

**The University of Iowa College of Engineering  
Student Development Center/Engineering Professional Development  
Cooperative Education and Internship Program**

**Chemical and Biochemical Engineering Co-op/Internship Employers  
Employers and Positions, 2005-09**

3M	St. Paul, Minnesota
Synthesis, compounding, testing, and reporting results of experimental materials for development of dental restoratives/Prepared samples for lab testing involving mixing, syringing, and coating polymers	
Abengoa Bioenergy Systems/University of Nebraska P2	York, Nebraska
Pollution prevention and control program intern; develop a fugitive dust emission plan, sludge management	
Advanced Bionics	Valencia, California
Research novel biocompatible polymers, conduct materials testing, and aid in fabrication of cochlear implants	
Advanced Micro Devices, Inc.	Sunnyvale, California
Linewidth standard characterization and implementation in production CD SEM system	
Alcan Packaging	Des Moines, Iowa
Technical intern in process engineering...plant engineering...wide variety of plastic films and sealants...meat and food service sector applications.	
Allylix	Lexington, Kentucky
Involved in cloning and expression of the yeast strains...developing a phage integration system	
Argonne National Laboratory	Argonne, Illinois
Team member in program aimed at a generalized understanding of how the three-dimensional structure of a membrane protein defines its function/wet chemistry in lab/work closely with principal investigator on the bioinformatics of membrane proteins	
Barr Engineering	Minneapolis, MN
Evaluated pollutant levels in northern Minnesota, created project related maps using GIS, evaluated the applicability of Chemcad and Mathcad to emission inventories, researched Minnesota electric companies renewable energy futures, environmental assessments for wind turbine siting, developed a cost model for a company interested in changing their waste combustor fuel ratio and researched Canada's environmental assessment system.	
Boston Scientific	Maple Grove, Minnesota
Design assurance intern...take newly discovered stent or methodology...test and retests it for compliance, both to what the Research and Division says the stent or method can or should do, and for the compliance to the governing body standards such as 21CFR part 211, 212 (FDA regulations) and the United States Pharmacopeia (USP) GAMP	
BP Corporation	Houston, Texas
Update wellbore utility chart design, create forecast for production in Cheyenne West oil field and track new well performance, predict performance using decline curve analysis	
BP Corporation	Iowa City, Iowa
Completing RAR/ARR; installing alarm and strobes in facilities; improvement of the flare system; using new program to maximize reporting of air emissions	

Buckman Laboratories Manufacture of specialty chemicals	Iowa City, Iowa
Burgess-Norton, Inc. Working with new technology group in assessing new products and processes and materials engineering	Geneva, Illinois
Cambrex Production engineering, emissions control standards and implementation, design	Charles City, Iowa
Cargill Engineering assistant...formulate method to prevent clogs from forming in feed hopper...also, devise system to regulate tank levels	Blair, Nebraska
Cargill Process improvement projects for plant, updating documentation, maintenance projects	Cedar Rapids, Iowa
Cargill Quality Control and production testing	Eddyville, Iowa
Cargill Packaging Supervisor/Project Engineer Intern...modification of a pre-existing line in oil fill room...decide where to place new equipment so 5-quart line would run most efficiently...alteration of a bottle unscrambler so that it unscrambled the bottles from a different position on the line than the manufacturers intended	Gainesville, Georgia
Cargill Design and construction of heat recovery and waste reduction system in food starch plant	Hammond, Indiana
Cargill Quality Assurance in salt plant...process engineering projects...presentations to engineering and non-engineering staff	St. Clair, Michigan
Cargill Chemical Design Project Engineer Intern, focusing efforts towards testing, installing, and optimizing run procedures for a proposed Reverse Osmosis Disk Centrifuge system	Sydney, Ohio
Caterpillar Chemical Engineering Intern...test samples of oils and metal working fluids daily for quality as well as to make sure the levels of different additives are safe for interaction with both people and equipment...in addition to daily laboratory work...in charge of coordinating a capital project for wastewater treatment	Decatur, Illinois
Caterpillar Specialty Products Business Unit on continuous product improvement (CPI) and hydraulic hose contamination	Mossville, Illinois
Caterpillar Working on a validation project using a fiberglass to be used in seals, a rubber to metal bonding project, and an adhesion issue with decals	Peoria, Illinois
Cedar River Paper Process Engineer Intern, assist process engineers in the implementation of projects to optimize productivity, optimize savings, and eliminate bottle necks in the paper making process	Cedar Rapids, Iowa

Deere Technology Center Metallurgical research and testing; process evaluation; quality control	Moline, Illinois
Dow Corning Performing research...working in the Business and Technology Incubator in the Science and Technology department...proprietary...specific safety training on radiation and lasers so that I could safely operate an X-Ray Diffractometer and a particle size analyzer	Midland, Michigan
Eli Lilly and Company Study enzyme kinetics of drug metabolizing CYP enzyme variants	Indianapolis, Indiana
Emerson-Fisher Controls International, Inc. Sales support engineer co-op/provided day to day support for sales representatives/responsibilities include pricing, product selection, materials	Marshalltown, Iowa
Engineered Seal Products Engineering Intern, develop marketing information, spectroscopy and quality assurance, materials processing and testing	Cedar Rapids, Iowa
Fauske and Associates Open and closed cell calorimetry, dust explosion and flammability, and water hammer testing for client companies... run the Advanced Reaction System Screening Tool (ARSST)...capable of analyzing open and closed cell testing; development of closed cell testing	Burr Ridge, Illinois
GE Healthcare CT Detectors area of General Electric Healthcare's Diagnostic Imaging branch, design processes by which the oxidation and hydration of terbium oxide could be determined	Milwaukee, Wisconsin
Gelita USA Assist with AutoCad drawings and engineering projects	Sioux City, Iowa
Genencor, Inc Major project is to reduce the production cost of an enzyme...saving the company money and possibly time... done by altering the conditions within the tank needed to lyse the cells	Cedar Rapids, Iowa
Genencor, Inc Purification of proteins in R & D environment with aim of scaling up processes to work in industrial environment	Palo Alto, California
General Mills Plant engineering staff in food products facility	Cedar Rapids, Iowa
General Mills Operations intern in the packaging department...perform capability studies on two packaging lines that would hopefully allow the weight targets for each box to be decreased, and therefore save the company money by limiting "overpacking" of cereal	Buffalo, New York
Genomatica Designing process to produce chemicals using renewable feedstocks	San Diego, California

HJ Heinz Engineering Intern, production, plant processes, and quality, projects included Product Heating Systems, Deaerator Conversion, Water Use Reduction and Pouch Film Waste Reduction	Muscatine, Iowa
HamiltonSundstrand Corporation Engine and Control Systems engineering project team	Rockford, Illinois
Hutchinson Technologies Inspect, characterize and analyze parts to insure highest production quality	Hutchinson, Minnesota
International Paper Process Engineering Intern...cardboard manufacturing plant...plant/process cost reduction and quality projects	Cedar Rapids, Iowa
IPSCO Steel Materials and process design/improvements	Muscatine, Iowa
Iowa Department of Natural Resources P2 Program/Accument Reclaim water that is used in non-contact process cooling on two furnaces and then returned directly to the city via the sewer system...filtering and reusing what is currently waste oil or using longer lasting oils to reduce the volume of oil that passes through the plant	Decorah, Iowa
Iowa Department of Natural Resources P2 Program/AutoProfile Monitor waste products generated from manufacturing processes, including rubber; design and implement waste reduction policies and procedures	Keokuk, Iowa
Iowa Department of Natural Resources P2 Program/Dial Corp. Resource conservation projects, process improvements, and pollution control	Ft. Madison, Iowa
Iowa Department of Natural Resources P2 Program/Hydrate Chemical Minimize the use of virgin chemicals for pH adjustment and reduce the volume of wastewater disposed to the Waterloo publically owned treatment works (POTW)	Waterloo, Iowa
Iowa Department of Natural Resources P2 Program/John Deere Ottumwa Development of a wastewater pretreatment process, the implementation of a returnable container project, the design of a water tracking program, and various energy reduction projects	Ottumwa, Iowa
Iowa Department of Natural Resources P2 Program/Fansteel Research and recommend alternatives to processes which produce a high amount of pollution, in order to reduce pollutants and create an economic benefit to the company	Creston, Iowa
Iowa Department of Natural Resources P2 Program/Pella Reduce quantity of paint used during production by reducing overspray waste	Pella, Iowa
Iowa Department of Natural Resources P2 Program/Proctor and Gamble Project included efforts to reduce the amount of water used at the plant...updating the paperwork on the existing rotoclone systems to see whether they are in compliance with their permits...find a way to use a renewable energy source on site.	Iowa City, IA
Iowa Department of Natural Resources P2 Program/Siegweck Company Setting up a recycling program...research into new distillation column	Cedar Rapids, Iowa

ISU Research Laboratories	Ames, Iowa
Undergraduate Research Assistant...research into aptamer based catalyst design...using aptamers, or DNA samples, as a catalyst for coupling two small molecules	
ISU – Dr. Kessler Laboratory	Ames, Iowa
Undergraduate Research Intern, sponsored by WISE...polymer research into applications and manufacturing	
John Deere Product Engineering Center	Waterloo, Iowa
Learning about gasket materials and their proper application/coordinate activities between material suppliers, part manufacturers, and John Deere/working on installing and operating UniForce program to aid in testing out gaskets.	
John Deere Waterloo Works	Waterloo, Iowa
Testing of purchased painted parts to insure quality control/assist in development of paint reclaim and paint process improvements for the final paint line	
Kraft Foods	Davenport, Iowa
Plant engineering intern in food processing plant	
Kemin Industries	Des Moines, Iowa
Intern in the world wide research and development group...future projects...expertise in genetic engineering, biochemistry and medium to large scale fermentations	
Los Alamos National Laboratory	Los Alamos, New Mexico
Basic and applied research on various project teams	
Mid American Energy	Council Bluffs, Iowa
Generation Engineering Department Intern at the Council Bluffs Energy Center...performance engineering for all three units at CBEC...project manager for the scaffold and insulation contractors that are supporting the six-week unit outage.	
Monsanto	Muscatine, Iowa
AST project design and implementation for salt tank level probe coupling testing, testing and documentation of interlocks and MCB compression fitting, other process/plant engineering projects as assigned	
NSF: Materials Research Science and Engineering Center	Minneapolis, Minnesota
Zeolite synthesis and characterization	
Northwestern University Material Research Center	Evanston, Illinois
Research Assistant on various projects involving application and testing of materials	
PB Leinertz USA	Chicago, Illinois
Plant Maintenance Intern...gelatin manufacturing facility... include process safety management compliance, capital project development, plant energy conservation and process improvement project development	
Penford Products	Cedar Rapids, Iowa
Team member of Customer Applications Group of R & D/provide service to customers of corn and starch products/ID types of starch using microscopy, staining and other methods/pilot projects working with new coatings/testing and analysis of paper products, corn starch products, and paper coating products	

Poet Design and Construction Process Engineering Intern in Design and Construction...project include the Process Data Books, Commissioning Checklist Binders, researching piping material, the Solid Fuel Boiler Project, compiling Miscellaneous Pump Manuals, and a Condensate Return Project	Sioux Fall, South Dakota
Polaris Industries Work on paint system to reduce MAP's, reverse osmosis, plasma cleaner redesign to remove the contamination from mixtures	Spirit Lake, Iowa
Procter and Gamble Product Development Intern, Fabric and Home Care/cite scale up recommendations for a process after testing whether process conversion from batch to continuous was feasible	Cincinnati, Ohio
REU – Auburn University Micro/Nano Research... project focused on a new core-shell coating process, specifically to coat Polyacrylamide (PAM) with poly( $\beta$ -hydroxybutyrate) (PHB) in supercritical CO <sub>2</sub> (scCO <sub>2</sub> )... many applications, such as for time-released pharmaceuticals and water-absorbent beads for agriculture	Auburn, Alabama
REU – U of Illinois at Chicago Research project couples electrophysiology and neurochemistry to further understand the microenvironment around an ischemic stroke area in the brain	Chicago, Illinois
REU – University of Iowa Guyman Lab Improve cochlear implants by creating polymers that have tiny channels, or 'pathways' to direct the neurite cells to grow in a linear fashion	Iowa City, Iowa
REU – U of Kansas Test the solubility of sulfuric acid in several room temperature ionic liquids using titration...results of these tests would then be used in the future to decide the applicability of using these ionic liquids as solvents in the production of methyl esters for biodiesel	Lawrence, Kansas
REU – U of Massachusetts at Amherst Developing a gel that can be placed on a person's organs to supply the organs with oxygen during surgery	Amherst, Massachusetts
REU – U of Maryland Materials Research Science and Engineering Center...project is centered on the synthesis mechanism of nano-materials	College Park , Maryland
Ricardo, Inc. Environmental remediation of brownfields sites	Van Buren, Michigan
Rock Island Arsenal Edgewood Chem/Biochem Command Technical/Research Intern...responsible for providing technical, engineering, and quality assurance support to many different Chemical and Biological Defense commodities	Rock Island, Illinois
Rockwell Collins Composite Applications Intern	Cedar Rapids, Iowa
Science Applications International Corporation Reviewing and analyzing greenhouse gas emissions reports	Washington, D.C.

Science Undergraduate laboratory Internship – Ames Laboratory Ames, Iowa  
Materials Science and Engineering (MSE) lab under the Department of Energy’s undergraduate internship program...working to start a cure characterization study of a polymer composite containing a ceramic filler that reduces the tendency of the polymer to expand when heated...composite is especially interesting for use in space applications, which require material functionality across a wide temperature gradient

TechniKrom Glenview, Illinois  
Inline Buffer Dilution modules, or skids, for pharmaceutical companies as well as columns for column chromatography

University of Hawaii at Manoa Manoa, Hawaii  
Research and data collection with Manoa Summer Undergraduate Research Program

UI CoE: IATL Iowa City, Iowa  
Running IR spectrum tests on the polymer solutions to determine the maximum conversion of the solution. The solutions are going to be used in place of solder on circuit boards so the amount of dark cure or cure in dark areas is to be determined so I have been working to determine how much solution is converting and how much of the unilluminated area is converted.

UI College of Engineering Chemical and Biochemical Engineering Iowa City, Iowa  
Laboratory Assistant/Research and data analysis

UI Department of Chemistry Iowa City, Iowa  
Lab/Research Assistant

UI Department of Physiology Iowa City, Iowa  
Physiology lab research assistant

UI Engineering Orientation Services Iowa City, Iowa  
Orientation advisor for incoming freshmen and parents, and transfer students to the College of Engineering, mentoring, scheduling, and advising

UI Water Treatment Plant Iowa City, Iowa  
Lab testing, environmental systems, Oakdale plant operations

University of Nebraska at Lincoln P3 Program: Pfizer Lincoln, Nebraska  
Provide technical assistance to the Environmental Health and Safety Department of Pfizer Genetics

Virginia Tech University Blacksburg, Virginia  
Research into fuel cells, using ionic polymer membranes as actuators/sensors