NRL Socio-Economic SMALL BUSINESS Information Session

Monday, 7 August 2023
NRL Lab Overview – Research Areas

Artificial Intelligence  Autonomous & Unmanned Systems

Chemical & Biological Sciences  Computational Physics

Nanotechnology  Electronics Science & Technology

Ocean & Atmospheric Science & Technology  Power & Energy

Space Technology  Quantum Information Science

www.nrl.navy.mil/Our-Work/Areas-of-Research
UNDERSEA WARFARE
Research and advanced technologies for undersea sensors for anti-submarine and counter-mine warfare.

MATERIALS & CHEMISTRY
Development of advanced functional and structural materials.

SPACE RESEARCH & TECHNOLOGY
Understand the space environment and its effects on systems and conduct unique experiments in space, specific to future Department of Navy needs.

ELECTROMAGNETIC WARFARE
Provide technologies for total awareness and dominance of electromagnetic battlespace.

ELECTRONICS
New electronic and electro-optic phenomena, materials, theory and techniques for future forces and technological surprise avoidance.

BATTLESPACE ENVIRONMENTS
Understand environmental processes and predict environmental variability from the ocean bottom through the middle atmosphere.

INFORMATION TECHNOLOGY
Networks and Communications, Information Assurance and Cyber Warfare, Decision Support, and Autonomous Systems.

4000 Employees
1,800 Science and Engineering (S&E) Professionals
Nearly 1000 PhDs

NRL is the Navy’s Corporate Laboratory operating at $1.2B per year producing over 100 invention disclosures annually and maintaining over 1400 active patents.

NRL’s world class research team works on Basic & Applied Research along with Advanced Technology Development to answer the Navy and Marine Corps needs.
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SYSTEMS

- Naval Quantum Computing Program
- Signature Technology
- Radar
- Information Technology
- Optical Sciences
- Tactical Electronic Warfare
<table>
<thead>
<tr>
<th>MATERIALS SCIENCE &amp; COMPONENT TECHNOLOGY</th>
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<tbody>
<tr>
<td><strong>Computational Physics &amp; Fluid Dynamics</strong></td>
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<tr>
<td><strong>Chemistry</strong></td>
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<tr>
<td><strong>Materials Science</strong></td>
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OCEAN & ATMOSPHERIC SCIENCE & TECHNOLOGY

- Acoustics
- Remote Sensing
- Ocean Sciences
- Marine Meteorology
- Space Science
NCST Mission Statement

- We rapidly conceive, develop, and demonstrate trailblazing space technologies for future Navy, DoD, and National Missions

NCST Vision Statement

- To revolutionize the space community with emerging technologies

Naval Center for Space Technology (NCST)

<table>
<thead>
<tr>
<th>Naval Center for Space Technology Director</th>
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<tr>
<td>Dr. Steven Meier</td>
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| Space Systems Development                  |
| Dr. Kenny Clark (Acting)                  |

| Spacecraft Engineering                     |
| Mr. Bernard Kelm                           |

| Mission Development                        |

| Advanced Systems Technology                |

| Design & Verification                      |

| C4I                                        |

| Systems Integration                        |

| Advanced Space Precision Navigation and Timing |

| Dynamics & Control Systems                 |

| Electronics & Software                     |

| Missions Operations                        |
NCST – 60+ Years of Delivering Innovative Spacecraft

NRL’S FIRSTS IN SPACE
A HISTORY OF ADVANCED TECHNOLOGY TRANSITIONS TO OPERATIONS AND INDUSTRY.
NCST Customers and Partners

We Have a Broad Customer Base
SSDD Mission Statement

- Develop systems that respond to DON, DoD, and national mission requirements.

Technology Development includes:
- Advanced sensors
- Multi-INT fusion
- Position, navigation, timing
- ISR data exploitation
- Artificial intelligence Machine learning (AI/ML)
- Satellite communications (SATCOM)
- Ground system operations
SED Mission Statement
Basic & applied research advanced development in all areas of DOD space program interests.

Technology Development includes:
• Space Robotics
• Optics
• Signals
• Communications
• Weather
• Mission Operations
• Demonstration of new components in space
Blossom Point

• Ability to integrate any mission into automated ground operations construct
• True 24x7 “lights out” for spacecraft and ground assets
• Maximizes mission success by increasing reliability and decreasing operational errors

Pomonkey

• Fastest 30m full motion antenna in the U.S.
• Capable of low earth orbit to deep space missions
• Customizable RF systems frequency coverage of 0.1 – 22 GHz
Capability Driven R&D

**From Initial Concept**
- Feasibility & Trade Studies

**Studies**
- System Engineering & Requirements Development

**Requirements**
- Design, Analysis, Assembly Integration & Test

**Integration & Verification**
- Launch Support

**Launch for Mission Success**
- Ground and Data Processing Support

Continuity of experts throughout project life from concept through on-orbit operations
Single Center for Space System Development – End to End

~188,000 ft\(^2\)

Single building facility provides:
- Spacecraft and payload design
- Prototyping
- Assembly and Integration
- Environmental and space simulation testing

Environmental Testing Facilities
- Anechoic Chambers
- TVAC
- Acoustics
- Vibration
- EMI/EMC

Design, Fabrication, Testing, & Qualification
- Clean Rooms
- Machine shop
- Space Harness
- 3D printing

Research Laboratories
- Space Robotics
- Free Space Optics
- Payload Design and Checkout

Enables rapid transition between stage of Integration and Test

DISTRIBUTION STATEMENT A: Approved for public release. Distribution is unlimited.
Select NCST Future Research Thrusts

- AI / Machine Learning and Autonomous Vehicles
- Space Robotics
- Resilient, Distributed Optical Communications
- Wireless Power Transfer
  - Space solar, power beaming
- Hypersonic R&D
  - Leading edge cooling, ultra-high temp materials, supersonic combustion
- Astrodynamics
  - Alternate satellite guidance & precision orbit determination
- Positioning, Navigation, and Timing
  - Quantum atomic clocks, multi-domain navigation & timing
- Multi-INT Fusion
  - Unique identifiers, advanced filtering, real time big data analysis
NCST Value to the National Space Community

History of delivering and operating innovative spacecraft to the national space community:

- Expertise in cubesats to 17,000 lb satellites
- Operations from LEO to GEO
- Strong record of transitioning R&D missions
- World-class end-to-end spacecraft design, build, & test resources
- Unique operating facilities (TVAC, EMI/EMC, shock/vibe)
- Multi-mission satellite ground stations connected to AFSCN

Keys to NCST’s success:

- Small development teams
- Deep experience - 30+ years in leadership and engineering positions
- Innovative culture driven by private industry business model
- Ability to work comfortably at any level from Class A to Class D
- Continuity of personnel from concept through on-orbit ops

NCST Has Significant Capabilities for Space System Design and Development
NRL Contracts

NRL Contracts is responsible for procurement from nonfederal sources, with express interest in maximizing Small Business participation.

- **Workforce:** 29% Distant Remote; 71% Local Remote
- **Locations:** DC; Stennis; Key West; Monterey; Chesapeake Bay; Quantico; Patuxent River
- **Doing Business with NRL:**
  - SAM, Seaport, GSA OASIS, NASA SEWP, DOD-ESI
  - Long-Range Acquisition Estimate
  - Broad Agency Announcements
    [NRL BAA Announcement #N00173-23-S-BA01](https://www.nre.navy.mil/work-with-us/small-business/broad-agency-announcements)

NRL Contracts contact:
[NRLContracts@nrl.navy.mil](mailto:NRLContracts@nrl.navy.mil)

**FY22 + FY23 Portfolio**
- 71% Competitive
- 29% Non-competitive
- 76% R&D
- 13% Services
- 11% Products

**Acquisition is a TEAM Sport!**
Office of Small Business Programs

The OSBP serves as the primary gateway for small companies considering doing business with NRL and it staunchly promotes small business participation through prime-contracting, subcontracting and partnering.
How NRL OSBP Supports the Small Business Community

• Helps small businesses find requirements to submit offers and possibly receive prime-contracts or partner with primes as subcontractors

• Bolsters market research by providing awareness of capable small businesses to the NRL workforce

• Assists small businesses in understanding our requirements and how to work with NRL
How NRL OSBP Supports the Small Business Community

• Explains the Government procurement process, procedures and regulations

• Helps small businesses obtain proper registration and credentials to work with the Government

• Conducts and participates in outreach events to increase awareness of NRL’s mission and to learn more about small business capabilities
# NRL Small Business Information Session

Fiscal Year 2023
Top 10 North American Industry Classification System (NAICS) Codes under which NRL Conducts Business

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<thead>
<tr>
<th>NAICS Code and Description</th>
<th>Percent of Total Dollars</th>
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<tbody>
<tr>
<td>541715: Research and development in the physical, engineering, and life sciences (except nanotechnology and biotechnology)</td>
<td>56.90%</td>
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<tr>
<td>541712: Research and development in the physical, engineering, and life sciences (except biotechnology)</td>
<td>18.32%</td>
</tr>
<tr>
<td>541330: Engineering services</td>
<td>5.92%</td>
</tr>
<tr>
<td>541512: Computer systems design services</td>
<td>5.75%</td>
</tr>
<tr>
<td>541713: Research and development in nanotechnology</td>
<td>2.41%</td>
</tr>
<tr>
<td>334516: Analytical laboratory instrument manufacturing</td>
<td>1.69%</td>
</tr>
<tr>
<td>541511: Custom computer programming services</td>
<td>1.06%</td>
</tr>
<tr>
<td>334111: Electronic computer manufacturing</td>
<td>0.90%</td>
</tr>
<tr>
<td>511210: Software publishers</td>
<td>0.70%</td>
</tr>
<tr>
<td>541513: Computer facilities management services</td>
<td>0.55%</td>
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## NRL Small Business Information Session

### Fiscal Year 2023

**Top 10 Product / Service Codes (PSC) under which NRL Conducts Business**

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<th>PSC and Description</th>
<th>Percent of Total Dollars</th>
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<tr>
<td>AJ13: General science &amp; technology R&amp;D svcs; General science &amp; technology; Experimental development</td>
<td>20.08%</td>
</tr>
<tr>
<td>AR23: R&amp;D - Space; Science/applications (advanced development)</td>
<td>10.36%</td>
</tr>
<tr>
<td>AC32: National defense R&amp;D services; Defense-related activities; Applied research</td>
<td>8.75%</td>
</tr>
<tr>
<td>AJ12: General science and technology R&amp;D services; General science and technology; Applied research</td>
<td>8.31%</td>
</tr>
<tr>
<td>AJ43: R&amp;D - General science/technology; Engineering (advanced development)</td>
<td>7.64%</td>
</tr>
<tr>
<td>AR13: Space R&amp;D services; Space flight, research and supporting activities; Experimental development</td>
<td>7.01%</td>
</tr>
<tr>
<td>AJ11: General science and technology R&amp;D services; General science and technology; Basic research</td>
<td>6.72%</td>
</tr>
<tr>
<td>AC63: R&amp;D - Defense system; Electronics/communication equipment (advanced development)</td>
<td>4.94%</td>
</tr>
<tr>
<td>AC33: National defense R&amp;D services; Defense-related activities; Experimental development</td>
<td>4.61%</td>
</tr>
<tr>
<td>AJ15: General science &amp; technology R&amp;D svcs; General science and technology; R&amp;D facilities &amp; maj equip</td>
<td>3.24%</td>
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U.S. Naval Research Laboratory Small Business Site


(Contact Info on site, along with Long Range Acquisition Estimate and Social Media links)

Dept. of the Navy Small Business Site

www.secnav.navy.mil/smallbusiness/Pages/default.aspx

Office of Naval Research Small Business Site

www.nre.navy.mil/work-with-us/small-business
HELPFUL HINTS

***Respond to NRL’s market research notices***

- Find out about NRL’s mission and make sure that what your company provides aligns with NRL’s requirements before you contact us to do business.

- If you want to respond to a particular solicitation, thoroughly review the solicitation before contacting the OSBP for assistance.
Opportunities

• Check out Contract Opportunities on [SAM.gov](https://www.sam.gov) for NRL requirements and market research notices

• NRL’s Broad Agency Announcement ([www.nrl.navy.mil/Doing-Business/Contracts/Broad-Agency-Announcements](https://www.nrl.navy.mil/Doing-Business/Contracts/Broad-Agency-Announcements)) is for long-range science and technology projects that offer potential for advancement and improvement of Navy and Marine Corps operations

• The [Navy’s Small Business Innovative Research/Small Business Technology Transfer program](https://www.navysbir.com) addresses the technological, research and development needs of the Navy and its System Commands
Opportunities

- SeaPort ([www.seaport.navy.mil](http://www.seaport.navy.mil)) provides an efficient and effective means of contracting for professional support services

- General Services Administration Government-Wide Acquisition Contracts (GSA GWACs): [www.gsa.gov/small-business](http://www.gsa.gov/small-business)
  - GSA One Acquisition Solution for Integrated Services (OASIS) Small Business
  - GSA 8(a) Streamlined Technology Acquisition Resources for Services (STARS) III
  - GSA VETS 2 for IT service requirements, including new and emerging technologies (exclusively set aside for SDVOSBs)
Helpful Websites

- **APEX Accelerators** (formerly Procurement Technical Assistance Centers) help businesses pursue and perform contracts with all levels of Government and most assistance is free: [www.apexaccelerators.us](http://www.apexaccelerators.us)

- **Small Business Development Centers** provide assistance and counseling to start, run and grow businesses: [www.sba.gov/local-assistance/resource-partners/small-business-development-centers-sbdc](http://www.sba.gov/local-assistance/resource-partners/small-business-development-centers-sbdc)

- **Project Spectrum**’s mission is to improve cybersecurity readiness, resiliency and compliance for small and medium-sized businesses: [www.projectspectrum.io](http://www.projectspectrum.io)
Outreach Events
(Attendance is at your discretion because there may be associated costs)

**Sea-Air-Space** is a maritime expo that brings the U.S. defense industry and key military decision-makers together.

*National Harbor MD, 8-10 April 2024*

[seaairspace.org](http://seaairspace.org)

The **Navy Gold Coast Small Business Procurement Event** provides a forum to assist businesses in support of the DoD.

*San Diego CA, 19-21 August 2024*

[www.navygoldcoast.org](http://www.navygoldcoast.org)