Marine Hydrokinetic Power Technologies Internship Programs

The Water Power Technology program at Sandia National Laboratories (SNL) is soliciting applications from qualified students to participate in our Marine Hydrokinetic (MHK) student internship programs. Please note that one of the general requirements for this program is that the student interns must be U.S. Citizens.

Attached is the resource guide to SNL’s student intern programs. Although the summer internship programs are most popular, SNL also offers internships during the academic year and for periods of up to one year. See internship classifications on the following page.

Marine Hydrokinetic devices produce electricity from the movement of water (current, tidal, and wave); both Wave Energy Converters (WECs) and Current Energy Converters (CECs), such as tidal and river turbines. SNL is at the forefront of research in this burgeoning alternative energy field and I hope that some of your students may have an interest in applying their skills to problems advancing these nascent technologies. The major research areas we are currently involved in are: wave energy characterization, including extreme events analysis, near-shore wave modeling and resource assessment, wave environmental assessment of large scale arrays (WECs and CECs), the development of WEC power performance models and advanced controls, offshore wind platform development, specialized component models for both WECs and CECs (i.e. mooring, power take off, computational fluid dynamics, materials, etc.), hydro-structural design and analysis of WECs and CECs, and advanced instrumentation development for modeling their hydro-structural response.

Since these are new application areas of research, it is not expected that students have direct knowledge of specific programs however a strong fundamental background in one of the following areas, physics, naval architecture, fluid mechanics, mathematics, and ocean engineering, is desired as well as a numerical modeling background.

If you can think of any students who would be capable and interested in an internship (graduate level or upper-level undergraduate) please pass this along to them.

The applicant should submit one document by email to vsneary@sandia.gov. The one document should include a cover-letter and a resume. In the cover-letter a preferred MHK focus area should be specified (either from the list above or independently generated) as well as the relevant coursework completed.

Sincerely,

Vincent S. Neary
INTERNSHIP CLASSIFICATIONS (the length of any internship must be a minimum of 6 weeks)

Summer Internship
The summer internship program, usually 10–12 weeks in length, occurs within an approximate timeframe of mid-May through late-August. Start and end dates are negotiated between the student and the manager but are ultimately determined by availability in student orientation scheduling and Student Intern Programs established separation dates. The summer period can not be extended beyond the Student Intern Programs established separation date, unless students are eligible and converted to year-round status by the established deadline. Summer students may work full-time, up to a maximum of 40 hours per week, at the discretion of their manager.

Academic Term Internship
Occasionally a student will elect to seek an experiential program during a regular academic term as this best fits their academic and professional development plans. This category provides students and managers an opportunity to participate in a non-traditional internship session during a regular academic term. Students participating in this category may be required to meet higher academic standards and may participate in assignments ranging in length from 3 to 5 months covering no more than one session which may include an adjacent summer session. Documented work assignments must be in a Sandia-focused discipline (Science, Math, Engineering, Technology, Business or CIS/MIS). Academic term interns may work up to a maximum of 40 hours per week, at the discretion of their manager.

Year-Round Internship
The year-round internship program is reserved for students attending local area schools and telecommuting students. Managers may hire students from the local area high schools, undergraduate schools, or graduate schools. During the regular academic terms, year-round students may work part time, up to a maximum of 25 hours for high school and undergraduate students and 30 hours for graduate professional students, at the discretion of their manager.

Co-op Internship
This category is a formalized work-study program available to undergraduate and graduate students enrolled in an official Co-op program at their schools. There are multiple assignment terms ranging in length from 3 to 8 months, after which the student returns to school full-time. Co-op internships may occur in alignment with individual school schedules. The student may return to Sandia for subsequent Co-op assignments. Documented work assignments must be in a Sandia-focused discipline (Science, Math, Engineering, Technology, Business or CIS/MIS). Co-op students may work up to a maximum of 40 hours per week, at the discretion of their manager.