UNIVERSITY *of* WASHINGTON

MECHANICAL ENGINEERING & FLUIDS

ASSOCIATED FACULTY

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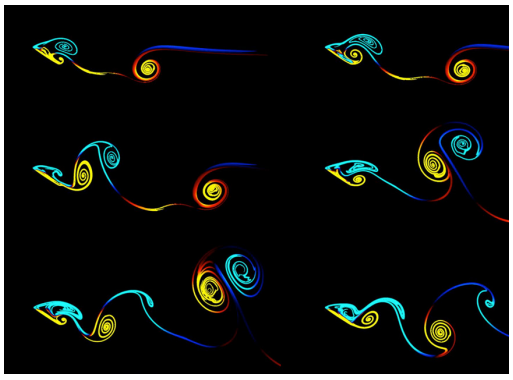
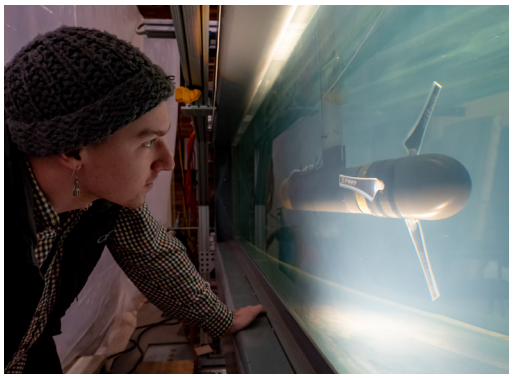
NOTABLE PARTNERS

American Heart Association
The Boeing Company
Novo Nordisk
PACCAR
Pacific Northwest National Laboratory
U.S. Department of Defense
U.S. Department of Energy
UW Applied Physics Laboratory
UW Medicine

OVERVIEW

From cutting-edge medical devices to new forms of renewable energy, a strong understanding of fluid mechanics underlies many of the emerging technologies that address society's most pressing challenges. Our coursework includes a strong fundamental grounding in fluid mechanics and our faculty are advancing high-impact fluids research across a wide swath of areas including human health, advanced manufacturing, robotics, machine learning, transportation, clean energy and the environment. Our location in Seattle provides a number of advantages to studying fluids due to our proximity to unique marine environments, large businesses that rely on fluids research and engineering, and UW Medicine, one of the nation's top medical research institutions. These advantages also result in world class interdisciplinary research projects across numerous UW departments.

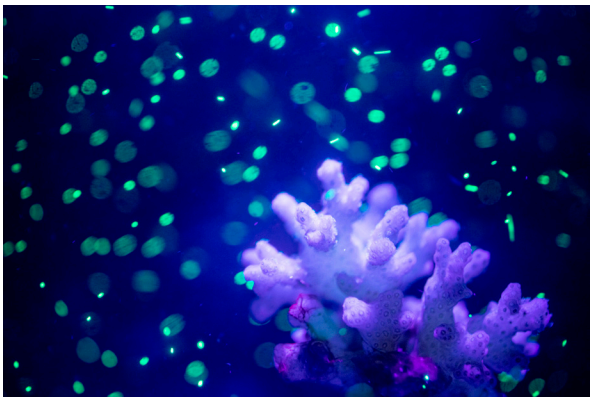




KEY RESEARCH AREAS

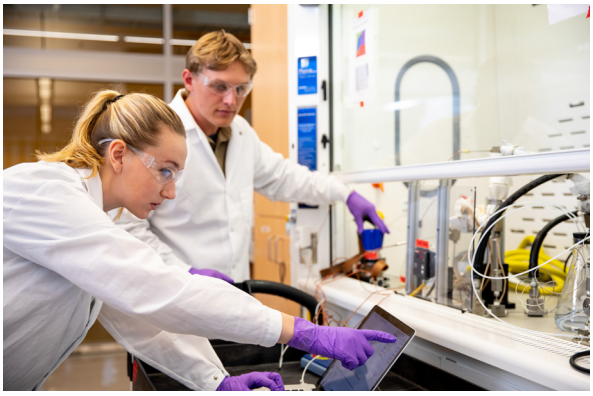
- Acoustics
- Aerodynamics
- Cardiovascular flows and medical devices
- Complex dynamical systems and controls
- Fluid-structure interactions
- Machine learning
- Marine hydrodynamics
- Nano-scale flows and microfluidics
- Wind and marine renewable energy

RESEARCH HIGHLIGHTS

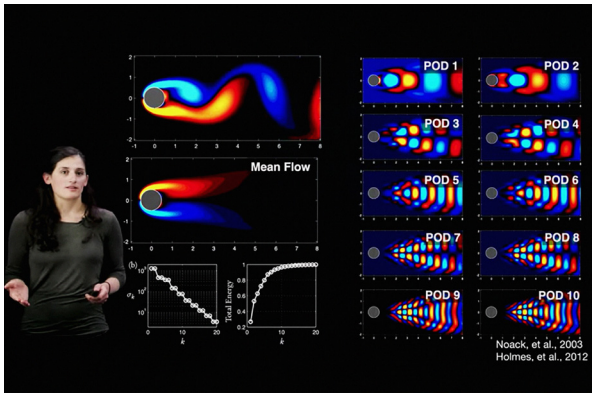


ME researchers provide fundamental fluid mechanics insights on a broad range of topics including **cardiovascular flows, microplastics in the ocean,** and **visualization of fluid dynamics.**

The **Pacific Marine Energy Center** responsibly advances the technical, environmental and societal dimensions of marine energy by expanding scientific understanding, engaging stakeholders and empowering students.



The **Novosselov Research Group** conducts multidisciplinary research and technology development in areas of aerosol science, supercritical fluids and electrohydrodynamics.



The **Brunton Lab** applies machine learning and other data science techniques to explore dynamical systems and controls, specializing in fluids.

AFFILIATED RESEARCH FACILITIES

The **UW Applied Physics Lab** boasts a world-class set of oceanographic and engineering research facilities, including a fleet of research vessels.

The **Institute for Nano-Engineered Systems (NanoES)** catalyzes research in nano-engineered technology and hosts an array of cutting-edge nanofabrication and testing facilities.

The **Alice C. Tyler flume** is an open-top water channel with control of flow speed, water depth, and water temperature for testing a variety of fluid conditions.

NOTABLE STARTUPS

Aquagga, Inc. uses supercritical fluids to address the challenges of cleaning up a pervasive toxic chemical known as PFAS.

MarineSitu makes marine environmental monitoring instruments accessible to turbine developers and other renewable energy companies.

XFlow Energy is developing robust, inexpensive and efficient vertical-axis wind turbine technologies focused on reducing the cost of wind energy generation.

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