Alden Summer Internship Program

Background: Alden Research Laboratory, Inc

Founded in 1894 and located in Holden, MA, Alden is the oldest continuously operating hydraulic laboratory in the United States and one of the oldest in the world. From the early days of hydropower development and aviation, through World Wars I and II, and into the modern world defined by environmental needs, Alden has been a recognized leader in the field of fluid dynamics consulting and is a vibrant, growing organization consisting of engineers, scientists, biologists, and support staff. Much of the work conducted at Alden supports the power generating, manufacturing, and process industries. The employees at Alden get their hands dirty solving flow problems that make a difference, helping to clean the World’s environment and power its infrastructure, through fish protection studies, physical modeling experiments, field measurement, and the use of Computational Fluid Dynamics (CFD) tools.

The following is a list of potential tracks and requirements that a student interested in an internship at Alden may apply for. Each area will provide the student with real-world, hands-on experience working alongside Alden’s engineering and/or biological staff.

Mechanical and Civil Engineer Internship

Alden has been conducting physical hydraulic model studies since 1894 to solve flow problems for utilities, engineering firms, the federal government, and vendors of hydraulic equipment. Physical and CFD hydraulic model studies can improve flow patterns and conditions at hydraulic structures and systems such as hydropower intakes (related to turbine performance), spillways, ice/trash booms, tailrace structures, upstream and downstream fish passage, pump intakes, wastewater facilities, stormwater and piping systems. These model studies provide a cost-effective means to evaluate the performance of hydraulic facilities before they are constructed or modified.

A successful candidate will work alongside Alden’s engineering staff to learn about the design and execution of hydraulic flow studies to understand how these models are constructed, evaluated, and how the data is applied to solving the real-world problem.

Biologist Internship

Alden has designed, evaluated, and tested numerous fish protection and screening technologies for use at power plant water intakes and other water withdrawals. Alden has also evaluated hydroelectric and hydrokinetic turbines and has researched their impact on fish survival. These technologies have been evaluated in one of our many flume testing facilities using live test fish, which are held within multiple on-site aquaculture facilities capable of holding a wide variety of fish species at various life stages.

A successful candidate will work alongside Alden’s biological staff to learn about the design and execution of research studies and how fish protection and/or power generating technologies are evaluated. Additionally, they will learn how a re-circulating aquaculture facility operates and how to care for a variety of larval and adult freshwater, estuarine, or marine fish.
Independent Research Project

With the wide variety of facilities and resources available at Alden, the opportunity for a student to develop their own research project is endless. The student will work closely with their advisor and Alden staff to develop a project that best fits their available time, educational interest, and the interests of Alden. With guidance from Alden staff, the student would be responsible for the study from inception to completion, including study plan creation, data collection, analysis and reporting. This program track has the potential to be combined with one of the above programs and may require some unpaid time by the student. Once the project is completed the student may be required to present their findings to the Alden employees during a lunchtime seminar.

Internship Requirements

Interns are paid hourly and generally work on a part-time or full-time status, between 20-40 hours per week for 10 to 12 weeks during the summer. Interns may receive academic credit if an agreement is made between the Alden Human Resources Department and the intern’s college or university. All interns are subject to the applicable Alden employee rules and should meet the following requirements:

- Candidate must be entering their sophomore, junior, or senior year in the upcoming fall semester, at an accredited college or university.
- An overall GPA of 3.0 or higher.
- A declared major in civil engineering, mechanical engineering, environmental engineering, biology, marine biology, fishery science, environmental science, or a similar major of study.
- Must be available to work either full-time (40 hours per week) or part-time (at least 20 hours per week), for the duration of the program (approximately 10-12 weeks).
- Submit resume to kbrewer@aldenlab.com