

# Fall/Winter 2020 Newsletter



Photo courtesy of navy.mil

## Save the Date

**2021 Virtual NSRP All Panel Meeting**  
*Celebrating 50 Years of the  
National Shipbuilding Research Program*

During the week of 22-26 March, 2021  
See current information [here](#)

# 10<sup>th</sup> Annual NSRP Day at NAVSEA

The National Shipbuilding Research Program (NSRP) held its 10th annual NSRP Day at NAVSEA Virtually on November 19th. The event, a collaborative effort between NAVSEA and private industry, focuses on developing technologies and best practices to reduce the cost in the U.S. shipbuilding and repair industry.

The event began by an address from VADM William Galinis, Commander, Naval Sea Systems Command, followed by a welcome from Don Hamadyk, Director, Research & Development HII – Newport News Shipbuilding, Chair of NSRP Executive Control Board and Chair of SNAME Ship Production Committee, and a thank you from Erik Oller, NSRP Program Manager, NAVSEA 05TN.



From 1100 to 1400, project teams from 31 NSRP-awarded Panel Projects and 17 Research Announcement projects (full list on the next two pages) presented and discussed their recently-finished and ongoing projects to NSRP Day attendees. The projects covered a wide range of shipbuilding activities and information was shared amongst an audience of Navy and contractor personnel with a role or interest in shipbuilding and ship repair.

During breakout sessions, four RA project teams presented their progress and results to virtual attendees. Nearly 200 Navy personnel, NSRP projects team members, and extended team members attended virtually.

**Projects presented at NSRP Day are listed on the next two pages, with links to available NSRP Day posters.**

# Panel Projects Presented at NSRP Day

## **Business Technologies Panel Projects**

[ExpressMarine Integration](#)

[Structural Interface for Automated Compliance Checking](#)

## **Environmental, Health, and Safety Panel Projects**

[Navy Tank Study for Robotics Application](#)

Identifying, Evaluating and Mitigating Ocular Hazards

[Wearable Ergonomic Sensor Technology](#)

## **Workforce Development Panel Projects**

[Certificate Program - Shipyard Industry Surface Prep Coating Training](#)

[Women in Welding](#)

[Build Your Future \(BYF\): Shipbuilding & Ship Repair Works!](#)

[Certificate Program - Shipyard Industry Marine Designer Training](#)

[Certificate Program - Shipyard Industry Manufacturing Technician Training](#)

## **Electrical Technologies Panel Projects**

[Shipboard Cable Tray And Cable Support Systems](#)

[Shore Power Connector Testing](#)

[Advanced Topside Lighting System](#)

[Fiber Optic Cables Design Enhancements](#)

[Organic LED, Low Voltage Shipyard Lighting Testing and Demonstration](#)

[Fusion Splice Enclosure at Equipment](#)

## **Planning, Production Processes, and Facilities Panel Projects**

Additive Manufactured Solutions in the Shipyard for Job Aids, Replacement and Part Prototypes

## **Surface Preparation and Coatings Panel Projects**

[Standardization and Digitization of Visual Inspection for Shipbuilding and Repair](#)

[Survey of Surface Preparation and Coatings Automation](#)

[Optimize Power Tool Surface Preparation](#)

## **Welding Technology Panel Projects**

[Multi-factor Monitoring of Hybrid Laser-Arc Welding Applications](#)

[Maximum Heat Input for Welding S-1 Series Carbon Steels with Toughness Requirements](#)

[Deep Penetration Laser-GMAW Welding](#)

## **Ship Design and Material Technologies Panel Projects**

[Simulation Workflow Development for Additive Manufacturing](#)

[ASTM F1387 Testing for Mechanically Attached Fittings](#)

[Scaling Up of 3D Printed Castings](#)

[Standardization of Watertight Hatches and Scuttles](#)

## **Ship Warfare System Integration Panel Projects**

[Alternative False Deck Design Optimization and Qualification](#)

[Extension Basis for 72-inch POA Enclosure Systems to DDG and CG](#)


[Electrical Connector Standardization](#)

[TRITON Dynamic Network Paradigm: Analysis and Demonstration](#)



# RA Projects Presented at NSRP Day

Program News



[Mixed Reality System for Real-Time Construction Problem Resolution \(MINERVA\)](#)

[Fatigue Analysis of Swaged Bulkheads](#)

[Fire Resistant Watertight Structural Doors](#)

[Cost Reduction of MIL-DTL-901E Shock Applications](#)

[Advanced Knowledge Provisioning Using Artificial Intelligence \(AI\) & Augmented Reality \(AR\) for Ship Repair](#)

[Robotic Arc Directed Energy Deposition Additive Manufacturing for Shipbuilding](#)

[Tele Welding - Remote Operation of Shipyard Welding \(and other\) Equipment](#)

[Supply Chain Integrity - Blockchain for Smart Contracts](#)

[Minimum Standardized Content to Enable a Navy Digital Enterprise](#)

[On-Board Ship 3D Environment](#)

[Laser Scan to CAD Analysis](#)

[Liftship \(1 and 2\)](#)

[Qualification Testing of Insulated Bus Pipe \(IBP\) for Shipboard Introduction](#)

[Insulated Bus Pipe Standard Interface To Naval Electrical Equipment](#)

[Welding SMART Camera "In the Torch" Project](#)

[Advanced Development and Implementation of the High Mobility Manufacturing Robot \(HMMR\)](#)

[Onboard Ship Integration of Laser Peening System for Lasting Aluminum Repairs](#)



# NSRP Research Announcement 21

## Solicitation Award Selections

The following RA 21 projects, listed below along with their contractors, were selected for award in September. Valued at over \$8.2 million, these projects were selected by NSRP's Executive Control Board. **Prime contractors** are highlighted in **bold text**. Please see the full press release [here](#).

### Tele-Welding Shipyard Prototype for Welding

**Edison Welding Institute** | Huntington Ingalls Industries - Newport News Shipbuilding | Robotic Technologies of Tennessee | Visible Welding

### Scaling Up 3D Printed Steel Castings

**General Dynamics NASSCO** | Huntington Ingalls Industries - Ingalls Shipbuilding | MELD Manufacturing | Naval Surface Warfare Center – Carderock Division | Altair

### Custom and Digitized ABS Rules with Executable Knowledge Packets

**American Bureau of Shipping (ABS)** | Conrad Shipyard | Auros Knowledge Systems

### Shore-Based Additive Manufacturing in Support of MSC

**American Bureau of Shipping (ABS)** | Austal USA | Old Dominion University | Military Sealift Command | Naval Sea Systems Command

### Early-Stage Structural Design Optimization

**MAESTRO Marine** | Austal USA | American Bureau of Shipping (ABS) | Ship Design USA | Naval Surface Warfare Center – Carderock Division | SPAR Associates

### Electrical Cable Fire Protection Cost Reduction

**Hepburn and Sons** | Fire Security | Fincantieri Marinette Marine | American Bureau of Shipping (ABS) | Roxtec | AeroNAV Testing

### Mobile Laser Scan to CAD Analysis

**Huntington Ingalls Industries - Newport News Shipbuilding** | Huntington Ingalls Industries - Fleet Support Group | Elysium | General Dynamics Bath Iron Works

# NSRP Panel Project Solicitation

## 21 Selected Awardees

The following Panel Projects, listed below along with their contractors, were selected for award in November. Valued at over \$2.4 million, these projects were selected by NSRP's Executive Control Board. **Prime contractors** are highlighted in **bold text**. Please see the full press release [here](#).

### **Industry-Wide Collaboration to Address the Navy's Shipboard Industrial Fire Safety Problem** **HII-Newport News Shipbuilding**

#### **Portable Single-Pass Buried Arc Welding of Steel Plate During Ship Erection**

**Edison Welding Institute** | Vigor | HII-Newport News Shipbuilding | Naval Surface Warfare Center-Carderock Division | VT Halter

#### **Shipbuilding Apprenticeship: A Qualitative Analysis**

**GD-Bath Iron Works** | GD-NASSCO | Fincantieri Marinette Marine| Austal USA| HII-Newport News Shipbuilding| HII-Ingalls Shipbuilding

#### **Automated Label Plate Generation**

**ShipConstructor USA** | Conrad Shipyard | Fincantieri Marinette Marine| Austal USA| LMI| Bancroft Enterprises| Praeses LLC

#### **High Productivity Reduced Emissions Arc Gouging Process**

**Edison Welding Institute** | Vigor | BSI EHS| CSK Mechanical | VT Halter

#### **Evaluation of Splice-On Connectors and Termini for Shipboard Applications**

**HII-Ingalls Shipbuilding** | HII-Newport News Shipbuilding | Amphenol | Naval Surface Warfare Center Dahlgren

#### **Optimized Weld Records**

**TruQC** | Edison Welding Institute | Fincantieri Marinette Marine

#### **Crane Lift Data Aggregation**

**GD-NASSCO**

#### **AMUET 4.0: Tooling to Accelerate Installation and Quality Control of Electrical Cables in Ships with Augmented Reality Using Existing Digital Models**

**Austal USA** | Solavitek Inc. | ShipConstructor USA| Pearl Harbor Naval Shipyard & Intermediate Maintenance Facility

#### **Next Generation Double Electrode GMAW Processes for Precision Fillet Welding**

**Edison Welding Institute** | GD-NASSCO | HII-Ingalls Shipbuilding| Naval Surface Warfare Center-Carderock Division

#### **Development of an Additive Manufacturing Capability for CuNi Seawater Heat Exchangers**

**ElectraWatch Inc** | Austal USA | Metallum 3D| HII-Newport News Shipbuilding| NAVSEA 05T

# NSRP Panel Project Solicitation

## 21 Selected Awardees (continued)

### Modern Shipbuilding Design Courses 3

**ShipConstructor USA** | Austal USA | Fincantieri Marinette Marine| Conrad Shipyard | Southern Maine Community College | Genoa Design

### Automated Detail Planning and Instant Earned Value Control

**Austal USA** | Floororganise B.V. | ShipConstructor USA| Philly Shipyard PSI| Fincantieri Marinette Marine

### Using Artificial Intelligence (AI) to Simplify Provisioning of Navy Standard Requirements

**Auros LLC** | Fincantieri Marinette Marine | Hepinstall Consulting Group

### Utilizing Ship Product Model Information for Corrosion Control and Coatings

**HII-Ingalls Shipbuilding** | ShipConstructor USA

### Standardization of UxV Shipboard Interfaces

**GD-NASSCO**

### Visual Guide for Non-Ferrous and Stainless-Steel Surface Preparation

**Elzly Technology** | Naval Surface Warfare Center-Philadelphia Division | SSPC

## Save the Date!

### 2021 NSRP All Panel Meeting

**Come Celebrate 50 years of NSRP at the 2021 NSRP All Panel Meeting; a virtual meeting during the week of 22-26 March in 2021.**

The NSRP All Panel meeting is a gathering of all nine NSRP Panels and their participants. The 2019 NSRP All Panel Meeting was the highest attended All Panel Meeting so far, totaling 414 participants. The meeting consisted of over 30 technical presentations given on both NSRP and ManTech projects as well as updates on all 9 of NSRP's Panels and ManTech COE Updates.



[This year's event will be held virtually, with additional details forthcoming.](#)

## Spotlight on: Lisa Wallington, NSRP NAVSEA 05TN Program Administrator



Ms. Lisa Wallington is the NSRP Program Analyst in NAVSEA 05TN. In this role, Lisa applies her expertise in the areas of lean processes, collaboration and network-building, and strategic communication within the NSRP Community. Lisa earned her Bachelor of Science in Mechanical Engineering from Oakland University in 1996, her Master of Science in Mechanical Engineering from Oakland University in 1999, and her Lean Six Sigma Black Belt Certification from Lawrence Technological University in 2009. Lisa's professional experiences range from automotive engineering design and testing, manufacturing operations lean processes, systems engineering, public relations for media strategies within the United States, strategic business operations manager for technology research & development for the United States, Europe, and China.

Ms. Wallington transitioned from private industry to the Federal Government as a U.S. Navy Engineer with a focus on cost engineering, Acquisition and Commonality, Culture of Affordability, Continuous Process Improvement (CPI) Projects, and strategic business operations. Her most recent lean process project was the NAVSEA Cybersecurity Risk Management Framework (RMF) Execution Process in which she led a team of NAVSEA HQ and NSWC Warfare Center Cybersecurity SME's to identify and document the existing RMF Process as well as process improvements. Lisa has received several "Outstanding Performance Awards" for her excellent efforts within the NAVSEA acquisition workforce community to include Directorates, Program Executive Offices, and Shipyards. Lisa is Defense Acquisition Workforce Improvement Act (DAWIA) certified at the Engineering Level III, Cost Estimating Level II and currently working toward Program Management Level II certification. Lisa is known within the NAVSEA community as eager to embrace challenges and for effectively building teams that often meet or exceed project goals.

Keep on the lookout for Ms. Wallington at NSRP events. She enjoys attending panel meetings and being active in the program. Contact her for questions you may have about how your involvement in NSRP can best assist the Navy's needs!

NAVSEA 05TN  
Program Analyst, National Shipbuilding Research Program (NSRP)  
Washington Navy Yard, DC  
[Lisa.wallington@navy.mil](mailto:Lisa.wallington@navy.mil)



## Completed Projects between July – December 2020

The following Panel Projects have been completed. No RA Projects were completed this quarter. Please email NSRP at [nsrp@ati.org](mailto:nsrp@ati.org) to request final reports. Distribution information is below.

### Completed Panel Projects

2018-454-005

[COMPASS- COMBined Product ASSEssment Tool](#)

*Distribution authorized for public release.*

2018-447-006

[Shipboard Pipe Insulation Tape](#)

*Distribution pending.*

2018-447-007

[Shipboard Cable Trays](#)

*Distribution authorized for public release.*

2018-453-013

[Weld Sequence Modeling Software Interface Development](#)

*ITAR Restricted.*

2019-375-002

[High Deposition Robotic Arc Additive Manufacturing Process Development](#)

*Distribution authorized to project participants and NSRP ASE Program representatives.*

2019-375-003

[High Penetration Dynamic Buried Arc Welding](#)

*Distribution authorized to the U.S. shipbuilding and repair industry and NSRP ASE Program representatives.*

2019-469-002

[Shore Power Connector Testing](#)

*Distribution authorized for public release.*

## Completed Projects between July – December 2020

### Completed Panel Projects Continued

2019-480-001

[Test and Evaluation of Primers with Extended AF Overcoat Window](#)

*Distribution authorized to the U.S. shipbuilding and repair industry and NSRP ASE Program representatives.*

2019-476-002

[Standardization and Digitization of Visual Inspection for Shipbuilding and Repair](#)

*Distribution authorized to the U.S. shipbuilding and repair industry and NSRP ASE Program representatives.*

2018-447-008

[Shipyard Industry Surface Prep and Coating Certification Training](#)

*Distribution authorized for public release.*

2019-479-001

[Quick Deploy Scaffold for Improved Safety and Lower Cost](#)

*Distribution authorized for public release.*

2019-476-001

[Survey of Surface Preparation and Coatings Automation](#)

*Distribution authorized to the U.S. shipbuilding and repair industry and NSRP ASE Program representatives.*

2019-482-001

[TRITON: Dynamic Network Paradigm Analysis and Demonstration](#)

*Distribution authorized to the U.S. Shipyards.*

## In other news....

NSRP has a LinkedIn Page with over 1,500 followers! Follow us at

<https://www.linkedin.com/company/nsrp-national-shipbuilding-research-program/>.

Thank you to all who have followed us so far, and we look forward to having more people follow what is going on with the National Shipbuilding Research Program.

## Full Page Links

(provided for readers whose IT systems restrict access to hyperlinks)

Page 1 - <https://www.nsrp.org/event/2021-nsrp-all-panel-meeting/>

Page 3 and 4 – project posters can be found here: <https://www.nsrp.org/nsrp-day-at-navsea-2020-virtual-conference/>

Page 5 - <https://www.nsrp.org/wp-content/uploads/2020/09/NSRP-RA-21-Press-Release-09.2020.pdf>

Page 6 - <https://www.nsrp.org/wp-content/uploads/2020/11/NSRP-Panel-Project-Press-Release-Nov-2020.pdf>

Page 7 - <https://www.nsrp.org/wp-content/uploads/2020/05/Final-Agenda.pdf>  
<https://www.nsrp.org/event/2021-nsrp-all-panel-meeting/>

Page 9 - <https://www.nsrp.org/project/compass-combined-product-assessment-tool/>  
<https://www.nsrp.org/project/shipboard-pipe-insulation-tape/>  
<https://www.nsrp.org/project/shipboard-cable-trays/>  
<https://www.nsrp.org/project/weld-sequence-software-interface-development/>  
<https://www.nsrp.org/project/high-deposition-robotic-arc-additive-manufacturing-process-development/>  
<https://www.nsrp.org/project/high-penetration-dynamic-buried-arc-welding/>  
<https://www.nsrp.org/project/shore-power-connector-testing/>

Page 10 - <https://www.nsrp.org/project/test-and-evaluation-of-primers-with-extended-anti-fouling-af-overcoat-windows/>  
<https://www.nsrp.org/project/standardization-and-digitization-of-visual-inspection-for-shipbuilding-and-repair/>  
<https://www.nsrp.org/project/shipyard-industry-surface-preparation-coating-training/>  
<https://www.nsrp.org/project/quick-deploy-scaffolding/>  
<https://www.nsrp.org/project/survey-of-surface-preparation-and-coatings-automation/>  
<https://www.nsrp.org/project/triton-dynamic-network-paradigm/>

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## About the Cover Photo

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201126-N-IU965-2080

SAN DIEGO (Nov. 26, 2020) The Nimitz-class aircraft carrier USS Carl Vinson (CVN 70) displays holiday lights on the island in celebration of the holiday season. USS Carl Vinson is currently pierside in its homeport of San Diego. (U.S. Navy photo by Mass Communication Specialist 2nd Class Matthew A. Fink)

**VIRIN:** 201126-N-IU965-2080.JPG

**Photo by:** Petty Officer 2nd Class Matthew Fink

<https://www.navy.mil/Resources/Photo-Gallery/igphoto/2002544453/>