



### SMART Center Partnership Opportunities

The SMART Center works with a wide range of partners to achieve its mission including industry employers, two- and four-year colleges, middle school and high schools, research institutions, nonprofit organizations, and government agencies.

The SMART Center can provide schools with tools and resources to increase students' awareness of clearly-articulated career pathways to well-paying job opportunities within the industry. We can also help assess industry partners' workforce and skill gaps and identify possible cost-effective educational approaches and partners to recruit, train, and employ needed workers.

We are always available to:

- give presentations on maritime and transportation career pathways, career and academic opportunities
- explore the type of resources and assistance best suited for your company or school's needs
- consult with your staff about increasing career awareness and academic preparation or potential employee training

To learn more about partnership possibilities with the SMART Center please contact Barbara Murray, Executive Director and PI of the SMART Center, at (757) 822-7485 or by email at [bmurray@tcc.edu](mailto:bmurray@tcc.edu).



The SMART Center  
Tidewater Community College  
Advanced Technology Center  
1800 College Crescent  
Virginia Beach, VA 23453  
[www.maritime-technology.org](http://www.maritime-technology.org)



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**SMART Center Partners**  
Anne Arundel Community College (MD)  
Eastern Shore Community College (VA)  
Edmonds Community College (WA)  
Florida State College at Jacksonville (FL)  
Hillsborough Community College (FL)  
Lorain Community College (OH)  
Mississippi Gulf Coast Community College (MS)  
Maritime Institute of Technology and Graduate Studies (MITAGS)  
Old Dominion University (VA)  
Paul D. Camp Community College (VA)  
Rappahannock Community College (VA)  
Thomas Nelson Community College (VA)  
Tidewater Community College (VA)  
University of Wisconsin-Madison (WI)  
K-12 schools throughout Florida, Georgia, Maryland, Mississippi, Ohio, Pennsylvania, Virginia, South Carolina, and Texas

**Industry Partners**  
American Maritime Holdings  
American Society of Transportation & Logistics  
AMSEC, LLC  
Auxiliary Systems  
BAE Systems Ship Repair  
Collins Machine Works  
Colonna's Shipyard  
General Dynamics  
Huntington Ingalls Industries (VA, MS)  
JAXPORT (Jacksonville Port Authority)  
MARAD (U.S. Maritime Administration)  
Nauticus  
NAVFAC (Naval Facilities Engineering Command)  
Norfolk Naval Shipyard  
Newport News Shipbuilding  
Oceaneering, International  
Ocean Marine Yacht Center  
Port of Virginia  
Underwater Construction Academy  
U.S. Department of Labor  
U.S. Department of Transportation



## Creating Synergy Through Industry Collaboration and Partnerships



SMART is supported by the National Science Foundation (NSF) under the following grant DUE# 1003068.



### From the Director's Desk

The SMART (Southeast Maritime and Transportation) Center is one of 41 National Science Foundation (NSF) Advanced Technological Education (ATE) centers. With an emphasis on awards at two-year colleges, the Advanced Technological Education (ATE) program focuses on the education of technicians for the high-technology fields that drive our nation's economy. The NSF ATE program is 20 years strong, with a unique mission to promote industry partnerships among colleges to prepare our technological workforce. ATEs work to form effective partnerships between academic institutions and employers to promote improvement in the education of science and engineering technicians at the undergraduate and secondary school levels. The ATE program supports professional development of college faculty and secondary school teachers; career pathways to two-year colleges from secondary schools and from two-year colleges to four-year institutions; and career awareness for multiple high-tech industries. Another goal is promoting articulations between two-year and four-year programs.

The SMART Center plays an integral role in developing partnerships in the maritime and transportation industry, increasing and sustaining awareness of career opportunities in the industry, and facilitating effective career pathways that will create educated, skilled and employable workers who can enter the workforce from community college, the military, or be promoted in current industry sectors.

The SMART Center acts as the catalyst for bringing together partners from the maritime and transportation industry, education, and government to:

- develop and promote career pathways and education programs that align with industry standards
- promote awareness of careers in the maritime and transportation industry to high school and community college students, veterans, women, and workers in transition
- facilitate and sustain industry collaborations on critical partnerships
- lay the groundwork for future industry-developed certifications for critical job roles
- facilitate the portability of credentials among regional employers
- consolidate education criteria for specific maritime occupations

We are headquartered at Tidewater Community College in Virginia Beach, Virginia. Our industry partners span the southeast region of the U.S. and are some of the most recognized names in the industry including BAE Systems Ship Repair, Huntington Ingalls Industries - Newport News Shipbuilding, AMSEC, and the Ports of Virginia, Florida, Mississippi, and Maryland. Combined, our partners employ more than 100,000 workers and have critical hiring needs for at least 16,000 new maritime and transportation technicians over the next four years as current workers retire.

To learn more about the SMART Center's work or how you can partner with us to increase the number of highly-skilled maritime and transportation technicians please contact me at [bmurray@tcc.edu](mailto:bmurray@tcc.edu) or 757-822-7485.

Regards,  
Barbara Murray  
Director and Principal Investigator, SMART Center

### What is the SMART Center?

The Southeast Maritime and Transportation Center is one of 41 National Science Foundation (NSF) Advanced Technological Education (ATE) centers. The SMART Center is the only ATE center solely focused on increasing the number of qualified skilled technicians in the maritime and transportation industry.

### Why Maritime and Transportation?

Seafaring is an integral part of our nation's past, present, and future. The maritime and transportation industry facilitates the movement of people and more than \$2 trillion of domestic and international cargo by waterway. More than 3,700 U.S. marine terminals move goods through an intermodal transportation by train (on 174,000 miles of railway) and by truck (over 45,000 miles of interstate highway). By 2020 the U.S. Department of Transportation estimates that the value of marine freight will increase by 43% domestically and 67% internationally. The maritime and transportation industry represents an enormous source of economic growth and global competitive advantage for our country.

The shipbuilding and ship repair industry represent a crucial segment of our country's maritime and transportation industry. This industry constructs, repairs, and maintains ships for our country's military and commercial maritime interested. In 2010 the industry generated more than \$19 billion in revenues; with a total multiplier effect the industry represents a domestic economic impact of approximately \$76 billion. Sustaining an adequate pipeline of skills workers is a strategic national interest.

### What Are the Opportunities?

While the maritime and transportation industry projects significant growth over the coming decades, the majority of the workforce is nearing retirement and current workforce development is not keeping pace. That means *there are more jobs available than people to fill those openings*. The result is a *large number of high-skill, high-wage, and above-average paying careers across the U.S., for qualified men and women including current high school and community college students, veterans, women, and transitioning workers.*



### SMART Center's History

SMART Center Director and Principal Investigator (PI) Barbara Murray has spent more than 10 years working alongside employers in the maritime and transportation industry. She has overseen Apprentices-Related Instruction (ARI) at Tidewater Community College (TCC) for more than 15 maritime and transportation companies sponsoring registered apprenticeship programs for more than 1,400 registered apprentices. Previously Murray oversaw a successful DOL grant to develop a structured program for the maritime workforce. The success of the "Maritime Taskforce," was born and continues as the Maritime Technologies Industry and Educator Consortium (MarTech IEC). In 2010, following the NSF ATE planning grant, the SMART Center was fully awarded, with Murray as the PI and headquarters at TCC. Since launching the Center has:

- created a program at TCC that enables apprentices to apply their ARI for credit toward an academic Career Studies Certificate in one of five areas: maritime technologies, marine electrical, marine mechanical, maritime welding, marine welding
- facilitated the creation of a new A.A.S. in Maritime Technologies degree at TCC; apprentices can embed the credits and credentials they earn through their ARI and career studies certificates (CSC) as well as their nationally-recognized credential, the DOL Journeyman's card
- saw the largest increase in apprenticeships among industry partners in Virginia (nearly 1,200 apprentices, up 14.3% since the launch of the SMART Center)
- facilitated the creation of the Hampton Roads Marine Skilled Trades Training Program to provide cost-effective accelerated training in marine electrical systems through a portable classroom that serves students at five participating Virginia Community College System (VCCS) schools. Of the first round of students, 80 completed the 120 hours of training and 73 have already been hired – a 91% grad-to-hire ratio.
- replicated the successful portable classroom training module to offer accelerated training in another area of critical industry workforce need: marine paintings and coatings
- held 5 focus groups with industry partners across the southeast to identify critical workforce and skill shortages
- held 4 sessions of an annual 5-day immersive Summer Maritime Educator Institute introducing more than 80 teachers and career coaches to the industry who represent direct connection to 10,000 students
- created the prototype for an intermodal maritime transportation and logistics competition to be held at the secondary school level

As one of 35 Subject Matter Experts (SME) for the transportation industry, P.I. Murray participates in the DOL National Competency Model development process. The validated updates for the Transportation, Distribution and Logistics (TDL) Competency Model will impact the SMART Center's mission in the implementation and dissemination of structured programs, resulting in improved workforce and sustainability for the Center.

