



Advancing Biofuels Research

NCERC at SIUE

Job Description: NCERC Operator in Training Internship Program

The NCERC Operator in Training Program is a paid, part-time internship experience. The Internship will provide an accelerated opportunity for hands-on training in bioprocess at the pilot plant facility located at NCERC. Interns will learn how to operate the pilot plant equipment and manage the corn-to-ethanol production process.

The purpose of the internship is to gain on-the-job training to develop the skills and experience needed to obtain an entry-level position in the process operations technology industry, such as biofuels, petroleum, biotechnology, or chemical manufacturing. The program is designed for recent graduates, nontraditional candidates who are changing careers, or highly qualified students in their final semester of study. The intern benefits by:

- Gaining hands-on experience in process operations technology that will make students more highly competitive for positions in the field
- Creating a network of industry and academic contacts
- Access to opportunities for professional development via mentoring and specialized training opportunities
- Earning a certificate of completion from NCERC at SIUE

The NCERC Operator-in-Training Intern comes to NCERC to gain knowledge and experience, which is acquired by performing the following duties:

- Participating in hands-on training opportunities, including soft skills, safety, utilities, and unit operations
- Working under the direction of NCERC Ethanol Plant Research Engineers, Operating Coordinators and Operating Technicians on special projects, such as maintenance, commissioning, or plant configuration
- Assisting in the operations of client and grant-funded research projects under the leadership of NCERC full-time staff
- Assisting in operating the NCERC pilot plant using a Siemens PCS 7 Distributed Control System
- Participating in the execution of a preventative maintenance system
- Reviewing updated piping and instrumentation diagrams (P & ID)
- Leading student teams during TAACCCT-funded training runs
- Completing other duties as assigned

To apply, complete the online application at
www.ethanolresearch.com/Internships.shtml



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Hourly Rate: \$12 (minimum of 10 hours per week, additional hours assigned based on volume of client/project work)

Additional Information:

- Requires standard PPE (hard hat, safety glasses, safety shoes)
- Ability to work shift and variable schedule preferred

Learning Outcomes

Process Operations:

Process water

Corn grinding/milling

Material transfer

Enzyme cart operation

Corn slurry preparation

pH control

Jet cooker operation

Liquefaction and enzyme effects

Start-up, shutdown, rinse operations

Process sampling

Fermenter fill/operations

Yeast and nutrient additions

Fermenter transfer

Distillation start-up and operations

Molecular sieve operation

Ethanol proof and sampling

Whole stillage processing

Distillation shutdown

Centrifuge operation

Evaporator start-up & operations

Syrup Production

Ring dryer start-up & operation

Syrup application

DDGS production and storage

Laboratory training – sampling methods, pH testing, moisture balance, calibration, HPLC, chromatography, DE testing, and biological observation.

About the NCERC

The National Corn-to-Ethanol Research Center (NCERC) is a unique facility, the only one of its kind in the world. The NCERC houses an analytical lab, fermentation lab, and fully functional pilot plant all under one roof. At the NCERC, corn ethanol, cellulosic ethanol, advanced biofuels, and specialty chemical research is conducted simultaneously. From biofuels to bioprocess and beyond, the Center's modern 24,000 square-foot pilot plant can be adapted to meet the needs of any project. The plant is equipped to handle a variety of feedstock's, with a modular, plug-and-play design and a wide range of options for optimal process flexibility.