UNIVERSITY of WASHINGTON

# MECHANICAL ENGINEERING, ENERGY & THE ENVIRONMENT

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## NOTABLE PARTNERS

The Boeing Company
General Motors
PACCAR
Pacific Northwest National Laboratory (PNNL)
UW Applied Physics Lab
U.S. Department of Energy
Washington State Department of Transportation

## OVERVIEW

UW Mechanical Engineering is helping to advance the adoption of a clean energy future by developing next generation marine, solar and wind energy and electrical energy storage materials, devices and systems, as well as their integration with the grid. Our students and faculty are working to increase the scope and impact of our research and education in alternative energies and the environment. We are fostering partnerships that grow our visibility and prominence in pollution prevention, clean combustion and energy research and technology translation. The solutions being developed in our labs will help establish the course toward a smarter, more sustainable future.

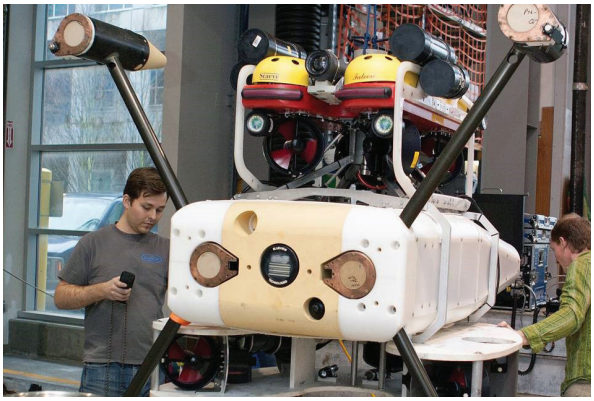
## KEY RESEARCH AREAS

- Acoustics and noise pollution prevention
- Batteries and energy storage
- Energy conversion
- Energy optimization and conversion
- Hybrid and electric vehicles
- Low-emissions combustion, pollutants and control
- Printed and flexible electronics
- Wind, solar and marine renewable energy and instrumentation

# RESEARCH HIGHLIGHTS

**The Design for Environment Lab** explores innovative and sustainable technology development, design and dissemination; life-cycle assessment and environmental performance measurement; and industrial ecology.

**Clean Cookstoves Lab** focuses on the testing, design and development of low-emissions, high-efficiency wood-burning cookstoves for the developing world.



**Northwest National Marine Renewable Energy Center** facilitates the commercialization of marine energy technology, informs regulatory and policy decisions, and works to close gaps in scientific understanding.

**Clean Energy Institute** is working to accelerate the adoption of a clean energy future by advancing solar energy and electrical energy storage materials, devices and systems, as well as their integration with the grid.

## AWARD-WINNING STUDENT TEAMS

**EcoCAR** is converting a Chevrolet Camaro into a hybrid electric vehicle for a student competition sponsored by General Motors and the U.S. Department of Energy.

The **Human Powered Submarine** team designs, manufactures and competes submarines with the goal of developing the most effective submarine system possible, relying solely on human power.

**UW Hyperloop** designs, fabricates and competes small-scale pods that travel by magnetic levitation inside tubes at SpaceX headquarters.

## STARTUPS

Companies resulting from recent ME faculty and student research include:

**JikoPower** builds generators that convert heat into electricity for disaster preparedness, camping and low-resource communities.

**Kuniokoa Cookstoves** – in collaboration with BURN Design Lab, ME researchers are creating more efficient and clean wood-burning cookstoves for developing countries.

**Marine Construction Technologies** has developed technology to reduce noise from pile driving and protect marine mammals and other sensitive wildlife while improving the efficiency of marine construction projects.

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