

CIRAS 2006 ANNUAL REPORT

University Extension

IOWA STATE UNIVERSITY

College of Engineering

CIRAS Mission Statement: *The mission of CIRAS is to enhance the performance of Iowa industry through education and technology-based services.*

From the Director

The loss of manufacturing jobs in Newton underscores the precarious position of manufacturing in this country. China has over 100 million manufacturing workers, and the number is growing. The U.S. has 14 million, and the number is declining. It is projected by some that over one million manufacturing jobs will be lost in the U.S. when the Iraq war ends. Newton just lost 2,000 jobs—2,000 high-paying jobs for Iowa engineers, lawyers, accountants, and factory employees.

Manufacturing jobs have a greater effect on the economy than any other business sector. When the job of building washing machines leaves the state, we also see a loss of jobs in other sectors, including transportation, services, utilities, construction, and insurance. This loss will affect more than Newton. Suppliers to Maytag from across the state are likely to lose business, and that will have a trickle-down effect on their communities.

It is critical that we use this recent negative circumstance to rally the state—to take this loss and somehow find a way to leverage an economic recovery in Newton and continue to build the economy of the entire state. If we cannot stop the loss of manufacturing jobs, how will we stop the loss of jobs in the biosciences sector or the IT sector?

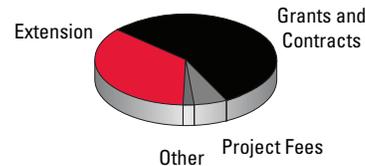
A shortage of qualified workers remains a top concern for many Iowa companies, and demographic projections indicate that this is likely to remain a key issue for much of the Midwest for years. This is an area that Iowa must pay attention to, but we cannot stop there. Many developing countries can throw millions of workers at manufacturing problems, so the ability to be innovative will be a key differentiator.

Innovation is the process in which new market knowledge and technology are applied to create business value. This may be directed to a product, process, service, or business model. We must become more innovative in all aspects of our business to compete in the global economy. We must continue to look at what will help us in the short term but be courageous enough to invest in ideas that may not pay dividends for 5, 10, even 20 years.

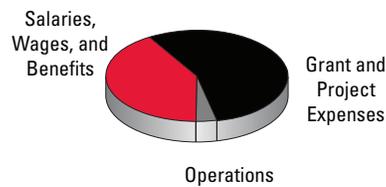
The latest Bureau of Economic Analysis data show that Iowa has climbed to second in the country in the state's dependency on manufacturing. Other states and countries want our manufacturing jobs. Now is the time to be proactive—to aggressively look beyond the boundaries of our companies, agencies, cities, and the state and work together. CIRAS staff and Iowa State University stand committed to helping you grow your company and the state economy—an economy and resultant quality of life that are very dependent on industry.

Ronald A. Cox

CIRAS Income
Total Income = \$5,656,580



CIRAS Expenses
Total Expenses = \$5,525,898



Iowa Manufacturing Profile

Iowa is home to 5,804 manufacturing establishments. The three areas below reflect how the manufacturing sector plays out as a portion of the state's total economic activity:

Labor Force	15%
Work Earnings	18%
Gross State Product	21%

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2005–2006 Highlights

Bioeconomy

- CIRAS continues working with USDA to implement the Federal Biobased Products Preferred Procurement Program (FB4P) authorized by the 2002 Farm Bill. The first of a series of rules designating biobased items for preferred procurement was published in the Federal Register in March 2006. Items included diesel fuel additives; mobile equipment hydraulic fluids; roof coatings; penetrating lubricants; water tank coatings; and bedding, bed linens, and towels.
- Over 420 people attended the 2005 Biobased Industry Outlook Conference, which featured speakers that discussed new discoveries in bioprocessing and new business models and capitalization strategies for biobased businesses.

Energy

- Energy Related Best Practices: A Sourcebook for the Food Industry has been published and distributed to Iowa's food processing companies, the largest manufacturing sector in Iowa. The report, funded in part by a grant from the Iowa Energy Center, contains hundreds of best practices for saving money by reducing energy consumption.

Engineering

- Shaver Manufacturing in Graettinger, a manufacturer of fencing equipment, post drivers, stump grinders, and log splitters, requested assistance with the development of a new log splitter. CIRAS provided input on testing and design that resulted in a product that could be quickly brought to market, thus increasing revenues for the company.
- T. L. Fabricators, LTD, a small start-up company located in Victor, is developing a parking lot lighting system that would better secure light bulbs and make replacing them easier by eliminating the need for a lift mechanism. CIRAS staff worked with the College of Design to analyze light intensity and distribution using lighting-level simulation software. The company is currently conducting field tests on a selected design.
- The Schebler Company in Bettendorf, which specializes in stainless steel fabrications, recently introduced a new high-heat cooling tunnel to rapidly cool baked products, such as cookies, snack bars, and candies. CIRAS staff and mechanical engineering faculty worked with Schebler to develop a computer model of the tunnel. Schebler estimates that they have retained sales of \$2.5 million and that they have the potential to gain \$3 million per year in additional sales.

Procurement

- Blue Wave Ultrasonics in Davenport requested assistance in competing for government contracts. CIRAS provided help with bid preparation, term definition, interpretation of FAR regulations, and GSA schedules. The company's government contracts for the past year have grown to over \$660,000.
- Capital City Boiler & Machine Works in Des Moines recently had a change in ownership and structure. They were concerned with maintaining relationships with federal and local governments that had been cultivated by the previous owner. CIRAS provided classes and counseling on government contracts, marketing, and processes. The company reported an increase of \$290,000 in government contracting in the first half of 2006.

Productivity

- CIRAS partnered with eight states to assist OEMs in reducing manufacturing critical-path time for key suppliers. Value Stream Maps, critical paths, and implementation plans were developed for 11 suppliers to John Deere, Oshkosh Truck, and Bobcat.
- Corrugated Solutions in Des Moines contacted CIRAS for assistance with production capacity. Staff helped the company build a simulation model of their operation to determine the capacity constrained resource and suggest improvements, which resulted in a 25% increase in capacity per hour.

Quality

- West Central requested internal auditor training to become certified to the new national biodiesel industry quality standard, BQ-9000. CIRAS staff provided training for internal audits, a pre-certification audit, and advice on implementing the standard. The plant became the second company certified to BQ-9000. As a result, sales are expected to increase 30% with cost savings of \$200,000, 12 jobs saved, and 5 new jobs created.
- Sioux Rubber & Urethane in Sioux City specializes in the application of rubber and urethane to industrial parts and components. The plant contacted CIRAS for assistance in implementing an ISO 9001:2000 Quality Management System. They became certified in July 2005.

Industrial Research

- CIRAS and the Iowa State Department of Economics partnered with the Economic Development Administration to conduct a regional study of the industrial structure of six Iowa counties: Adams, Clarke, Decatur, Ringgold, Taylor, and Union. The report identifies challenges for the region, such as out-migration and an aging workforce, as well as opportunities in regionally competitive manufacturing industries.

Continuing Education

- Nearly 500 people attended a continuing education conference in Des Moines that covered quality design, material selection, construction, and operation of asphalt pavements in Iowa. The conference drew paving contractors, consultants, and county, city, state, and federal engineers. Attendees were able to obtain professional development hours toward retention of their Iowa Engineering Licenses.

Project Activity

