NEW YORK STATE | NYSERDA

New York State Offshore Wind Academic Symposium 2024

May 8, 2024

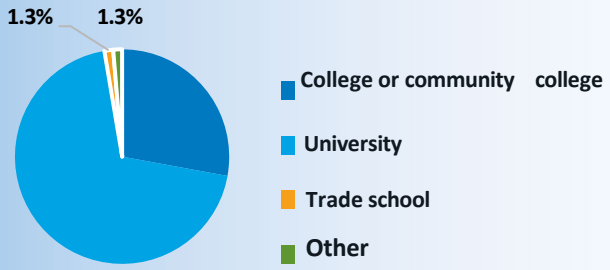
Underlining Our Purpose

NREL Wind Energy Workforce 2024 Report

Student and Recent Graduate Survey (n=346)

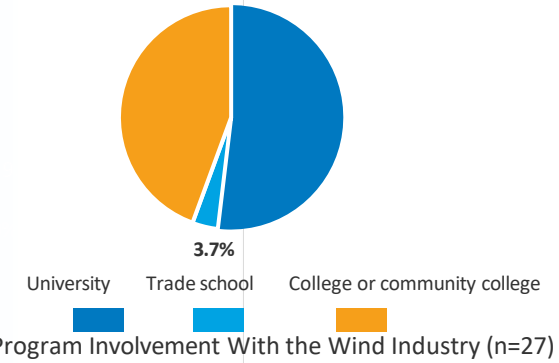
Type of School Attended, 2022 (n=226)

Graph courtesy of BW Research Partnership



Educator Survey (n=27)

Type of School Currently Employed (n=27)



Program Involvement With the Wind Industry (n=27)

- Survey results indicated 60.0% found that they had a lack of exposure to the wind energy industry within their coursework, 48.0% felt that their skills were not transferable to wind, and 54.0% were unsure what jobs made up the industry.
- Those that looked for job opportunities reported that finding opportunities in the wind energy industries (e.g., offshore, distributed, and land-based) was more difficult than other renewable energy industries.
- A lack of awareness of job opportunities and perceived difficulty finding job openings poses a two-sided barrier for both career seekers and employers in the wind energy industry when trying to increase the applicant pool.

NEW YORK STATE | NYSERDA

Key Takeaways: *NREL Wind Energy Workforce Assessment*

Reported challenges for **student applicants** to renewable energy educational institutions:

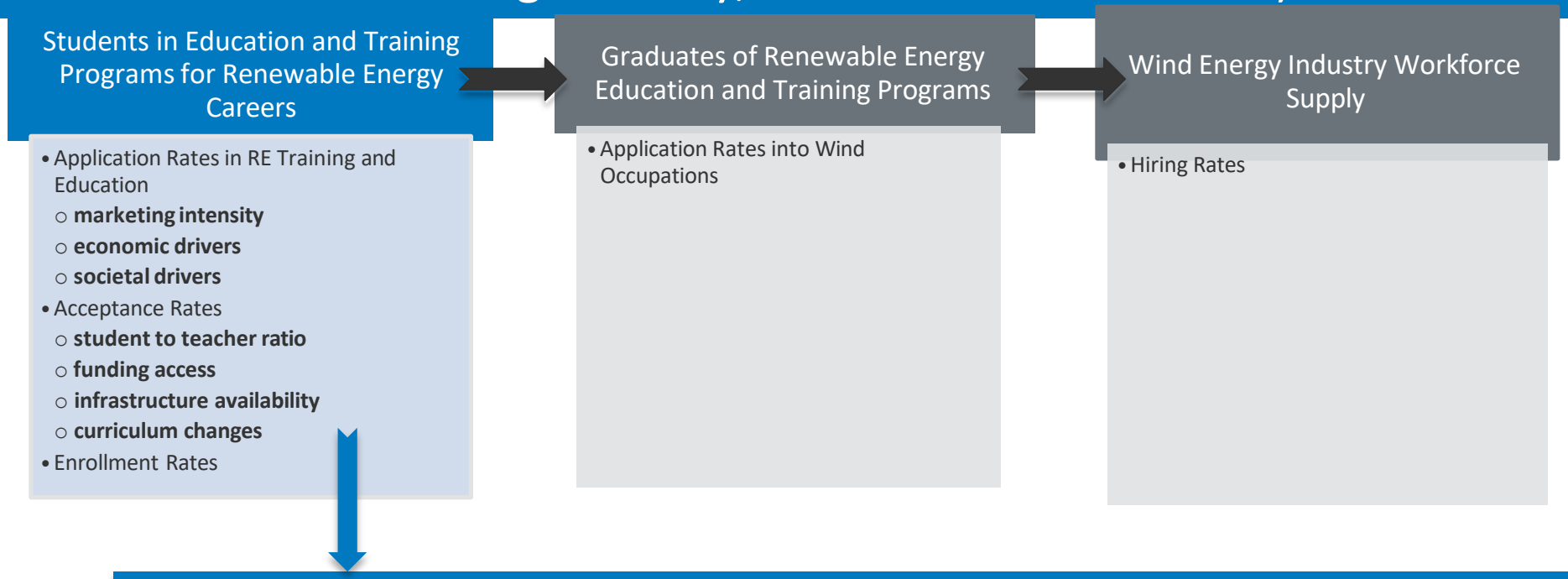
- **Number of applicants** and **acceptance rates** into renewable energy education and training programs have largely **stayed the same** over the past year and past three years.
- Educators who reported an **increase in applicants** reported that **job market availability, marketing for the program, and economic drivers** were the most impactful reasons for the increases.

Reported **student perceptions** of education and training programs:

- Students reported being **aware of experience gaining opportunities** offered through their educational institutions. Educators also reported that students do **utilize the career services department** if the school has one. Therefore, one way industry firms could help mitigate hiring challenges in the wind industry is by **connecting with educational institutions for partnership in experience gaining opportunities offered through their programs.**

- ***Creating ties between educational institutions and the wind industry helps build sustainable job pathways for a utilized labor force.***

Key levers influencing application and acceptance rates for students entering renewable energy related education and training programs, and therefore the number of graduates potentially qualified for careers in wind. Some of the key levers identified are bulleted below (e.g., marketing intensity, student to teacher ratio).



The model indicated that as the application levers **increase in positive influence** over the application rate, the **percent of students applying into renewable energy education and training programs** also **increases.** Furthermore, **increasing** the number of students applying, being accepted into, and therefore going through education and training programs allows for a **larger number** of qualified applicants to graduate, apply, and subsequently be hired into wind jobs.

Slide Credit: NREL 2024

Agenda

Time	Subject	School	Speaker Name
9:00 AM	**Arrivals, Registration, Light Breakfast**		
9:30 AM	The State of New York's Offshore Wind Industry	NYSERDA Offshore Wind Assistant Director	Pauline Huet LeBertre
9:45 AM	The State of New York City's Offshore Wind Industry	NYCEDC Chief Strategy Officer	Cecilia Kushner
Session 1	Electrical Engineering, Electricians, Welding	Serving as MC	Jessica Dealy
10:00 AM	Rapid Expansion of Electrician and Welding	SUNY Alfred	Jeffery Stevens Carrie Cokely
10:09 AM	Enhanced Metal Fabrication Pathways for the OSW Industry in the Capital Region	Hudson Valley Community College	Héctor Rodríguez
10:18 AM	Enhance Engineering and Technology Fields, Micro-Credentials, and Summer Camp	SUNY Polytech	Zhanjie Li, Ph.D.; Iulian Gherasoiu, Ph.D.
10:27 AM	Offshore Wind and Renewable Power Systems Laboratory	Stonybrook University	Fang Luo, Derek O'Connor
10:36 AM	SUPERWIND: SBU Program for UPskilling, Empowering and Reskilling Workforce for Offshore WIND Sector	Stonybrook University	Peng Zhang
10:44 AM	SUNY Poly Offshore Wind Training Team (SPOWT2)	SUNY Polytech Institute	Zhanjie Li, PHD.
10:52 AM	Moderated Q& A	All Session 1	
Session 2	Structural Engineering, Maintenance	Serving as MC	Janna Herndon
11:00 AM	Zahn Innovation Center	City College of New York (CCNY)	Chris Bobko
11:09 AM	Renewable Energy Training Center's Offshore Wind Technician Training	SUNY Morrisville	Dr. Ben Ballard
11:18 AM	Bridges to Offshore Wind	CUNY Offshore Wind Advisory Network	Robert Zandi
11:27 AM	Manufacturing and Metal Work	LaGuardia Community College	Hannah Weinstock
11:36 AM	Power Distribution and Engineering	College of Staten Island	Jasmine Cardona and Nicole Bagliore
11:45 AM	Operation and Maintenance	City Tech Community College	David Iaconangelo
12:00 PM	Moderated Q& A	All Session 2	
12:15 PM	LUNCH	Lunch and Networking	
Session 3	GWO, Safety, Maritime	Serving as MC	Jessica Dealy
1:00 PM	Preparing Workforce for Cutting Edge Manufacturing in OSW	Farmingdale State College	Khosro Shirvani
1:09 PM	GWO, Dynamic Positioning, and Maritime Outreach	SUNY Maritime	James Spear
1:18 PM	Maritime and Vessel Efforts	Kingsborough Community College	Robert Zandi
1:27 PM	WINDPLUS: A New York's Digitally Enhanced, Modernized Power Grid – Workforce Learning, Upskilling and Strengthening	Stonybrook University	Yifan Zhou - absent
1:36 PM	Strengthening the Offshore Wind Energy Workforce: Creating the Capital Region Pipeline for Wind Turbine Service Technicians in New York State	Hudson Valley Community College	Héctor Rodríguez
1:45 PM	American Clean Power	American Clean Power	Josh Rogers - absent
1:50 PM	Moderated Q& A	All Session 3	
Session 4	MWBE, Innovation, Outreach, Fundamentals	Serving as MC	Janna Herndon
2:00 PM	MWBE, Online Training Workshops for Minority and Women Owned Business Enterprises (MWBEs) and Small Startups in the Offshore Wind Industry	Farmingdale State College	Betty Feng, PhD.
2:09 PM	Navigating the Clean Energy Transition	SUNY Stonybrook	Patricia Malone
2:18 PM	Strengthening the Wind Energy Education Pipeline (SWEEP)	Suffolk County Community College	Melanie Morris-Carsch
2:27 PM	Leveraging the Power of SUNY to Achieve NY's Offshore Wind Energy Goals; Preparing Offshore Wind Pathways	SUNY Buffalo	Meg Hagen, Timothy Leyh
2:36 PM	Offshore Wind Technology Workforce Training Program.	University of Albany - SUNY	Harry Efstathiadis
2:45 PM	Board of Cooperative Educational Services Offshore Wind Energy Pipeline Program	SUNY Oneonta/Otsego Northern Catskill	Tracy Allen, Mark Davies, Hugh Gallagher
2:53 PM	Moderated Q& A	All Session 4	
3:15 PM	Closing	Closing Remarks	Jessica Dealy

Session 1: Electrical Engineering, Electricians, Welding

Time		Serving as MC	Jessica Dealy
10:00 AM	Rapid Expansion of Electrician and Welding	SUNY Alfred	Jeffery Stevens Carrie Cokely
10:09 AM	Enhanced Metal Fabrication Pathways for the OSW Industry in the Capital Region	Hudson Valley Community College	Héctor Rodríguez
10:18 AM	Enhance Engineering and Technology Fields, Micro-Credentials, and Summer Camp	SUNY Polytech	Zhanjie Li, Ph.D.; Iulian Gherasoiu, Ph.D.
10:27 AM	Offshore Wind and Renewable Power Systems Laboratory	Stonybrook University	Fang Luo, Derek O'Connor
10:36 AM	SUPERWIND: SBU Program for UPskilling, Empowering and Reskilling Workforce for Offshore WIND Sector	Stonybrook University	Peng Zhang
10:44 AM	SUNY Poly Offshore Wind Training Team (SPOWT2)	SUNY Polytech Institute	Zhanjie Li, PHD.

"On average, in 2030, just over a third of jobs created in the State's offshore wind industry will be management or professional service positions. Another roughly three in 10 jobs will be installation or repair positions ."

— *NYSERDA 2022 OSW Workforce Gap Analysis*

NEW YORK STATE | NYSERDA

New York State Offshore Wind

Alfred State College

Growing the Offshore Wind Workforce through Rapid Expansion of Electrician and Welding Education & Training

Jeffrey Stevens, Dean, School of Applied Technology
stevenjs@alfredstate.edu

Carrie L. Cokely, VPAA
cokelycl@alfredstate.edu

Peter McClain, Director, Accounting & Controls
mcclaipm@alfredstate.edu

Alfred State College
School of Applied Technology

Program Description:

- ***Comprehensive skills training and workforce development project to train future electricians and welders with a focus on skills needed for the offshore wind power production field***
- ***Achieved through expansion of welding and electrical programs with facilities, equipment, and faculty***
- ***Allows for increase of 20 students in each program***
  - *Expand welding from 161 total students to 181; Expand electrical from 238 total students to 248*
  - *Electrical waitlisted for Fall 24 with expansion; 58 on electrical waitlist; Welding at 46*
- ***Lead Contact: Jeffrey Stevens, Dean, School of Applied Technology***

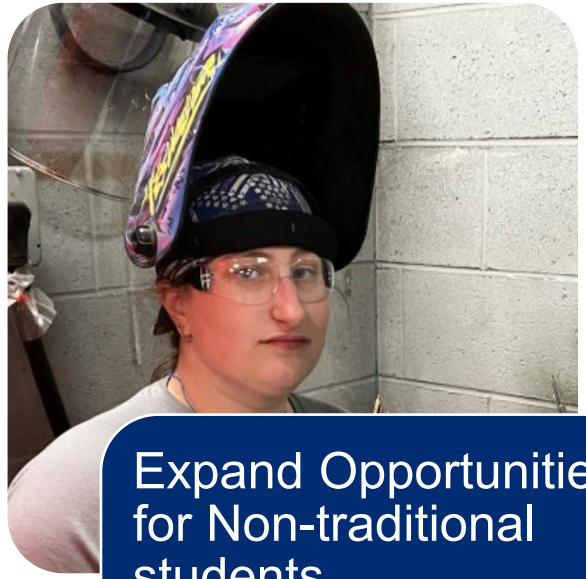
Timeline of Development

2023

- Renovation of Welding Lab for expansion
- Enrolled 15 new welding students for total of 54
- Partner with BOCES programs on pipelines

2024

- Renovation of Electrical Lab for Expansion
- Enroll 20 new electrical students for a total of 100



Expand Opportunities for Non-traditional students

- Women in the trades
- Students with disabilities
- Economically disadvantaged by federal Perkins standards

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- **Partnerships with Industry leaders on job training for career changers or development of microcredentials**
  - Short specialized trainings for adult learners and incumbent workers in skills required for offshore wind industry
- **Partnerships with additional BOCES or high school training programs in the skilled trades**
- **Potential for apprenticeships in welding/electrical**

NEW YORK STATE | NYSERDA

New York State Offshore Wind

Metal Fabrication Pathways for the OSW Industry in the Capital Region

Hudson Valley Community College

Héctor M. Rodríguez, Ph.D., P.E.
Dean of STEM
h.rodriguez@hvcc.edu

Hudson Valley Community College, Troy, NY School of STEM

Program Description:

- ***Strengthen two-year Welding and Fabrication A.O.S.***
- ***Better align curriculum and laboratory equipment to OSW***
- ***Faster pathways: 1yr. Certificate, microcredential, non-credit training***
- ***Participants: 50 per year***
- ***Lead: Mr. Joe Dana (j.dana@hvcc.edu)***

Timeline of Development

2024

- 1 yr. Welding Certificate
- Include NDT and Submerged Arc Welding
- Lab equipment purchases
- Faculty NDT Training
- Workforce development welding

2025

- Implement program changes

2026+

- Continue offering program

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- **Articulations and College in the HS/dual enrollment with CTE programs**
- **Outreach events – NY State Steel Fabricators, etc.**
- **Workforce development training: Submerged-Arc-Welding & NDT basics**

NEW YORK STATE | NYSERDA

New York State Offshore Wind

SUNY Polytechnic Institute

Offshore Wind Technology Workforce Training Program

Iulian Gherasoiu
Associate Professor
College of Engineering
Utica, NY

SUNY Polytechnic Institute, Utica, NY
College of Engineering

Program Description:

Develop in partnership with University at Albany a micro-credential and a project-oriented capstone program for offshore wind energy workforce training for College students. Three course including hand-on experience are in the development phase.

- ***SUNY Poly is developing a course and laboratory activities that are focused on the electrical aspects of the offshore wind generator operation - Fundamentals of Electrical and Electronic Systems of Wind Turbines***
- ***Number of Individuals expected to receive educational trainings: 15 to 20 students per semester***
- ***Lead Contacts:*** ***Prof. H. Efstathiadis CNSE/U Albany***

  Prof. I. Gherasoiu, Electrical Engineering Technology/SUNY Poly

Timeline of Development

2023

Program Started January 2024

2024

- All three courses approved by Curriculum Committee
- Courses being Developed

2025

- Courses and lab for hands-on experience start Spring 2025
- Courses will continue to be offered beyond Spring 2025

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- Partners Internal:
  - Zhanjie Li, Department of Mechanical Engineering, SUNY Poly

    Leading the development of workforce training program to increase the number of engineers, scientists, and engineering technicians with the skills to contribute to the current offshore wind industry and help foster its growth. It aim is to make SUNY Poly's campus the hub for promoting and supporting offshore wind industries in NY in collaboration with external partners.
  - Juan Felipe Henao, Ph.D., College of Business, SUNY Poly
    Leading research on the complementarity of different renewable energy sources in New York State (NYS), in particular solar and wind resources, using historical data and projections of climate variability.

- Partners External:
  - Ralph O'Connor - Sustainable Energy Institute (ROSEI) in Johns Hopkins University
  - PowerGEM
  - GE Renewable Energy Learning Center
  - Eonix Energy

EONIX GE VERNOVA JOHNS HOPKINS UNIVERSITY PowerGEM Power Grid Engineering & Markets

New York State Offshore Wind

SUNY Polytechnic Institute

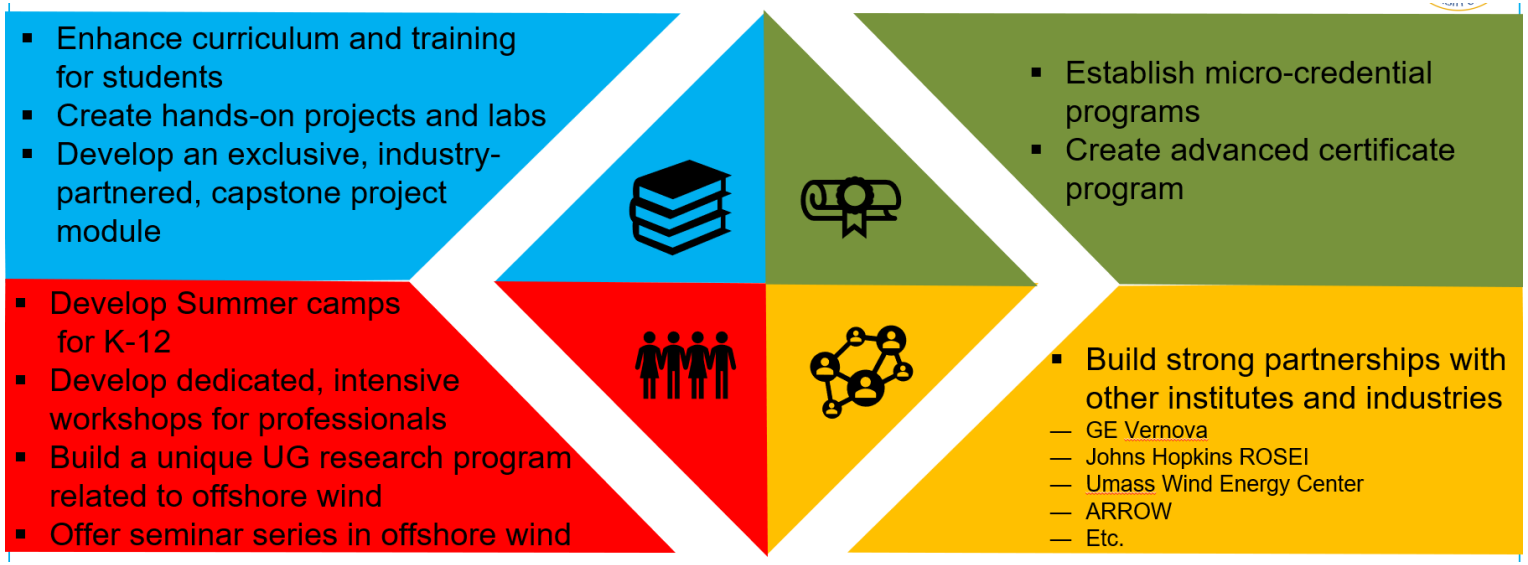
SUNY Poly Offshore Wind Training Team (SPOWT^2)

Zhanjie Li, Ph.D.
Professor
Zhanjie.Li@sunypoly.edu

SUNY Polytechnic Institute, Utica, NY
College of Engineering

Program Description:

- **Develop a strong workforce training program to increase the number of engineers, scientists, and engineering technicians**



Curriculum:

- Wind turbine design and analysis (offered in Spring 2024, 10 students)
- Introduction to offshore wind (Planned for F24)
- Aerodynamics for wind turbine (Planned for F24)
- Data analysis and statistics (Planned for F24)
- Construction Management: Installation and Inspection (Planned for S25)
- Logistics (Planned for S25)
- MTC 366 Wind Energy (approved)
- MTC 466 Wind Power Generation (approved)
- Design and Analysis of Wind Turbine Blades (Planned for S25)
- Introduction to Energy Management (Planned for F24)

- ***Two semester courses: 20~30 students each; 2 summer workshops: 15 each; UG researcher: 5 each semester; 2 summer camps: 20 each***

- ***Zhanjie Li, Zhanjie.li@sunypoly.edu***

Timeline of Development

2023

- Curriculum development
- Hand-on labs developed

2024

- UG researchers
- Summer camp
- Workshop with CPE
- Courses
- Seminar series

2025

- Micro-credentials
- Workshop with CPE
- Continuation plan beyond funding

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- **SUNY Poly internal partnerships**
  - Iulian Gherasoiu, EET, Leading with an electrical engineering focus areas in offshore wind training
  - Center of Smart Infrastructures and Sustainability (CSIS) – Zhanjie Li is leading a proposal to establish the center ($250k); Part of the continuation plan for the project
- **External partnerships**
  - GE Vernova
  - Johns Hopkins ROSEI
  - Umass Wind Energy Center
  - Convegent Science
  - ARROW, SUNY Poly is an affiliate member

ARROW ACADEMIC CENTER FOR RELIABILITY & RESILIENCE OF OFFSHORE WIND

University of Massachusetts Amherst

U.S. DEPARTMENT OF ENERGY

NEW YORK STATE | NYSERDA

New York State Offshore Wind

Stony Brook University

Offshore Wind and Renewable Power Systems Laboratory

Fang Luo, Associate Professor, fang.luo@stonybrook.edu
Derek O'Connor, Workforce Development Manager, derek.oconnor@stonybrook.edu

In Collaboration with:

Farmingdale State College & **Suffolk County Community College**

Stony Brook University, Stony Brook, NY
Electrical &Computer Engr. & Economic Dev.

Program Description:

- ***Non-credit, 30-hour program for Offshore Wind HVDC Courses/Training for entry level professionals, graduated students and interested students ; micro-credential and digital badge, K-12 outreach***
- ***Five training modules with lectures and hands-on sessions***
- ***Two cohorts in the award timeframe at no charge to participants, resulting in 30 total people being trained.***
- ***Fang Luo, fang.luo@stonybrook.edu, and , Derek O'Connor, derek.oconnor@stonybrook.edu.***

Timeline of Development

2024

- May 2024: Equipment purchased
- June 2024: Development of content and Train the Trainer on equipment
- July 2024: Equipment installed in lab
- July 2024: 15 Suffolk Community College students interviewed and recruited into program

2024

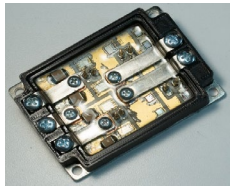
- September 2024: Cohort One Training for 3 months
- November 2024: 15 more students recruited for Cohort 2
- December 2024: Completion of Cohort 1

2025

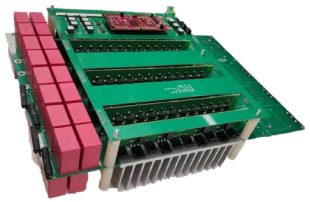
- January 2025: Assessment and improvement of content
- March 2025: Begin Cohort 2 training
- June 2025: Completion of Cohort 2; total of 30 trained Offshore Wind HVDC Power Systems Professionals

Potential for Partnerships, Assistance, Job Pathways and Collaborations

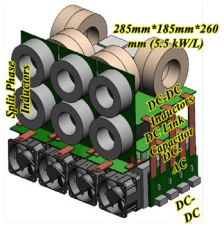
- **Provides training for immediate needs in OSW and HVDC industry**
- **Creates diversified career pathways**
- **Foster collaborations with OSW and HVDC companies, higher education institutes, as well as research institutes**
- **Potential leveraging more research components from Spellman High Voltage Power Electronics Lab at SBU**



High Performance WBG Modules



High Density Grid Tied Solar Converter (SiC)



Modular Grid-tied Converter for Grid Control (SiC)

Grid-Integration Control

NEW YORK STATE | NYSERDA

New York State Offshore Wind

SUPERWIND: SBU Program for UPskilling, Empowering and Reskilling Workforce for Offshore WIND Sector

Peng Zhang
SUNY Empire Innovation Professor
Electrical and Computer Engineering
Stony Brook University
p.zhang@stonybrook.edu

College of Engineering and Applied Science

Program Description:

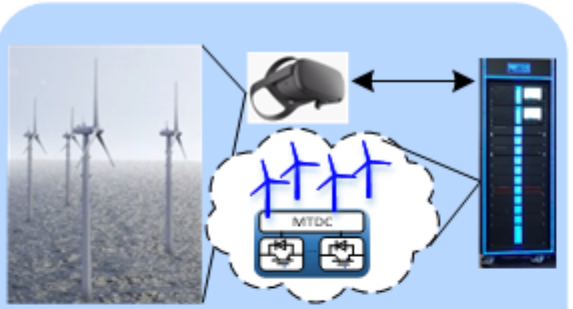
One-semester, three-credit courses

- C1: Introduction to Wind Energy Systems
- C2: Offshore Wind Power System Analysis and Control
- C3: Power System Operation, Planning, and Markets with Offshore Wind
- C4: High Voltage Direct Current (HVDC) Transmission: Converters, Systems and DC Grids
- C5: Cyber-Physical Resilience of Offshore Wind Systems
- C6: Data Analytics in Offshore Wind Integration

Micro-Credential Courses

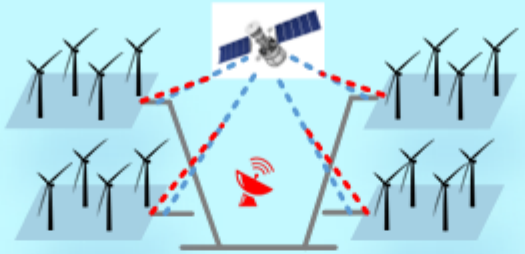
- M1: Offshore Wind Energy Conversion and Storage
- M2: Planning of Offshore Wind Systems
- M3: Electricity Markets with Offshore Wind
- M4: Transients and Stability of Offshore Wind Systems
- M5: Grid Integration of Offshore Wind Power
- M6: High Voltage Engineering and HVDC
- M7: Multi-Terminal DC and Modular Multilevel Converters for Meshed Offshore Wind Grids
- M8: Operation, Control, Protection and Fault-Resilience in Offshore Wind Systems
- M9: Cyber Resilience of Offshore Wind Grid: SCADA, Communications and Cybersecurity
- M10: Power-to-X and Offshore Wind Energy Hub
- M11: Artificial Intelligence for Offshore Wind Analytics and Operations
- M12: Digital Twin and Virtual Reality (VR) for Offshore Wind Systems

Timeline of Development



2024

- C1~C3
- M1~M5, M7, M8



2025

- C4~C6
- M6, M9~M12

“The Series”

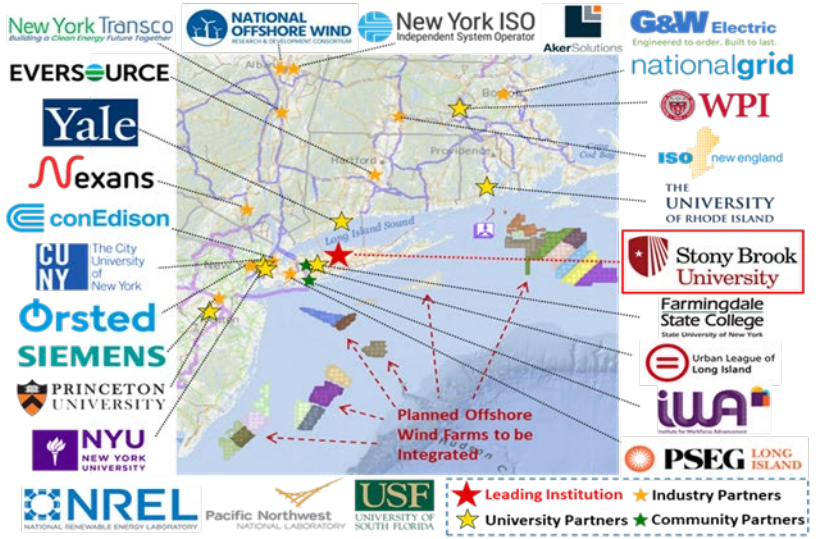
- 5 regular textbooks
- 12 short books

Partnerships and Collaborations

- **IEEE Press Series on Offshore Wind Energy Collection (2024-):**
  - ✓ Founding Editor: Prof. Peng Zhang
  - ✓ World's first textbook series for OSW training
  - ✓ 2024 authors includes top OSW experts from: Orsted, NREL, NYU, USF, SBU, URI, Puget Sound Energy, Shell, DTU, UH, OSU, Birmingham, Eversource Energy, etc.

- **Established an OSW testbed at Stony Brook Power Lab as a living laboratory for teaching and training**

- **Currently 20+ onsite or remote users are accommodated simultaneously**



Session 2: Structural Engineering, Manufacturing and Maintenance

Time	Title	Serving as MC	Janna Herndon
11:00 AM	Zahn Innovation Center	City College of New York (CCNY)	Chris Bobko
11:09 AM	Renewable Energy Training Center's Offshore Wind Technician Training	SUNY Morrisville	Dr. Ben Ballard
11:18 AM	Bridges to Offshore Wind	CUNY Offshore Wind Advisory Network	Robert Zandi
11:27 AM	Manufacturing and Metal Work	LaGuardia Community College	Hannah Weinstock
11:36 AM	Power Distribution and Engineering	College of Staten Island	Jasmine Cardona and Nicole Bagliore
11:45 AM	Operation and Maintenance	City Tech Community College	David Iaconangelo
12:00 PM	Moderated Q& A	All Session 2	

“Together, manufacturing and construction will account for about six in ten offshore wind jobs (56.5 percent) in 2040.”

- *NYSERDA 2022 OSW Workforce Gap Analysis*

NYSERDA

New York State Offshore Wind

The City College of New York

Zahn Innovation Center

Chris Bobko, Executive Director
chris@zahncenternyc.com
cbobko@ccny.cuny.edu

Office for Experiential Learning

Francesca Anselmi, Executive Director
fanselmi@ccny.cuny.edu

The City College of New York, West Harlem
Zahn Innovation Center & Office for Experiential Learning

Program Description:

- ***Experiential Learning/Workforce training*** - create a robust student and workforce pipeline for careers in renewable energy and offshore wind.
- ***R&D and Innovation:*** support innovation in renewable energy and offshore wind by encouraging and supporting translational research.

- ***Thematic Areas***: Environmental impact, energy & sustainability policy
  Supply chain management & project development,
  Renewable energy engineering

- Skills-based trainings – 8 tracks and 320 students/year
- Course integration in Engineering, Econ & Public Policy, Science, Architecture
- Seed grants and matching funds for translational research

Timeline of Development

2023

- Initial Engagement with Rise / AE1
- 2 Zahn Incubator startup finalists related to sustainable energy

2024

- Steering committee formation & planning for initial programs
- Seeking additional funding and renewed bid
- CCNY Offshore Wind team – finalist in Collegiate Wind competition

2025-2026 +

- Pilot skills-based learning experiences tailored to renewable energy / off-shore wind
- Zahn Innovation Center prize track dedicated to clean-tech
- Shared programs with Rangel Infrastructure Workforce Initiative

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- **Integrate with Rangel Infrastructure Workforce Initiative (non-degree seeking students) and its partners to work on innovation that meets real-world needs**
- **Build an Industry Consortium adding EPCs, Tier 1 suppliers, utilities – who help set strategic priorities, provide additional resources, and place interns and program graduates**
- **Connect with cleantech/greentech/bluetech investors and explore new venture investment models leveraging government backing**

NEW YORK STATE | NYSERDA

SUNY MORRISVILLE
RENEWABLE ENERGY TRAINING CENTER

New York State Offshore Wind

SUNY Morrisville

Renewable Energy Training Center's Offshore Wind Technician Training

Dr. Ben Ballard, RETC Director
BallarBD@morrisville.edu
Ph: 315.684.6780
morrisville.edu/renewable-energy

SUNY Morrisville, Morrisville, NY
Renewable Energy Training Center

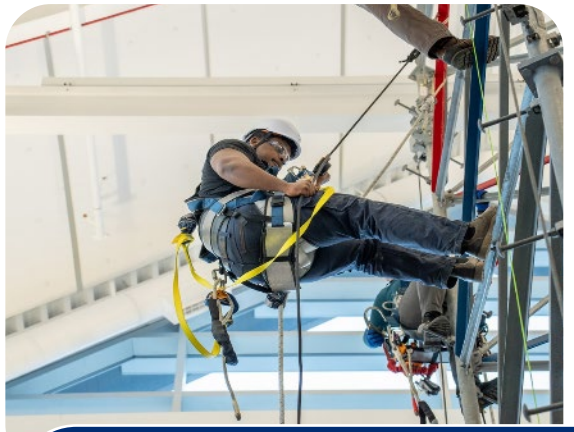
Program Description:

- ***Wind turbine technician micro-credentials → Wind turbine technician 1-yr certificate*** *(10-15 participants per semester)*
  - *Low-residency, online, hybrid, HyFlex offerings (classes beginning summer 2024)*
- ***Embedded wind tech. training in Renewable Energy A.A.S. and B.Tech.*** *(15-30 participants per year, began spring 2024)*
- ***Outreach: K-12 STEM workshops*** *(30-60 participants/yr),* ***RE career exploration*** *(>300 participants/yr),* ***Teacher Professional Development*** *(K-12, BOCES; 20-40 participants/summer)*
- ***Contacts:***
  - *Dr. Ben Ballard, RETC Director BallarBD@morrisville.edu 315.684.6780*
  - *Mr. Sam Doubleday, Outreach Coord., DoubleS@morrisville.edu 315.684.6299*
  - morrisville.edu/renewable-energy

SUNY MORRISVILLE
EST. 1908

Timeline of Development

SUNY MORRISVILLE
EST. 1908



Spring 2024

- Micro-credentials and Certificate developed
- Embedded Courses offered (RE A.A.S./B.Tech.)
- RENG Courses adapted for hybrid/HyFlex/low-resid.
- Career Exploration HS Events

Summer 2024

- Micro-cred. Courses offered:
  - RENG 101, 102, 225 (*hybrid/HyFlex/low-resid.*)
- Summer Institute:
  - Teacher Prof. Development
  - HS Career Exploration
- K-12 STEM workshops

Fall 2024-Spring 2025

- Micro-credentials and Certificate approval
- Wind Tech Micro-cred. Courses offered (*hybrid/HyFlex/low-resid.*)
- Embedded Courses offered (RE A.A.S./B.Tech.)
- Career Awareness/Outreach

Photos: Tower Climbing Lab and Wind Lab at SUNY Morrisville's ACET Center

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- **Outreach, Recruiting, Collaboration – Join Us!**
- Education Opportunity Program (EOP)
- Science of Technology Entry Program (STEP)
- Collegiate Science & Technology Entry Program (CSTEP)
- Syracuse Education Opportunity Center (EOC)
- Central New York Regional Planning & Development Board
- Greater Syracuse Works
- NY for Clean Power
- SUNY Clean Energy Consortium

SUNY MORRISVILLE
RENEWABLE ENERGY TRAINING CENTER

- **Wind Industry Partners** (technical review, internships, outreach)
- Orsted, Avangrid, Storke LLC., others welcome!

- **Articulation Opportunities**
- HS/BOCES, community college, SUNY-SUNY institution, GWO providers

morrisville.edu/renewable-energy

Tower Climbing Lab at SUNY Morrisville's ACET Center

NEW YORK STATE | NYSERDA

New York State Offshore Wind

CUNY Offshore Wind Advisory Network

Bridges to Offshore Wind & CUNY Trainings & Programs

- Robert Zandi, Associate Director of Renewable Energy Programs
  Division of Workforce Development, Kingsborough Community College, CUNY

- Hannah Weinstock- Senior Director of Workforce Development,
  Continuing Education & Workforce Development, LaGuardia Community College, CUNY

- David Iaconangelo- Renewable Energy Coordinator & Instructor
  Continuing Studies Center, City Tech, CUNY

- Jasmine Cardona, Executive Director
  Division of Economic Development and Community Partnerships, College of Staten Island, CUNY

CUNY Offshore Wind Advisory Network

The City University of New York (CUNY) is the nation's largest urban public university, a transformative engine of social mobility that is a critical component of the lifeblood of New York City and its residents.

The CUNY Offshore Wind Advisory Network (CUNY OWAN) was created out of the need to centralize the opportunities, requests and training information of the four CUNY schools offering clean energy/OSW specific trainings.

Together, these institutions and divisions have over 50 years of demonstrated experience in delivering high quality workforce development training programs across New York City with the goal to remain responsive to the needs of disadvantaged and disconnected NYC residents who seek clean energy job training and degree pathway programs.

KCC DREAMS BEGIN HERE

THE CITY UNIVERSITY OF NEW YORK The College of Staten Island

NEW YORK CITY COLLEGE OF TECHNOLOGY CUNY

LaGUARDIA COMMUNITY COLLEGE

CUNY Offshore Wind Advisory Network

Bridges To Offshore Wind

Bridges to Offshore Wind presentations (2 hour and 12 hour courses) provide an introduction to Offshore Wind Energy and the wide variety of careers and trainings, certificate programs, apprenticeships, and degrees available at the four CUNY schools. These presentations are being offered to other schools and Community Based Organizations and are being provided to Disadvantaged Communities and Environmental Justice Communities throughout NYC.

These presentations explore a variety of topics related to Offshore Wind Energy and include the history of wind energy, science and logistics of Offshore Wind Energy, the current status of local OSW projects, the variety of jobs in the field, labor market statistics, workforce gaps, and a plethora of current trainings, programs, and apprenticeships available at KCC, CSI, City Tech, and LGCC to help students receive the training they will need to be a part of the upcoming Offshore Wind Energy workforce.

Each School will be providing a minimum of 3 sessions per year totaling at least 12 sessions per year and a minimum of 240 participants per year. Over the 3 year duration of the program a minimum of 36 presentations will be given and 560 participants will participate in the Bridges to Offshore Wind Program.

KCC DREAMS BEGIN HERE

THE CITY UNIVERSITY OF NEW YORK The College of Staten Island

NEW YORK CITY COLLEGE OF TECHNOLOGY CUNY

LaGUARDIA COMMUNITY COLLEGE

CUNY Offshore Wind Advisory Network

Program Resources:

To learn more about each school certificate programs, apprenticeships, and degree offerings or schedule a Bridges to Offshore Wind presentation at your school, Community Based Organization, or Community Center please check out the OWAN website at:

https://sites.google.com/view/bridgestooffshorewind/home

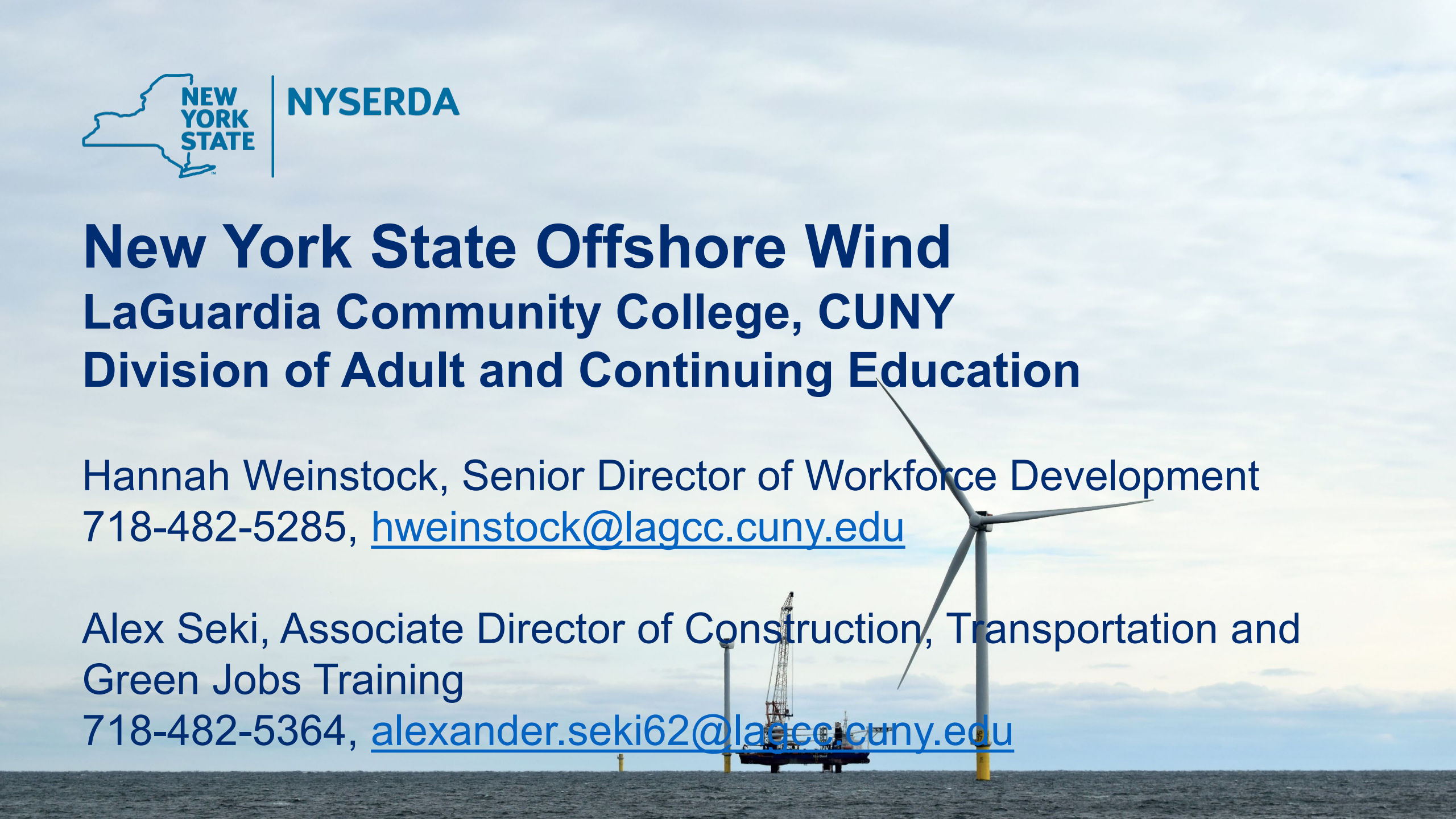
NEW YORK STATE | NYSERDA

New York State Offshore Wind

LaGuardia Community College, CUNY
Division of Adult and Continuing Education

Hannah Weinstock, Senior Director of Workforce Development
718-482-5285, hweinstock@lagcc.cuny.edu

Alex Seki, Associate Director of Construction, Transportation and Green Jobs Training
718-482-5364, alexander.seki62@lagcc.cuny.edu



LaGuardia Community College, Long Island City, NY Workforce Development Department

Electrical 1 Training Program:

- ***195-hour hands-on training program that prepares individuals for a career in the electrical field. Includes industry-recognized credentials: OSHA30, SST, NCCER Construction Core, NCCER Electrical Level 1.***
- ***Courses run September-December and March-June, weekday evenings. 50 students trained/year. Full scholarships available.***

Offshore Wind Technician Training Program:

- ***160 hour training program that prepares individuals to become wind service turbine technicians. Includes industry-recognized credentials: GWO Basic Safety Training, GWO Basic Technical Training, and NCCER Wind Service Technician.***
- ***First cohort expected to launch in early 2025. This will be a free program specifically for disadvantaged communities.***

Timeline of Development for Offshore Wind Technician Training

2024

- Lab Facilities Development
- Instructor Certification
- GWO Accreditation

2025

- Two cohorts of Offshore Wind Technician Training offered to disadvantaged communities at no cost

Beyond

- Cohorts of Offshore Wind Technician Training, GWO BST and GWO BTT offered based on demand

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- **Provide your input into our future training offerings**
- **Speak to a class**
- **Hire our graduates**
- **Contract with us for customized training to meet your needs**
- **Refer your constituents to training**
- **Request a Bridge to Offshore Wind workshop**
- **For partnerships please contact Hannah Weinstock, hweinstock@lagcc.cuny.edu or Alex Seki, alexander.seki62@lagcc.cuny.edu**
- **For more information on workforce training programs or to enroll in classes, please visit www.laguardia.edu/careers or call 718-482-7244.**

NEW YORK STATE | NYSERDA

New York State Offshore Wind

College of Staten Island, CUNY

Sustainable Energy

Jasmine Cardona, Executive Director
Economic Development & Community Partnerships
Jasmine.Cardona@csi.cuny.edu

College of Staten Island, CUNY
Workforce Development and Innovation

Engineering and Environmental Science Labs

- **The key to the program is a strong hands-on and focused laboratory experience with a focus on renewable energy. With the addition of a Power Systems Laboratory, a Renewable Energy Systems Laboratory (RESL) and an Applied Mechanics Laboratory students gain specialized knowledge and skills to meet the demands of the industry.**

Welding

- **Our curriculum will cover welding fundamentals, safety procedures, welding theory, hands-on practice, and specialized welding processes such as MIG, TIG, and Stick welding. Will train 45 welders per year (15 per semester).**

Machinist

- **Our Machinist Program will provide specialized training in precision machining techniques tailored to meet the unique demands of the offshore wind sectors. The curriculum includes hands-on instruction in machining components crucial for offshore wind turbines and maritime vessels, ensuring graduates are equipped with the skills needed for success in these growing industries.**
  Will train 30 machinists per year (10 per semester).

Electrical Technician

- **The curriculum encompasses foundational courses in electrical principles, safety procedures, code compliance, and practical hands-on training in electrical systems and equipment. Advanced coursework may include specialized topics such as programmable logic controllers (PLCs), renewable energy systems, automation technologies, and electrical instrumentation.**

Timeline of Development

2023

- NYSERDA Award $600k HVAC Training
- NYS DOL Apprenticeship Designation

2024

- $1.7M Senator Schumer and Gillibrand for Workforce Education and Training in Wind Energy
- $2.9M CM Malliotakis for STEM Labs
- Launch of Welding and Machinist Training

2025

- Launch of Electrical Technician Training Program

College of Staten Island
The City University of New York

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- **Partner in apprenticeship programs with industry partners to provide hands-on training and mentorship opportunities for students.**
- **Support job placement for graduates, connecting them with employment opportunities.**
- **Collaborate to develop and maintain a curriculum that aligns with industry standards and addresses current and emerging workforce needs.**

College of Staten Island
The City University of New York

NEW YORK STATE | NYSERDA

New York State Offshore Wind

City Tech, CUNY

Continuing Studies Center

Debra Salomon, Program Director
dsalomon@citytech.cuny.edu
David Iaconangelo, Coordinator
david.iaconangelo70@citytech.cuny.edu

CUNY City Tech
Continuing Education & Workforce Development

Fundamentals Of Electricity I & II

Provides an introduction to electrical theory for work in the building trades, solar PV, energy storage, heat pump installation, and Offshore Wind Energy.

AWS Beginning & Advanced Welding Training and Exam Prep

Prepares students with info, skills, and experience to pass AWS Certified Welders Exam.

Construction Project Management Certificate

Upskilling program for degree and non-degree students.

Offshore Wind Manufacturing & Assembly Technician Training

Prepares for manufacturing, assembly, other OSW supply chain jobs.

Timeline of Manufacturing Tech Development

2023

- Identifying credentials
- Establishing employer partnerships
- Securing Funding

2024

- Working with faculty
- Building Lab
- Purchasing Equipment

2025

- Outreach/Registration
- Deliver Fall 2025 cohort- City Tech degree and non-students
- Program reports and outcomes

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- Partner with South Brooklyn manufacturers to build training lab.
- Listen to OSW project managers to understand skills gaps.
- Engage our existing CBO partners in a new tech training for their constituents.
- Seek assistance with equipping a state-of-the-art training facility for manufacturing technicians.
- Expand on existing union partnerships to prepare student for apprenticeship pathways.

Prepare students for immediate and future work in manufacturing and assembly.

Session 3: GWO, Safety, Maritime

Time	Title	Serving as MC	Jessica Dealy
1:00 PM	Preparing Workforce for Cutting Edge Manufacturing in OSW	Farmingdale State College	Khosro Shirvani
1:09 PM	GWO, Dynamic Positioning, and Maritime Outreach	SUNY Maritime	James Spear
1:18 PM	Maritime and Vessel Efforts	Kingsborough Community College	Robert Zandi
1:27 PM	WINDPLUS: A New York's Digitally Enhanced, Modernized Power Grid – Workforce Learning, Upskilling and Strengthening	Stonybrook University	Yifan Zhou - absent
1:36 PM	Strengthening the Offshore Wind Energy Workforce: Creating the Capital Region Pipeline for Wind Turbine Service Technicians in New York State	Hudson Valley Community College	Héctor Rodríguez
1:45 PM	American Clean Power	American Clean Power	Josh Rogers - absent
1:50 PM	Moderated Q& A	All Session 3	

"Compared to the national average, the concentration of construction and O&M jobs in New York State is slightly lower. These two phases will ultimately account for the largest component of work in an offshore wind industry, representing an estimated 58 percent of workforce additions. There is significant overlap of job types across these phases, including construction and other trade workers, administrative support, maritime and port workers, and management positions." – NYSERDA 2022 OSW Workforce Gap Analysis

"In 2021, construction employers reported the greatest difficulty hiring workers, with 98% reporting at least some difficulty finding qualified workers" –NREL 2024 Wind Energy Workforce Assessment

NEW YORK STATE | NYSERDA

New York State Offshore Wind

Farmingdale State College

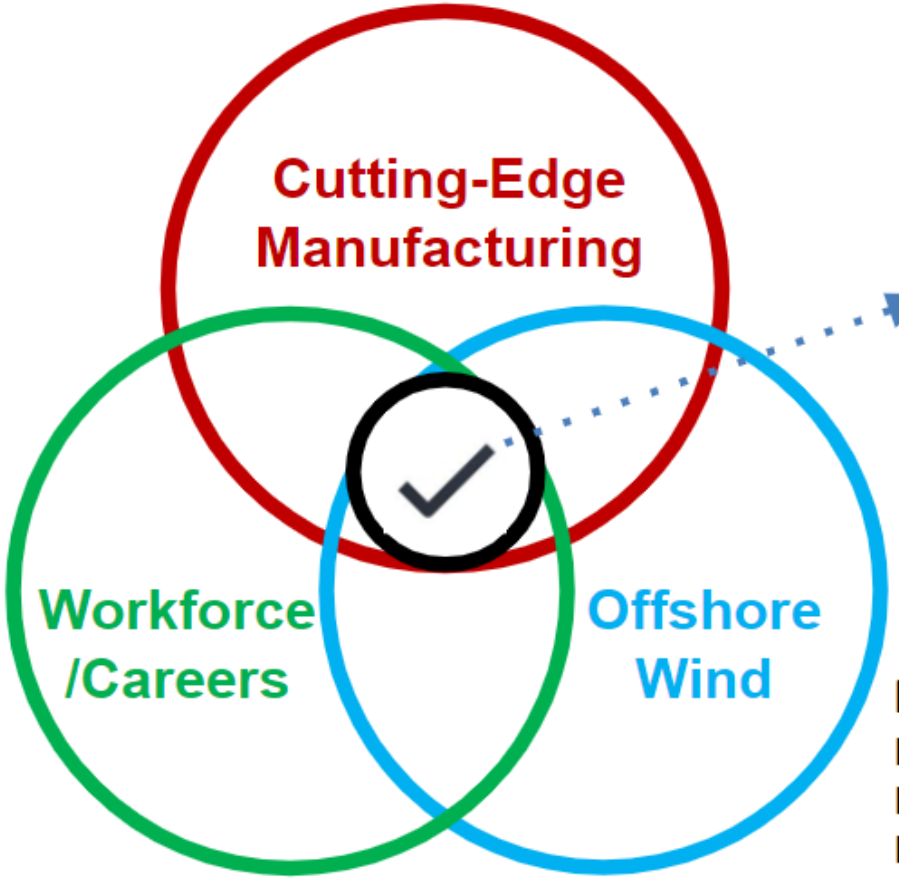
Preparing Workforce for Cutting-Edge Manufacturing in Offshore Wind

PI: Khosro Shirvani, Assistant Professor
Khosro.Shirvani@farmingdale.edu

CO-PI: Marj Issapour, Professor

Farmingdale State College, Farmingdale, NY
School of Engineering

Program Description: ***Preparing Workforce for Cutting Edge Manufacturing in OSW***



Objectives:
addressing **specific training needs**
in **advanced manufacturing**
to support the growing
OSW industry

Priority Focus areas:
Focus Area 1: Curricula expansion
Focus Area 2: Building capacity
Focus Area 3: Developing Pipeline for Future Workers
Focus Area 4: Expanding Awareness of Career Opportunities in OSW

Farmingdale State College, Farmingdale, NY
School of Engineering

Program Description:

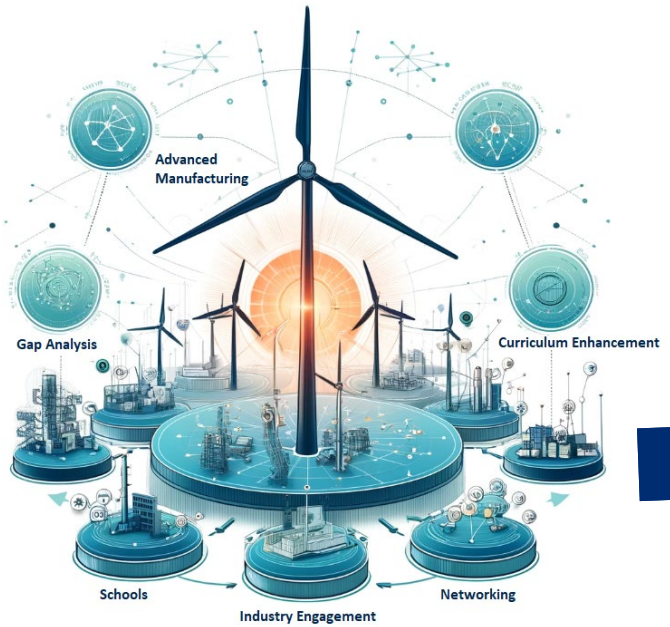
Preparing Workforce for Cutting Edge Manufacturing in OSW

- Gap analysis to identify immediate needs.
- Enrich existing relevant courses in the School of Engineering,
- Incorporating necessary instrumentation to meet industry demands.
- Outreach to underserved communities/ Conducting workshops to inform & engage youth about opportunities in OSW manufacturing/ Creating a sustainable pipeline of talent.
- ***Number of Individuals expected to receive educational trainings:***

  150 students/semester

- ***Lead Contacts: Khosro Shirvani, Assistant Professor, SUNY Farmingdale***

Timeline of Development



2024

- Gap Analysis
- Industry Engagement
- Curriculum Enhancement

2025

- Module Integration
- Community Engagement and Outreach
- Educational Partnerships
- Public Awareness Campaigns

FUTURE

- Equipment Acquisition
- Develop & Lunch Micro Credentials & Certificate Programs in Advanced Manufacturing for OSW
- Curriculum Expansion

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- **Local Manufacturing Companies**
- Partner for specialized training programs.
- Enhance curriculum with practical, industry-specific skills.

- **Collaboration with Colleges and Universities**
- Team up for complementary offerings in training programs.
- Share resources and expertise to broaden educational impact.

- **Internship Opportunities**
- Work with local manufacturers to provide hands-on internship experiences.
- Enable students to apply theoretical knowledge in real-world settings.

- **Pipeline Development**
- Collaborate with high schools and community colleges.
- Create a continuous pipeline for workforce readiness in offshore wind.

- **Government and Industry Support**

NEW YORK STATE | NYSERDA

New York State Offshore Wind

SUNY Maritime College

Professional Mariner Training & Offshore Wind COE

James P. Spear, Director, jspear@sunymaritime.edu

SUNY Maritime College – Bronx, New York Department of Professional Mariner Training/ Offshore Wind

Program Description:

- ***GWO Basic Safety Training (BST), Basic Technical Training (BTT), Dynamic Positioning (DP), Undergraduate/Graduate OSW curriculum (developing), Customized, external-facing ancillary technical courses (initial development)***

- ***Initial estimates of approximately 500x GWO BST applicants per annum, basis published market forecasts and project development timelines***

- ***Contacts: James P. Spear (Director, PMT) jspear@sunymaritime.edu, Captain Jeffrey Spillane (Dean, MET) jspillane@sunymaritime.edu***

Timeline of Development – SUNY Maritime College Offshore Wind Programs

2023

- Industry Stakeholder MOU's
- Training Provider RelyOn Nutec Contract
- USCG 41' Crew Tranfer vessel

2024

- GWO BST Rollout
- BTT Rollout
- Dynamic Positioning Program Development
- OSW Curriculum Development

2025+

- Growth to sustainability of GWO & OSW Programs
- Implementation of Dynamic Positioning

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- **Letters of Intent/Term Sheets and MOUs executed with numerous OSW: Developers Attentive Energy/Total Energies, Community Offshore Wind- National Grid/RWE, Equinor, Vineyard Offshore Wind**
- **Developing a dual certificate program with Farmingdale State College – GWO**
- **Middle School Engagement: NYC Student Day: Youth Power and Offshore Wind.” November 5th 2022 (Attentive Energy/TotalEnergies & Horizons National)**
- **Industry Engagement: Connecticut Maritime Association 2024, IPF2024, Workboat2024, Regional Forums (Developing)**
- **Pending Student Day with Community Offshore Wind for Summer 2024**

NEW YORK STATE | NYSERDA

New York State Offshore Wind

Kingsborough Community College, CUNY

Maritime and Vessel Efforts

- **Robert Zandi, Associate Director of Renewable Energy Programs**
  Division of Workforce Development, Continuing Education & Strategic Partnerships

CUNY Kingsborough Community College Continuing Education & Workforce Development Maritime & Vessel Efforts

Current Offerings:

Deckhand Training

Maritime Technician Apprentice Program

Seafarers International Union Partnership

Intro to Welding for Offshore Wind Energy Careers

KINGSBOROUGH COMMUNITY COLLEGE

★ DREAMS BEGIN HERE ★

CUNY Kingsborough Community College Continuing Education & Workforce Development Maritime & Vessel Efforts

Coming Fall 2025:

Global Wind Organization Basic Safety Training

Global Wind Organization (GWO) certified training is an internationally recognized standard required by many Offshore Wind (OSW) industry companies. Akin to OSHA for the Ocean, this training is geared toward OSW turbine construction and installation fields of work. GWO Basic Safety Training Covers important topics for safety to ensure that workers in Offshore Wind Energy are well equipped with the skills and awareness when it comes to safety while working at sea.

Crew Transfer Vessel Simulator Lab Training

Crew Transfer Vessel training simulates the foundation of an offshore wind turbine. It is used to teach students safe transfer procedures between a vessel and an offshore wind turbine. The simulated software for CTV will be used to train workers to maneuver up to a turbine's monopile and transfer personnel from the boat to the tower. During the construction and maintenance and operation of offshore wind farms, CTV personnel will be in high demand as these vessels are used to transport wind farm technicians, tools, equipment, and other personnel to sites on a daily basis

KINGSBOROUGH
COMMUNITY COLLEGE
★ DREAMS BEGIN HERE ★

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- **KBCC is always looking to expand our partnerships and collaborations.**
- **KBCC is open and looking for donors to further extend and expand upon our existing programs which have finite timeframes and funding so that we may continue to provide these valuable trainings to the communities in which we serve.**
- **To explore partnerships, collaborations please reach out to Robert.Zandi@kbcc.cuny.edu**

  or Christine.Zagari@kbcc.cuny.edu

KINGSBOROUGH COMMUNITY COLLEGE

★ DREAMS BEGIN HERE ★

NEW YORK STATE | NYSERDA

New York State Offshore Wind

Stony Brook University

WINDPLUS: Accelerating Offshore Wind Integration in New York's Digitally Enhanced, Modernized Power Grid – Workforce Learning, Upskilling and Strengthening

Point Person:

Yifan Zhou, Assistant Professor, yifan.zhou.1@stonybrook.edu

Team members:

Andrew Singer, Peng Zhang, Kevin Reed, Joseph Warren, Rachelle Germana, Catherine Sherman, Rong Zhao, Patricia Malone

Stony Brook University, Stony Brook, NY
Department of Electrical and Computer Engineering

Program Description:

Pillar 1: All-digital offshore wind training environment	
• Real-time learning environment for training the New York workforce with high-fidelity digital twins of various offshore grid models	• Capacity: Remotely accessible by 30+ users simultaneously. • Key contact: Dr. Peng Zhang
Pillar 2: Interdisciplinary curriculum development	
• 6 full-semester courses and 9 micro-credentials on HVDC transmission, digital simulation, communication and sensing, automation, AI, etc.	• Capacity: >600 individuals per year. • Key contact: Dr. Yifan Zhou
Pillar 3: Equity-focused outreach through University Honors Programs (UHP)	
• Pre-College Programming and Community programming, engagement of Women in Science and Engineering (WISE), etc.	• Capacity: >60 individuals per year. • Contact: Dr. Catherine Sherman

Timeline of Development

2024Q1-Q4

- Develop digital twins of typical OSW grids
- Demonstration of the integrated digital testbed

2024Q1-2025Q2

- Develop lecture notes for both courses and micro-credentials

2024Q3-2025Q2

- Organize UHP seminars and pre-college programming

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- **Collaboration with SUNY's commitment to climate solutions, like the New York Climate Exchange and Collaborative for the Earth.**
- **Collaboration with offshore wind developers and utilities to explore field trip opportunities for offering first-hand experience in the workforce training.**
- **Pathways for reaching young students and building a pipeline for future offshore wind study and workforce.**

NEW YORK STATE | NYSERDA

New York State Offshore Wind

Strengthening the Offshore Wind Energy Workforce: Creating the Capital Region Pipeline for Wind Turbine Service Technicians in New York State

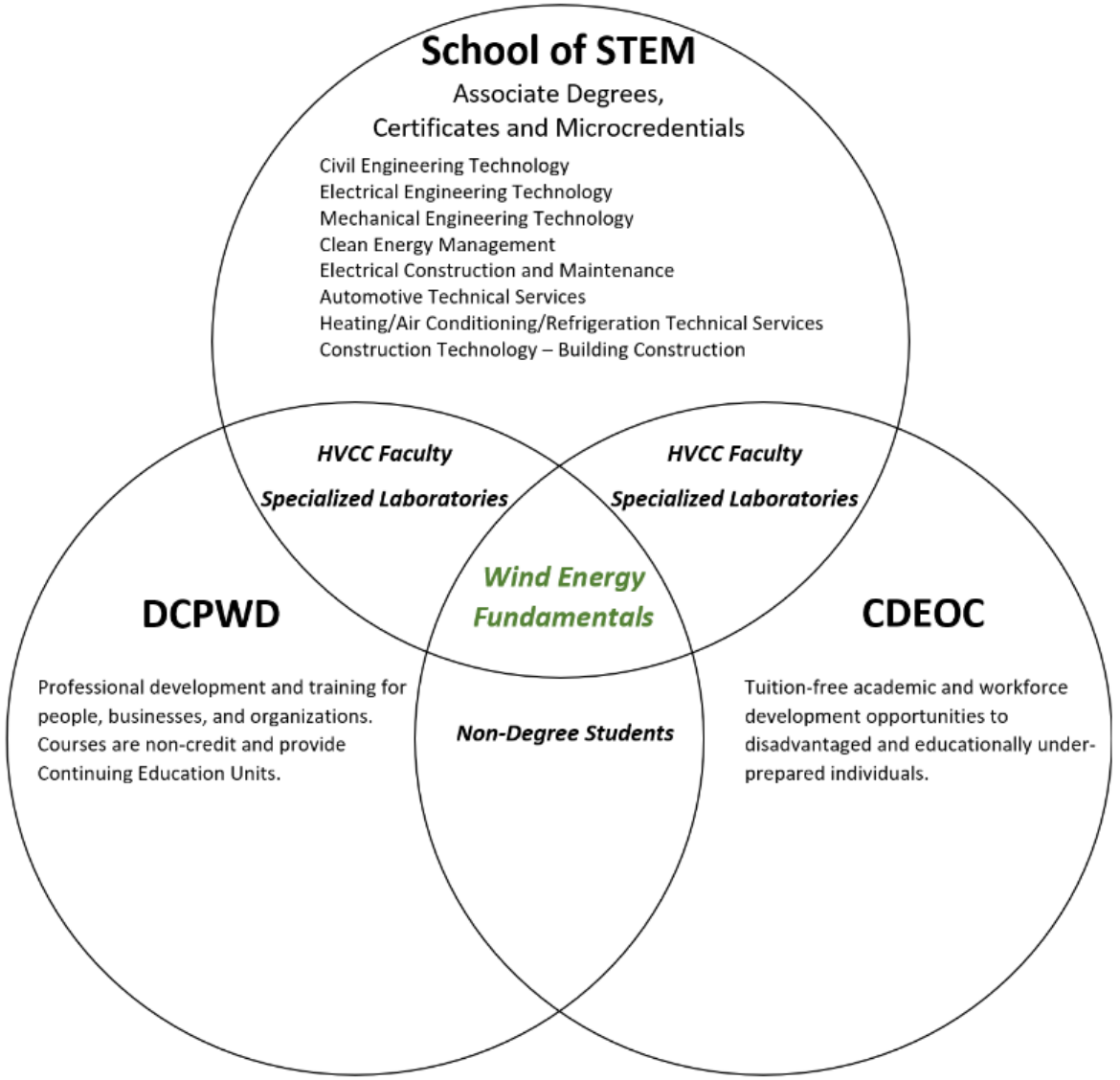
Hudson Valley Community College

Héctor M. Rodríguez, Ph.D., P.E.
Dean of STEM
h.rodriguez@hvcc.edu

Hudson Valley Community College, Troy, NY School of STEM

Program Description:

- ***Wind Energy Fundamentals microcredential (non-credit)***
- ***Entry-level wind energy and safety courses (follow GWO)***
- ***Hands-on (trainer) and virtual reality***
- ***Individuals with some technical background with no formal OSW***
- ***No cost for 48 participants (3 cohorts)***
- ***Lead: Dr. Chris McNally (c.mcnally@hvcc.edu)***



Timeline of Development

2024

- New courses: Int Wind Power and Wind Power Safety.
- Non-credit microcredential: Wind Energy
- Order lab equipment
- OSHA10 Training

2025

- Teach 3 cohorts (48 participants)

2026+

- Continue workforce development training
- Adapt to credit programs

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- **Articulations and College in the HS/dual enrollment with CTE programs**
- **Outreach to HS – virtual trainers**
- **Articulate to other institutions with advanced programs**

NEW YORK STATE | NYSERDA

New York State Offshore Wind

American Clean Power Association (ACP) and Clean Power Institute (CPI)

Laura Wilson Phelan, Chief Strategy & Program Officer, CPI
Josh Rogers, Sr. Dir., Safety, Workforce Training & Operations, ACP
Duane Brown, Manager, Standards Development, ACP

Clean Power Institute

American Clean Power

Diversifying the workforce

Attract and retain more people from diverse experiences and backgrounds into the industry

Standardizing training & safety

Build on the industry's commitment to safety by establishing clear career pathways and standardizing training for entry-level wind, solar, and battery storage technicians

- *Published ACP Training Guidelines and Clean Energy Career Pathways Catalog*

Research & analytics

Tools for workforce organizations, community colleges, and training centers to understand the trends of the clean energy industry.

AMERICAN CLEAN POWER

CLEAN POWER INSTITUTE

Timeline of Development

2024

- Launch of CPI
- Development of Standards and Guidelines
- Commitment to adoption
- Pilot development of courses and aligned training model
- Support recruitment in key roles and advance DEI

2025

- Ongoing advancement of 2024 priorities
- Launch Accreditation and Certification
- Develop curriculum and supporting content

2026+

- Ongoing advancement of 2024-25 priorities
- Assess industry trends to develop safety, skills, and competency needs
- Support recruitment and training in additional roles

AMERICAN CLEAN POWER

CLEAN POWER INSTITUTE

ACP ANSI Standards

ACP Workforce Standards Committee

- ANSI/ACP 5000-1-2022, Wind Workforce Definitions
- ANSI/ACP 5000-2-2022, Wind Technician Entry-Level Standard

ACP Environmental Health and Safety Standards Committee

- ACP 1000-2.1: 2023, Rescue and Fall Protection Standard: Definitions and Nomenclatures
- ACP 1000-2.2: 2023, Rescue and Fall Protection Standard: Rescue Training Requirements
- ACP 1000-2.3: 2023, Recue and Fall Protection Standard: Fall Protection Training Requirements

AMERICAN CLEAN POWER

Opportunities for Collaboration

- Join ACP Standards and Committee efforts for industry collaboration and alignment (non-ACP members can participate in our standards work)
- Support CPI recruitment and/or training curriculum development
- Adopt and commit to ACP standards and guidelines

Lead Contacts:

- Safety and Training: Josh Rogers (JRogers@cleanpower.org)
- Standards: Duane Brown (DBrown@cleanpower.org)

Session 4: Innovation and Outreach

Time	Title	Serving as MC	Janna Herndon
2:00 PM	MWBE, Online Training Workshops for Minority and Women Owned Business Enterprises (MWBEs) and Small Startups in the Offshore Wind Industry	Farmingdale State College	Betty Feng, PhD.
2:09 PM	Navigating the Clean Energy Transition	SUNY Stonybrook	Patricia Malone
2:18 PM	Strengthening the Wind Energy Education Pipeline (SWEEP)	Suffolk County Community College	Melanie Morris-Carsch
2:27 PM	Leveraging the Power of SUNY to Achieve NY's Offshore Wind Energy Goals; Preparing Offshore Wind Pathways	SUNY Buffalo	Meg Hagen, Timothy Leyh
2:36 PM	Offshore Wind Technology Workforce Training Program.	University of Albany - SUNY	Harry Efstathiadis
2:45 PM	Board of Cooperative Educational Services Offshore Wind Energy Pipeline Program	SUNY Oneonta/Otsego Northern Catskill	Tracy Allen, Mark Davies, Hugh Gallagher
2:53 PM	Moderated Q& A	All Session 4	

"Creating connections between educational institutions and the wind industry can help build sustainable pathways for a utilized labor force." - 2024 NREL Wind Energy Workforce Assessment

NEW YORK STATE | NYSERDA

New York State Offshore Wind

Farmingdale State College

Sustainable Business and Technology Online Workshops

J. Betty Feng, PhD
Associate Professor
fengj@farmingdale.edu

Marj Issapour MS, P.E.
Professor
issapom@farmingdale.edu

Farmingdale State College, Farmingdale, NY
School of Business and School of Engineering

Program Description:

- **A series of self-paced online training workshops, designed for Minority and Women Owned Business Enterprises (MWBEs) and small businesses (SBAs) who want to get involved with clean energy and offshore wind (OSW) industries. These short, non-credit-bearing online workshops aim to provide a strong foundation in sustainable business practices and OSW technology.**
- ***Total 100 enrollment per year.***
- ***Lead Contacts:***

J. Betty Feng, PhD
Associate Professor
fengj@farmingdale.edu

Marj Issapour MS, P.E.
Professor
issapom@farmingdale.edu

Timeline of Development

2023

- Industry survey
- Workshops topic design

2024

- Identify instructors
- Workshop content Development
- Pilot for feedback

2025

- Official Program Launch

Overview of OWTI MWBE Workshops

Foundation of Sustainable Business

(7 workshops)

- What is Sustainable Business?
- Sustainability Strategy and Implementation
- People Management at Future Workplace
- Sustainable Marketing & Branding
- Green Supply Chains
- Triple Bottom Line Accounting and Reporting
- Introduction of Project management

Green Financing and Sustainability Analytics

(4 workshops)

- Green Financing
- Environmental impact assessment (PLCA)
- Social impact assessment (SLCA)
- Regulation and Compliance for Green Business, LEED Certification

Offshore Wind Technology

(8 workshops)

- What is Offshore Wind and why is it relevant
- Where are OSW farm developments and how does a wind turbine Work
- OSW Supply Chain
- Offshore Site Investigation, Planning & permitting
- Wind farm construction and Installation
- Manufacturing in Wind Energy industry
- Bringing Wind Power infrastructure Ashore
- Operation and Maintenance

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- **Future in-person, certificate or degree-based programs**
- **Partnership with developers and other institutions for program sharing and further development.**
- **Additional support for project-management training and other pathway programs.**

NEW YORK STATE | NYSERDA

New York State Offshore Wind

Navigating the Clean Energy Transition the Offshore Wind Industry: An interdisciplinary program for emerging, existing and transitional professionals

Patricia Malone
School of Professional Development
Stony Brook University

Stony Brook University, School of Professional Development

Program Description:

Objectives

- To provide professionals from diverse sectors an interdisciplinary program addressing the many aspects of the clean energy transition from research to application.
- To share the knowledge, perspectives and insight from both academic and industry professionals across the clean energy ecosystem.
- To foster a community and dialogue among professionals in various sectors and organizations in leading and supporting the transition across sectors.

Program Facts:

- 30 hours; non – credit
- Delivery model: Synchronous zoom; Lunch - hour modules.
- Program dates: June 12, 2024 - Cohort 1 & Early 2025 - Cohort 2.
    - 35 participants per cohort
    - To commences with in-person breakfast reception at Stony Brook University, June 11, 2024.
- Audience: emerging, existing and transitional professionals with some experience/education in the clean energy field.

Timeline of Development

2023

- Submitted OWTI grant application

2024

- Grant awarded
- Program development
- Recruitment
- Launch of program
- Best practices and preparation for Cohort 2

2025

- Focus groups with employers and participants
- Strategy for future program development
- Launch Cohort 2
- Potential for degree consideration

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- This program is an opportunity to meet the growing need for most professionals to obtain new knowledge and skills in the clean energy workforce.
- This program will include focused outreach to diverse communities to ensure that a just and inclusive audience is served.
- We have engaged experts across the ecosystem from academia, to developers, utilities, regulators and more. The value of their current understanding of the new knowledge and skills needed to meet workforce imperatives will be central to this program.

NYSERDA

New York State Offshore Wind

Suffolk County Community College

Strengthening the Energy Education Pipeline (SWEEP)

Melanie Carsch, Assistant Director of Sustainability
morrism@sunysuffolk.edu, 631-851-6414

Suffolk County Community College, Long Island Workforce Development

Program Description:

- A new dual certification program in Welding & Composites - Expanded existing welding training, 180 hours of classroom instruction & labs, for 40 students, culminating in the American Welding Society (AWS) National Certification exam.
- A 15-hour Introduction to Basic Composite Technology course will be taken by the 40 welding students, in partnership with the Institute for Workforce Advancement (IWA).
- A 60+-hour composites course will be developed and industry-validated in year one and delivered to 20 students in year two, with the welding and introductory composites course as pre-requisites.
- Offshore Wind Career Exploration workshops will be conducted for College & high school students, as well as community members. Six sessions per year, for a total of 12, with a goal of exposing 180 people to the industry.
- 45-hour High School Offshore Wind Turbine course that introduces wind energy concepts to students.
- ***Lead Contacts –Phil Rugile, Institute for Workforce Advancement***
- ***Susan McQuillan, Institute for Workforce Advancement***
- ***Arlene Jackson, Suffolk County Community College***
- ***Laura Galletta, Suffolk County Community College***

Timeline of Development

2023

- First cohort of welding & intro to composites students.
- 11 students tested for AWS.
- One Offshore Wind Career Exploration Workshop was conducted.
- Developed curriculum for 45-hour High School Offshore Wind Turbine course

2024

- Second cohort of welding & Intro to Composites students completed the program. A total of 24 students.
- 16 more students will complete these two programs in 2024.
- The full 60 hour composites course has been developed.
- Two Offshore Wind Career Workshops were conducted.

etc

- First cohort of Highschool students completed the 45 hour OSW course. Two more cohorts will go through the program.
- In spring 2025, the inaugural cohort of the 60 hour composites course will take place.
- Nine Offshore Wind Career Exploration workshops to take place throughout 2024 / 2025.

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- **National Offshore Wind Training Center (NOWTC) –** The National Offshore Wind Training Center offers Global Wind Organization Training (GWO) as well as Get up Safely Training. These trainings are temporarily taking place at Suffolk County Community College, before it moves to its permeant home in Brentwood. These certifications are required to work offshore.
- **The Nassau and Suffolk Building and Construction Trades Council & Long Island Federation of Labor –**We encourage our students, and the community to learn about careers in labor unions, and expose them to pathways early on.
- **Community Offshore Wind –** Representatives from Community Offshore Wind have participated in two of our career exploration workshops as guest speakers.

NEW YORK STATE | NYSERDA

University at Buffalo
The Center for Industrial Effectiveness (TCIE)

New York State Offshore Wind

University at Buffalo, Center for Industrial Effectiveness

- Leveraging the Power of SUNY to Achieve NY's OSW Goals

- Preparing NY's Renewable Energy and OSW Supply Chain

Meghan Hagen, Project Coordinator
memanley@buffalo.edu

Jennifer L Flagg, Project Director
jlflagg@buffalo.edu

University at Buffalo
The Center for Industrial Effectiveness (TCIE)

Program Description:

- *Sparking **interest** in offshore wind and renewable energy careers*
- *Creating **awareness** of NY's broad range of training programs.*
- *Focus on outreach to underserved, underrepresented populations.*

Lead Contacts

Tim Leyh- Administration

Jen Flagg- Program management

Meg Hagen & Farida Hosaini – Program coordination

Online Courses

- Renewable Energy: Fundamentals and Job Opportunities (available now)
  - 375 course seats available
- NYS's Renewable Energy Supply Chain (launching in Fall 2024)
  - 400 course seats available

Events

- 15 Lunch and Learns in WNY
- 8 career fairs across the state

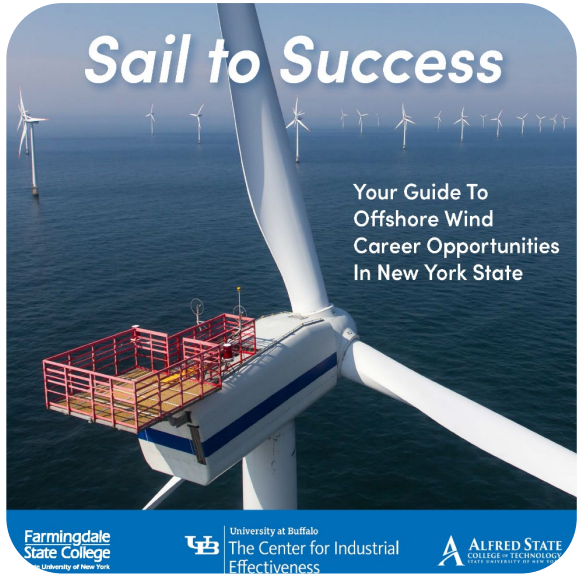
SUNY Clean Energy Consortium

https://cleanenergyed.suny.edu/

- SUNY/CUNY training program database
- Careers, legislation, incentive programs

Timeline of Development

University at Buffalo
The Center for Industrial Effectiveness (TCIE)



2023

- July: Project 1 kickoff
- Renewable Energy Fundamentals Course Revised
- Resources developed
- Program listings updated

2024

- Jan: Project 2 kickoff
- Industry survey
- Supply chain course
- Events
- Course support
- Follow-up surveys

2025

- Events
- Course support
- Follow up surveys
- Consortium expansion

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- **SUNY Clean Energy Consortium**
  - Jennifer Flagg JLFlagg@buffalo.edu
- **Industry Survey/ Supply Chain Course**
  - Meg Hagen MeManley@buffalo.edu
- **Lunch and Learn Events/ Renewable Energy Course Enrollment/ Resources for Learners**
  - Farida Hosaini FaridoHo@buffalo.edu

SCAN ME

University at Buffalo
The Center for Industrial Effectiveness (TCIE)

NEW YORK STATE | NYSERDA

UNIVERSITY AT ALBANY
STATE UNIVERSITY OF NEW YORK

POLYTECHNIC INSTITUTE
STATE UNIVERSITY OF NEW YORK

New York State Offshore Wind University At Albany

Offshore Wind Technology Workforce Training Program

Harry Efstathiadis
Professor
College of Nanotechnology Science and Engineering
Albany, NY

University At Albany SUNY, Albany, NY College of Nanoscale Science and Engineering

Program Description:

Develop in partnership with SUNY Polytechnic Institute (SUNY Poly) a micro-credential and a project-oriented capstone program for offshore wind energy workforce training for College students. Three course including hand-on experience are being developed

- ***Number of Individuals expected to receive educational trainings: 45 to 60 students per semester***
- ***Audience: The courses including the capstone projects will also be available to Engineering and School of Arts and Sciences students***
- ***Lead Contacts:***

  Prof. H. Efstathiadis and Prof. U. Pillai, CNSE/UAlbany.

  Prof. K-Y Kim, CNSE/UAlbany

  Prof. I. Gherasoiu, Electrical Engineering Technology/SUNY Poly and Dr. D. Sadana, CNSE/UAlbany).

UNIVERSITY AT ALBANY
STATE UNIVERSITY OF NEW YORK

POLYTECHNIC INSTITUTE
STATE UNIVERSITY OF NEW YORK

Timeline of Development

2023

- Program Started January 2024

2024

- All three courses approved by Curriculum Committee
- Courses being Developed

2025

- Courses and lab for hands-on experience start Fall 2024
- Program ends Spring 2025
- Courses will continue to be offered beyond Spring 2025

1. **Offshore Wind Energy Theory, Design and Materials of Turbine Blades, Turbine Installation, and offshore Wind Energy Economics**
2. **Offshore Wind Energy-Impacts on Society, Environment, and Climate Change**
3. **Fundamentals of Electrical and Electronics Systems of Wind Turbines**

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- Partners Internal:
  - Bruce H. Bailey, Ph.D., Executive in Residence, Weather & Climate Analytics, UAlbany
    Leading an effort to build awareness of the operational characteristics of all the planned offs development along the eastern seaboard
  - Department of Atmospheric and Environmental Sciences, **& Atmospheric Science Center** University at Albany

- Partners External:
  - Buffalo State - Center for Integrated Studies Nanoscience and Nanotechnology
  - PowerGEM
  - Custom Electronics, Inc
  - Eonix Energy

EONIX

BUFFALO STATE
The State University of New York

PowerGEM
Power Grid Engineering & Markets

CUSTOM ELECTRONICS, INC.

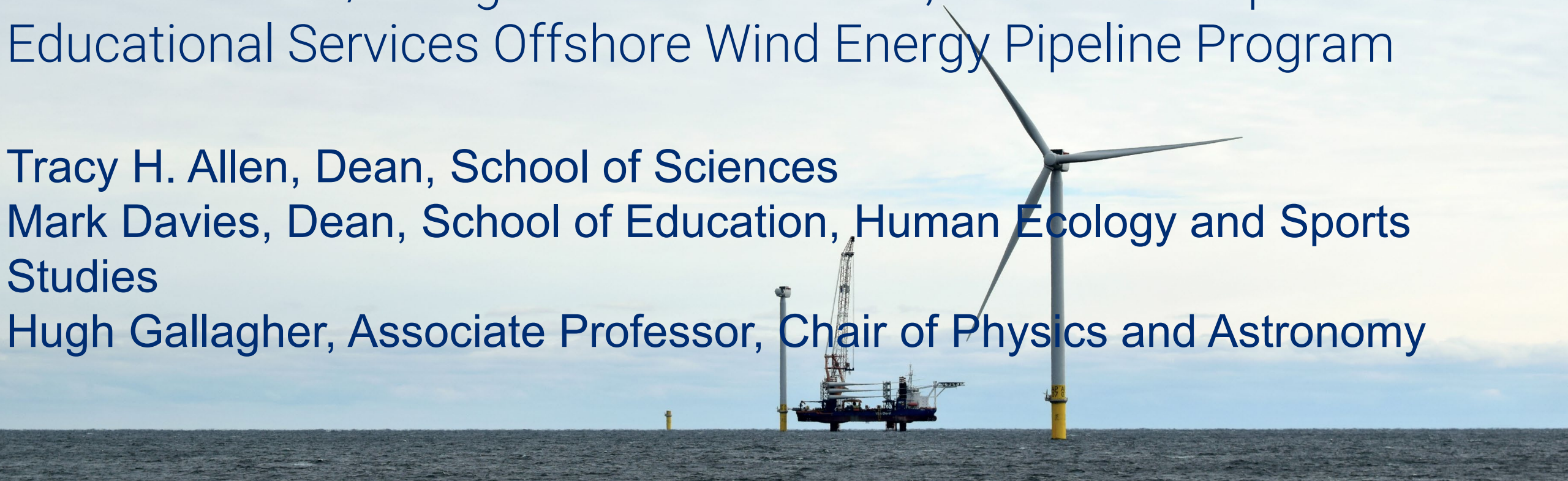
NEW YORK STATE | NYSERDA

New York State Offshore Wind

SUNY Oneonta

SUNY Oneonta/Otsego Northern Catskill, Board of Cooperative Educational Services Offshore Wind Energy Pipeline Program

Tracy H. Allen, Dean, School of Sciences
Mark Davies, Dean, School of Education, Human Ecology and Sports Studies
Hugh Gallagher, Associate Professor, Chair of Physics and Astronomy



SUNY Oneonta, Oneonta, NY
Physics and Astronomy

Program Description:

- ***Sustainable Energy (with wind focus) Course Sequence aligned to ONC BOCES Mechatronics and New Vision Engineering leading to Sustainable Energy Micro-Credential and BOCES-Oneonta Pipeline***
- ***Sustainable Energy Course with Physics, Engineering courses leading to a Sustainable Energy Micro-Credential for Oneonta students***
- ***Development of a Sustainable Energy Demonstration Lab for Micro-Credential Capstone Projects and community outreach, field trips***
- ***Outreach to expand awareness of career opportunities in Off-Shore Wind and Sustainable Energy through Micro-Credentials, and K-12 and community education at AJR Science Discovery Center***
- ***Number of Individuals expected to receive educational trainings: BOCES 15 students/year, Oneonta 5-10 students/year, Outreach >1000***

Timeline of Development

Summer 2024

- BOCES curricular alignment and course development
- Oneonta Sustainable Energy course development
- Establish Demonstration Lab
- Create Micro-Credentials
- Plan Micro-Credential capstone project

Fall 2024

- Initiate Micro-Credential institutional approval
- Offer and assess BOCES prototype curricular modules
- Engage industry partners to evaluate and enhance Demonstration Lab
- Plan Micro-Credential capstone project

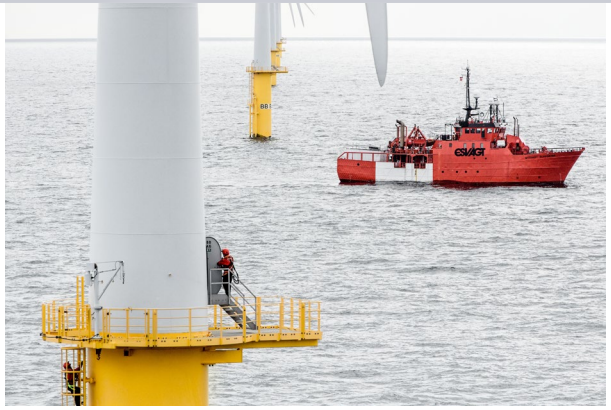
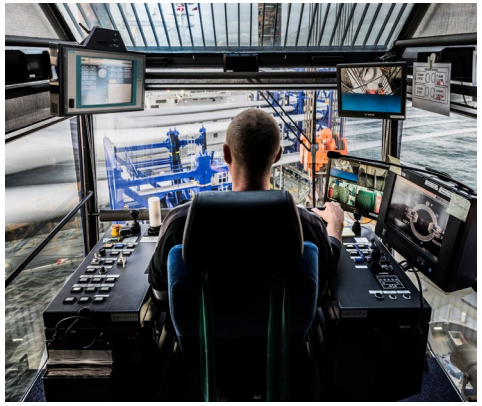
Spring 2025

- Offer Oneonta Sustainable Energy course (and Oneonta Microcredential)
- Offer and assess BOCES prototype curricular modules
- Build and assess wind Micro-Credential capstone project
- Display wind and sustainable energy exhibit

Potential for Partnerships, Assistance, Job Pathways and Collaborations

- **Creating and aligning a flexible curriculum that aligns with desired BOCES learning outcomes and Sustainable Energy Course objectives (including content, field trips and capstone project)**
- **Identifying academic and industry partners for students who desire to transition to engineering programs or careers in wind (or sustainable) energy**
- **Identifying and procuring equipment and space for a productive renewable energy demonstration lab.**

Project Phase	Land Based Job Types	Sea Based Job Types
Development	Community Outreach, Government Affairs, Engineering, Attorneys, Scientists, Financial and Permitting Specialists, Civil and Electrical Engineering	Engineers, Protected Species Observers, Vessel Captains, Atmospheric, Geologic, and Marine Scientists
Manufacturing and Construction	Civil work, Transmission Lines, Port Operators, Dock Workers, Line Workers, Iron Workers, Crane Operators, Electricians, Painters	Cable Burials, Project Installation, Safety Corridor Vessels, Pile Drivers, Welders, Electricians, Technicians, Crane Operators, Protected Species Observer
Operations and Maintenance	Dock and Port Managers, Plant Managers, Administrative Staff, Transmission Line Monitoring, Energy System Monitoring, Operations Control, Marine Coordination	Inspection, Maintenance Technicians, Support Vessel Crew, Protected Species Observers, Vessel Captains, Safety Corridor Vessels


SERDA

Thoughts?

- **Repeat? How Often?**
- **How to improve?**
- **Does this answer a need?**

Stay Connected and Informed

Tune in for "Learning from the Experts" webinars

- Educational webinar series featuring outside experts presenting on key offshore wind technologies, development practices, and research findings
- Visit **wind.ny.gov** to register
- All webinar recordings and presentations are available at **nyserda.ny.gov/osw-webinar-series**

→ **More than 40 webinars in the series!** Check out our YouTube channel.

Join our mailing list to receive the latest alerts!
Visit offshorewind.ny.gov to sign up

Resources

NYSERDA Websites

- **NYSERDA's Offshore Wind Website: Nyserda.ny.gov/offshorewind**
- **OffshoreWindTraining.ny.gov**
- ***Learning from the Experts* webinar series: Nyserda.ny.gov/osw-webinar-series**

Other Websites

- **OffshoreWindFacts.org - New website from the Special Initiative on Offshore Wind**
- **OSWLongIsland.com – Guidance for Offshore Wind Careers**

Thank you

Jessica.Dealy@nyserda.ny.gov
offshorewind@nyserda.ny.gov

NEW YORK STATE | NYSERDA