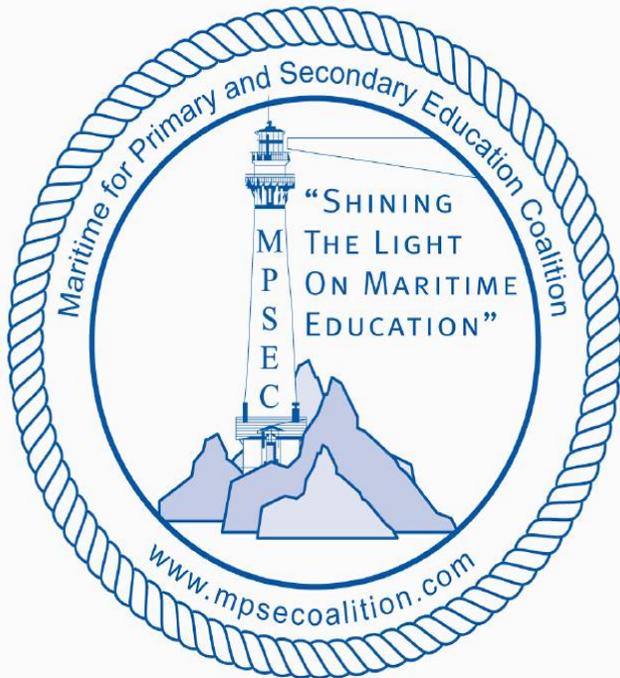


LADDER'S of OPPORTUNITY : Connecting students to post-secondary maritime/marine education, training and careers”

Dr. Arthur H. Sulzer EdD Captain USN-Ret.

Maritime for Primary and Secondary Education Coalition (MPSEC)

Maritime Academy Charter School Philadelphia, PA



Teaching With Small Boats Alliance (TWSBA)

Conference

Chesapeake Bay Maritime Museum

**St Michael's MD
April 27-28, 2017**

Current School and Workforce Issues

Students not Graduating High School

Lack of Student Interest in STEM Education and Technical Careers

Aging Maritime/Marine Workforce

Shortage of Qualified Technical Workforce

Loss of Maritime Heritage Awareness



Maritime K-12 Schools in America

Marine Movement began in 1980s focused on ocean science curriculum/careers

Maritime Movement began in 1999 focused on seagoing curriculum/careers

In 2003 there were 6 K-12 Marine/ Maritime Intermodal/ Transportation

K-12 Schools located around the country. Currently there are over 45 schools

Primary schools (Elementary/Middle) integrate marine/maritime/intermodal subjects in standard curriculum

Secondary Schools (High) offer specific marine/maritime/intermodal courses

Maritime/Marine Science and Transportation School Programs Appeal to Students

Style

Integrated
Course Specific
Industry Specific
Company Specific
Regional Focus

Type

Career Technical
Apprentice
Academic



Course Outline

-
- Module 1 Introduction to Maritime & Marine Careers Part 1 Maritime Careers Part 2 Marine Careers (8 Hrs.)
 - Module 2 Life Aboard Ship (5 Hrs.)
 - Module 3 Introduction to Marine Engineering & Shipbuilding and Careers (6 Hrs.)
 - Module 4 History of the American Merchant Shipping (16 Hrs.)
 - Module 5 Introduction to Shipbuilding & Ship Repair, Boatbuilding and Boat Repair (12 Hrs.)
 - Module 6 Specifics of Maritime Port Operation and Careers (3 Hrs.)
 - Module 7 Specifics of Maritime Support Operations and Careers (6-8 Hrs.)
 - Module 8 Specifics of Shipping Careers (8 Hrs.)
 - Module 9 Education Pathways to Maritime & Marine Careers (4Hrs.)
 - Module 10 Maritime & Marine Career Progression (2 Hrs.)
 - Module 11 Marine Ecology (16 Hrs.)
 - Module 12 Ocean Science (6-8 Hrs.)
 - Module 13 Boating Education and Safety (USCG/State Certification) (15 Hrs.)
 - Module 14 Diversity in Maritime & Marine Industry Part 1 African American Mariners Part 2 Women on the Water (7 Hrs.)
 - Module 15 Local Maritime & Marine Overview (20 Hrs.)
 - Module 16 Introduction to Marine Navigation (6 Hrs.)
 - Module 17 Professional Diving (4 Hrs.)
 - Module 18 Ocean Engineering (6 Hrs.)
 - Module 19 Recreational /Wooden Boat Building and Industry (2-3 Hrs.)

Maritime Studies Help Develop Six Character Characteristics for Employment and Academic Achievement

Comportment

Engagement

Concentration

Preparedness

Confidence

Perseverance



Outcomes of Maritime/Marine School Education Programs

(Three Year University of Pennsylvania Graduate School of Education Case Study)

Student/Parent Interest and Involvement
with School and your Organization
Graduation from High School
Academic Engagement
Academic Grade Improvement
Marine Science and Maritime Higher
Education Student Interest
Employment in Marine/Maritime
Transportation Industry upon
Graduation

Copy of Research Available

(University of Pennsylvania Graduate School of Education Three Year Doctoral Case Study Outcome)

**Title: MARITIME TACTILE EDUCATION FOR URBAN
SECONDARY EDUCATION STUDENTS
(UMI # 3535037)**

By: Arthur Henry Sulzer IV

**A copy of this dissertation is available through
Pro Quest LLC
789 East Eisenhower Parkway PO Box 1346
Ann Arbor, MI 48106-1346**

The U.S. Department of Transportation provides over \$51 billion in surface transportation construction funding each year to build, repair, and operate our Nation's highways, bridges, and public transportation systems. For every \$1 billion in transportation infrastructure investments, 13,000 jobs are projected to be created over the next 10 years. In addition to these hundreds of thousands of jobs that will be created, transportation employers across the main subsectors of trucking, transit, air, highway, rail, and maritime will need to hire up to 4.6 million workers—1.2 times the current transportation workforce—in the next decade, due to the industry's employment needs that will result from growth, retirements, and turnover. Many of these individuals will require training to meet the skill requirements of transportation employers.

While demand for transportation workers will vary by region, subsector, and occupation, there will be a large number of job openings for high-skill and middle-skill workers across the transportation industry. Successful recruitment and upskilling of new and current workers who will be responsible for the operation, maintenance, and construction of the Nation's transportation infrastructure will be critical to a system that meets the economic and security needs of the 21st century.

The U.S. Departments of Education, Transportation, and Labor have worked together and with industry stakeholders to project the employment and skill needs of the transportation industry over the next 10 years, and to ensure that America has job-driven education and workforce development systems in place that can provide students, job seekers, and workers with the skills needed for these careers. At an October 2014 convening, the Departments presented and discussed a draft of these projections with industry, education, and workforce stakeholders.

The collection and analysis of employment and skills data highlights the future growth areas and employment “hot spots” in transportation by industry subsectors, occupations, career areas, and geographic areas. It also emphasizes the need for skills training and Career Pathways across the transportation industry. The report identifies high-demand jobs with good wages, and analyzes the patterns in the education and work experience required for entry, as well as on-the-job training required for new entrants to gain full competency. We present this report as a blueprint to the field for aligning investments in transportation with high-quality career pathways programs that can create ladders of opportunity for millions of Americans, while strengthening communities and meeting the demand for the movement of people and goods across the U.S. and the world.

Secretary Arne Duncan
U.S. Department of Education
Secretary Anthony R. Foxx
U.S. Department of Transportation
Secretary Thomas Perez
U.S. Department of Labor

Community Maritime Partners

Historic Ships

Higher Education Institutions

Sea Scouts of America

Sea Cadets (Navy League)

Maritime Museums

Propeller Club

Maritime Associations

Marine/Maritime Employers

Professional Maritime Training Schools

Maritime for Primary and Secondary Education Coalition (MPSEC)

The coalition aims to foster the development of maritime education in our Nation's primary and secondary schools. This will be accomplished through a network of local, state and federal agencies, private employers, maritime associations maritime institutions of higher education and other interested parties.

Membership is open to individuals or groups that believes in the value of a maritime education and career, as well as the need for public awareness of the importance of our maritime heritage and maritime industry to our Nation.

MPSEC will work with its partners to develop outreach programs at both the primary and secondary school levels.

Additional Information Contact:

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