



Wind Energy Research

Penn State has the broad multi-disciplinary expertise needed to address the interwoven technological, economic, environmental, and societal barriers associated with wind energy development through unified internal and external research collaborations. We understand the broad issues and needs and have the capabilities required to conceptualize, develop and evaluate wind energy systems, while partnering with industry, government and communities to overcome these barriers.

Ongoing Research

- Modeling the boundary layer
- Remote local wind monitoring
- Airfoil design and characterization
- Composite blades, manufacturing methods, NDI
- Active blades
- Noise prediction and reduction
- Reduction of gear bending fatigue
- Health monitoring of drivetrains
- Electric generator design
- Scaled rotor test design in large water tunnel facility
- Energy storage
- SmartGrid
- Systems integration and analysis
- Supply chain and workforce development
- Environmental impacts
- Market Acceptance

Technology Organizations

- Aerospace Engineering
 - Rotorcraft Center
- Mechanical Engineering
- Meteorology
- Electrical Engineering
- Civil and Environmental Engineering
- Applied Research Laboratory (ARL)
 - Energy Science and Power Systems
 - Manufacturing and Materials
 - Drivetrain Technology Center
 - Gear Research Institute
 - Complex System Monitoring
 - Fluids and Structural Mechanics
 - Oceanic & Atmospheric Physics
 - Fluids Research Facilities
- Materials Research Institute
- Composites Manufacturing Center

Other Organizations

- Huck Institutes of the Life Sciences
 - Biology/Ecology
- Smeal School of Business
 - Supply Chain Management
- Energy and Mineral Engineering
 - Energy Policy and Economics
 - Energy Engineering
- Social Science Research Institute
 - Geography: Economic Development
 - Rural Sociology: Community Well-Being

Contact Information

George Lesieutre, Aerospace Engineering
814-863-0103 • g-lesieutre@psu.edu

Susan Stewart, Applied Research Lab
814-863-5381 • sstewart@psu.edu



www.wind.psu.edu