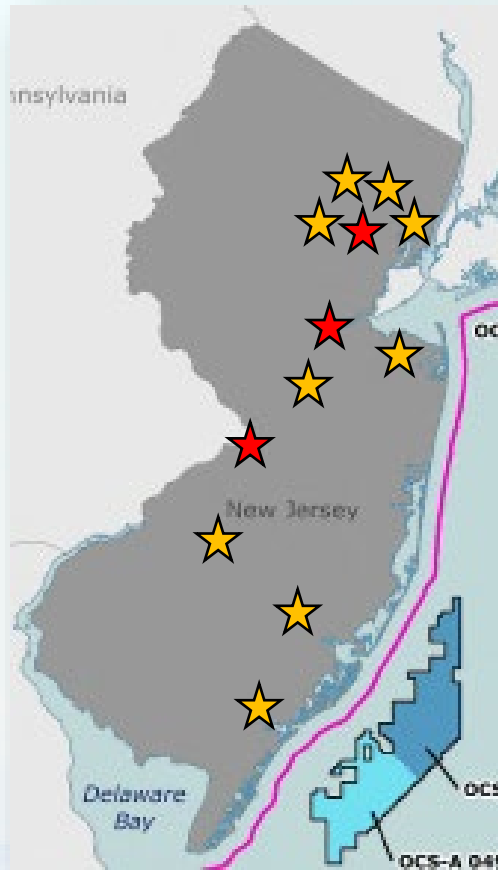




An Overview of the New Jersey Academic Alliance for Offshore Wind Energy (A²OSW)

Onur Bilgen, Josh Kohut, and Peggy Brennan-Tonetta
Rutgers, The State University of New Jersey

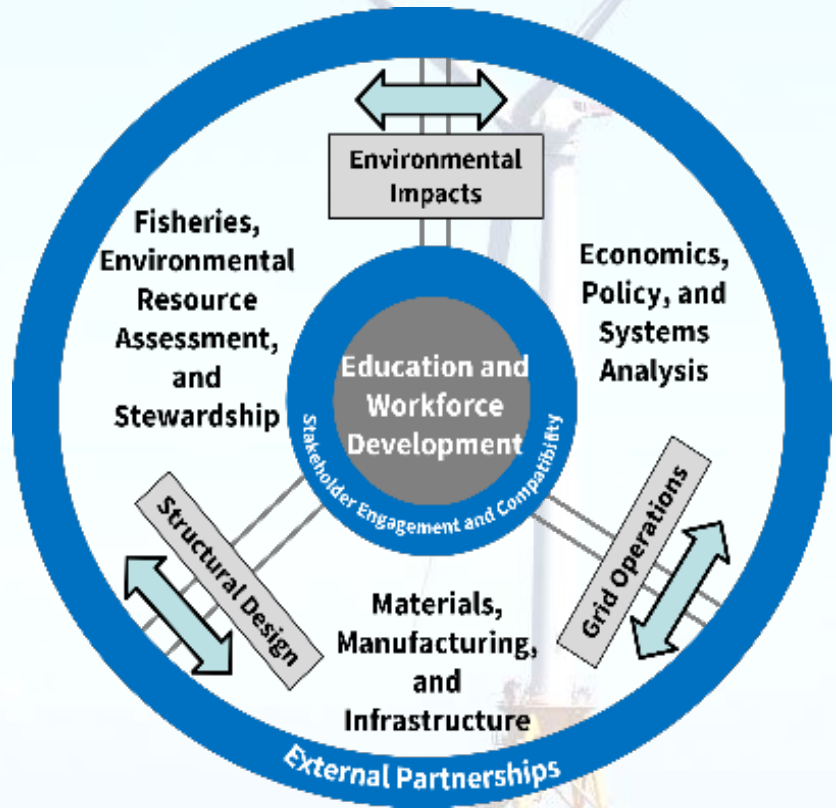
The New Jersey Academic Alliance for Offshore Wind Energy (A²OSW)



Rutgers Offshore Wind Energy Collaborative

- Created to organize expertise in OSW research and education across the Rutgers community.
- Over 60 faculty from Rutgers New Brunswick, Newark, and Camden!
- Goal is to establish Rutgers as a national leader in OSW innovation.

OSW.rutgers.edu



Accomplishments

- Established strong community of faculty and staff
- Collaborations on numerous proposals including
 - NJEDA Wind Innovation Center
 - DOE Center of Excellence in Offshore Wind
 - Mid-Atlantic Wind Innovation Center (MAWIC)
- Successfully secured grant funding such as the NJEDA University Initiatives Program
- Significant collaborations with industry for research and educational curriculum development
- Website created for easy identification of Rutgers resources/ contacts
- Recognition of Rutgers as a leader in offshore wind research
- Planning activities for FY 24

Educational Modules

- **11** faculty from engineering, environmental, and social science disciplines
- **33** modules developed topics include:
 - Wind Turbine Modeling and Optimization
 - Offshore Wind and Fisheries
 - Life Cycle Assessment of Offshore Wind Energy
 - Economics of Wind Generation/ Supply Chain
 - Psychological Dimensions of OSW Development
- Fall '23 – Full Launch
- Certificate/badging program being considered



Want to incorporate offshore wind into your course or program?

Educational modules are available to you for free and cover the following topics:

- *Business and economics*
- *Engineering*
- *Environment and ecosystems*
- *Social sciences*



osw.rutgers.edu/wind-institute/curriculum-modules/

These modules are currently only available to Rutgers faculty and instructors.

These modules are made possible with funding from the New Jersey Economic Development Authority through the University Initiatives to Advance Offshore Wind Energy program.

credit: Usra.Lng/istock

Community Events and Shared Learning

Engage and connect with local communities and businesses on offshore wind energy development, careers in offshore wind energy, environmental health, sustainability, training needs, and networking

1. Rutgers-Camden: May 2, 2023
2. Rutgers-Newark: January 26, 2024
3. Rutgers-New Brunswick: today



Credit: Jeffrey Arban/Rutgers University

Planning for a Future Full-Feature Net-Zero Wind Energy Test (WET) Center

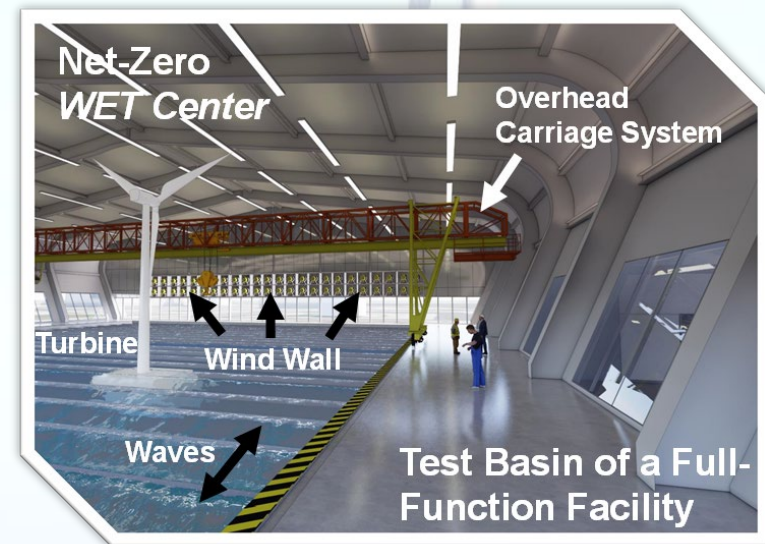
Onur Bilgen (co-Lead), Josh Kohut (co-Lead), Laurent Burlion, Aziz Ezzat, Travis Miles, Roger Wang, Serpil Guran, Elsayed A. Elsayed, Mohsen Jafari, Michael Crowley

Deliverable 1: Design of the *Net-Zero WET Center*

Deliverable 2: Design & Development of the *Rutgers WET Lab*

Deliverable 3: Laboratory Development and Pilot Implementation

Deliverable 4: Collaboration and Outreach Activities

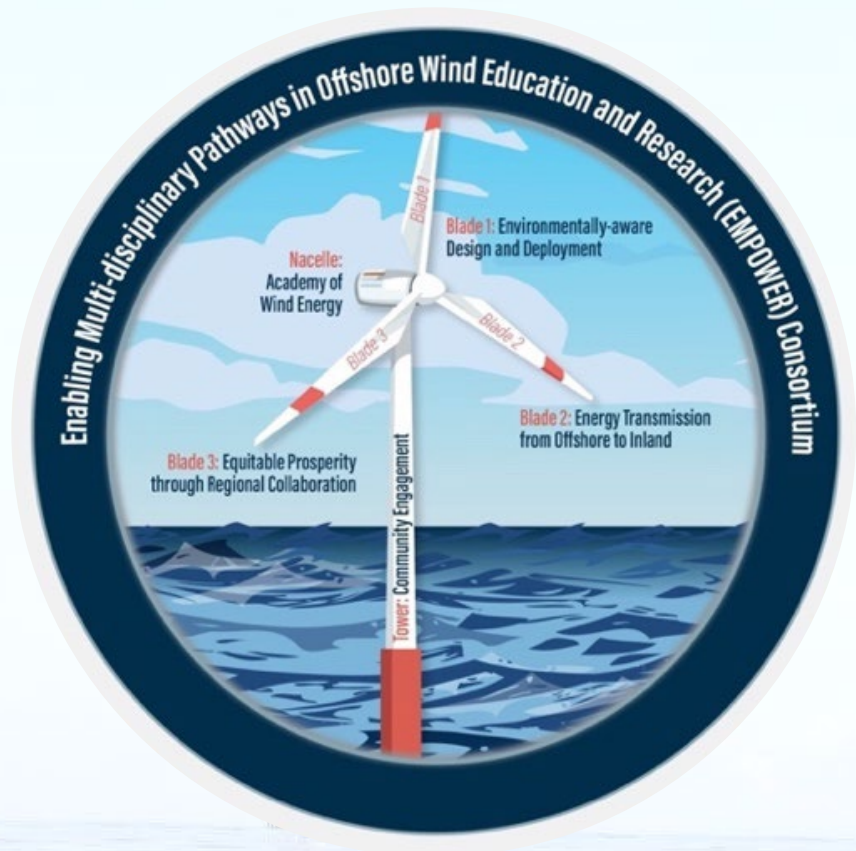


New Jersey Wind Institute Fellowship Program



- Designed to encourage and support student research in topics in offshore wind and build student and faculty advisor expertise in offshore wind research and innovation in NJ
- Involves several state higher education institutions (including Rutgers, NJIT, Rowan, Montclair State, Stockton, Seton Hall, Princeton, Stevens)
- Supports both Undergraduate and Graduate Students

DoE Center of Excellence: Our Response

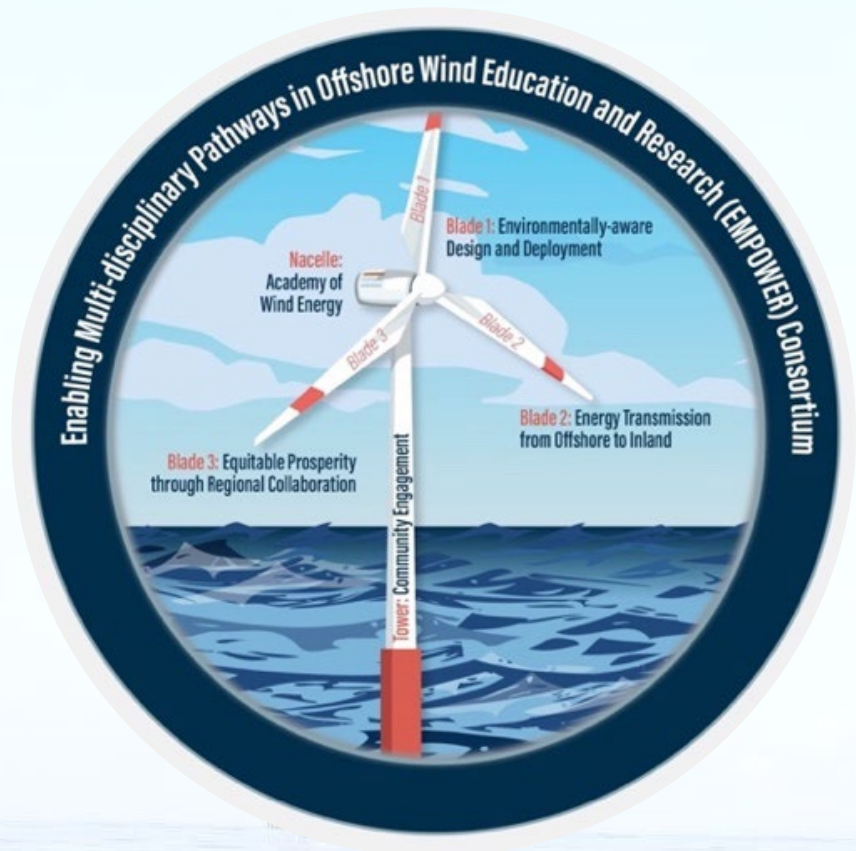


Enabling **M**ulti-disciplinary
Pathways in **O**ffshore **W**ind
Education and **R**esearch
(EMPOWER)

*An Offshore Wind Workforce Development
and Research Consortium for Equitable and
Environmentally-aware Offshore Energy
Deployment*



DoE Center of Excellence: Our Response

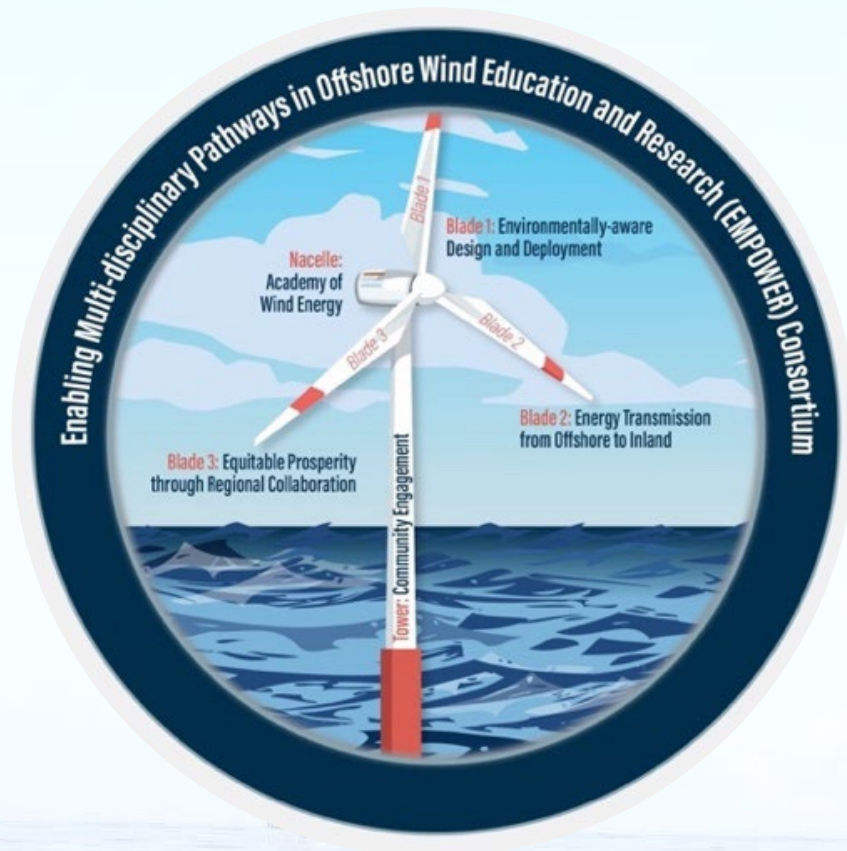


- Rutgers, The State University of New Jersey
- Princeton University
- New Jersey Institute of Technology
- Rowan University
- Stevens Institute of Technology
- University of Delaware
- The State University of New York at Albany
- The State University of New York at Stony Brook
- Clarkson University
- University of Maryland at College Park
- University of Texas at Dallas
- North Carolina State University
- The University of North Carolina at Chapel Hill
- East Carolina University

Fathom Science

- New Jersey Economic Development Authority
- New Jersey Commission on Science, Innovation and Technology
- New York State Energy Research and Development Authority
- National Offshore Wind Research Development Consortium
- National Renewable Energy Laboratory

DoE Center of Excellence: Our Response



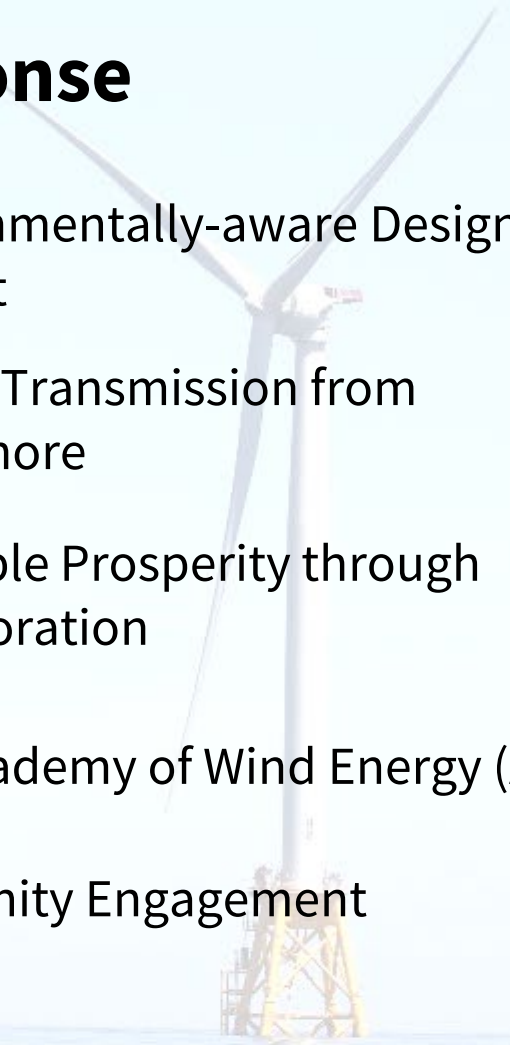
Blade 1: Environmentally-aware Design and Deployment

Blade 2: Energy Transmission from Offshore to Onshore

Blade 3: Equitable Prosperity through Regional Collaboration

Nacelle: The Academy of Wind Energy (AWE)

Tower: Community Engagement



New Jersey Academic Alliance for Offshore Wind Energy (A²OSW)

New Jersey Academic Alliance for Offshore Wind Energy (A²OSW) Symposium

Friday, January 12, 2024 at Rutgers-New Brunswick

Academia and partners in offshore wind energy – students, faculty, staff, government, nonprofits, and industry – are invited to attend.

For more information and to register, visit:
osw.rutgers.edu/event/symposium2024/



This event is made possible with funding from the New Jersey Economic Development Authority.

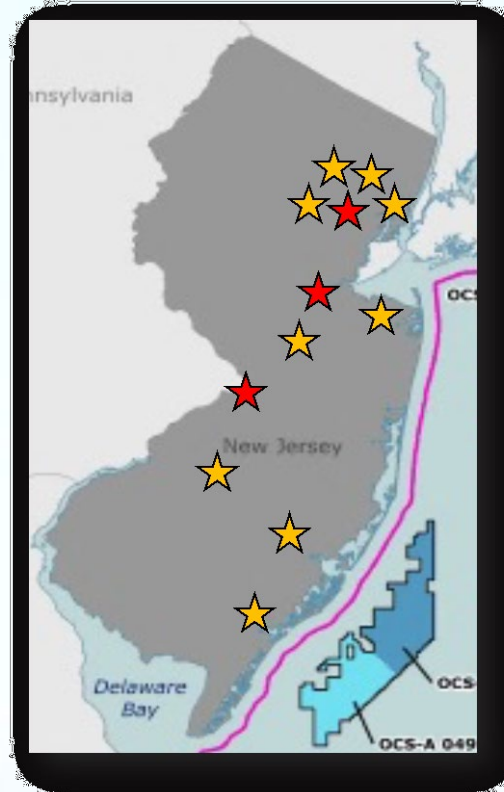
Student posters related to offshore wind energy will be on display during the Symposium. Students can present their posters during the breaks throughout the day. To present a poster at the Symposium, please submit the title of your poster to Amy Mandelbaum at amy.mandelbaum@rutgers.edu by Friday, January 5, 2024.

Credit: Lisa Eng/BOEM

A²OSW CORE Research & Education Focus Areas

**CLIMATE-SMART
MODELING**

**ELECTRICAL
INFRASTRUCTURE**



**ENVIRONMENTAL
IMPACT ASSESSMENT**

**POWER-TO-X AND
STORAGE SOLUTIONS**

OSW DESIGN AND MANUFACTURING

New Jersey Academic Alliance for Offshore Wind Energy (A²OSW)

Some Introductions



Ahmed Aziz
Rutgers



Onur Bilgen
Rutgers



Peggy Brennan-Tonetta
Rutgers



Frank Derby
Rowan



Denise Hien
Rutgers



Josh Kohut
Rutgers



Pankaj Lal
Montclair State



Jie Li
Rowan



Tony MacDonald
Monmouth



Michael E. Mueller
Princeton



Marcos Netto
NJIT



SangWoo Park
NJIT



Philip Pong
NJIT



Chelsie Riche
Rutgers



Meghann Smith
Montclair State



Josh Taylor
NJIT



Sherwood Taylor
ACCC



Wade Trappe
Rutgers



Ruoqian Wang
Rutgers



Weitian Wang
Montclair State



Lei Wu
Stevens



Sotirios Zavras
NJIT



Zhimin Xi
Rutgers

A²OSW Objectives and Approach



Objective:

A²OSW to become a leader in integrated approach to the economics, engineering, environmental science, and policy of wind energy.

Approach: *collaboration between industry, government, and academic partners...*

- 1) Research in the five Focus Areas
- 2) A “Physical Space Network” of meeting/gathering spaces
- 3) Workforce Development Focus (Integrated Academic Programs in OSW)
- 4) Economic Development and Tech-2-Market Focus
- 5) Community Engagement Focus
- 6) A Virtual Data Network and Cybersecurity Capabilities
- 7) Partnering with Unique Test Facilities



NAWEA/WindTech 2024

RUTGERS-NEW BRUNSWICK

Co-organized by the NJ Academic Alliance for Offshore Wind

Inclusive Period for All Events: OCT 28 (MON) – NOV 2 (SAT)

NAWEA WindTech '24: OCT 30 (WED) – NOV 1 (FRI)

Notable Events: ACP Offshore Wind Power (Atlantic City, NJ): OCT 28 (MON) – OCT 30 (WED)

Questions?

