Research Groups & Labs

**Deconinck Research Group**

The main topic of my research is the study of nonlinear wave phenomena, especially with applications in water waves. I use analytical techniques ranging from soliton theory and partial differential equations to dynamical systems, perturbation theory and Riemann surfaces. The computational methods I use cover a wide range as well, from symbolic computation to continuation methods, data analysis and spectral methods.

**Kutz Research Group**

We develop data methods for reduced-order and equation-free modeling, machine learning, and compressive sensing for applications across the engineering, physical and biological sciences. We also leverage traditional applied mathematics expertise in nonlinear waves, scientific computing, perturbation and asymptotic methods, and bifurcation theory. Domain science research includes optics, neuroscience, computer vision, and fluid dynamics.

**LeVeque Research Group**

The LeVeque research group's research interests span many areas, including numerical analysis, computational fluid dynamics, nonlinear partial differential equations, mathematical theory of conservation laws, and software development, including the CLAWPACK software for solving conservation laws and other hyperbolic systems modeling wave propagation. It is also involved in research in many applications areas, including astrophysics, geophysics, and biophysics.

**Mathematical Ecology Group**

**Shea-Brown Neural Dynamics Group**

The Neural Dynamics research group's interests span a wide set of topics in mathematical neuroscience and biological dynamics. Recent work focuses on optimal signal processing and decision making in simple neural networks, dynamics of neural populations in interval timing tasks, correlations and reliability in simple neural circuits, and properties of oscillator networks with generalized symmetries.

**Shlizerman Research Group on Data-driven Dynamical Systems**

Research in our group combines dynamical systems theory with data analysis to produce realistic data-driven dynamical models. Investigations are at the interface of development of generic computational approaches and modeling actual biological and physical systems. With the data-driven methodology Eli Shlizerman (PI) and members of the group are working on modeling neurobiological networks underlying insects' sensory systems and neural dynamics of organisms.

**Tung Research Group**

Function expansion.

Department of Applied Mathematics
University of Washington
Lewis Hall 201
Box 353925
Seattle, WA 98195-3925

Phone: (206) 543-5493
Fax: (206) 685-1440
info@amath.washington.edu

Source URL: https://amath.washington.edu/research-groups-labs