Statement A

Steve Ouimette, (Acting) Department Head
Mission:

- **Provide full-spectrum Naval Architect and Engineering expertise and tools to design, engineer, and integrate surface, combatant craft, and undersea vessels as total systems**

- **Enable sub-system improvements by assessing their effectiveness and affordability at the system level and from a total life cycle perspective**

- **To conduct hydromechanics research, development, testing, and evaluation for the U.S. Navy, government agencies and marine and related industries**
What we do:  
Perform research, engineering and naval architecture on surface and submarine vessels, combatant craft, and unmanned systems in the areas of hull forms; propulsion; platform dynamics; hydrodynamics; and conceptual, preliminary, & contract design including analysis of alternatives, specifications, technology assessment, and general arrangements.

What we Provide:

- A variety of computational tools and model / full scale testing to develop and evaluate ship, submarine, and propulsor concepts and designs.

- Direct support to the Fleet by conducting full-scale trials and solving operational problems in the areas of hydromechanics.

- Cradle to grave total engineering and lifecycle support for small boats and craft.

- Naval architecture and engineering services to acquisition programs.
- Ship, Submarine & Aircraft Carrier design management support
- Program life cycle cost estimates (PLCCE), and cost/benefit analyses for the total ship, ship systems, craft and boats
- Ship and ship systems technology needs, documents, and technology readiness level assessment (TRLA)
- Early stage ship design tools and processes (ASSET, LEAPS, etc.)
- Ship, submarine and advanced naval capability concepts & technologies
- Product data acquisition, integration methods & technologies
- Full spectrum, full life cycle support of all boats and crafts
- Ship general arrangement products (drawings, product model configurations, etc.)
- Systems engineering & weights and stability analyses for ship systems and equipment
- Platform & Mission System RMA
Naval Architecture and Engineering Department (Cd 80) - Organization

- Submarine Maneuvering and Control Systems Design and In-Service Engineering from Fly-by-wire
- Hull Resistance (Surface/Sub) Evaluation and Design Support
- Seakeeping Performance Prediction and Assessment
- Propulsor Design (Surface/Sub)
- Wave Loads (Surface/Sub)
- Computation Fluid Dynamics Predictions and Development
- Full Scale Trials
- Towed arrays and towed vehicle design and evaluation
- Ship/Aircraft interface design
Naval Surface Warfare Center
Naval Architecture and Engineering Department (Cd 80) Organization

Combatant Craft Division

Full Spectrum

- Naval Architecture
- Design & Engineering
- Survivability
- Transportability
- Human Systems Integration
- Test & Evaluation
- Logistics
- Life Cycle Management
- Industrial Support

Full Life Cycle

- Craft Research & Development
- Craft Acquisition
- Craft Sustainment

Total Systems Engineering
Naval Architecture and Engineering Department (Cd 80)

Naval Surface Warfare Center

Naval Architecture of Ships, Submarines, Boats, Craft, and other Naval Systems

Early concept/design development and trade-off studies through cost analysis, detailed hydrodynamic and propulsor design, maneuvering and ship control, model testing, internal arrangements, ship systems integration, full-scale trials and operational support.

Concept development and early stage design → Small scale test and evaluation → Full scale tests, evaluation and trials.
Other facilities are used on an as-needed basis to conduct specialized experiments that provide data (e.g., wave impact loads, torques, etc.) which supplements and complements the Characterization Process.
Many Large & Small Business Partners

- AMSEC
- AECOM
- WARTSILA
- ABBOTT ON CALL *
- CSRA
- DRAPER
- VENCORE

- CDI MARINE
- SEAWARD SERVICES
- PROFESSIONAL SOFTWARE ENGINEERING *
- QUADELTA *
- GIBBS & COX
- FRICTION STIR LINK *

* Denotes Small Business

Plus Many More…. We Value Industry Help
Projected Areas for Future Growth

We Need Your Ideas and Creativity to Solve Our Technical Challenges!
Highlighted Future Growth Area: State of the Art Modelling and Simulation Technologies to Provide New Ways to Visualize, Design, and Analyze Ships and Ship Systems
Many More Projected Future Growth Areas...

- Unmanned Systems – Air, Surface, and Underwater
- Computation Fluid Dynamics Predictions and Development
- Ship Cost Estimating and Analysis
- Full Scale Trials, Maneuvering, Stability, Control, Motions, Stability and Seakeeping
- Propulsor Design (Surface/Sub), Model Fabrication, Welding
- Systems Acquisition Planning, Platform Support, Program Management
- Life Cycle Design, Engineering, Maintenance, Testing
- Ship/Aircraft Interface Design, Towed Vehicle Design
- Shipboard Energy Efficiency Improvement – Full Spectrum of Support
### Projected Service and Materials Contracts (FY17 – FY18)

<table>
<thead>
<tr>
<th>Brief Description</th>
<th>Est. Value</th>
<th>Anticipated Announcement Date (QTR / FY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barge Maintenance &amp; Support in Hawaii</td>
<td>&lt;$10M</td>
<td>4th QTR FY17</td>
</tr>
<tr>
<td>Flexible Infrastructure</td>
<td>&lt;$1M</td>
<td>4th QTR FY17</td>
</tr>
<tr>
<td>Advanced Electronics for Combatant Craft</td>
<td>$10-$30M</td>
<td>4th QTR FY17</td>
</tr>
<tr>
<td>Ocean Waves Research</td>
<td>$5-$20M</td>
<td>4th QTR FY17</td>
</tr>
<tr>
<td>Engineering Services for Propulsor Design and Manufacturing</td>
<td>$10-$30M</td>
<td>4th QTR FY17</td>
</tr>
<tr>
<td>Intelligent Systems for Combatant Craft</td>
<td>$10-$30M</td>
<td>4th QTR FY17</td>
</tr>
<tr>
<td>Environmental Ship Motion Forecasting (ESMF)</td>
<td>$10-$30M</td>
<td>4th QTR FY17</td>
</tr>
<tr>
<td>Combatant Craft Maintenance/ R&amp;D, Norfolk, VA</td>
<td>$50-$70M</td>
<td>4th QTR FY17</td>
</tr>
<tr>
<td>Administrative Support at Little Creek, VA</td>
<td>$20-$40M</td>
<td>1st QTR FY18</td>
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<tr>
<td>Engineering Services for West Bethesda</td>
<td>$20-$40M</td>
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<tr>
<td>Model Design and Fabrication for West Bethesda</td>
<td>$20-$40M</td>
<td>1st QTR FY18</td>
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<tr>
<td>Ship Cost Estimating</td>
<td>$10-$30M</td>
<td>1st QTR FY18</td>
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<tr>
<td>Engineering Services for Combatant Craft</td>
<td>$50-$100M</td>
<td>Adv Notice Released</td>
</tr>
<tr>
<td>Boat Inventory Management/ ILS for Combatant Craft</td>
<td>$10-$30M</td>
<td>Adv Notice Released</td>
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<tr>
<td>Alteration Installation Team (AIT) Services</td>
<td>$10-$30M</td>
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