SMART Maritime Teacher Institute

Barbara Murray, SMART Director and Principal Investigator
Partnering with industry and education to prepare the Maritime workforce for 2012 and beyond
SMART Maritime Institute Seeded Programs

Regional Examples

- Duval County Schools
  Jacksonville, FL
  Maritime Logistics and Advanced Manufacturing

- Virginia Middle and High Schools
  STEM, Robotics, Career Pathways

- South Broward High School
  Hollywood, FL
  Maritime Logistics Academy

- BAE, HII and AMSEC
  National Programs
SMART Maritime Teacher Institute
Summer 2012
APPLICATIONS BEING ACCEPTED NOW

SMART Maritime Teacher Institutes

SMART: Southeast Maritime and Transportation Center

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APPLICATIONS BEING ACCEPTED NOW

Become a Premier Teacher of Maritime and Transportation Technologies

WHERE: Hampton Roads, VA—Virginia Beach, Newport News, and Norfolk—home of the Port of Virginia, the 5th largest in the US and home to the largest nuclear shipbuilding and repair operations in the US

SMART: Total immersion into the world of Maritime and Transportation Technologies, hands-on learning

WHO: Select Educators, college faculty career coaches and industry stakeholders

WHY: To gain knowledge and first-hand experience and create hands-on Maritime and Transportation Technologies activities and lessons. Become a SMART Center leader and learn about maritime career pathways and careers while developing take-home curricula.

Experience
- Gain hands-on experiences in the Maritime and Transportation industries and have first-hand exposure to industry leaders
- Learn first hand about maritime STEM career opportunities, career pathways, maritime courses and relevant curricula
- Be the first to know about emerging technologies to include offshore wind energy, marine energy, marine composites and more
- Be a part of National Office of Naval Research ROBO Boat competition
- Tour area shipyards to learn more about required skills for maritime and transportation careers and learn how to incorporate activities in your classroom activities
- Spend a day with the Virginia Port Authority, touring the regional ports
- Build synergy among teachers and industry from all sectors of Maritime and Transportation

Team up with other Premier Educators, Faculty and Career Coaches. Become a SMART Center leader and learn about maritime career pathways and careers while developing take-home curricula.

APPLICATION DEADLINES:
March 30, 2012

To Register:
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SMART: Southeast Maritime and Transportation Center

TIDewater Community College
From here, go anywhere.
Basic Career Pathway Model

K-8 STEM and Robotics

High School, Dual Enrollment and Robotics

Community College & 4 – year University

Military Career Transition

Apprenticeship Programs

Seagoing Captain, Mates, Pilot

Shipbuilding, Ship Repair, Welders, Electricians

Recreational Yachts, Pleasure Crafts

Ports Logistics, Long Shoremen
### 4-Year Tuition Costs VS Apprenticeship Program Income

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<tr>
<th><strong>DEBT</strong></th>
<th><strong>INCOME</strong></th>
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<tr>
<td><strong>Four year College Debt</strong></td>
<td><strong>Four Year Apprenticeship Average Income</strong></td>
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<tr>
<td>$17,000</td>
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<td>Including books</td>
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Average yearly earnings
Along with health, vacation and other typical employment benefits

Total cost of $68,000

Total income of $200,000
Maritime Technologies Career Pathways

Secondary
- Dual Enrollment
- Industry Credentials
  - MSSC / ASTL / CTL
  - ABYC / AWS

College
- Advanced College Certificates
  - Mechanical / Electrical Welding & Technician Support
- A.A.S Business
  - Marine Logistics
- A.S. Engineering
  - Mechanical Electrical Design M & S

Industry Apprenticeship
- Journeyman Card
- 4 Year B.S. or B.A.S.
- A.A.S. Maritime Technologies
  - Mechanical Electrical Welding Maritime Tech
South Broward High School Global Logistics Academy Contents

* 2012/2013 Proposed Activities Timeline
* Current Advisory Board Members & Future Members
* Student Demographics
* Current Student Activities and Work Samples
* Sample Student Logo Designs
* Goals & Action Plan
Goals & Action Plan

- Increase Advisory Board Membership
- Recruitment and Retention of Students in Program & Program Completers
- Scholarship Program & Grant Writing
- Community & Business Involvement
- Publicity & Marketing
- Teacher Recruitment
What SMART Center Does for Teachers

• Provide great opportunities for contacts in industry for both class visits and job information

• Exposure to the inside of actual shipyards, ports, and etc.

• Opens up more information about what is available both in general, and in specific places
What SMART Center Does for Teachers

• Provides contacts with professionals who can tell you exactly what they wished they would have learned in preparation for their job

• The robotics competition SMART is developing can be used with students to promote STEM concepts as well as knowledge of maritime industries
What SMART Center Does for Teachers

- Provide information about jobs, career direction, and educational opportunities
- Provide connections with professionals in the industry
- Expose them to careers and information they may not otherwise receive
Newport News Shipbuilding

- 125 year history designing, building, overhauling and repairing ships for the Navy, the Coast Guard and commercial trade
- Sole supplier of U.S. Navy aircraft carriers, the world's largest and most complex warships
- One of only two builders constructing the Virginia-class nuclear submarines
- Largest industrial employer in Virginia—more than 20,000 employees
- Over 500 Master Shipbuilders (40 years or more service)
- Many careers in shipbuilding industry
How does SMART benefit the Industry?

- Gaining school system contacts throughout the area
- Sharing the many career paths with teachers and administrators
- Dispelling inaccurate perceptions of the Maritime Industry – shipbuilding careers
- Identifying students that are “ready to enter the workforce”
- Understanding the need – helping support our educators in promoting STEM careers
Educating Educators on Our Workforce

- The workforce is aging
  - National demographic / local impact
  - Retiring workers will leave significant gaps in knowledge, skills, and experienced craftsmanship.

- Workforce training is costly
  - >$8000 / employee in the first year alone

- Most workers we hire need additional training
  - Workforce ready ≠ Shipbuilder ready
  - Craft work requires high level skill sets
  - Technology is constantly evolving

- Newport News Shipbuilding will hire over 4,000 new employees in the next three years

Partnering to Create Our Future Workforce!
The SMART Maritime Teacher Institute experience as commented by attendees:

- Provided an abundance of information
- Overall Wow!!! Many, many experiences have opened my eyes to the industry
- I understand that there are a lot of avenues that can be taken but what about the ones not talked about
- Far exceeded my expectations
- Terrific - I came in knowing nothing about
- I have made good networking contacts
- I am more aware of the maritime industry
- Introduced extremely professional industry members