



Position Title **PhD Student in Experimental Fluid Dynamics**
for the Applied Turbulence and Land-Atmosphere Systems ([ATLAS](#)) group
in Mechanical Engineering

The Research Much of humanity lives and depends on ecosystem services that are immersed in a turbulent boundary layer close to the land surface. In this region of the atmosphere closest to the ground, turbulent fluctuations are at the core of many weather phenomena and biological interactions. Understanding these turbulent processes is necessary for modeling their behavior in air-quality control, wind energy optimization, or natural-disaster forecasting.

However, the role of turbulence in these atmospheric surface layer (ASL) processes remains unclear, largely due to the complexity of the ASL and the disparate range of temporal and spatial scales present. Moreover, turbulence models have a broad range of clienteles with different requirements and needs. Our goal is to enable the development of a spectrum of reduced-order models for turbulence representation optimally suited for the plethora of science and engineering problems facing society today and in the foreseeable future.

We work in the following general areas (and at their intersections):

- Development of high-resolution, low-cost, and compact nanoscale sensing platforms that quantify velocity, temperature, humidity, and their turbulent fluxes at unprecedented scales
- Near-surface turbulent measurements over various landforms, sites, and thermal stabilities to validate and improve model parametrizations
- Design and characterization of a new environmental flow facility that uses an active grid with individually controlled paddles to impart coherent structures in time and space that echo relevant field observations

Your Profile We are looking for an enthusiastic and self-motivated PhD student with good communication skills to join our group. Research experience in experimental fluid dynamics is beneficial but not required.

The position is available starting Spring 2024 with a preference to fill the position by Fall 2024. All applications received before Nov 15th will receive full consideration; the position will remain open until filled.

Location Located in a vibrant city that offers diverse culture, amazing food, and affordable cost of living, the [University of Houston](#) is the second most ethnically diverse major research university in the U.S., and serves a population of 46,000 students, including 45% first-generation college students and over 40% Pell Grant students.

Interested applicants should reach out to Kelly Huang at yhuang68@uh.edu.