

Press Release

For Immediate Release

Executive Control Board awards \$2.8M for R&D Project Portfolio

November 21, 2019 - The Executive Control Board of the National Shipbuilding Research Program (NSRP) has selected 20 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 \$2.8M, were among those proposed in response to the Panel Project Solicitation, issued in June 2019.

Abbreviated descriptions follow; prime contractor noted in bold in organization listing:

Scaling Up of 3D Printed Castings

NASSCO | Meld Manufacturing | Ingalls Shipbuilding | Bath Iron Works | NAVSEA

NSRP Investment: \$150K

Duration: 12 Months

Objective:

Develop a nozzle head that is harder than the material being printed and properly manage the thermal transfer of heat from the nozzle head to the material. The goal is to prove the theory that the size of printing can be scaled up by increasing the deposition rate.

Multi-factor Monitoring of Hybrid Laser-Arc Welding Applications

Ohio State University | NASSCO | Edison Welding Institute | Ingalls Shipbuilding | NSWC Carderock

NSRP Investment: \$150K

Duration: 12 Months

Objective:

Characterize inline coherent imaging technology (ICIT) for use in hybrid welding applications in an effort to provide in process monitoring of multiple welding variables.

Optimize Power Tool Surface Preparation

Elzly Technology | Ingalls Shipbuilding | BAE Jacksonville

NSRP Investment: \$150K

Duration: 12 Months

Objective:

Generate the necessary data to allow shipyards and the Navy to optimize procedures for power tool cleaning prior to coating application. Work with a stakeholder team to: consolidate power tool performance data from independent studies, develop a comprehensive list of the generic type of power tools available to the industry, and generate data on tool effectiveness in a shipyard setting.



Simulation Workflow Development for Additive Manufacturing

ATA Engineering | Bath Iron Works | Ingalls Shipbuilding | Newport News Shipbuilding

NSRP Investment: \$150K

Duration: 12 Months

Objective:

Develop a superior modeling and simulation framework to predict the performance of AM parts such that simulations could be used to reduce the amount of qualification testing currently necessary for part acceptance by the Navy.

Deep Penetration Laser-GMAW Welding

Edison Welding Institute | NASSCO | NSWC Carderock

NSRP Investment: \$150K

Duration: 12 Months

Objective:

Develop a laser-hybrid welding process capable of fabricating single-pass 1" thick panels of AH36 steel.

Advanced Topside Lighting System

RSL Fiber Systems | Signal Mate | PSU ARL Electro-Optics Center | Austal USA | Ingalls Shipbuilding | Newport News Shipbuilding | NAVSEA 05Z33 | Bath Iron Works

NSRP Investment: \$149K

Duration: 12 Months

Objective:

Provide a plan for utilizing advanced lighting technologies on new construction and in-service ships based on the specific design of each ship type. The lighting systems will provide ease of installation, long life, low maintenance, self-monitoring, and parts commonality.

Navy Tank Study for Robotics Application

Newport News Shipbuilding | Ingalls Shipbuilding

NSRP Investment: \$113K

Duration: 12 Months

Objective:

Evaluate tanks across multiple ship platforms, looking to identify the tanks that share the most in common. Consult industry experts on robotic/automated solutions that currently exist or can be developed for the tanks that share the most in common. Goal is to mostly eliminate manned entry from these tanks without compromising quality or schedule.

Validate a Testing Protocol to Establish the Maximum Heat Input for Welding S-1 Series Carbon Steels with Toughness Requirements

Newport News Shipbuilding | LeTourneau University

NSRP Investment: \$149K

Duration: 12 Months

Objective:

To develop and validate a simulative, low cost method for determining heat input limits for the full range of S-1 series carbon steels that have toughness requirements. These heat input limits could be added to future Navy Fabrication Documents.

Standardization of Watertight Hatches and Scuttles

Ingalls Shipbuilding

NSRP Investment: \$127K

Duration: 12 Months

Objective:

Develop an improved set of drawings for a new family of Navy standard hatches and scuttles. Incorporate material standardization, improved production processes, and increased part commonality.

Extension Basis for 72-inch POA Enclosure Systems to DDG and CG

Newport News Shipbuilding | Ingalls Shipbuilding | Bath Iron Works

NSRP Investment: \$148K

Duration: 12 Months

Objective:

Develop the basis for extending the 72 inch Physical Open Architecture enclosure solution to DDG and CG class ships.

Alternate False Deck Design Optimization and Qualification

Newport News Shipbuilding | Ingalls Shipbuilding | Hilti North America

NSRP Investment: \$137K

Duration: 12 Months

Objective:

Build on previous NSRP panel projects by optimizing false floor design for weight, then conducting structural testing as required to qualify this system for use in combat systems, engineering and auxiliary spaces on Navy ships.

Certificate Program - Shipyard Industry Manufacturing Technician Training

Bath Iron Works | Southern Maine Community College | National Maritime Education Council

NSRP Investment: \$150K

Duration: 12 Months

Objective:

Provide shipbuilding industry entry-level production craft training and enhance workforce excellence of shipyard craft mechanics. Develop a training certificate program criterion which aligns with shipyard industry standards.

Identifying, Evaluating and Mitigating Ocular Hazards

Penn State University Applied Research Lab | Newport News Shipbuilding

NSRP Investment: \$150K

Duration: 12 Months

Objective:

Measure and determine means to mitigate ocular hazards associated with laser ablation surface preparation processes that will be used in areas where a controlled environment is not possible.



Electrical Connector Standardization

Bath Iron Works | D'Angelo Technologies

NSRP Investment: \$150K

Duration: 12 Months

Objective:

The primary goals and objectives of the project are: identify the degree of connector consolidation that is available for a given ship class; determine the available savings resulting from the recommended available consolidation opportunities; create a business case that identifies specific opportunities to receive benefit from connector standardization; and present an implementation plan for a given ship class.

Organic LED, Low Voltage Shipyard Lighting Testing and Demonstration

OLEDWorks LLC | Acuity Brands | Ingalls Shipbuilding | Bath Iron Works

NSRP Investment: \$150K **Cost Share:** \$11K

Duration: 12 Months

Objective:

Follow-on to the earlier Low-Voltage Shipboard Lighting Feasibility Study project. This project will refine shipboard configuration, optimize size & weight to maximize inherent advantages of OLED technology. The benefits of an OLED option will be evaluated and quantified.

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

NASSCO

NSRP Investment: \$103K

Duration: 12 Months

Objective:

Establish a standard process using Additive Manufacturing tools and techniques that will significantly reduce part design, procurement and lead times associated with the fabrication of jigs, fixtures and design prototypes.

Women in Welding

Newport News Shipbuilding | New Horizons

NSRP Investment: \$123K

Duration: 12 Months

Objective:

Perform a study to determine structural issues in the welding labor market facing women and how to tailor recruitment and training efforts to increase the number of women in the welding field for shipbuilding. Seek to incorporate techniques and lessons learned into existing recruitment and training programs.



ASTM F1387 Testing for Mechanically Attached Fittings

Bath Iron Works | Ingalls Shipbuilding | MAF fitting supplier (Viega/Hilti) | SW Research Institute

NSRP Investment: \$150K

Duration: 12 Months

Objective:

Complete the testing required to get Viega MegaPress Copper Nickel and Stainless Steel fittings approved and qualified to ASTM F1387.

Certificate Program - Shipyard Industry Marine Designer

Bath Iron Works | Southern Maine Community College | National Maritime Education Council

NSRP Investment: \$150K

Duration: 12 Months

Objective:

Develop a certificate program to provide shipbuilding industry marine designer training for entry-level designers and/or to prepare members of the general public with the skills necessary to qualify for entry-level marine designer positions.

Structural Interface for Automated Compliance Checking

ShipConstructor USA | Marinette Marine | Conrad Shipyard | Auros Knowledge Systems | American Bureau of Shipping

NSRP Investment: \$150K **Cost Share:** \$65K

Duration: 12 Months

Objective:

Reduce cost and schedule by developing the structural rules within 3D Design Model. Extend and advance the Auros–ShipConstructor connector to automate structural detailed design compliance checking including ABS rules and vessel specifications.

Questions? Contact the NSRP Team at: nsrp@ati.org or visit the NSRP website at: www.nsrp.org

