

# Office of Naval Research

*From optical and atom laser technologies to blood substitutes and techniques for preventing hearing loss; from the accuracy of GPS to understanding how sounds travel in the oceans; from basic research to manufacturing technologies, the U.S. Department of the Navy's Office of Naval Research (ONR) has a long history of funding innovations that change the world.*

*Supported by world-class scientists and engineers—including 50 Nobel Laureates—the results of ONR-funded science and technology allow our Naval services to protect the freedom and independence of the United States and our allies around the world; it also provides spin-off technologies that touch the lives of all our citizens.*



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# The Office of Naval Research

*Innovative Science since 1946*

In discovery, concept and design advances, invention, and high-risk initiative, the Office of Naval Research (ONR) has been delivering world-changing technologies to the Navy and Marine Corps (Fleet/Force) for more than half a century.

Established as the first federal agency whose mission was to promote Science and Technology (S&T) in academia, laboratories, business, and elsewhere, ONR proved so successful that Congress used the same model to establish the National Science Foundation in 1951.

ONR manages programs that range from basic research (6.1) through applied research (6.2) and takes the most promising technologies and matures them. ONR moves the most capable of those on to development (6.3) and realistic demonstration, application, delivery, and deployment to the fleet and force. Many of these technologies also transition to the commercial world. This process is summed up as innovation, experimentation, and transition.

Discovery and invention feed application and delivery, and are guided by awareness of the Fleet/Force's operational needs. ONR's program officers – first-rate staff scientists who serve as project and program managers – have broad discretion in project selection, and are held responsible for S&T program results.

## *ONR is organized into six S&T Departments:*

**Ocean, Atmosphere & Space** (Sensing & Systems; Processing & Prediction)

**Human Systems** (Medical S&T; Cognitive, Neural & Biomolecular)

**Information, Electronics & Surveillance** (Electronics; Surveillance, Communications & Electronic Combat; Mathematical, Computer & Information Sciences)

**Naval Expeditionary Warfare** (Strike Technology; Expeditionary Warfare Operations)

**Engineering, Materials & Physical Science** (Materials S&T; Mechanics & Energy Conversion S&T; Ship Hull, Mechanical & Electrical Systems S&T; Physical Sciences S&T; Navy S&T Ship Office)

**Industrial and Corporate Programs** (Manufacturing S&T; Product Innovation; Corporate Programs; Small Business Innovation Research (SBIR); and Small Business Technology Transfer (STTR).

## **Recently launched *Future Naval Capabilities (FNCs)* initiatives concentrate scientific and technological resources on nearer-term, applied science and technology efforts, and include:**

- **Autonomous Operations** increase performance and affordability of unmanned air, sea, and land vehicles.
- **Capable Manpower** initiatives prepare our troops to fight and win in information rich, distributed battle-spaces.
- **Electric Warships and Combat Vehicles** for efficient, powerful, electric power plants enabling unprecedented survivability.
- **Knowledge Superiority and Assurance** to distribute information in a dynamically managed, interoperable network that features high capacity connectivity and enterprise-wide integrated information.
- **Littoral Anti-submarine Warfare** programs enable our forces to detect, classify, localize, track and engage threats in the littoral environment.
- **Littoral Combat and Power Projection** develops the capability of deploying, reconstituting, and supplying our forces from the sea.
- **Missile Defense** is developing 360 degree protection, overland surveillance and fire control

capability, an integrated air picture, composite combat identification, distributed weapons control, and overland intercept capability to mitigate the threat of proliferating ballistic and cruise missiles.

- **Organic Mine Countermeasures** to clear enemy mines at sea, on the shore, and inland.
- **Fleet/Force Protection** to provide effective means of protection of naval platforms – ships, aircraft and vehicles – with weapons, sensors, and countermeasures.
- **Time Critical Strike** to allow Naval forces to hit the right target at the right time.
- **Total Ownership Cost Reduction** will reduce maintenance and manning, and will advance design and manufacturing processes, ensure environmental compliance, and give the Naval forces reliable cost estimating tools.
- **Warfighter Protection** will keep our Fleet and Force healthy and fit, and give them the best possible combat casualty prevention and care.

ONR also seeks to foster “disruptive technologies” – new capabilities not yet even envisioned by operators’ requirements. New offices – *Swampworks* and *Tech Solutions* – have been established to find innovative technological solutions to emerging challenges. *Swampworks* initiatives, for example, include jet noise mitigation, and the challenge of conducting anti-submarine warfare in the littoral environment.

ONR's *Naval Fleet/Force Technology Innovation Office* (NFFTIO) provides an S&T interface to the operational, strategic planning, and the concept development Joint Navy and Marine Corps Commands worldwide. ONR's Commercial Technology Transfer Office (CTTO) ensures that innovations and programs ready to transition are rapidly delivered to our Fleet and Force.

ONR continues to provide cutting edge science and technology... [Visit us at www.onr.navy.mil](http://www.onr.navy.mil)