Dr. Matthew Rau (https://raulab.psu.edu) is actively seeking a new Ph.D. student to join his lab to work in the area of aquatic aggregates and particle transport. Duties will include both experimental (lab) and field work. Specifically, this student will work on a funded research project involving cohesive particles and particle aggregates to explain how they respond to hydrodynamic forcing and how they ultimately govern transport in aquatic systems. Particle types of interest include primarily biological particles like algae and exopolymer particles secreted by aquatic organisms but also inorganic and organic solid particles (e.g. sediments, plastics).

**Duties**
- Build and perform in-lab experiments
- Analyze experimental and field data, including development of reduced-order models to describe the aggregate behavior and their impact on transport
- Participate in ship-based field measurements
- Build and modify field equipment to make the particle measurements required for this work
- Analyze water samples for particle content, potentially including algae species, extracellular polymers, microplastics

**Eligibility**
- Students should be open minded, curious, eager to learn, and ready to work with fellow graduate students.
- Have a BS or MS degree in a related field (this can be interpreted fairly openly)
- Be interested in pursuing a PhD in Mechanical or Civil and Environmental Engineering (Note: you do not necessarily have to have a BS or MS in these fields to apply)
- Students with experience in marine or environmental science, in particular those with field experience, are especially encouraged to apply

**How to apply:**
- **First contact Dr. Rau** (matthew.rau@psu.edu, please mention this add in your correspondence)
- Once you have confirmed mutual interest with Dr. Rau, you will then have to apply to Penn State
- Application to PSU deadline for Spring 2022: October 15th
- Application to PSU deadline for Fall 2022: December 15th