research maps to the Naval S&T Strategic Plan; the projects are the building blocks for Future Naval Capabilities (FNCs) and Innovative Naval Prototypes (INPs)





Dr. David Wineland won the 2012 Nobel Prize in Physics for his work in quantum computing.

Creativity Thrives in Discovery and Invention

From Basic Science to the Fleet!

Basic Research

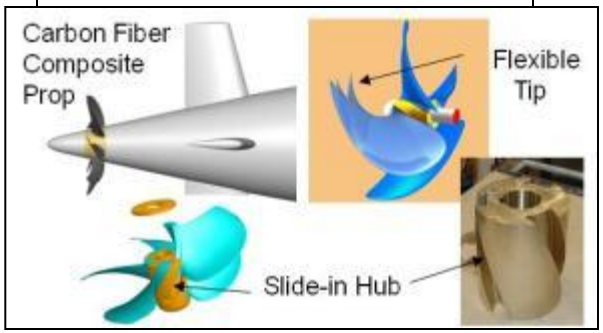
- *Cavitation Erosion Resistant Coating and Matrix Materials*
- *Hydro-Elasticity Effects of Composite Materials*
- *Large-Eddy Simulation of Crashback loads*

FNC

Pitch-adapting composite submarine propeller for enhanced performance with reduced weight, less maintenance and substantial acquisition and life cycle cost savings

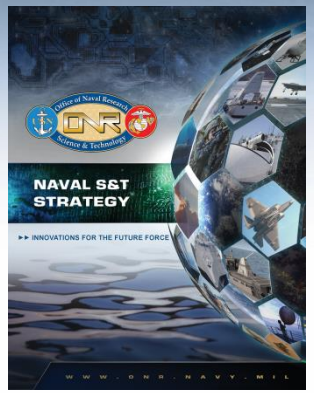
Acquisition POR

- *SEA 073R Advanced Submarine Systems Development*
- *PEO SUB Virginia and Follow-on class submarines*



Academia → ONR's Unique Mission → Industry

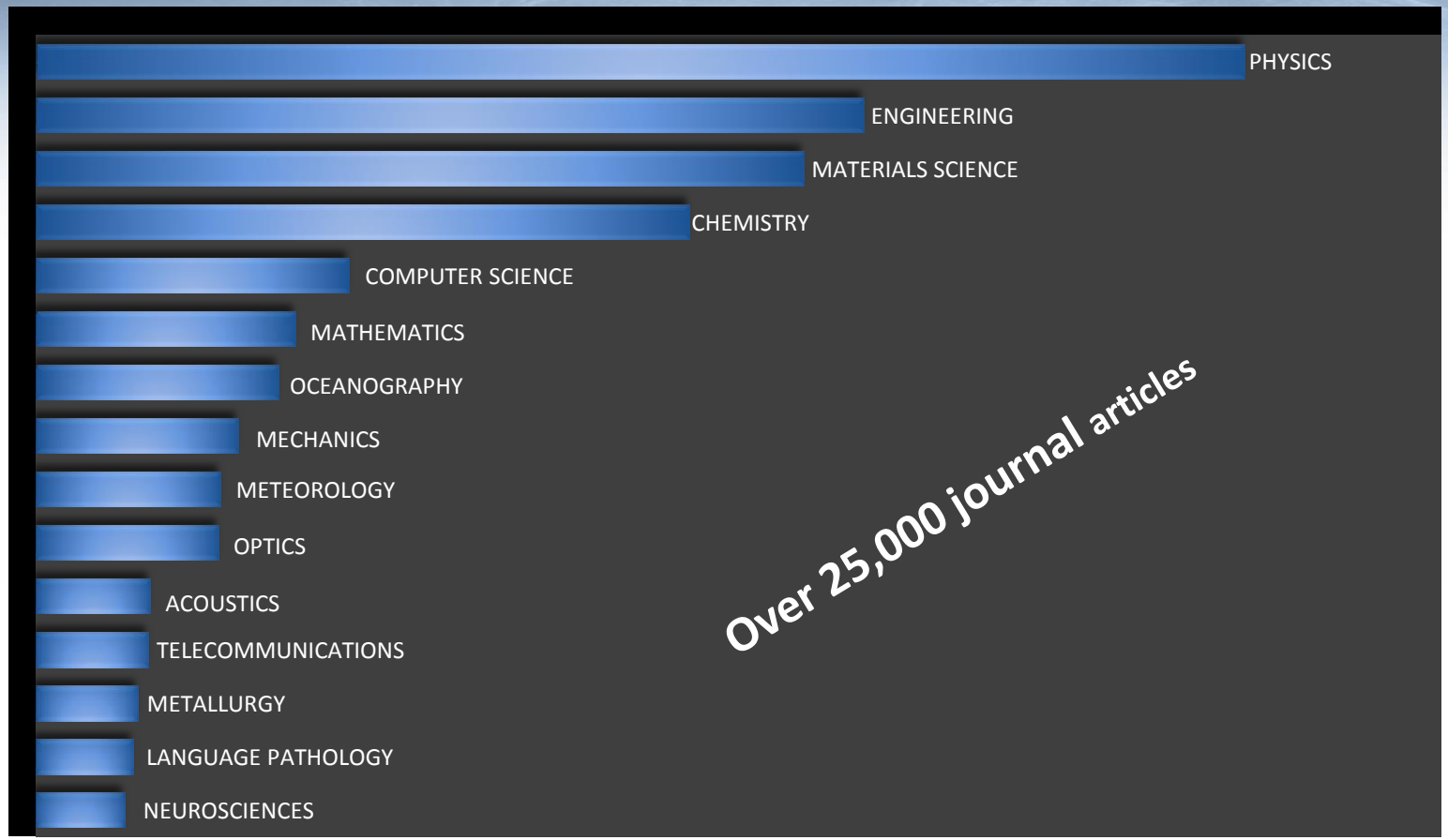
Naval S&T Strategy Focus Areas



- Assure Access to Maritime Battlespace (D32)
- Autonomy & Unmanned Systems (D35)
- Electromagnetic Maneuver Warfare (D31)
- Expeditionary & Irregular Warfare (D30)
- Information Dominance – Cyber (D31)
- Platform Design & Survivability (D33)
- Power & Energy (D33)
- Power Projection/Integrated Defense (D35
- Warfighter Performance (D34)

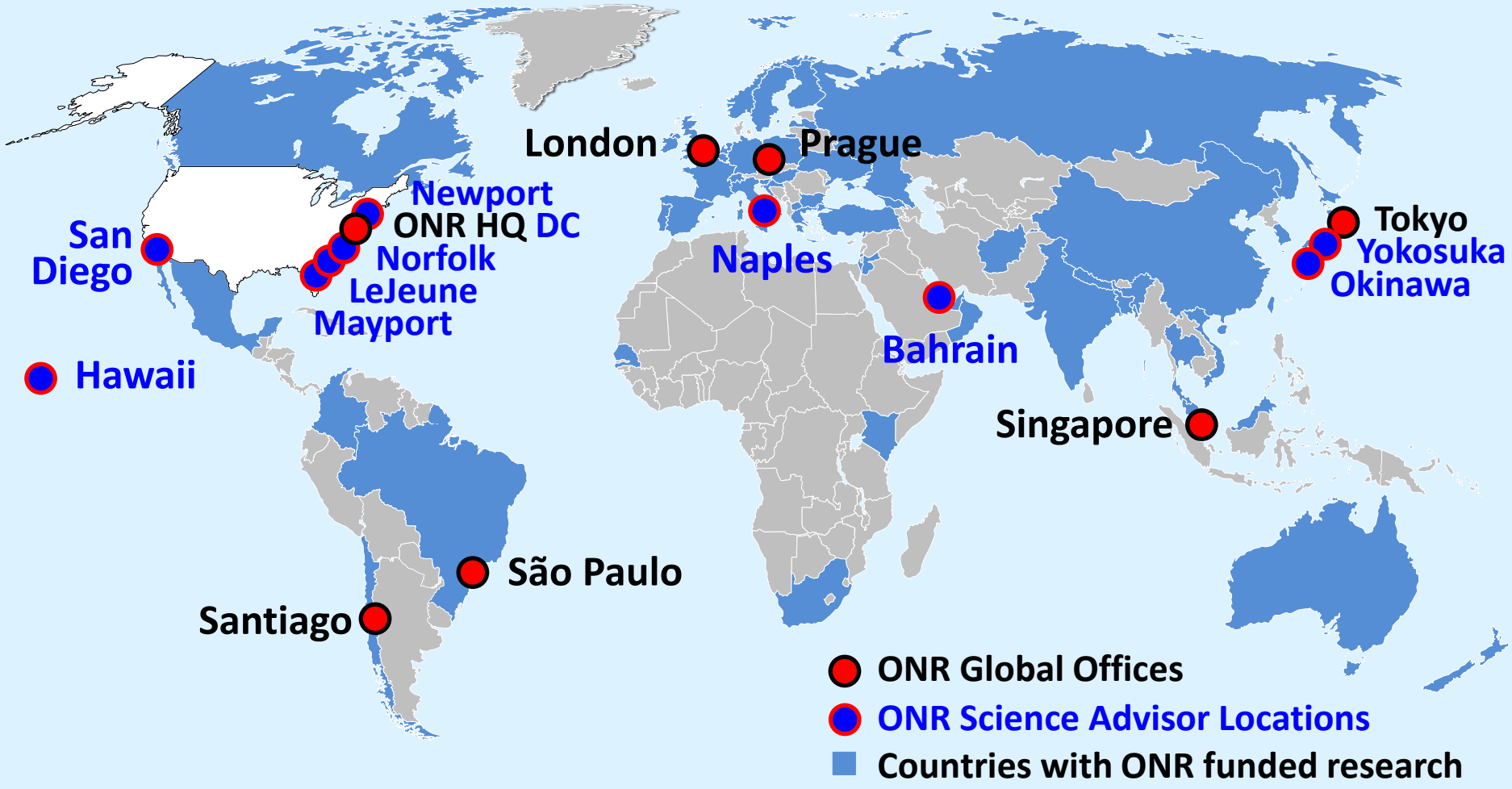
S&T Investment Priorities

Top Research Areas: ONR Publications 2009-2014



Academic & Industry Collaborations

Global & Fleet Engagement



We execute $2B/year with the Naval S&T community in the US and 54 countries

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