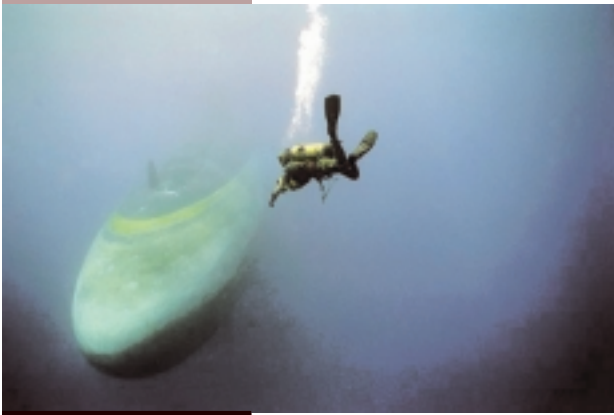


# ONR Presents...

## National Naval Responsibilities in Science and Technology



The Navy and Marine Corps operate on—and above, and under, and from—the sea. The maritime environment extends from the sea floor to

space and includes the land battlespace that is reached from the sea. It is complex and challenging, and it makes Naval operations inherently difficult and dangerous even under the best conditions. The Department of the Navy has therefore historically placed great emphasis on maintaining a vigorous science and technology program in those areas where research is critically important to maintaining naval superiority.

Many of those areas, uniquely important to the Navy and Marine Corps, are simply not addressed by research investments from the other Services, or for that matter from the National Science Foundation, the National Institutes of Health, other federal research establishments, or even private industry. This means that the health, strength, and growth of our scientific and technical capabilities in those fields depend upon the Department of the Navy.

On behalf of the Department of the Navy,

the Office of Naval Research (ONR) must ensure continuing United States leadership in these vitally important scientific and technical disciplines. It does so through research, recruitment, and education, all done with a view to sustaining an adequate base of talent and the critical infrastructure necessary to carry out research and experimentation.

### How does the Department of the Navy determine its National Responsibilities?

In consultation with experts drawn from the National Academies and elsewhere, the ONR identifies National Naval Responsibilities. ONR looks at various scientific fields and assesses:

- The scope of Naval responsibility.
- Funding and funding trends.
- The scope, degree, stability, and trend of

non-Naval funding.

- The scientific and technological performer base—in academia, government, and industry.

- The scientific and



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technological infrastructure.

- The scientific and technological knowledge-base—including graduate and post-doctoral programs in the area.
- The prospects of integration with and transition to engineering development and acquisition programs.

### **What does the Department of the Navy do to meet its National Responsibilities?**

Above all, it seeks to keep the field healthy by giving it stability. The Office of Naval Research finds relevant programs and allocates resources to them. It keeps key areas of basic and applied research strong, and it balances theoretical, empirical, and field work to sustain a research infrastructure. It actively seeks to attract talented investigators to the field through civilian and military fellowships, and by supporting entry-level faculty. And finally the Office of Naval Research establishes centers, real and virtual, of integrated research when appropriate.



### **What are the National Naval Responsibility Programs?**

One program area has been approved; two others are under active consideration.

#### **Approved:**

- *Ocean acoustics.* Investigators in this field seek to understand the physics of

sound in water—how it is generated, how it is propagated, and how it is scattered. This knowledge is vital to submarine and antisubmarine warfare.

#### **Under consideration:**

- *Hydrodynamics and naval architecture.*

Hydrodynamics is the study of the physics of fluids—how they behave and how they flow. This in turn is of great importance to naval architecture—the design of ships.

- *Underwater weaponry.* The

development of underwater weaponry—vital to any modern navy—depends upon a diverse range of scientific and engineering disciplines. Sensors, autonomous control systems, network technologies, explosives, guidance, fire control, and propulsion are a few of the areas covered by this responsibility.