

## Departments



## Science and Technology (S&T) Department

FY22: 140 FTEs

145 Projects (116 are NISE)

- Technical management, research and development, and integration support to develop advanced technologies that ensure technological superiority for the Navy, Marine Corps, and Joint Warfighters.
- Develop, motivate and sustain partnerships with industry and academia to expand research opportunities, recruitment and promote technology transfer to/from the private sector.
- Analyze C4ISR and Space systems to identify gaps in capability; assist in strategic roadmaps to future technology development.
- Rapidly prototype and demonstrate capabilities that address emergent Naval technology needs.

## Customer Support

- Defense Advanced Research Projects Agency (DARPA)
- Office of Naval Research (ONR)
- Office of the Secretary of Defense (OSD)
- Strategic Capabilities Office (SCO)
- Deputy Assistant Secretary of Defense (Emerging Capability and Prototyping) (DASD (EC&P))
- Navy Tactical Exploitation of National Capabilities (TENCAP)

## Leadership

Suzanne Huerth, PhD, SSTM — Department Head

Lucas Overbey, PhD — Deputy Department Head

### S&T Lead Managers:

Tom Glaab — Naval Innovative Science and Engineering (NISE)

Jason Livingston — DARPA

Steve Fraile — ONR and Advanced Technology Research

Greg Hays — SSTM Rapid Prototyping and Exercise

## Science and Technology Focus Areas

Research and development of mission-critical information warfare with a focus on:

- Research and development of game-changing technologies in autonomy-enabled battle management aids, including decision making, battlespace awareness, trusted artificial intelligence (AI), optimized contested logistics, human-machine decision making, and test, evaluation, verification, and validation (TEVV) of autonomy-enabled systems.
- Establish leadership in electromagnetic maneuver warfare (EMW), touching on counter-C5ISR, persistent battlespace awareness, RF-enabled cyber effects, and edge sensing and processing applications and research in multi-modal sensor fusion, RF front end design, and low size, weight, and power (SWAP) systems.
- Develop leading expertise and capabilities in quantum and optical communications and sensing, focusing on persistent targeting and ISR, assured communications and PNT, and preparing for the future in quantum computing and algorithms.
- Rapid prototyping and development for cutting-edge technologies in cyber warfare, resilient communications, model-based engineering, and immersive technologies.

### Areas of Emphasis

- Changing the mindset from solving requirements to solving warfighter problems.
- Create opportunities to engage with industry and academia.

## Achievements

- NIWC Atlantic has invested in fixed and mobile optics labs to support development of novel free-space optical (FSO) communications technologies and systems. FSO does not operate at radio frequencies, so it is much harder for adversaries to intercept. NIWC Atlantic has engaged industry to support this effort through an Advanced Navy Technical Experiment (ANTX) event.
- Successfully designed, developed, and implemented an automated decision aid software application, sensor system package, and wireless mesh network for the DARPA Robotic Autonomy in Complex Environments with Resiliency (RACER) program to provide enhanced situational awareness inside the Command Post (CP) of autonomous ground vehicle operations during the second field experimentation at Camp Roberts, California.



**Delivering mission-critical information warfare capabilities to the Warfighter**

Naval Information Warfare Center (NIWC) Atlantic is a Navy engineering and Information Technology (IT) Command and part of the Naval Research and Development Establishment.

Our work is shaped by requirements that demand research and engineering with the goal of delivering the operational advantage gained from fully integrating Naval information functions, capabilities and resources to optimize decision making and maximize warfighting effects.

We deliver the products and solutions that help our customers accomplish their mission today and into the future and most importantly, serve our nation by delivering information warfare solutions that protect national security.

# Science and Technology Department

## Deputy

### DARPA

Tactical Technology Office (TTO)  
Information Innovation Office (I2O)  
Biological Technologies Office (BTO)  
Defense Sciences Office (DCO)  
Microsystems Technology Office (MTO)  
Strategic Technology Office (STO)

### ONR

Information, Cyber and Spectrum Superiority  
Battlespace and Maritime Domain Access  
Mission Capable Persistent and Survivable Platforms  
Warfighter Supremacy  
Force Protection and Integrated Defense

### NISE

Facility Recapitalization  
Workforce Development  
Basic and Applied Research  
Technology Transition

### ATR

Assured Communications  
Electromagnetic Maneuver Warfare  
Joint Capability Technology Demonstrations (JCTDs) and Emerging Capability Support

## Science and Technology Integrated Product Teams

- **DARPA:** The Defense Advanced Research Project Agency (DARPA) Integrated Product Team (IPT) focuses on providing DARPA with technical expertise and direct support to DARPA Science and Technology programs which are focused on providing or preventing strategic and tactical surprise. These programs are high-payoff, high-risk development efforts of critical technologies and systems that enable information warfare solutions for the Warfighters of today and the future.
- **ONR:** The Office of Naval Research (ONR) IPT provides provides technical expertise and direct support to S&T programs facilitated by ONR that enable the future operational concepts of the U.S. Navy and Marine Corps. In support of ONR objectives, the Business Unit currently performs innovative research and development (R&D) of leap ahead technologies and future Naval capabilities; leadership and Program Management (PM) duties for major S&T programs; quick reaction, prototyping, and experimentation; and global technology awareness. In addition, we support technology demonstrations and assessments where industry, academia, and/or government-developed prototypes are presented for Warfighter feedback.
- **NISE:** Section 219 of NDAA established a mechanism whereby a defense laboratory may fund basic and applied research, transition of technologies developed by the defense laboratory into operational use, recruitment and retention of personnel with needed scientific and engineering expertise, and revitalization and recapitalization of the laboratories. Basic research is directed toward greater knowledge of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind. Applied research is understanding the means to meet a recognized and specific need. It may be oriented toward the design and development of prototypes. Technology transition moves mature technologies into programs of record. Workforce development grows the technical knowledge, skills and abilities of our scientists and engineers according to their assigned competencies. Facilities recapitalization builds the infrastructure of our laboratories with new equipment or for the establishment of new laboratories.
- **ATR:** The Advanced Technology Research (ATR) IPT provides technical expertise and direct support to S&T programs sponsored by a variety of DoD organizations, including OSD, DASD (EC&P), SCO and TENCAP. Initiatives define and enable the future Naval and Joint operational concepts.

