



OFFICE OF NAVAL RESEARCH

SCIENCE & TECHNOLOGY STRATEGY

2026



INTRODUCTORY LETTER FROM THE CHIEF OF NAVAL RESEARCH, DR. RACHEL RILEY

My team often hears me say that “peanut butter spreading is only a strategy for making toast.”

Specifically, what I mean is that government organizations all too often focus on peanut butter spreading — hedging bets on their investments by putting a little bit of money in many places and taking cuts in small percentages across the board. And this is not, in fact, a coherent strategy.

Strategy, and especially strategy in innovation organizations, requires placing informed bets — and sometimes big ones. Resource allocation is much of what we do. Therefore, ensuring that we are allocating our portfolios to the highest and best uses at any given time (and adjusting as new data emerges) is the core of what we must do well to accomplish our mission.

The Office of Naval Research’s (ONR) mission is to equip our Sailors and Marines — and, in turn, our Joint Force — with the best technology to deter and, when called upon, defeat our adversaries. The best technologies do not appear out of the ether; rather, they are usually the result of a journey that began with basic Science and climbed the ladder of the Technology Readiness Levels (TRLs), with Warfighter input, partnership and experimentation along the way.

All good innovation organizations, both public and private sector, manage their investments as a portfolio. At ONR, we are somewhat unique across the Service innovation organizations, in that our investment portfolio stretches from TRL 1 (observing basic principles) to TRL 6 or 7 (demonstration in a relevant or operational environment). This approach is a strength and a responsibility, as we must carefully steward technologies to, and often through, the infamous “Valley of Death.”

In this important moment in time, we have embarked on a journey to refine how we do every part of our business, to make transparent what we are solving for, what bets we will place across our portfolio, and how we will measure whether and how they have paid off. Our strategy will continue to evolve, as all good strategies must, but we share it in the spirit of humility and in hopes of the most effective collaboration with our many mission partners.

I am always open to questions or feedback from any of our stakeholders and customers. If something is unclear, don’t hesitate to reach out to me or my team to clarify. And if it is clear? Then let’s get to work — not on making toast, but on delivering game-changing technologies to our Sailors and Marines whom we have the honor of serving.




DR. RACHEL RILEY
CHIEF OF NAVAL RESEARCH



I. INTRODUCTION AND THE STRATEGIC PROBLEM

A Legacy and Path of Innovation for a New Era

In 1946, public law established an Office of Naval Research in the Department of the Navy; “to plan, foster, and encourage scientific research in recognition of its paramount importance as related to the maintenance of future naval power, and the preservation of national security...” As ONR marks its 80th anniversary in 2026, we reaffirm our commitment to the vision that sparked our creation.

But the strategic landscape in which we operate is transforming. The speed of technological change is relentless, the character of conflict is evolving, and a new era of strategic competition presents challenges of a scale and complexity never before seen for the Navy and Marine Corps — and, in turn, for the Joint Force that we support. The comfortable assumptions of the past no longer hold. To continue our legacy of success for the next 80 years and beyond, ONR must adapt, refocus its efforts, and aggressively seize the opportunities of this moment. This strategy is our roadmap.



ONR delivered the Medium Displacement Unmanned Surface Vessel (MDUSV) Seahawk to the Fleet in 2026. The vessel can perform multiple mission sets, and together with its predecessor Sea Hunter, represents critical new capability for the Warfighter. (U.S. Navy Photo)

The Core Challenge: Disciplined Choice in an Age of Uncertainty

The Department of the Navy (DON) is confronted by a strategic environment defined by profound technical and operational uncertainty. And the DON's contribution to the Joint enterprise is as essential as it has always been, if not even more so. In this context, ONR must make disciplined and defensible choices in Science & Technology (S&T) that are not merely innovative but also impactful across multiple time horizons for the DON and the Joint Force. Additionally, ONR faces challenges in transitioning technology and fielding it effectively. Our ability to meet these challenges is complicated by a confluence of powerful factors:

Accelerating Speed and Complexity of Technological Change

Global commercial innovation is advancing rapidly, giving both consumers and adversaries access to new technologies. To secure naval power, we must invent breakthrough technologies that commercial interests are not pursuing, and work with our partners, such as the Department of the Navy's Rapid Capability Office (DONRCO), Portfolio Acquisition Executives (PAEs), the Defense Innovation Unit (DIU) and the Defense Advanced Research Projects Agency (DARPA), as they deploy commercial technologies for military purposes at pace.

Evolving Character of Conflict

Potential adversaries are no longer simply imitating our capabilities; they are actively developing and deploying sophisticated technologies and strategies designed to contest our dominance, disrupt our kill chains, and deny us freedom of maneuver in critical warfighting domains. Additionally, new technologies are enabling hybrid and asymmetric warfighting concepts that the Navy and Marine Corps must not only counter and ultimately neutralize but also adopt and employ.

Intensified Strategic Competition

Highly resourced and technologically savvy adversaries are actively seeking to erode our military advantage in a renewed era of strategic competition. To counter this threat, the DON, the Joint Force and the Nation look to ONR to deliver the foundational and leap-ahead S&T required to deter aggression, out-innovate competitors, and guarantee absolute U.S. maritime dominance for decades to come.

Unprecedented Global Investment in Defense Innovation

Both our allies and our adversaries are pouring immense resources into defense-related S&T, creating a crowded, competitive landscape. We must ensure that within the U.S. government, industry and academia, our investments are unique, complementary and focused on areas where we can achieve a truly decisive edge, rather than duplicating efforts of others.

Systemic Barriers to Technology Transition

ONR has historically faced institutional challenges in the transition from laboratory to field. These barriers include a mismatch between S&T cycles and acquisition timelines, uncertain demand signals from the Fleet and Force, and a dearth of dedicated partners to carry technology through engineering and manufacturing. Invention and innovation without transition is a squandered opportunity.

Balancing Time Horizons

Our responsibility is twofold. We must accelerate the delivery of capabilities that address the urgent needs of the current and impending fights. Simultaneously, we must patiently cultivate transformative inventions and discoveries capable of producing entirely new, paradigm-shifting technologies of the future. Neglecting either of these imperatives puts America's future naval power at risk.

ONR ABOARD GUIDED MISSILE DESTROYERS

For 80 years, the Office of Naval Research (ONR) has been a leader in advancing American naval warfighter readiness and dominance — leading the development of innovative science and technology for the Navy and Marine Corps. Some of the most important naval platforms and capabilities began as ONR-sponsored research.

ONR's contributions are essential to the advancement and delivery of combat systems, sensors, weapons, materials, robotic and autonomous systems, and numerous other technologies that provide critical capability for the Fleet and Force.

Among these vital platforms is the Arleigh Burke (DDG 51)-class guided-missile destroyer, which is the primary surface combatant of the U.S. Navy. Its many variants and upgrades incorporate numerous ONR advances and innovations, including:

Cutting-edge advanced materials resulting in a stronger, more durable hull, exterior and interior

Enhanced weaponry, command and control, and electronic warfare

Groundbreaking air defense, navigation and electronics

Medical systems addressing warfighter fatigue and improved survival during casualty events.

ELECTRONICS

COMMAND
AND CONTROL

RUDDERS AND
PROPELLERS

NAVIGATION

ELECTRONIC
WARFARE

MEDICAL

AIR DEFENSE

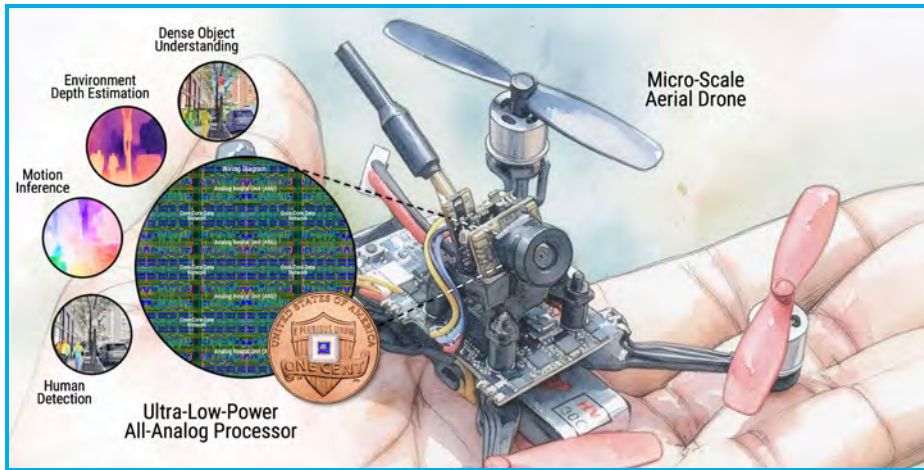
WEAPONS

HULL

SONAR



NAVY



Here we show a micro-scale aerial drone outfitted with one of our all-analog autonomous vision sensors. To the left of the drone is the transistor-level wiring diagram of the compute cores for our latest all-analog processor. The whole processor is much smaller than a penny and can fit virtually anywhere. We provide outputs of several deep neural networks that can be simultaneously run on our processor.

Chief of Naval Research's (CNR's) Intent

We will meet these challenges, ensuring ONR can deliver game-changing S&T for at least the next 80 years. We will achieve this by ruthlessly prioritizing our efforts and aligning our enterprise — our people, processes and budgeting — around a singular framework for scientific research and technology delivery. To accomplish this, we will:

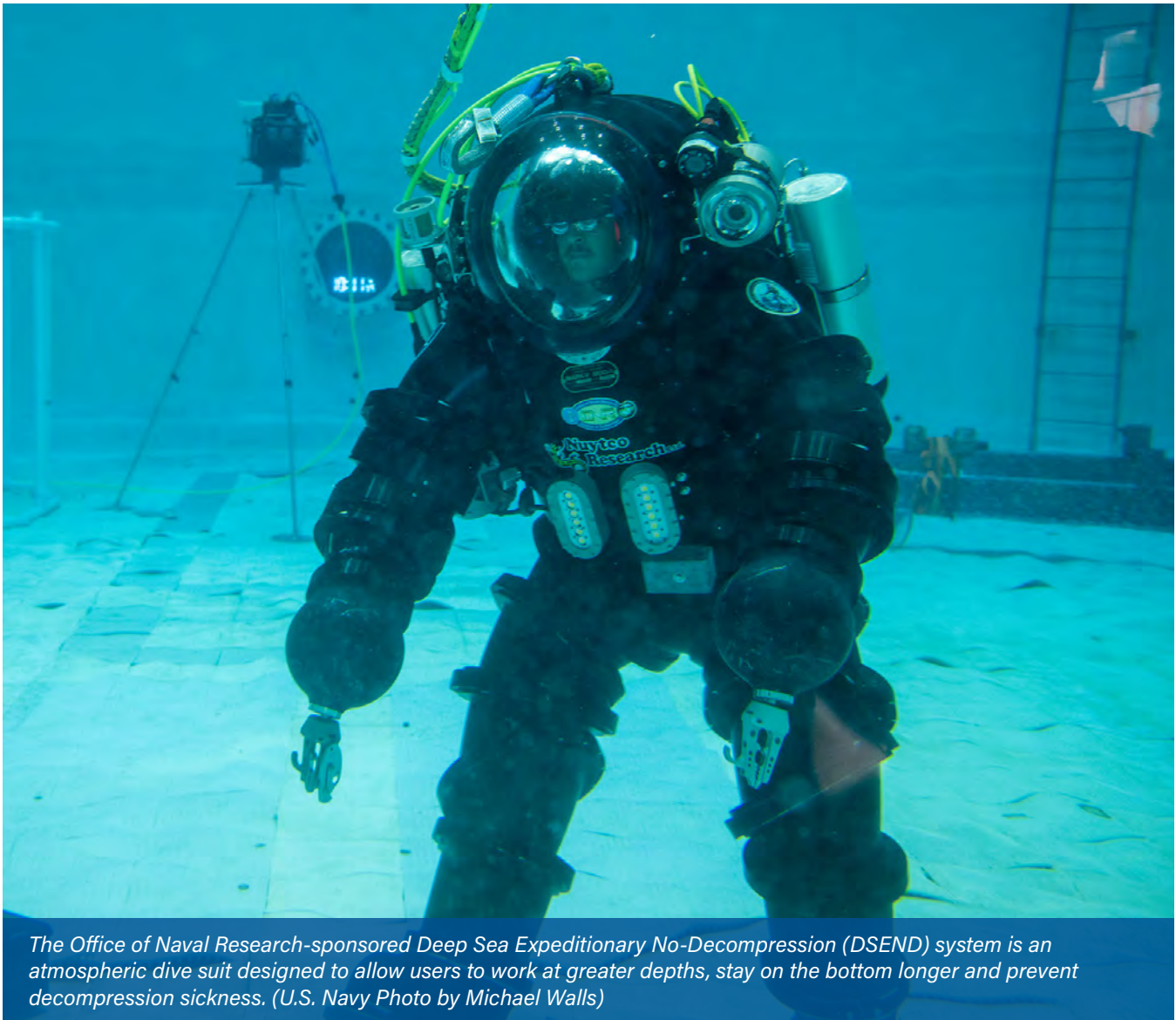
- **Focus** our world-class talent and resources on solving high-impact problems that only ONR can address.
- **Engage** more frequently, more transparently, and more effectively with all of our stakeholders.
- **Explain** the naval relevance and credible transition path for every program in our portfolio.
- **Deploy** technology at the fastest possible pace in close partnership with the acquisition community and the Warfighter, rigorously measuring the results.

At ONR, we abbreviate this as the “FEED” strategy, as in “FEED S&T to the Fleet and Force.” Because technological development is ever accelerating, we have also recently added the following, so we now refer to the strategy as “FEED at Speed”:

- **Speed** invention, innovation and problem-solving with organizational improvements and new tools like Artificial Intelligence (AI) to deliver solutions as rapidly as possible.

The U.S. Naval Research Laboratory's (NRL) Distributed Autonomous Systems Group demonstrates how a hexapod can maneuver through different terrains at NRL in Washington, D.C., Jul. 20, 2021. The hexapod tracks human movement in order to fulfill military communication needs. (U.S. Navy photo by Sarah Peterson)





II. THE TECHNICAL SOLUTION – 11 SCIENCE & TECHNOLOGY FOCUS AREAS

All strategy involves choices: where to allocate (or not allocate) resources to achieve a goal. At ONR, this process starts with our enduring 11 S&T Focus Areas and subordinate 63 Research Areas, described on pages 10 and 11. These areas serve as part of our strategic taxonomy, guiding investments across the entire S&T continuum. They trace the maturation of an idea from Science in our Basic Research Portfolio through Applied Research and Technology Maturation, and ultimately into the Future Naval Capabilities (FNCs) and Innovative Naval Prototypes (INPs) of our Advanced Technology Development Portfolio. The S&T Focus areas, which endure in their naval relevance, even as we achieve delivery of new technologies within each of them, provide a clear, coherent demand signal to academia, industry and our internal DON stakeholders about our long-term priorities. S&T Warfare Areas, another component of ONR's strategic taxonomy, drive higher-maturity technology and ensure that the S&T Portfolio is closely aligned with operational priorities, tailored to address domain-specific naval missions and challenges. This focus ensures that our efforts are cohesive rather than a collection of disconnected projects.

FOCUS AREAS AND

Artificial Intelligence (AI) and Autonomy

- Machine Learning
- Adversarial AI and Autonomy
- Intelligent and Collaborative Agents
- Perception and Understanding
- Autonomous Systems Control
- Modeling and Simulation, Testing, and Verification and Validation

Command, Control, Communications, Computers, Cyber, Intelligence, Surveillance, and Reconnaissance (C5ISR) and Naval Space

- Electromagnetic Warfare
- Surveillance, Sensors, and Phenomenology
- Quantum Positioning, Navigation, and Timing (PNT)
- Communications and Networking
- Intelligence, Decision Superiority, C2, and Combat Systems
- Full-Spectrum Cyber
- Maritime Rocket Logistics
- Maritime Space Payload Technology and Exploitation
- Space-Based Maritime Domain Awareness
- Space-Based Alt-PNT

Directed Energy and Kinetic Systems

- High Energy and Pulsed lasers
- High Power Microwaves
- Counter Directed Energy Weapons
- DE Lethality and Operations Analysis
- DE Capabilities Enablers
- Propulsion Systems and Airframes
- Improved Payloads
- Find, Fix, Track, Target Enablers
- Weapon Networking and Autonomy

Materials and Electronics

- Sensor Materials
- Extreme Environment materials and Processes
- Sustainable and Operationally Robust Materials
- Integrated Materials Systems Technology
- RF Electronics
- Nanoelectronics
- Quantum S&T
- Analog & Mixed Signal Devices and Circuits
- Power Electronics
- EO/IR Sensor Components
- Plasma Sciences
- Electric Weapons

SUPPORTING RESEARCH

Human and Biological Systems

- Warfighter Decision Superiority and Readiness
- Medical and Human Performance Technologies
- Bioinspired and Bioengineered Technologies
- Human Machine Teaming

Manufacturing

- Process and Automation
- Digital Tools
- Integrated Manufacturing and Sustainment Technologies

Naval Engineering

- Resilient Naval Systems Science and Engineering
- Integrated Cyber-Physical Systems
- Complex Systems and Design Sciences

Naval Aerospace

- Sea-Based Aviation
- Naval Aviation Readiness and Sustainment
- Advanced Autonomy and Integration
- Aircraft Propulsion, Power, and Thermal Management

Ocean, Atmosphere, and Space

- Understanding the Physical Battlespace
- Battlespace Sensing Technology
- Battlespace Prediction Systems
- Battlespace Exploitation

Power and Energy

- Energy Storage
- Power Generation
- Thermal Management
- Power Distribution, Control, and Resilience

Undersea Systems

- Undersea Sensors
- Undersea Distributed Systems
- Undersea Exploitation
- Undersea Weapons and Effects

ONR Focus Areas are the broad technical domains where we make long-term, high-impact investments to address enduring naval challenges — representing major, game-changing opportunities to advance naval warfighting.

In support of those Focus Areas, ONR Research Areas are the critical details — the specific scientific, mathematical and engineering disciplines that make possible the dominant capabilities and knowledge directed in the Focus Areas.

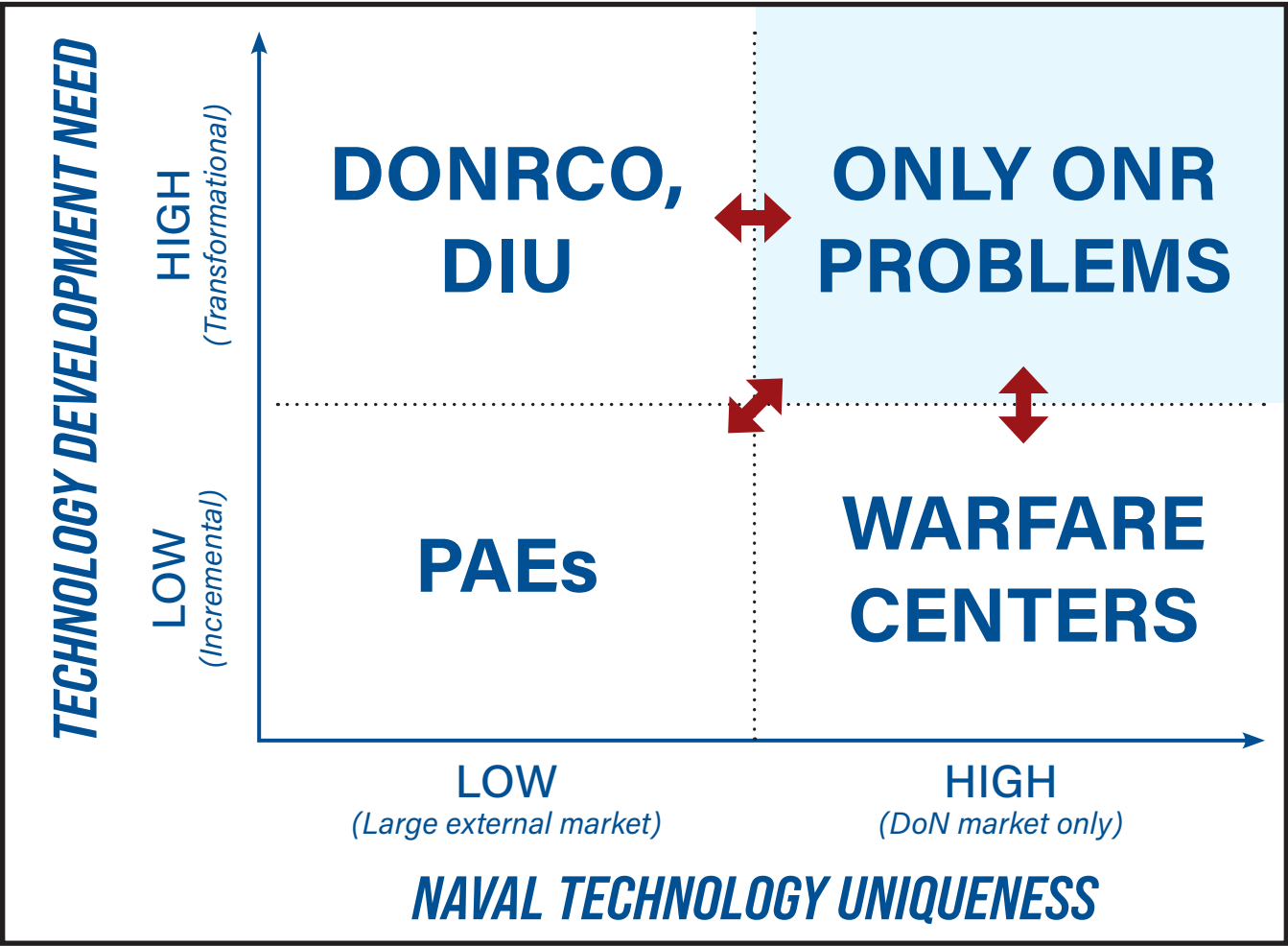
*Taken together — when the macro guidance of the Focus Areas meets the rolled-up sleeves and daily ingenuity taking place in the Research Areas — ONR can, and will, **FEED S&T to the Fleet and Force — at Speed.***

III. ACTIONS TO IMPLEMENT CNR’S INTENT

To execute our strategy, we will organize our enterprise-wide efforts under the “FEED at Speed” framework. These are not merely slogans; they are actionable lines of effort with clear objectives and accountable owners.

1. FOCUS: Executing a Disciplined and Strategic Portfolio

The cornerstone of our disciplined approach is a relentless focus on solving what we define as the “Only ONR” problems. Only ONR problems represent differentiated value to the Department of War (DoW) and DON, as shown below. They are challenges residing at the intersection of highly transformational potential and unique naval technology applicability. They emphasize scientific research and technological development, leading to disruptive, unique, and novel technologies that enable entirely new, game-changing capabilities rather than incremental improvements. They are in S&T areas where the commercial market is unlikely to invest, with broad definitions in Basic Research (which seldom has economic returns that excite the market), and narrower views as we move into the more Applied side of our portfolio. In sum, if ONR does not pursue them, no one else will develop and deliver them in a timely and efficient manner. We will rigorously apply the “Only ONR” framework to every portfolio review and investment decision — not to eliminate risk, which would be foolhardy in an innovation organization — but to take smart, calculated risk, with articulated tradeoffs and expected outcomes. This is as much a cultural as a process change.





A U.S. Marine tests the Office of Naval Research-sponsored Joint Marksmanship Assessment Package, or JMAP, which is a training tool that digitizes and streamlines the process of assessing accuracy, speed and performance on the shooting range. (U.S. Navy photo by Michael Walls)

To Focus, we will:

Identify, Implement and Assess Naval Focus Areas

ONR will use Research Areas to implement its Future Years Defense Program (FYDP), modeling and execution. We will prioritize our portfolio through active executive assessment and management of our S&T Focus Areas, as well as shifts in portfolio composition as necessary.

Actively Manage S&T Maturation

We will appoint senior, experienced scientists and engineers as Focus Area Leads (FALs) to serve as subject-matter experts and chief S&T strategists in their scientific and technical domains. These leaders are responsible for creating, continuously assessing, prioritizing, and red teaming our S&T goals within their domains and subordinate Research Areas. They will be informed by a deep understanding of future naval challenges, intelligence on adversary capabilities, and emerging technological trajectories, and they will advocate for technology transition in their Focus Areas.

Align our S&T Workforce

We will deliberately organize our workforce to maximize outcomes and accelerate the transition of mature technologies to Warfighters. Specifically, we will align our

talent pool to ensure we have cutting-edge scientists and engineers, now and in the future, performing in the scientific and technical disciplines and domains required by our S&T Focus Areas and Research Areas.

Conduct Disciplined Program Prioritization

ONR will continuously evaluate Research Areas against their transformational effects and unique naval applicability, as well as varying technical maturity timelines. This demands clear-eyed resource decisions that deliver the greatest advantage to the Navy and Marine Corps in future naval power. This discipline will pervade the selection of S&T programs and provide guidance to the Naval Research Laboratory, Naval Warfare Centers, other government laboratories, academia and industry on S&T priorities. Furthermore, ONR will apply new scrutiny toward Science, Technology, Engineering and Math (STEM) education; Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR); and Manufacturing Technology to ensure that these programs are fully aligned with our Focus Area priorities. Projects incompatible with our “Only ONR” focus will be divested — indeed, a crucial part of any portfolio strategy is to divest at speed when necessary.

ONR ABOARD BALLISTIC MISSILE AND ATTACK SUBMARINES

For 80 years, the Office of Naval Research (ONR) has been a leader in advancing American naval warfighter readiness and dominance — leading the development of innovative science and technology for the Navy and Marine Corps. Some of the most important naval platforms and capabilities began as ONR-sponsored research.

ONR's contributions are essential to the advancement and delivery of combat systems, sensors, weapons, materials, robotic and autonomous systems, and numerous other technologies that provide critical capability for the Fleet and Force.

Today's nuclear subsurface fleet is the result of 80 years of leadership by ONR in many of the critical technologies found on these vessels. ONR has also provided much of the fundamental knowledge that allows these vessels to operate in the deep sea for months at a time. The result is the world's quietest, most lethal and most survivable submarines in the world — the cornerstones of maritime supremacy and our strategic deterrence. Some of the ONR-led innovations include:

Specialized sensors and systems for enhanced navigation and stealth

Cutting-edge propulsion systems offering greater speed and reliability

Creative construction techniques that reduce production time and life-cycle costs

Improved coatings and design features for stronger hulls

Extensive upgrades to both tactical and strategic weapon systems.

SENSORS |
COMMAND
AND CONTROL |
PROPULSION |
CONSTRUCTION |
MISSILES |
STEALTH |
CONTROL SYSTEM |
HULL |
TORPEDOES |

| SONAR

| NAVIGATION



2. EXPLAIN: Articulating Naval Relevance and Value

For too long, the S&T community has been perceived as living in an ivory tower, removed from operational realities and conversing in a secret, highly technical language. However, we at ONR acknowledge that we are at our best when we are closely connected to our Sailors and Marines and can explain the content and application of our work simply to them. Variations of the quote, “If you can’t explain it simply, you don’t understand it well enough,” have been attributed to multiple famous scientists. But no matter who originally put it so succinctly, the most effective technical experts know it to be true, and they put it into practice regularly. Therefore, we will clearly and consistently articulate S&T’s value proposition to every stakeholder. To define S&T’s differentiated value, we will:

Map to the Mission

We will map the ONR S&T portfolio to its alignment with DoW direction, including the National Defense Strategy and DoW Critical Technology Areas. On the Navy side, we will trace our work to DON Guidance in the CNO’s Alignment, Assessment, Prioritization and Programming (CAAPP) and the CNO’s Fighting Instructions. We will institutionalize the process of mapping every research area to its specific kill chain effects and a likely, credible transition path. This analysis provides a clear, compelling narrative that answers the critical question, “How will this help the American Warfighter win?”

Implement Three Future Years Defense Program (FYDP) S&T Plans

To ensure our investments deliver an enduring advantage and anticipate future warfighting needs, ONR is implementing comprehensive three FYDP S&T roadmaps. The primary purpose of these 15-year plans for each Focus Area is to establish a rigorous, disciplined, analysis-based framework that goes beyond mere program extensions to proactively identify and address long-term scientific, technical and knowledge gaps. The Three FYDP roadmaps coalesce ONR and its stakeholders around shared long-range goals, translating detailed gap analyses into prioritized recommendations that guide and communicate our vision.

Align Budget

Investment in S&T fuels our ability to outpace adversaries in furtherance of future naval power. We will design our financial structure and systems to ensure that every dollar is purposefully aligned with our most urgent naval priorities. This modernized framework will bring unprecedented clarity and transparency, empowering Congress, Navy leadership, resource sponsors and financial managers to see the direct impact of their funding support. By drawing a clear line from fiscal resources to S&T outcomes, we inspire confidence that our Nation’s investments are driving real, measurable S&T advantage for the Fleet and Force.

Tailor Communications

We must tailor our communication for all stakeholders — from Congress and the Office of the Secretary of War, who need to understand the justification for our budget, to the program office and the Warfighter, who need to understand the technology being delivered and resultant future capabilities. We will communicate the naval S&T portfolio with frameworks and taxonomies that best convey our intent and desired outcomes. This clarity builds trust and understanding of our mission so our partners can maximize benefits from what ONR delivers.

3. ENGAGE: Synchronizing with Our Stakeholder Ecosystem

Deploying new capabilities to the Warfighter requires a team effort across the DON, in which the S&T community must collaborate effectively with resource sponsors, the acquisition communities, Type Commands and Navy and Marine Corps operational forces themselves. And, given the broader community of industry, academia and other government entities with whom we collaborate, working effectively with our external stakeholders is no less crucial. We cannot succeed in isolation, and especially not as the mature parts of our portfolio attempt to traverse the infamous “Valley of Death” to benefit our Sailors and Marines. As the DON modernizes itself, implementing acquisition reform, OPNAV redesign, and other strategic efforts, our traditional relationships and linkages are evolving. In parallel, we will build new processes and reinforce existing ones to ensure regular touchpoints, accurate and timely information exchange, and improved advocacy across our entire ecosystem.

Synchronize and align to the changing environment

ONR’s FALs and Program Officers will engage constantly with the PAEs, who will field many of ONR’s technology outcomes. We will assign domain-specific S&T Leads to each PAE to serve as S&T advisors who will gain an understanding of the PAEs’ requirements and explain the S&T ONR is developing and its impact on planned capabilities. ONR will similarly synchronize with OPNAV to understand Warfighter requirements and resourcing to assess programmatic risk and transition impediments, and with DONRCO to understand how it implements new ways to find and field innovative commercial technology.

Reinforce traditional relationships

With the outputs of the Explain initiatives, ONR will be better equipped to articulate its S&T needs to performers and to break down institutional silos to avoid isolated S&T efforts and facilitate more efficient transition. We will engage with the Fleet and Force informally and formally through our embedded Science Advisors to ensure our S&T priorities align with their current and future needs — and if they do not, we will adjust our priorities. We will conduct robust experimentation and analysis with Warfighters to ensure our S&T solves their problems in operationally relevant environments rather than only working in pristine laboratory settings. We will continue our engagement with other S&T providers, such as the Marine Corps Warfighting Laboratory (MCWL) and the other Service laboratories, to leverage their products, support their efforts, and identify and eliminate duplication of effort.



The Robotic Servicing of Geosynchronous Satellites (RSGS) payload integrated with the Northrop Grumman Mission Robotics Vehicle (MRV) spacecraft bus sits outside the cryogenic thermal vacuum chamber after completing testing at the U.S. Naval Research Laboratory’s (NRL) Naval Center for Space Technology (NCST) in Washington, D.C. NRL NCST, with funding support from the Defense Advanced Research Projects Agency (DARPA), conducted the final space-readiness testing on RSGS, a robotic payload designed to extend and upgrade satellites already in orbit. (U.S. Navy photo by Jonathan Steffen-Arnold)

ONR ON THE F-35B/C LIGHTNING II

For 80 years, the Office of Naval Research (ONR) has been a leader in advancing American naval warfighter readiness and dominance — leading the development of innovative science and technology for the Navy and Marine Corps. Some of the most important naval platforms and capabilities began as ONR-sponsored research.

ONR's contributions are essential to the advancement and delivery of combat systems, sensors, weapons, materials, robotic and autonomous systems, and numerous other technologies that provide critical capability for the Fleet and Force.

The F-35 Lightning II is a fifth-generation, multirole fighter that significantly advances the air combat capabilities of the Marine Corps and Navy. ONR has made major contributions to the development and improvement of both the Marine and Navy version of this aircraft, including:

Upgrades to its air-to-air weaponry

Enhancements to pilot survivability

Improved affordability for the manufacture of the canopy, targeting system, and other assemblies

Advances in simulation and testing of complex components.

CANOPY |

SURVIVABILITY |

TARGETING |

ARMAMENT |

MATERIALS |

ADVANCED
MANUFACTURING

STOVL SYSTEM
UPGRADES

SIMULATION
AND TESTING





U.S. Navy Quartermaster 3rd Class Zinnia Bank participates in a virtual navigation demonstration using the ONR Global TechSolutions-sponsored Virtual Bridge and Nautical Trainer (VIBRaNT), held in the pilot house of the Nimitz-class aircraft carrier USS Theodore Roosevelt (CVN 71). (U.S. Navy photo by Mass Communication Specialist Seaman Alexia Mezick)

New Industry Engagement

While ONR will be vigilant about directing every one of our dollars to “Only ONR” problems, we would suboptimize our whole system if we did not help to direct outside capital toward meeting naval needs. To actively synchronize our efforts with the broader ecosystem, ONR will host Innovation Industry Days (I2D) across all its S&T Focus Areas on an annual basis. An I2D is a dedicated, collaborative forum where ONR FALs present long-term projections of critical S&T challenges and efforts to non-traditional, commercial and innovative industry partners. Crucially, these engagements are not just about projecting our needs but actively listening to industry’s groundbreaking ideas. Through I2Ds, we gain vital situational awareness of ongoing private sector efforts, enabling us to identify where industry may already be solving the problems we are currently investigating, thereby preventing duplicative research. Furthermore, where highly promising commercial concepts exist,

we will leverage these forums to identify opportunities to provide targeted funding to speed the development of these technologies. Ultimately, this proactive engagement accelerates the delivery of technology to the Warfighter by providing a clear demand signal, while simultaneously capitalizing on existing commercial innovation.

Focus Area Crosswalks

To keep foundational research focused on the future of naval warfare, ONR will hold Focus Area Crosswalks. Unlike program reviews, these exploratory forums bring together ONR Program Officers, Fleet operators, and strategic planners to consider and brainstorm future warfighting needs. Bounded by reality and feasibility assessments based on the current state of S&T, the goal is to examine and inform how emerging science and technology could shape new operational concepts and long-term future naval power. By assessing the progress of basic and applied research, these discussions provide the strategic foresight needed to align today’s discoveries with tomorrow’s challenges and ensure research supports decisive future capabilities.



CAPT Juston Kuch, Training Air Wing One Commodore, operates a simulated T-45 Goshawk in the Operational Flight Trainer onboard NAS Meridian. The simulators incorporate augmented-reality technology to enhance student pilot training. (U.S. Navy photo by Petty Officer 2nd Class Molly Tice)

4. DEPLOY: Delivering with Urgency and Measuring What Matters

“Innovation is our advantage...But innovation is not enough. We have to follow through. Blueprints alone do not deter aggression. We have to translate our lead in the lab to a lead in the field.” Forty years ago, President Ronald Reagan said this in an address to our Nation. It is no less true today. Naval power and national security come from deployed capabilities, not technology that has “transitioned” to a partner with an indeterminate outcome in mind. We will streamline our internal processes and work relentlessly with our partners to accelerate the transition of mature technologies from the laboratory to the Fleet and the Force. A critical and transformational component of this effort is redefining how we measure success.

A Paradigm Shift in Measuring Success

For too long, we have measured inputs (budget appropriated), processes (activities completed), and outputs (what a process produces) rather than desired impact on Warfighter competitive advantage resulting from fielding S&T. We will now shift our focus to measuring outcomes — the tangible impact and benefit delivered to the Warfighter. Success is not demonstrating a new prototype; success is delivering a fielded capability that provides a decisive competitive advantage to our Sailors and Marines. We will develop and implement rigorous outcome-based metrics across our entire portfolio. Additionally, we will document when viable and transformational technology is not pulled into the Fleet and Force and why — so that we can learn and improve.

Actively Manage Mature Technology Goals with S&T Warfare Area Leads

ONR will leverage S&T Warfare Area Leads — active-duty officers with technical expertise — to synchronize technology projects with real-world operational needs. Embedded within specific warfare and technical domains, these leads act as essential bridges between scientific

innovation and Warfighters, providing deep insight into urgent challenges and evolving threats. They advocate operational requirements within ONR while championing new S&T solutions to PAEs, OPNAV, DONRCO, and the Fleet and Force. Working closely with both operational and scientific leaders, Warfare Area Leads match real-time demand with cutting-edge supply, driving S&T investments that deliver decisive, deployable naval capabilities. S&T Warfare Leads will champion and expedite the transition of feasible technologies.

Calibrate ONR Portfolios

ONR has historically used S&T portfolios with different technical maturities, time horizons, processes, selection criteria, and relationship with stakeholders. With increased emphasis on focus, prioritization and urgency, ONR will recalibrate the programs that comprise its S&T portfolio. This includes calibration of our FNC and INP programs to ensure they produce transformational technology and meet our new definition of success. ONR will redesign its Technology Maturation portfolio to target transformational progression aimed at specific technology solutions for the Warfighter.



An uncrewed aerial vehicle equipped with specialized software and sensors flies during the Technical Concept Experiment (TCE) 23.2, held at Marine Corps Base Camp Pendleton, California. TCE 23.2 showcased multiple systems designed to enhance the Marine Corps' capability in carrying out amphibious operations. (U.S. Navy photo by Michael Walls)

5. SPEED: Transforming Scientific Research and Technology Advancement

Historically, S&T advancement — and the delivery of new technology — has been limited by the speed of human-driven problem-solving and invention. For the last 80 years, we have added further rate-limiting factors by layering on onerous additional approval processes, duplicative budgeting cycles, and “waterfall” development methodologies with limited benefit. Even with advances in education, research tools and global collaboration, the core driver of progress has remained the single human mind, with all its strengths and weaknesses. Now, AI offers a revolutionary path to accelerate discovery and tackle scientific problems at unprecedented speed and scale — potentially even using AI to conduct the actual research aimed at discovery, invention and innovation. In addition, the new urgency that this administration has brought to putting the mission ahead of the bureaucracy has opened a critical juncture in cutting through red tape. The final tenet of the “FEED at Speed” strategy will ensure that the rate-limiting factor in all our efforts is the physical science and only the physical science — we will accelerate innovation, discovery and invention through the best tools available and minimize our own bureaucracy.

Research on AI and research by AI

ONR will begin a strategic initiative to not only research AI for naval use cases but also use AI to conduct basic and applied research. The goal is to achieve machine-driven acceleration in research to outpace adversaries in the discovery, invention and fielding of new technology. ONR will use AI to compress combinatorial search problems to accelerate scientific research and will search for new forms of accelerated research, such as AI hypothesis-driven research or other methods, yet to be discovered.

AI-Enhanced Program Execution

ONR Program Officers (POs) manage complex portfolios under tight administrative constraints. ONR will invest in training and deploying specialized AI assistant tools to help POs stay current with fast-changing technology, identify new research and non-traditional performers, synthesize researchers’ results, and automate routine administrative tasks. Additionally, ONR will focus on educating POs on how researchers are increasingly applying AI within their own scientific workflows. By leveraging AI for data-informed portfolio analysis, a single PO will dramatically enhance scientific productivity. The goal is not to replace humans, but to increase our efforts exponentially by having large-scale networks of coordinated performers and agents to achieve asymmetric effects in problem-solving and time.

AI Testing, Validation and Quality Assurance

The speed-up gained from AI-generated research addresses only part of the opportunity and challenge. We will also explore how AI-produced hypotheses, results and designs will be validated — whether by human review, experimental confirmation or independent AI critique. The first two validation methods reintroduce the human bottleneck and may diminish the acceleration we seek, but independent AI critique introduces another part of the initiative, where AI can be used to validate, red-team and quality-check not only results from AI performers, but also from human performers. In all cases, ONR will develop governance and human oversight frameworks with defined ethical and security guardrails.

Bureaucracy Busting

We have made significant progress reducing redundant and overly complex approval procedures within our own command echelon, and we will continue this iterative work. To accelerate our operations, we are collaborating with DON leaders to secure waivers under our Science and Technology Reinvention Laboratory authorities, eliminate budgeting pauses in our program lifecycles, and automate internal business operations. All members of the ONR team are now asked to actively identify bottlenecks and propose solutions. Eliminating these barriers will directly increase our problem-solving capacity, accelerate innovation and help us deliver warfighting capability.



THIS STRATEGY WILL GUIDE THE OFFICE OF NAVAL RESEARCH FOR THE COMING YEARS. IT IS A COMMITMENT TO DISCIPLINE, FOCUS AND A RENEWED SENSE OF URGENCY. WE HAVE DETAILED IMPLEMENTATION PLANS THAT HAVE BEEN CREATED AND ARE BEING ACTED UPON INTERNALLY, WITH METRICS TO TRACK PROGRESS — BUT WE ALSO OWE IT TO OUR MANY MISSION PARTNERS TO BE TRANSPARENT ABOUT WHAT WE ARE DOING AND WHY, SO THAT ALL MAY JOIN US IN ACHIEVING OUR OBJECTIVES.

BY ADHERING TO THESE PRINCIPLES OF FOCUS, EXPLAIN, ENGAGE, AND DEPLOY — AT SPEED, WE WILL CONTINUE TO FULFILL OUR VITAL MISSION AND ENSURE THE UNITED STATES NAVY AND MARINE CORPS REMAIN THE WORLD'S MOST FORMIDABLE NAVAL FORCE, TODAY AND FOR GENERATIONS TO COME.

