# Summer 2025



ARROW Quarterly Newsletter - August 1, 2025



As the Director of the ARROW Offshore Wind Center I'd like to introduce you to the first of our quarterly newsletters. We hope these newsletters will keep you up-to-date on ARROW's activities and accomplishments and we invite suggestions for features or other news to be included. This issue features our first ARROW-SEA meeting, in which more than 90 people came together in Amherst to share important work on OSW, learn from one another and continue to bond as a team. Additionally, we highlight some student and faculty accomplishments and a collaboration with the International Network for Offshore Renewable Energy. I will look forward to checking in every three months and encourage you to be in touch with me directly for any ARROW-related matters.

I would also like, of course, to thank ARROW's funders, the US Dept. of Energy, the Massachusetts Clean Energy Center and the Maryland Energy Administration for their steadfast support.
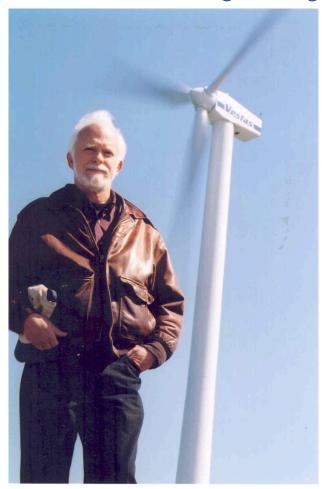
## ARROW-SEA

**May 27-30, 2025**

ARROW wrapped up its highly successful 2025 SEA Summer Education Accelerator, bringing together students, faculty,industry experts, and National Labs to explore cutting-edge topics in offshore wind power and renewable energy integration. Over four days of engaging sessions, hands-on activities, and field trips, attendees gained new insights,forged valuable connections, and contributed to shaping the future of sustainable energy.

# Emeritus Professor Jim Manwell appointed Adjunct Professor of Civil Engineering at UMass Amherst



ARROW is pleased to announce that Emeritus Professor Jim Manwell has been appointed Adjunct Professor of Civil Engineering at the University of Massachusetts Amherst. Manwell was the founding director of the UMass Amherst Wind Energy Center, and coauthor of the foundational textbook *Wind Energy Explained: Theory, Design, and Application* (Wiley,2009). He retired from the Mechanical and Industrial Engineering (MIE)Department in 2023 after 40 years of work in the area of renewable energy,with particular expertise in offshore wind energy system design and analysis. We are excited that he will be sharing the wealth of his expertise on Offshore Wind Energy with our civil engineering students.

## Oyewole Abe
*UMass Amherst PhD Candidate in Structural Engineering and Mechanics*

The US East Coast faces intense hurricane risk, and in these coastal areas, offshore wind has become central to our clean-energy future.

Oyewole Abe, UMass Amherst PhD Candidate in Structural Engineering and Mechanics, is developing solutions related to wind veer, which is the rapid change in wind direction along a height, as well as lateral deflection of monopile foundations in nonlinear seabed soil behavior to predict how blades, towers, and piles behave under hurricane storms up to Category 3.

"What concerns me most," Abe says, "is that the current design standard does not account for the effect of veer."

His research helps finance entities lower investment risk and guide engineers in designing every turbine component for maximum stability and resilience. This summer, as an Offshore Structural Engineer Intern at WSP, Abe will translate these insights into real-world projects — performing structural analyses, coordinating multi-phase schedules and budgets, and integrating field data into finite-element models — bridging cutting-edge research with industry practice to accelerate the deployment of reliable, storm-resistant offshore structures.

## Emmanuel Branlard
*Associate Professor, Mechanical and Industrial Engineering*

Emmanuel Branlard's research at the University of Massachusetts Amherst focuses on the modeling and simulation of wind turbine aerodynamics and structural dynamics, while integrating additional physics to capture the full multiphysics behavior of these systems.

His lab investigates a range of topics relevant to modern wind energy, for instance:

- the unsteady aerodynamics of turbines and wind farms, to improve predictions of fluctuating loads and power output;
- the aeroelastic stability of rotors, to avoid vibrations that can shorten turbine lifespan;
- the role of stochastic effects in design, to better account for variability and uncertainty in wind conditions;
- the use of digital twins to follow the life-cycle of turbines throughout their operational life.

While addressing these challenges, the team contributes to the development of OpenFAST, an open-source tool widely used in academia and industry.

Professor Branlard previously worked at three national labs and with two major wind industry partners. His team collaborates closely with national labs and maintains a strong commitment to developing open-source tools for the community.

# ARROW sponsors 2025 INORE Symposium

ARROW co-hosted and supported the INORE 2025 North American Symposium at Northeastern University in Boston June 9-13, 2025.
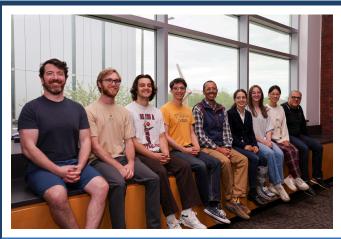
[INORE, the International Network on Offshore Renewable Energy](#) is an organization committed to connecting early-stage researchers in offshore renewable energy.

Several ARROW students and faculty attended the event, which included research presentations, knowledge sharing with local and national offshore wind experts, an interactive wind energy stakeholder role-playing activity, and several field trips, including a trip to the New Bedford Marine Commerce Terminal (NBMCT) which had 9 new Haliade X blades and several tower and nacelle components in transit for installation at Vineyard Wind 1.









## About our newsletter

If you have questions, comments or ideas to share, contact Terri Downing, ARROW Grant Administrator at [terridowning@umass.edu](mailto:terridowning@umass.edu).
To stay up to date on ARROW activities, be sure to also check out our webpage and connect with us on LinkedIn:

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