

FULLY PAID ALGAL BIOFUELS RESEARCH INTERNSHIP AT PACIFIC NORTHWEST NATIONAL LABORATORY



Internship Research Projects

The overall project objective is to utilize microalgae for biofuels production. The intern will set up a series of photobioreactors for the cultivation of marine microalgae. This will involve preparing sterile medium using the autoclave, inoculating the flask and photobioreactor cultures, and monitoring the biomass concentration, measured as optical density using a spectrophotometer and as dry weight using an oven and balance, as a function of time. Throughout the experiment, the light intensity, pH, nitrate concentration, and temperature of the cultures will be monitored. We may also carry out culture experiments in small LED-lighted and temperature-controlled pilot-scale ponds (1000 liters each) located next to Sequim Bay, Washington, for clean seawater access. Additional potential internship projects include cultivation of seaweed for biofuels, cultivation of alkaliphilic cyanobacteria at high pH for air CO₂ capture, and extraction of biomass for proteins.

Location and Duration

The position is located at the PNNL Marine and Coastal Research Laboratory in Sequim, WA (see photo). More information, including a 3 minute video, is available at: <https://www.pnnl.gov/marine-and-coastal-research-laboratory>. The spring internship begins in January 2025 and lasts 16 weeks.



Required Qualifications

The applicant must be a graduating senior or recent graduate (BS/BA or combined BS/MS within 2 years) with a background in microbiology, chemistry, biochemistry, or biochemical/chemical engineering. The applicant must have basic laboratory skills and must have successfully completed laboratory course work. GPA>3.5 is preferred. US citizenship or Permanent Resident status is required. Depending on funding availability and performance, interns may have the option to continue as post-baccalaureate or post-masters research associates, a two-year limited term position.

Contact Information

For more information on different internship projects, stipends, housing allowance, and travel reimbursement, please contact Dr. Michael Huesemann at michael.huesemann@pnnl.gov prior to **September 3, 2024**.