



# Maritime Education, Training, Research & Innovation Summit:

## *Implications for Education, Workforce Development and Training*

MASSACHUSETTS MARITIME ACADEMY PRESENTATION BY:

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MARITIME AND PROFESSIONAL TRAINING**

# Agenda

- Introduction
- Background
- Future opportunities for maritime professionals
- Foundational disciplines
- Undergraduate or graduate education
- Workforce development and training opportunities
- Research opportunities
- Questions





# Introduction

Massachusetts Maritime Academy (MMA) is a top rated public college that has been training people for careers on the ocean since 1891.

All of our graduate and undergraduate degrees have value to the offshore wind industry.

Our Center for Maritime and Professional Training (CMPT) is offering industry-accepted safety training to the offshore wind workforce.





# Background

- CMPT: Professional development division
  - 500-700 students per year
  - Non- credit bearing training
  - Train to recognized standards (USCG-GWO)
- Began process during Cape Wind
- GWO is the industry standard
- GWO standards are similar to existing CMPT programs
- BST required for all
- Refreshers required. Long term sustainability
- Substantial investment by MassCEC

# Future opportunities for maritime professionals

## 2018 study published by the Massachusetts Clean Energy Center

A 1600 MW project could generate up to 507 Job years for “Water Transportation Workers”

Operate construction vessels, transportation vessels, supply and support craft.

USCG Credentialed Mariners

- Captains
- Mates
- Engineers
- Deckhands
- Oilers





# Future opportunities for maritime professionals

## Required skills

- USCG License
- STCW training
- General navigation/ safety
- Specialized propulsion systems, waterjets, high speed vessels
- Dynamic positioning
- Specialized vessel handling in WTG farm, crew transfer ops
- Power plant operation (Diesel) auxiliary systems, steering, habitability, internal power



# Foundational disciplines

Energy system design, operation, and maintenance

- Engineering
  - Electrical
  - Mechanical
  - Civil
  - Marine
  - Environmental
  - Quality
  - Health and Safety





# Undergraduate or Graduate Education

MMA offers many courses that enable pursuit of such a career at the undergraduate or graduate level with synergies in the offshore wind sector.

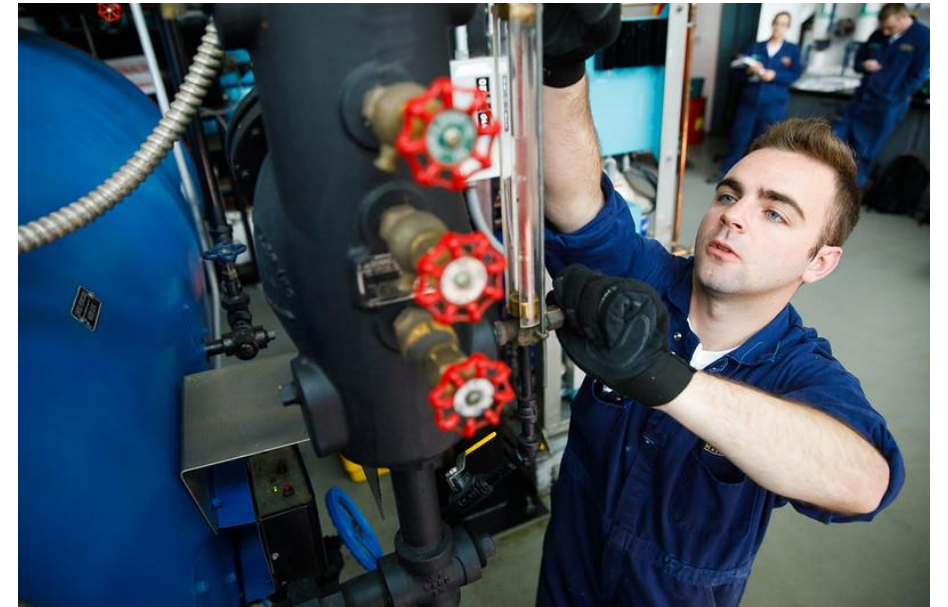
## Degree programs at MMA:

### Undergraduate

- Energy Systems Engineering
- Facilities Engineering
- Marine Engineering
- Emergency Management
- Marine Transportation (Deck)
- Marine Science, Safety and Environmental Protection
- International Maritime Business

### Graduate

- MS- Maritime Business Management
- MS- Emergency Management
- MS- Facilities Management





# Undergraduate or Graduate Education

Courses that enable pursuit of such a career at the undergraduate or graduate level?

- **UMASS-Amherst: Wind Energy Center**
  - M.S. in Mechanical and Industrial Engineering with a Concentration in Wind Energy
  - Graduate certificate in Wind Power Engineering



# Undergraduate or Graduate Education

Courses that enable pursuit of such a career at the undergraduate or graduate level?

- **UMASS-Lowell programs**
  - Center for Wind Energy
  - Research and Education



# Undergraduate or Graduate Education

Courses that enable pursuit of such a career at the undergraduate or graduate level?

- **Tufts University**
  - Ph.D. in Offshore Wind Energy Engineering
  - M.S. in Offshore Wind Energy Engineering
  - Post-Baccalaureate in Offshore Wind Energy Engineering





# Undergraduate or Graduate Education

Courses that enable pursuit of such a career at the undergraduate or graduate level?

- **Bristol Community College**
  - ACEMV: Offshore Wind Power Technician Certificate for year-round Vineyarders
  - National Offshore Wind Institute (NOWI)
    - Associate in Science in Engineering Technology (Offshore Wind Power Technology)
    - Offshore Wind Power Technician Certificate
    - GWO Courses



# Undergraduate or Graduate Education

Courses that enable pursuit of such a career at the undergraduate or graduate level?

- **University of Delaware**
  - **Offshore Wind Skills Academy**
    - The OWSA is targeted for professionals from traditional energy industries, supply chain companies, regulators, investors, consultants and any others wanting an in-depth knowledge of this industry.



# Workforce Development and Training Opportunities

- Global Wind Organization (GWO)- Industry developed and accepted
- MMA's GWO program
  - Sea Survival
  - Working at Heights
  - First Aid
  - Manual Handling
  - Fire Awareness
  - Blended learning available





# Research Opportunities

## MMA Feasibility Study

- Funded by Massachusetts Clean Energy Center

Explore requirements and demand for:

- CTV Operator Training
- Expanding GWO Suite
- Helicopter Hoisting



# Research Opportunities

- MMA's feasibility study
- UMD Studies
- Tufts: Studying industry safety practices





# Summary

- Massachusetts is investing in OSW Workforce Development
- Educational institutions are developing pathways to enter the industry at many levels
- Working with industry to meet workforce needs







# Questions?

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