

## Press Release

For Immediate Release

### Executive Control Board awards \$3.8M for R&D Project Portfolio

**March 15, 2019--** The Executive Control Board of the National Shipbuilding Research Program (NSRP) has selected 28 panel projects for award, as part of the Program's continuing mission to reduce costs associated with U.S. shipbuilding and ship repair. These new projects, valued at over \$3.8M, were among those proposed in response to the Panel Project Solicitation, issued in September 2019.

Abbreviated descriptions follow:

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

National Maritime Education Council | NCCER | Austal USA | Bollinger Shipyards

**NSRP Investment:** \$141K

**Duration:** 12 Months

**Objective:**

The purpose of this project is to investigate and identify best practices related to the recruitment of the next generation workforce within the shipbuilding and ship repair industry, to identify gaps, and to design and develop tools and strategies to close those gaps.

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#### Support Delivery of Shipbuilder Product and Technical Data to an In-Service Navy PLM for all Classes of Ships

Ingalls Shipbuilding | Newport News Shipbuilding | Bath Iron Works

**NSRP Investment:** \$150K

**Duration:** 12 Months

**Objective:**

Help layout strategies and goals for the standup of the Navy In-Service product life-cycle management environment with respect to the delivery of information by shipyards, and storage of information with respect to the classes of vessels by providing a forum to discuss, analyze, and document the necessary steps.

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#### Standardization and Digitization of Visual Inspection for Shipbuilding and Repair

BAE Systems JSR | Newport News Shipbuilding | TruQC

**NSRP Investment:** \$148K

**Duration:** 12 Months

**Objective:**

The objectives are to work with the TruQC software program, which can be evaluated and tested to industry and government requirements, and fulfill the paperless visual inspection reporting requirements of NAVSEA contractors and inspectors. The intent of this project is to prove system functionality and repeat tremendous savings and data availability seen by commercial clients over a two year period globally.



## ExpressMarine Integration

SSI USA | VT Halter Marine | Express Marine AS | Conrad Shipyard

**NSRP Investment:** \$150K

**Duration:** 12 Months

**Objective:**

Avoid redoing work in the detail design phase that has already been carried out in the early design phase by developing a way to pass a rich early phase structure-model to a detail-engineering production tool without losing properties and metadata.

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## Fiber Optic Testing Enhancement for Cost Reduction Follow On

Kitco Fiber Optics | NSWC Dahlgren (Tech Warrant Holder Rep) | Newport News Shipbuilding | EXFO North America

**NSRP Investment:** \$150K

**Duration:** 12 Months

**Objective:**

Validate the laboratory findings from the previous fiber optic (FO) test enhancement project by evaluating the use of an Optical Time Domain Reflectometer (OTDR) to perform MIL-STD-2042-6 required FO testing during new construction on a Virginia-class submarine. Successful completion of this project will allow the Navy to identify the technology requirements for defining new test equipment specifications.

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## Certificate Program: Shipyard Industry Surface Prep and Coating Training

Bath Iron Works | BAE Systems JSR | Southern Maine Community College | Society of Protective Coatings (SSPC)

**NSRP Investment:** \$150K

**Duration:** 12 Months

**Objective:**

Design a one-year Certificate Program to train entry level shipyard painters, thereby increasing the skill level of applicant pools, new hires and experience workforce.

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## Shipboard Fiber Optic Cables Design Enhancements

RSL Fiber Systems, LLC | Penn State University ARL Electro Optics Center | OFS Fitel | Austal USA | Newport News Shipbuilding | NSWCDD Shipbuilding | Ingalls Shipbuilding | SUPSHIP Gulf Coast

**NSRP Investment:** \$149K

**Duration:** 12 Months

**Objective:**

Identify areas where the cable designs used on US naval vessels can be enhanced to: reduce the cost of ship construction, modernization, and maintenance; improve installation practices; and facilitate the implementation of new technologies.

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## Miniature Torch Speed Sensor Based Adaptive Manual Arc Welding

University of Kentucky | Ingalls Shipbuilding | Miller Electric

**NSRP Investment:** \$150K

**Duration:** 12 Months

**Objective:**

The goal of the project is to develop a cost-effective solution for less-than-highly-skilled manual weld operators to make smaller fillet welds in compliance with the shipbuilding welding procedure specification.



## Survey of Surface Preparation and Coatings Automation

Elzly Technology Corporation | BAE Systems JSR | Blakey Group | Ingalls Shipbuilding

**NSRP Investment:** \$150K

**Duration:** 12 Months

**Objective:**

The objective of this project is to develop a path forward for NSRP Shipyards to improve automation of surface preparation and coating processes.

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## Shore Power Connector Testing

Penn State Electric-Optics Center | D'Angelo Technologies, Inc. | SUPSHIP Gulf Coast SSGC

**NSRP Investment:** \$150K

**Duration:** 12 Months

**Objective:**

Research if a portable automated testing device can be developed to perform all the permutations for shore power connector testing on DDG class ships with limited operator involvement. Initial focus will be on adapting COTS equipment.

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## Short Course on Dredging Fundamentals for Shipyard Operations & Environmental Sustainability

Anchor QEA, LLC

**NSRP Investment:** \$22K

**Duration:** 6 Months

**Objective:**

Develop a short course to provide shipbuilding facilities with information to help successfully plan dredging projects, and to anticipate strategies to manage risk and make dredging a more cost-effective exercise.

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## Shipboard Cable Trays

Bath Iron Works | NASSCO

**NSRP Investment:** \$150K

**Duration:** 12 Months

**Objective:**

This project plans to research cable tray products that can be used in lieu of traditional hangers for larger bundles of cables to be pulled at once, thereby reducing cable installation time and cable damage, and improving personnel safety.

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## Quick-deploy Scaffold for Improved Safety and Lower Cost

Electrawatch | Austal USA

**NSRP Investment:** \$138K

**Duration:** 12 Months

**Objective:**

Establish the feasibility of a rapidly deployable scaffold designed for the shipyard environment and which identifies a clear path towards a reduction of at least 50% in labor costs and 60% in assembly/disassembly time when compared to erecting and dismantling existing scaffold solutions.



## Test and Evaluation of Primers with Extended AF Overcoat Window

Excet, Inc. | NRL | BAE Systems JSR | Bath Iron Works | Ingalls Shipbuilding | Sherwin Williams, International  
| PPG

**NSRP Investment:** \$150K

**Duration:** 12 Months

### Objective:

Perform large scale applications of commercially available epoxy “tie coats” that would be installed as part of a MIL-PRF-24647 qualified underwater hull paint system. The large scale applications would be proposed for active US Navy ships, or other shipyard assets that require a MIL-PRF-24647 paint system. The demonstration would be used to validate laboratory testing that has already been completed under a previous NAVSEA program.

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## Fusion Splice Enclosure at Equipment

Penn State Univ. Electro-Optics Center | Ingalls Shipbuilding | Bath Iron Works | Austal USA | Lockheed Martin (AEGIS) | NSWC Dahlgren

**NSRP Investment:** \$139K

**Duration:** 12 Months

### Objective:

Develop a fusion splice enclosure that may be mounted on or near equipment, to facilitate fusion spliced connections at the equipment.

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## Applications of Targetless Photogrammetry for Facilities and Close Range Metrology

Newport News Shipbuilding | Ingalls Shipbuilding | Photometrix

**NSRP Investment:** \$150K

**Duration:** 12 Months

### Objective:

The goal is to evaluate methods and technology for targetless photogrammetry and its viability for 3D data collection. The objectives are to create a quantitative comparison of targetless photogrammetry to current capture methods and identify viable candidates for targetless photogrammetry methods.

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## High Penetration Dynamic Buried Arc Welding

Edison Welding Institute | Ingalls Shipbuilding | NASSCO | NSWC-Carderock | Vigor Shipyard  
| OTC Daihen US

**NSRP Investment:** \$150K

**Duration:** 12 Months

### Objective:

The goal of this project is to reduce the cost and time associated with thicker plate welding and to reduce plate preparation and post-weld straightening costs for shipyards by using single-pass, square butt dynamic buried arc (D-Arc) welding.



## High Deposition Robotic Arc Additive Manufacturing Process Development

Edison Welding Institute | Austal USA | NSWC-Carderock

**NSRP Investment:** \$150K

**Duration:** 12 Months

**Objective:**

The project goal is to develop high deposition robotic tandem gas-metal arc additive manufacturing process technology and establish process metrics for building large shapes and features on candidate material applications.

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## Joint Operable Standards for Containerized Modules

NASSCO

**NSRP Investment:** \$134K

**Duration:** 12 Months

**Objective:**

The goal of this project is to create a single set of standards for intermodal shipping containers across all military services. This will ensure interoperability among the Navy, Marine Corps, Army, Air Force, Coast Guard and Military Sealift Command of containerized military modules for shipboard use, ease of transport by ship or air, and streamlined design of shipboard connections to containerized modules.

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## Virtual Spray Paint Training System

NASSCO | Virtual Paint Products, LLC

**NSRP Investment:** \$147K

**Duration:** 12 Months

**Objective:**

Project goals will include evaluating Virtual Reality Technology such as VPSTS to shipbuilding industry standards (009-32/NSTM-631/NSTM-634 and SSPC as it relates to spray painting operations), and collecting user feedback on the experience.

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## TRITON Dynamic Network Paradigm: Analysis and Demonstration

Penn State Univ. Electro-Optics Center | Perspecta Labs | Lockheed Martin Mission Systems & Training | Ingalls Shipbuilding

**NSRP Investment:** \$150K

**Duration:** 12 Months

**Objective:**

Enhance the TRITON\* architecture to provide: reconfigurable connectivity for damage recovery or mission-based upgrades; analog RF signal capability; and broadcast communication. Conduct demo for TWH.

\*Tactical Resilient Infrastructure Twinning Optical Network.



## Knowledge Provisioning to Improve and Simplify ABS Digital Compliance

**Auros Knowledge Systems** | American Bureau of Shipping | Conrad Shipyard | Hepinstall Consulting Group | Victoria Dlugokecki, P.E.

**NSRP Investment:** \$150K

**Duration:** 12 Months

### **Objective:**

Deliver digitized ABS rules to shipyards in a way that allows seamless integration into functional and detailed design processes, thus avoiding the need to manually develop and update design procedures as ABS updates rules and requirements.

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## COMPASS - COMBined Product ASSESSment Tool

**NASSCO** | Saritasa

**NSRP Investment:** \$145K

**Duration:** 12 Months

### **Objective:**

This project proposes to develop a single integrated software application (COMPASS) that tracks all product submissions, feedback and responses, regardless of the source. An employee could open COMPASS, select a product and review all open issues against that product in a combined list that includes feedback from USCG, Owner, ABS, MSC, vendors, internal customers.

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## Weld Sequence Modeling Software Interface Development

**Ingalls Shipbuilding** | NSWG- Carderock | ESI North America

**NSRP Investment:** \$150K

**Duration:** 12 Months

### **Objective:**

The goal of this project is to develop and demonstrate a user friendly interface for weld distortion modeling to aid in optimizing welding sequences and minimizing weld induced deformation of very large ship assemblies/sub-assemblies.

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## Design of a SIFD Principal Unit and Development of an EQT Strategy

**Newport News Shipbuilding** | Ingalls Shipbuilding

**NSRP Investment:** \$148K

**Duration:** 12 Months

### **Objective:**

Design a Shock Isolated False Deck Principal Unit, and develop a strategy and plans for Environmental Qualification Testing.



## Shipboard Pipe Insulation Tape

**Bath Iron Works**

**NSRP Investment:** \$150K

**Duration:** 12 Months

**Objective:**

Investigate insulation securing alternatives to the MIL-STD-769 requirements; specifically, the use of tape products in lieu of wire for securing insulation prior to lagging. Perform research to better understand the basis for requiring the use of wire for securing insulation.

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## Advanced Impact Analysis - Potential Changes to Weld Fume Carcinogenicity Designation

**BSI EHS Services and Solutions East Inc.** | NAVMEDCEN Industrial Hygiene | Bath Iron Works | Newport News Shipbuilding | Norfolk Naval Shipyard

**NSRP Investment:** \$30K

**Duration:** 6 Months

**Objective:**

Evaluate International Agency for Research on Cancer studies and references relative to welding processes, materials, claims and conclusions that may apply to shipyard welding. Collect and review existing exposure monitoring data. Determine exposure ranges by welding process to compare to exposure categories in IARC report. Prepare a summary report to inform shipyards.

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## Wearable Ergonomic Sensor Technology

**Newport News Shipbuilding**

**NSRP Investment:** 149K

**Duration:** 12 Months

**Objective:**

Develop and provide ergonomic specific evaluation tools coupled with body motion sensing technology via a committee of Newport News Shipbuilding and Ingalls Shipbuilding personnel (to include ergonomists and end-users) and wearable technology developers.

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**Questions?** Contact the NSRP Team at: [nsrc@ati.org](mailto:nsrc@ati.org) or visit the NSRP website at: [www.nsrc.org](http://www.nsrc.org)

