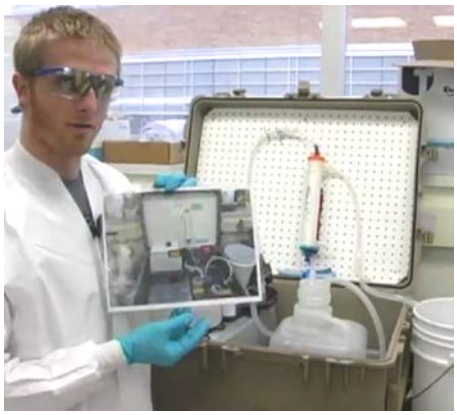
IOWA STATE UNIVERSITY
Department of Chemical and Biological Engineering

ENJOY YOUR ADVENTURE

CBE Alumni Share Their "Real World" Experiences

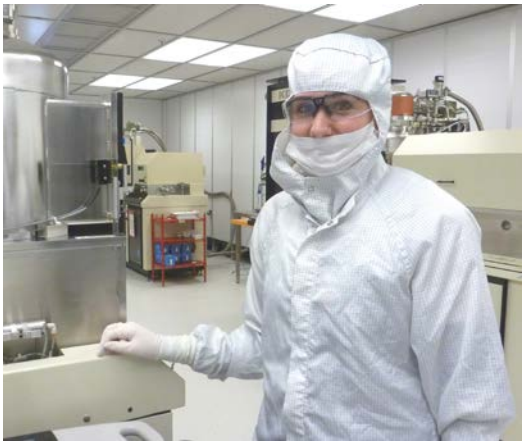
Department grads enjoy chemical engineering careers in a variety of jobs

Ashley L., *Operations Engineer, Chevron Phillips*
As an Operations Engineer I oversaw the commissioning and startup of a new specialty chemical unit at one of our smaller plants. I now oversee the day-to-day operation of this unit. My role as an operations engineer is dynamic; I am in the plant about 50% of the day troubleshooting the process and working with Operations and Maintenance. The other half of my day is typically spent reaching out to our technical experts to further expand my knowledge of the technology, and developing projects to make my unit more efficient and safe. At the end of the day, it's rewarding when I can go home having solved a complex problem.



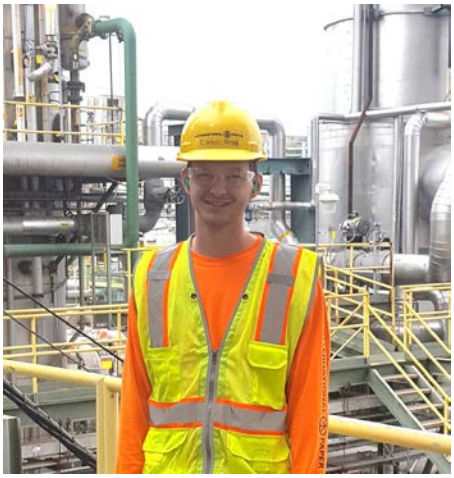
Jessie D., *Large Volume Sample Coordinator, Wisconsin State Laboratory*
As a Large Volume Sample Coordinator for Wisconsin State Laboratory, I concentrate 100 L samples of well water to 1 L, and measure the concentrations of indicator organisms. They are a group of bacteria called "total coliforms" that have been identified by the U.S. Environmental Protection Agency as an indicator of waterborne bacteria which cause disease. Based on the results of the microbiological tests, and other information gathered about the specific well characteristics, I write a report to the Wisconsin Department of Natural Resources, and the well owner on corrective actions, further recommendations, and system operations to improve the waterborne bacteria problem. This position not only requires microbiology knowledge, but engineering as well. I calculate flow rates and purge times for well pumps, analyze water transport in soils/ground and piping/distribution systems, and determine how this all contributes to a well becoming contaminated.

Megan H., *Law Clerk at Davis Brown Law Firm*
As a current law student and future patent attorney, I take the technical background from my Chemical Engineering studies and apply it to my knowledge of the legal system to help companies and entrepreneurs protect their inventions by acquiring and maintaining patent protection. Every day is different; my tasks range from drafting patent applications, working with the U.S. Patent and Trademark Office to get patents issued, creating licensing agreements, and doing research for litigation when clients' patent rights are infringed. Law school has opened up a variety of career opportunities for me, including working as a patent prosecution or litigation attorney in a law firm, serving as in-house counsel for a single company, or even working in a technology transfer office at a university.



Emily R., *Project Engineer, Emerson Automation Solutions*
As a Project Engineer for Emerson Automation Solutions I am responsible for overseeing the physical vapor deposition processes in a manufacturing line. The parts made in our facility are used in the power, oil & gas, and chemical industries. As part of my job, I apply technical knowledge that I learned at Iowa State to help develop new processes, and to troubleshoot any production issues that may arise. Typically these activities involve setting up experiments, analyzing data, sharing results with my team, and making recommendations to management.

Carson R., *Power and Recovery Process Engineer at International Paper*
As a Power and Recovery Process Engineer for International Paper, I am responsible for all of the evaporators, boilers, and other process equipment in my area. My area provides the paper mill with steam, water, power, and Na_2CO_3 (Sodium Carbonate)/Na_2S (Sodium Sulfide) for the kraft process (which turns wood into pulp). I work on optimizing the performance and process controls of the equipment, and evaluate and determine potential cost savings. In addition, I have worked on installing new capital projects, such as a new recovery boiler and high solids concentrator.



Erika W., *Process Engineer at Cargill, Corn Processing Plant*
As a Process Engineer for Cargill's Corn Processing Plant I split my time between continuous improvement projects, larger capital projects, and other tasks, such as obtaining environmental permits, and ensuring safety. It is a very dynamic position and I enjoy the daily challenges.