



Iowa Companies Use Iowa State Structures Lab to Test Products

Last fall, American Athletic in Jefferson, Iowa, which designs and manufactures sporting equipment, developed a new bracket to enhance the safety of its overhead, structurally mounted equipment for institutional play. Before the company could complete the product designs, it needed to test the new components' performance.

Around the same time, XL Specialized Trailers, a Manchester, Iowa-based company that manufactures various types of trailers, needed to test the structural performance of its redesigned low-profile hydraulic detachable gooseneck trailer.

Both of these companies turned to CIRAS for help. For more than a decade CIRAS, in partnership with Iowa State University's Structural Engineering Laboratory (operated in the Department of Civil, Construction, and Environmental Engineering), has

assisted companies by conducting preliminary structural engineering tests for internal company use.

The tests help companies determine whether or not they need to adjust their product design or if the product is ready to be launched.

"We work with the structures lab to develop projects to help companies with structural testing," says John Roberts, CIRAS

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On the Cover: XL Specialized Trailers loads a redesigned trailer to conduct static and dynamic tests with the Iowa State structures lab.

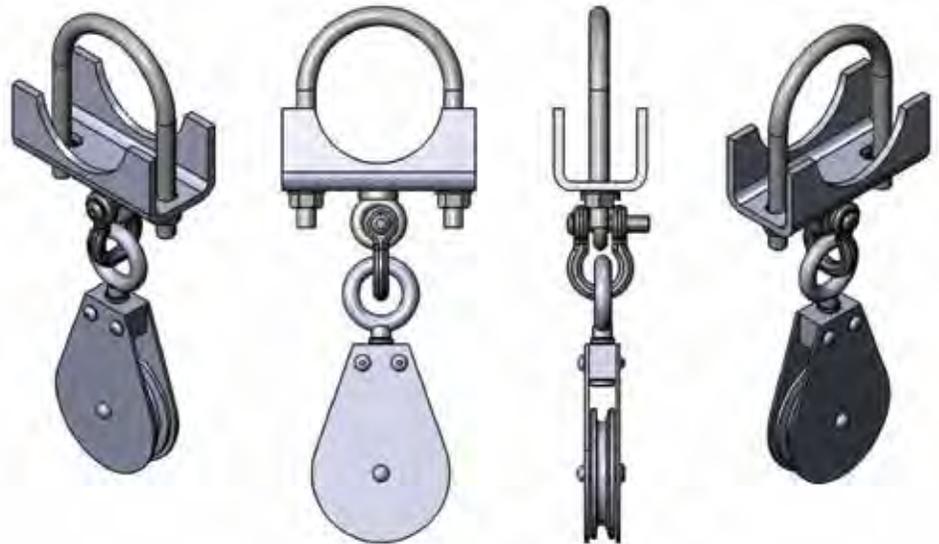
CIRAS Mission: *Every day we will enhance the performance of industry through applied research, education, and technical assistance.*

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American Athletic worked with the ISU structures lab to test new components (depicted in this 3-D rendering) for its overhead, structurally mounted sports equipment.

project manager. "The tests are not standardized and are noncertified. They are for internal use to help companies make decisions about their products based on their goals and the test results."

CIRAS works with the company to develop test methodologies based on their requirements, and then the company fabricates any fixtures required or specimens to be tested.

Ensuring safety of sports equipment mountings

Brian Holladay, a senior operations manager at American Athletic, had worked with CIRAS on projects in the past and knew the structures lab could perform the testing needed. "I like to use CIRAS for third-party destructive testing analysis of my critical components," he says. "The depth and detail of the report gives me credible and presentable data, and it allows my design engineers time to design."

Using the structures lab's data acquisition equipment, hydraulic actuators, load cells, and deflection transducers, CIRAS and structures lab scientists performed maximum load

testing on American Athletic's new bracket. Holladay says the test results showed a performance increase over the brackets' previous design and indicated a dramatic increase in strength.

"Based on the success of the testing, the design will be a great addition to a family of products for a quickly developing national service market that will allow us to retain or hire 10 or more employees and increase product sales dramatically," Holladay says.

Additionally, because the company manufactures most of its products in Iowa and sources most of its raw material locally, the increased sales will support many other Iowa businesses. Athletes will benefit, too—the enhanced bracket helps increase safety of the company's equipment in gymnasiums nationwide.

Improving product lines and increasing revenue

Last fall, XL Specialized Trailers wanted to increase production for several of its trailers. Matt Schattgen, an engineer, says the company changed multiple components in critical areas

of the trailers to improve the assembly process. Testing the stress and strain in a dynamic situation to ensure the trailer's quality was an essential step before delivering the product to customers.

"We were looking to more than double the production of the trailer, and we did not want to have any failure possibilities in the field because of changes we made to improve manufacturing," says Jeff Ingels, vice president of engineering.

The company brought the trailer to Ames to be outfitted with strain gauges and data collection equipment. The trailer then returned to Manchester to undergo static and dynamic tests. XL Specialized Trailers developed and set up a road course and loaded the trailer with large boxes of concrete to simulate normal loads it would haul. Doug Wood, Iowa State's manager of the Structural Engineering Laboratory, rode inside the truck to collect data during braking, accelerating, hitting bumps, and driving around curves.

Testing confirmed the company's performance expectations as generated by computer models, and the company launched the new product—its XL low-profile hydraulic detachable gooseneck trailer for construction industry use—shortly afterward. "We produce about three or four of these trailers a week. We have doubled our volume in this model," Ingels says.

After the success of this project, XL Specialized Trailers arranged for testing of another trailer being redesigned. The testing again confirmed the company's expectations for the product and production began in late 2012, doubling the output of a full-width mechanical gooseneck trailer.

"The biggest benefit to the structures testing CIRAS offers for Iowa companies is that CIRAS is easily accessible and easy to work with, and they give the testing results back in a good turnaround time."

—Jeff Ingels

provided expertise to our company by recommending better data collection processes during the dynamic load simulations. Doug Wood has many years of simulation experience and guided our engineering team in a direction to get the most consistent and accurate data from the constraints that we were dealt."

"The biggest benefit to the structures testing CIRAS offers for Iowa companies is that CIRAS is easily accessible and easy to work with, and they give the testing results back in a good turnaround time," Ingels says.

Schattgen also was impressed with CIRAS and the structures lab. "CIRAS

➤ **For information on product testing, contact John Roberts at 515-294-0932 or jarobert@iastate.edu.**



Structural Engineering Laboratory

The Structural Engineering Laboratory is used to test bridge and building components along with researching new methods for making structures safer and more cost efficient.

Example Applications

- Validating capacity of various components (structural and product)
- Optimizing performance of structural materials and structural design
- Determination of bridge load capacities for posting evaluations
- Load distribution of bridge structures
- Damping characteristics
- Development uses for UHPC 30,000 psi concrete
- FRP product development to replace reinforcing bar, eliminating current corrosion issues
- Calibrating finite-element model of construction equipment high-capacity haulers
- Evaluation services of consumer products or development of products
- Structural reliability

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Jeff McCuddin, process engineer, evaluates welding efficiency.

Maintainer Improves Processes and Builds a Lean Culture

Manufacturers must consistently strive to be efficient and eliminate waste—in both time and materials—to be successful. Two key pieces of the process are getting to the root cause of the problems that generate waste and getting everyone from management to floor workers involved. But how do you create the culture within a company to support this effort?

Shelley Morris, general manager at Maintainer Corporation of Iowa, Inc., was searching for answers to that question when he attended a CIRAS event—Lean: Problem-Solving—in November of 2011.

Maintainer, which is located in Sheldon, Iowa, is a manufacturer of customized mechanics service truck bodies, lube truck bodies, and extendable boom cranes. The company's mission statement reflects its commitment to total customer satisfaction and to being responsive, efficient, and committed to continuous improvement.

"Like most companies," Morris says, "we have had challenges finding something that sticks and something that is sustainable and meaningful to the workforce. As a 38-year-old company,

we needed a framework and some clear goals to help us create a culture and environment in which we can thrive."

Following his participation in the initial problem-solving event, Morris met with Bob Coacher, CIRAS account manager, and Jeff Mohr, CIRAS project manager, to discuss how to get the entire company involved in creating a positive environment for problem solving.

As a result, CIRAS organized a two-day on-site training session for the company. Tracey Richardson, president/owner of Teaching Lean, Inc., was brought in to lead the sessions. Richardson, who spent 10 years working with Toyota North America as an employee and later as a consultant trainer, focused on problem-solving processes based on the

Toyota Business Practices model.

Workshop participants included Maintainer's president Dennis Michels, Morris, and a dozen other members of the company.

Leadership plays a crucial role in developing an environment where the rest of the employees choose to get involved and stay involved in making improvements, according to Coacher. "To nurture that involvement, leadership has to have patience and allow teams to try new ideas and make mistakes," he says.

The morning session was devoted to learning how to create a Lean culture with the afternoon session focusing on a structured problem-solving process. Various training tools were provided so

the participants would have resources to use as they continue the process in the plant.

Mohr says the most important thing to gain from these sessions is for participants to learn to ask what is happening and what is supposed to be happening. "The gap between those is the problem," he explains. "Through the training sessions, we provide a step-by-step process to get to the root cause of the problem and come up with the best ways to resolve the issues."

The structured approach, including learning a common language, facilitates involvement by everyone at the company. "The people on the floor are able to present ideas to management and can talk through the steps they went through to come up with the improvements," Coacher explains. "The process makes it easier for the workforce to discuss their ideas and for management to recognize it is the workforce who has the skills and ability to know and see things of which the managers may not be aware."

On day two of the training session, the participants divided into three teams to work on specific problems they selected where progress could be made within a few days.

Working on real problems was very beneficial, according to Morris. "It got us out of the classroom and onto the plant floor to apply what we had learned," he says. "It was hands-on training with Richardson watching us to make sure we were always working toward the right end result."

The teams delved into the root causes of their specific problems and came up with solutions. Resolving those challenges provided the teams with confidence to tackle more complex issues with the rest of the workforce.

"Like any other effort, it takes a lot of commitment," Morris says. "Nevertheless, we are certainly much

more advanced than we have ever been in terms of our Lean thinking."

While it is still too early to fully measure the impact of changes that have been made, Morris says he knows the company is on the right track. One indicator of this has been the hiring of a process engineer. "We hired someone specifically to work on problem solving, identifying the gaps and putting teams together to solve those problems," he explains.

The company has adopted the A-3 template for the eight-step process that Richardson provided as its standard problem-solving approach. For each challenge, a team goes through the steps: identify the problem; break down the problem in order to understand the current situation; develop a goal statement; perform root-cause analysis; brainstorm countermeasures and create a countermeasure implementation plan; see the plan through; check results and processes; and update standard work and share wherever applicable.

One area where the company is already seeing an impact is in the reduction of hydraulic hose scrap. From a management perspective, the scrap numbers were consistently too high, according to Morris.

Using the problem-solving approach, the team identified the gap between what

was currently happening and what they wanted to happen regarding the amount of scrap generated. The company has implemented changes in processes and training aimed at achieving an 80 percent reduction in scrap. Although the changes have just recently been implemented, Morris says the early results are very encouraging.

Maintainer is also working to ensure it has the skilled labor it needs to meet consumer demand. "In northwest Iowa, we can't always solve our production problems with increasing head count," Morris points out. "We're using the problem-solving tools to work toward more efficiency. A part of this is gaining a better understanding of the jobs we're asking our workforce to do and ensuring they have the training to do the jobs."

The company has developed the framework to provide specialized in-house training. For example, when the time comes that more welders are

needed, the Maintainer Weld Academy has been established to train current employees who aren't welders today but have the propensity to become welders.

You hear all the time about the shortage of skilled workers, according to Mohr. "Maintainer has developed an efficient way of meeting this challenge," he says. "It's very exciting to see companies come up with unique solutions."

"We're using the problem-solving tools to work toward more efficiency. A part of this is gaining a better understanding of the jobs we're asking our workforce to do and ensuring they have the training to do the jobs."

—Shelley Morris

McCuddin teaches problem solving at Maintainer.



➤ For more information, contact Jeff Mohr at 515-294-8534 or jeffmohr@iastate.edu.



Photo Courtesy of Rockwell Collins

Timberline Receives Prestigious Award

In March 2013 Timberline Manufacturing Company, which specializes in electrical contract manufacturing, received Rockwell Collins' President's Award, the highest award the company presents to its thousands of suppliers.

"A key component of our success is our relationships with our partners, and CIRAS is a valued partner to us. For several years and through several projects, CIRAS specialists have coached and mentored us to more fully understand our business and how we can operate in both tactical and strategic ways to grow our business and our profitability. Our leadership team sincerely appreciates their efforts and assistance."

—Mike Johnson, Owner
Timberline Manufacturing Company
Marion, Iowa

ADA Enterprises Increases Sales by \$615K Using Theory of Constraints

ADA Enterprises, Inc., a manufacturer of plastic-coated steel outdoor furniture and agricultural supplies, is first and foremost a family business. Tom Stensrud, president since 2001, credits his grandparents and their entrepreneurial spirit for laying the groundwork for the company.

It all started in the 1950s. The elder Stensruds owned a hardware store in a small Minnesota town. When a local farmer coming off a bad year offered to trade them his farm for the store, they took him up on it. The farmer didn't succeed, and the Stensruds soon owned both.

By the mid '60s, Tom's dad, Al, had joined the family business. With a growing family to support, they expanded their venture to selling and building grain bins and other farm structures.

When his parents retired in the '70s, Al Stensrud formed a partnership and bought the business. Shortly thereafter Al became aware of a plastic-coated steel product being used in a hog barn they were remodeling.

"Dad thought it was the greatest thing in the world," Tom Stensrud says, "and split with the partners." In 1974 Al and his wife, JoAnn, founded ADA Enterprises in Northwood, Iowa, to market the plastic-coated steel products. Within a few years, they had expanded the business from a marketing company to include the steel manufacturing and plastic coating.

With an expanding family to feed in the mid '90s, the Stensruds were again on the lookout for ways to grow the business. "At the time, our primary products were farrowing and nursery flooring for pigs up to 100 pounds," Tom Stensrud says. "It was a very good product, but expensive. We knew we couldn't sustain this because in a bad year, hog farmers would bypass flooring and we wouldn't have any customers."

Subsequently the decision was made to find additional uses for their machinery and technology. They soon were in the

business of custom plastic coating for playground equipment. One of their customers was a playground company, Premier Polysteel, which Stensrud bought in 1998.

With a dealer network set up to market playground equipment to cities and municipalities, ADA soon expanded its product line to plastisol-coated outdoor furniture.

Today the company is no longer manufacturing playground equipment but focuses on its line of 100% plastisol-coated outdoor furniture and amenities. These include benches, picnic tables, trash receptacles, bike racks, patio umbrellas, and grills. In fact, outdoor furniture comprises more than half of the business, with livestock products making up the other half.

"We've had a lot of changes," Stensrud says, "and that's why CIRAS is important to us. We started as a hardware store, and now look at what we're doing. We were trying to do things as fast as we could, but we weren't being efficient. We were just trying to stay in business."

Mike Willett, CIRAS project manager, guided ADA through a Theory of Constraints (TOC) Business Improvement Generation (BIG) project. The goal is to provide a variety of tools, education, and facilitation to help a company design and implement a process for generating ongoing business improvement and ultimately greater profitability.

"ADA needed to improve cash flow," Willett says. "To remedy that, you have to determine what is causing the problem, what can be done to change that, and how to implement the change."



ADA employees plastisol coat children's playground decks.

Willett met with ADA's leadership team weekly to guide them through the five-phase BIG project. It started with helping the team understand the policies and behaviors needed to achieve productivity improvement. Next came a systematic process to determine priority problem areas so they could then decide what needed to be done to correct those areas.

Issues affecting the company's bottom line included such things as unfocused sales, high inventory, and poor scheduling. While these were symptoms of problem areas, they couldn't be resolved until the constraint and core conflicts were identified.

"One of the big lessons we learned from Mike was understanding where to focus our attention," Stensrud says. "We had been trying to save time where time didn't really matter. We were worried about how long things were taking in fabrication until we realized we had spent money to do things faster there only to have to wait later on in the process."

Phase three explored strategies for exploiting, subordinating, and elevating the constraint, and phase four focused on the development of an implementation plan. The team mapped out exactly what needed to be done and in what order as well as what resources were required.

In ADA's project, the constraint was identified to be in the coating area. Consequently, the implementation plan included a technical assistance project.

CIRAS coordinated this project with the University of Northern Iowa's Recycling and Reuse Technology Transfer Center to determine the effect of curing temperature on colorfastness of their coating material.

The final phase of the BIG project is implementation of the plan, which is ongoing according to Stensrud. The team continues to meet weekly, and that in itself has multiple benefits. "As a family business, the weekly meetings help everyone—both family and nonfamily members—realize their value. Everyone is part of the team," he says.

While it has been slightly more than a year since the BIG project was completed, Stensrud reports very positive results.

These include \$615,000 in increased sales, \$200,000 in retained sales, cost savings of \$122,500, plus retention of all 30 employees and the hiring of one additional employee.

The company also had The Dura Bilt® Calf Stall selected by a panel of farmers, ranchers, and industry professionals as one of the World Ag Expo's Top 10 New Products in 2013. The

stall was showcased in February at the 46th annual World Ag Expo in Tulare, California.

"CIRAS helped us look at things differently, to see the big picture and tackle problems that were sensitive without hurting feelings," Stensrud says. "As a result, we have become better manufacturers and have developed a plan for doing things more efficiently."

"CIRAS helped us look at things differently, to see the big picture and tackle problems that were sensitive without hurting feelings. As a result, we have become better manufacturers and have developed a plan for doing things more efficiently."

—Al Stensrud



Beth Balzer

New CIRAS Advisory Council Member

Beth Balzer is manager of business development at the Iowa Economic Development Authority (IEDA), formerly the Iowa Department of Economic Development. The IEDA's Business Development Division focuses on positioning Iowa as the location for business growth through the recruitment of new businesses and the retention and expansion of existing businesses. For 20 years, Balzer has worked primarily with existing industry on company growth and retention projects. Her expertise is in project management, sales, and marketing.

In addition to business development, the IEDA provides programs and services to support tourism and community development. The IEDA offices are located in Des Moines, Iowa.

➤ For more information, contact Mike Willett at 319-234-6811 or mwillett@iastate.edu.

CIRAS Presents Products Made in Iowa at Engineering Career Fair

Twice each year, hundreds of companies flock to Iowa State University's Hilton Coliseum to recruit students at the Engineering Career Fair. As part of CIRAS' 50th anniversary celebration, CIRAS joined 272 companies—151 of which are based in or have facilities in Iowa—at the spring career fair last February to present a unique display of Iowa-made products to the fair's more than 3,200 attendees.

"We participated in the Engineering Career Fair to celebrate 50 years of improving the profitability of businesses and to help raise students' awareness of CIRAS services and some of the products made in Iowa. This provided students an opportunity to learn about us. As they move out into the workforce, they can recognize CIRAS' connection to industry and know that we're here to help them and their companies," says Ruth Wilcox, CIRAS project manager.

CIRAS displayed nearly 24 companies' products at its Made in Iowa booth. Current and past CIRAS Advisory Council members and other Iowa companies contributed products to the display. Products included an agricultural clutch, animal feed supplements, archery targets, bar-code labels, cookies, an extension spring, fire protective gear, floor matting, frozen pizza, a golf flagstick and cup, grooming brushes and combs for animals, hand sanitizers, ice cream, lip balm, medical equipment, popcorn, salad dressing, soaps, socks, specialty tools, and a tool storage locker.



From left, Ruth Wilcox, CIRAS project manager, visits with engineering students Glenna Lovig and Jenny Kuentstling at the CIRAS Made in Iowa booth.

Wilcox says the students attending the career fair were often surprised to see the types of products made in the state. "I always enjoy the energy and enthusiasm of students when it comes to their new careers and their interests in Iowa companies and products. It's fun that people are getting excited about products made in Iowa. They were even asking where they could buy the products."

To attract students to its booth, CIRAS offered a drawing for an iPad mini. Adam Reineke, a senior in software engineering, stopped at the booth and was the lucky winner. "I was impressed

by the breadth of items made in Iowa, especially that there is a Snap-On Tools factory here in Iowa," he says.

In addition to being displayed at the career fair, CIRAS' Made in Iowa exhibit was displayed at the College of Engineering's VEISHEA tent and at the Iowa Association of Business and Industry "Taking Care of Business" Conference in Okoboji, Iowa.

CIRAS welcomes Iowa manufacturers who want to have their items included in the Made in Iowa display to contact Ruth Wilcox at 515-290-1134 or rwilcox@iastate.edu.

The fall Engineering Career Fair will be September 24 from 12 p.m. to 6 p.m. at Hilton Coliseum and the Scheman Building. Companies wanting to recruit Iowa State engineering students are encouraged to reserve a booth soon, as space is limited.

Companies can contact Engineering Career Services at ecs@iastate.edu to reserve a space.

CIRAS 50TH ANNIVERSARY SPECIAL



Letter from the Director

In the early '60s, manufacturing was a major component of Iowa's gross state product, yet there were few mechanisms to provide widespread university assistance to this critical segment of the state's economy. The College of Engineering Advisory Council encouraged Dean George Town to investigate how assistance could be provided to industry. A study group was formed that visited other research and

service groups throughout the United States and ultimately developed a model for providing industry services.

With the dean's leadership, in July 1963, the Iowa legislature appropriated funds and authorized the Board of Regents to establish the Center for Industrial Research and Service (CIRAS) to counsel industry on special problems, advise on appropriate procedures for growth, and conduct research and testing programs.

During its first five years of service, CIRAS field staff made more than 8,000 personal calls on Iowa industry, handled more than 2,500 individual industry requests, and created an inventory of Iowa firms and individuals.

Compare that to the momentum of the past five years, with CIRAS and its partners making more than 52,000 contacts with industry and reporting a cumulative impact from companies of more than \$1.8 billion (sales gained or retained, \$1.5 billion; new investments, \$227 million; costs saved or avoided, \$100 million), with 25,675 jobs added or retained as a result of the assistance they received.

This basic premise that led to the creation of extension over 100 years ago, and to CIRAS fifty years ago, still holds today... Iowa State University Extension and Outreach makes the knowledge base of the land-grant university available to the people of the state.

Our CIRAS staff and our partners continue a strong commitment to improving the lives of the people of Iowa by providing the latest education, applied research, and technical assistance to enhance the performance of Iowa industry.

Our vision for Iowa is healthy communities through business prosperity. We look forward to the next fifty years partnering with companies and communities to help them prosper and grow.

Ron Cox
CIRAS Director and Associate Dean for Extension and Outreach in the College of Engineering



Celebrating 50 Years of Service

“ Iowa State University was the first institution to accept the Morrill Act and become a land-grant institution. A few years later, it was the first institution to apply the Smith-Lever Act and implement a Cooperative Extension Service focused on agriculture and home economics. It's not surprising, then, that Iowa State also was one of the first institutions to expand the concept of extension into engineering and focus on the needs of industry and manufacturing.

To this day, Iowa State University is among only a handful of institutions that recognize the importance of a broad portfolio to more fully serve its state. Within ISU Extension and Outreach, CIRAS not only directly connects industry and manufacturers to technical expertise, but also creates capacity within the College of Engineering to forge partnerships with companies for the benefit of students, faculty, and the companies themselves.

The whole point of a land-grant university like Iowa State is to offer access to highly qualified faculty interested in investigating phenomena and problems whether they require basic research or are applied in nature. This combination benefits both learning and discovery. CIRAS, like the rest of ISU Extension and Outreach, works to foster an engagement effort using that knowledge to drive economic activity, enhance productivity, and improve the quality of life for our citizens. Congratulations on 50 years! ”

—Cathann Kress

Vice President, Iowa State University Extension and Outreach

“ Over the past 50 years, CIRAS has been a key resource for manufacturers in this state. But CIRAS isn't just for manufacturers. Thanks to CIRAS, Iowa businesses are safer, smarter, and more innovative. At ABI we value our partnership with CIRAS, because CIRAS helps Iowa grow. Congratulations to CIRAS on 50 impactful years. ”

—Mike Ralston

President, Iowa Association of Business and Industry (ABI)

“ In the past, we have used CIRAS to help us sort through a broad range of issues, and we continue to use their resources. The staff is uniformly responsive, courteous, and always asking how they can be more relevant in advancing manufacturing in the state of Iowa. CIRAS does a great job of making it easy to access the considerable expertise of the Iowa State University faculty. ”

—Tom Wenstrand

President, Hawkeye Steel Products, Inc.

CIRAS TIMELINE

1963-1970

1963

In the early 1960s, manufacturing was a major component of Iowa's gross state product, yet there were few mechanisms in place to provide widespread university assistance to this critical segment of the state's economy.

The College of Engineering Advisory Council advised Dean George Town to investigate ways to provide assistance to industry. A model for CIRAS was developed by Town in 1962. In July 1963, the Iowa legislature appropriated funds and authorized the Board of Regents to establish CIRAS to counsel industry on special problems, advise on appropriate procedures for growth, and conduct research and testing programs where necessary.



Henry Palmer, a 1960 civil engineering graduate of Iowa State, was hired as the first CIRAS employee. Waldo Wegner (below), a professional civil engineer and Iowa State's first basketball All-American, was named the first CIRAS director.

Following the successful agricultural extension model, CIRAS staff were located both on campus and across the state, allowing enhanced access to campus resources and providing timely local assistance. Harley Boeke, an Iowa State civil engineering graduate, was the first CIRAS field representative.



CIRAS was housed in temporary barracks, Building E, on central campus for the first 18 years of operation. The building was one of 15 war surplus buildings erected on the Iowa State campus in 1947.

1970-1980

In the early '70s, a CIRAS survey found inadequate business records, lack of clear lines of authority, and shortage of working capital were some of the most widely encountered problems by Iowa's small manufacturers. By the mid-1970s, though, energy uncertainties, unemployment compensation, and the impact of computers on manufacturing were the top concerns.



Waldo Wegner (third from left) discusses the objectives of an industrial-educational meeting held in Creston with other attendees.

E. O. Sealine, CIRAS marketing specialist, helps Iowa manufacturer Bimco Inc., Bloomfield, market their products.



1980-1990

1980

CIRAS was awarded funds from the Economic Development Administration's University Center Program to provide economic development assistance to Iowa industry. The center began offering technical assistance to manufacturers and entrepreneurs in economically disadvantaged regions in Iowa.



1981

CIRAS launched and administered the Small Business Development Center (SBDC) program for retail and service firms and inventors. Starting with offices at four universities, the program has grown to 12 locations across the state. Since 1985, it has been administered by Iowa State's College of Business.



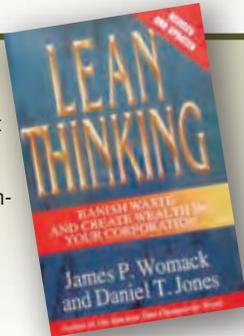
Daniel Zaffarano, vice president for research, Iowa State; Cooper Evans, U.S. Representative from Iowa; and David Swanson, CIRAS director, discuss research and technology transfer.

1982

CIRAS conducted a quarterly economic survey. The results provided a better understanding of the health of the Iowa industrial sectors and showed that more than 50% of all manufacturers look to Iowa State for resources and assistance.

1990-2000

The productivity improvement methods of Deming and Goldratt were in demand in the early '90s. By the late '90s, CIRAS was becoming actively involved in Lean manufacturing. CIRAS also increased the technical diversification of its staff.

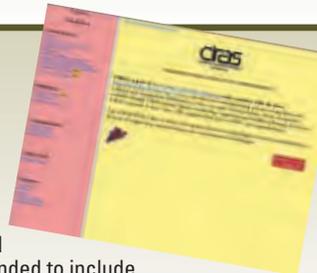


1994

CIRAS became a partner in the Iowa Manufacturing Technology Center (IMTC). Funded by the Department of Commerce, IMTC was a natural fit with CIRAS because of its similar missions with CIRAS and ISU Extension—to assess the needs of predominantly rural manufacturers, assist them with the adoption of appropriate technology to modernize their operations, improve quality, and increase their competitiveness in the global economy.

1995

Dissemination of CIRAS information went worldwide in 1995 when CIRAS posted its first Internet web pages. Initially developed as part of an effort to improve access to Iowa State by rural manufacturers, the site expanded to include educational materials, information on manufacturing in Iowa, and links to manufacturing resources.



2000-2013

2000

In 2000, the Iowa Department of Economic Development asked CIRAS to manage the Iowa Procurement Outreach Center (IPOC), which offers counseling and technical assistance to Iowa firms that want to provide goods and services to the federal government. In 2005, the name was changed to the Procurement Technical Assistance Center.



Jim Black (second from left) works with Kaizen team at Paragon International to develop a Lean strategic plan.

2001

Ron Cox was named as director of CIRAS. Cox previously spent four years as a CIRAS field agent in the Mason City area, where he provided technical assistance to manufacturers in the areas of product design and testing, industrial ventilation, productivity, and root cause analysis.



Gerry McClure (left), Schebler Company president, with Ron Cox, CIRAS director.

2002

After 90 years as a separate extension activity, the Engineering Extension Service was included under the CIRAS umbrella on July 1, 2002, to provide a more seamless link between manufacturers and the faculty in the College of Engineering. CIRAS was selected to jump-start the Federal Biobased Products Preferred Procurement Program (FB4P) for the USDA due in part to Iowa State's commitment to the emerging bioeconomy. The name later changed to BioPreferred®.

1965

The 1965 CIRAS Advisory Council (below) was formed to provide additional oversight and direction to the center's efforts. One of the first advisory council members, Lew Throssel, former CEO of Dodger Industries, Eldora, described the purpose of the council: "The council provides a sounding board for the CIRAS administration and staff and a resource for strategic planning and direction." Since the council was initiated in 1965, more than 100 Iowa companies have participated—providing guidance to the CIRAS director and staff. The first chair of the CIRAS Advisory Council was Ralph Schlenker of Iowa Power and Light in Des Moines.



Engineers from Alcoa's Davenport Works and Iowa State University as well as CIRAS personnel brainstorm on energy conservation problems at a meeting.



The governor selected CIRAS to manage the federally legislated State Technical Services Program. Legislation specified the goal and the method—wider diffusion and more effective application of science and technology in business, commerce, and industry are essential to the growth of the economy, to higher levels of employment, and to the competitive position of United States products in world markets.

1966

CIRAS became part of ISU Extension when the short courses service group, farm demonstrations service group, Engineering Extension Service, and CIRAS were merged to establish a new entity, University Extension.



From left, Dwayne Dygert, coordinator of Iowa Development Commission Foundation's (IDCF's) product placement program; Norman Frye, inventor; and Harold A. Sturtz of Dowden, Inc., examine the first invention placed in the IDCF product placement program, coordinated through CIRAS.

1975

Martin Poe, an extension resource development specialist, assisted with the development of the North Iowa Area Development Manufacturers' Group (NIAD) in 1975. The group, a nonprofit advocacy organization, more recently was named the Business and Industry Group of North Iowa (BIG). Poe was hired by CIRAS in 1976. A year later, he initiated the Cedar Valley Manufacturers Association to promote and serve industry in the Cedar Valley community.

1976

CIRAS established the Iowa Industrial Waste Information Exchange program, a clearinghouse to help Iowa manufacturers identify potential users and sellers of waste.



James Schaaf (left), CIRAS, discusses methods of costing with Gary W. Clem, owner, Almaco, Inc., Ames.

1984

CIRAS began administration of Iowa's Minority Business Development program. The program helped secure \$6.3 million in contracts and provided management assistance to 143 minority-owned firms.



Robert Tvrdik (left), CIRAS field representative for southwest Iowa, discusses training programs with James A. Bianco, Iowa Spring Manufacturing, Adel.



Carmi Spicer, CIRAS, makes a database search to obtain information for a Program for Innovation client.

1988

CIRAS celebrated 25 years of service. During those 25 years, CIRAS personnel made more than 130,000 personal contacts with Iowa's manufacturing firms.

1999

CIRAS had engineers from many disciplines on staff by the late '90s. This diversity resulted in increased interaction with faculty and better access to campus facilities, which led to an increased variety of technical assistance for small companies. CIRAS also began hiring students to assist on projects. This provided enhanced educational opportunities for the students, economical solutions for Iowa's small companies, and a new conduit for Iowa's companies to hire engineering graduates.



Ben Taylor, a December 1999 Iowa State graduate, worked on an Advanced Analytical Technologies, Inc., project from early stages to completion.

The Ames CIRAS staff moved to the newly completed Howe Hall.



2005

Iowa Manufacturing Extension Partnership (IMEP) was integrated with CIRAS to elevate the level of technical expertise and to provide the latest technical and educational opportunities to Iowa's manufacturers.



2006

CIRAS partners with Iowa State Meat Science Extension to provide more training programs and plant consultation for Iowa meat-processing companies.

Centerville Machining, Inc., works with CIRAS to improve productivity and cash flow. Pictured from left are Mike Willett, CIRAS industrial specialist, Ira Hartley, and David Belloma.

2009

CIRAS played a key role in research and information gathering for the USDA BioPreferred® Program. CIRAS identified biobased products, developed systems to collect and access information on the biobased industry, and worked with the ASTM International standards committee to perfect the methodology for determining biobased content.

In 2011, the team received recertification of its ISO 9000 status. The BioPreferred project was one of only two university programs to receive this certification.

2011 through today

In order to tailor customized solutions that enhance the performance of Iowa companies, CIRAS combines its in-house expertise with the extensive knowledge base found within partner organizations. Recent partners include the Iowa Area Development Group, the Iowa Association of Business and Industry, and the Iowa Farm Bureau Federation.

CIRAS provides applied research, education, and technical assistance in the broad categories of engineering, management practices, government contracting, productivity, quality, and innovation.



2013 CIRAS Staff (above)

Front row (from left): Leah Barton, Susan Clark, Mike Willett, Glenn Volkman, Ruth Wilcox, Pam Russenberger, Julie Fagle, Beth White, John Roberts. **Back row (from left):** Ron Cox, Mark Reinig, Haiyan Li, Jessica Riedl, JoAnn Miller, Bob Coacher, Rudy Pruszko, Shankar Srinivasan, Ranojoy Basu, Jim Poe, Steve Devlin, Derek Thompson, Sean Galleger, Jeff Mohr, Brenda Martin, Brian Muff, Savitha Bangalore, Paul Gormley, Mike O'Donnell, Chris Thach.

Not pictured: Gordon Bonnes, Pete Nadolny, Marc Schneider

CIRAS Director Timeline

- Waldo W. Wegner** • 1963–1978
- David H. Swanson** • 1978–1989
- Lloyd E. Anderson** • 1989–1992
- Delbert A. Shepard** • 1992–1993
- Richard A. Grieve** • 1994–2001
- Ronald A. Cox** • 2001–Present

CIRAS Mission: *Every day we will enhance the performance of industry through applied research, education, and technical assistance.*

CIRAS is supported in part by the DoC/NIST Manufacturing Extension Partnership, the DoD/DLA Procurement Technical Assistance Program, and the DoC/EDA University Center Program. This 50th anniversary special designed and produced by Hobbs Designs, LLC—July 2013

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CIRAS Staff Circa 1980

Palmer hired in 1963 as first CIRAS employee

In 1963, George Town, dean of the College of Engineering, was responsible for launching the Center for Industrial Research and Service (CIRAS) after the Iowa legislature appropriated funds and authorized the Board of Regents to establish the center. An article in the *Des Moines Register* introduced the center, outlining its potential and the expected impacts.

About the same time as the announcement of the center, Henry “Hank” Palmer, a 1960 Iowa State University civil engineering graduate, returned to Iowa State after a tour of duty in the Marine Corps. When Palmer returned to campus, he was anticipating starting a graduate assistantship in civil engineering. However, he was notified that Dean Town wanted to meet with him and discuss an opportunity. Town offered Palmer the job of helping to launch CIRAS. After discussing the position with Dean Town and reading the introductory article in the *Des Moines Register*, Palmer thought the job sounded interesting and had much potential—so he accepted the newly created position.

As a result of the news article in the *Register*, a number of industrial clients immediately contacted CIRAS and Palmer began providing support to these companies. Palmer recalls one of his earliest tasks was to create a list of industries in Iowa, using mainly a phone directory. He also contacted Iowa State faculty, describing what CIRAS was, and requested their expertise in assisting companies.

Palmer said that after a few months, Waldo Wegner, a professional civil engineer and Iowa State’s first basketball All-American, was named the first director of CIRAS. Palmer worked with CIRAS for 15 months, during which time two additional employees joined the staff.

“The experience at CIRAS—working with industry—forever changed my career plans.”

—Hank Palmer

“The experience at CIRAS—working with industry—forever changed my career plans,” explains Palmer. After he and his wife completed degrees at Iowa State, he went on to the University of Pittsburgh and earned his MBA degree. He has continued to work in business areas ever since.



System for Award Management (SAM)— www.sam.gov

There is a new government registration process—the System for Award Management (SAM). SAM registration is required for a company to be awarded and paid on most federal government contracts. The SAM is also a way for your company to be found for potential contracting opportunities as it is searchable by the government and registered industries. The new system consolidates several federal websites to create streamlined and integrated processes that should eliminate data redundancies and provide improved capability for users. The SAM consolidation is being completed in phases; the first phase includes the functionality of the Central Contractor Registry (CCR), Federal Agency Registration, Online Representations and Certifications Application, and Excluded Parties List System.

What does this mean for your company? If you were registered in CCR, your profile information was migrated to SAM, but you will still need to create an individual profile and migrate your company information to be active in the database. It is important to search for your company in the SAM and ensure your profile has not expired. Companies that did not have a CCR registration can create a new profile. Though the system has been online for nearly a year, updates and fixes are regularly being installed. The CIRAS Procurement Technical Assistance Program team has identified tips and tools to help work through issues as you complete your registration. If you have any questions or need assistance with your SAM registration, contact Pam Russenberger at 515-509-7814 or plrussen@iastate.edu.



To participate in a discussion about government contracting, join our LinkedIn group at linkd.in/1aTvPI9.

STAFF NEWS



Robert Coacher
Retired June 2013

Robert R. Coacher, western Iowa account manager for CIRAS, has retired after 10 years of serving Iowa business and industry. An engineering graduate of Iowa State University and an MBA graduate from the University of South Dakota, Coacher used his knowledge of industry, process improvement expertise, and management skills to match business needs with Iowa State resources and help Iowa manufacturers improve their performance and the state's economy. In addition, Coacher positively represented CIRAS and Iowa State University Extension and Outreach by taking on leadership roles in regional manufacturing groups such as the Siouxland CEO Round Table and the Sioux City National Association of Purchasing Management. Before coming to CIRAS, Coacher was a project manager with Xcel Energy, IPS/MidAmerican Energy, and Gateway.



Carey Novak
Project Manager

Carey Novak joins CIRAS as a project manager and will manage industry-based student capstone/senior design efforts and other industry collaborations for CIRAS and the College of Engineering. Throughout his career, he has initiated, negotiated, and managed more than 150 industry-university projects for Bradley University, the University of Kansas, and Iowa State University. He earned a bachelor's degree in economics and a master's degree in policy analysis from Southern Illinois University, and he has taken PhD courses in economics at Penn State University.



Chris H. Hill
Project Manager

Chris H. Hill recently joined CIRAS as a project manager, leading CIRAS' innovation efforts. He has worked in the appliance and defense industries for 26 years in manufacturing, purchasing, quality, and project and program management roles for domestic and international projects. Prior to joining CIRAS, he led new product development—design, manufacturing, and quality—for one of the world's largest appliance manufacturers. He has an MBA and a bachelor's degree in industrial engineering from Iowa State University, and he also holds numerous American Society for Quality certifications, a British Standards Institution lead auditor certification, and several patents. At CIRAS, Hill will help clients with innovation, product design and testing, process design, and manufacturing design.



National Survey Explores Management Practices in U.S. Manufacturing Firms

by Liesl Eathington

A recent survey by the U.S. Census Bureau offers a rare glimpse into the internal management practices of U.S. manufacturing firms. The 2010 Management and Organizational Practices Survey (MOPS) investigated the structure of management practices in key areas of process improvement, decision making, and human capital development. With more than 30,000 manufacturing plants responding, this large-scale survey was designed to improve our understanding of the relationships between firm management practices and productivity.

Measuring Management Practices

The MOPS included 16 questions about management practices across three broad areas: monitoring, targets, and incentives. Questions on monitoring related to the use of information to improve production processes. Questions on targets queried firms on the design, integration, and achievement of their production targets. Questions on incentives covered bonuses, promotion, and dismissal practices for management and nonmanagement positions.

Participating firms received numerical scores for their responses to each question. Firms with more specific, proactive, frequent, and explicit practices were assigned higher scores than firms with less structured practices. To illustrate, one survey question asked how quickly underperforming employees are dismissed after the problem has been identified. Firms that generally dismiss employees within six months received higher scores than firms that rarely or never dismiss underperforming employees.

An overall management score for each firm was calculated by averaging its

scores on the 16 individual questions. The scores were normalized on a zero-to-one scale, with a score of zero representing the least formalized management practices and a score of one representing the most structured management practices (SMPs). The research team used the overall management scores to explore relationships between SMPs, firm performance, and other firm characteristics.

Key Findings

- Early findings suggest that the use of SMPs is linked to better firm performance, as measured by productivity, profitability, rates of innovation, and employment growth.
- There was wide disparity in adoption of SMPs across survey participants. Slightly fewer than 20 percent of establishments might be described as “intense” users of SMPs, as measured by their overall management scores.
- Plants in the Midwest tend to use fewer SMPs compared to those in the South, but more SMPs than plants in the West and Northeast. Within the Midwest, establishments in Iowa and Kansas had the highest average management scores.

- The adoption of SMPs appears to have increased in recent years. The area of greatest change occurred in the use of data-driven performance monitoring.
- Firms use a variety of information sources in developing their management practices. The top three information sources, by percentage of respondents indicating that they obtain information from that source, were firm headquarters (54 percent of respondents), trade associations or conferences (48 percent), and consultants (45 percent).

In conclusion, preliminary findings from the MOPS support conventional wisdom that firms may bolster their performance by engaging in a continuous improvement process, adopting challenging targets, and providing strong incentive systems for employees.

For more detailed findings from the MOPS, see the paper titled “Management in America” (U.S. Census Bureau Center for Economic Studies Paper No. CES-WP-13-01 [January 2013]) available at the following link: www.ciras.iastate.edu/publications/ManagementInAmerica.pdf.

CIRAS' Ideation Session Energizes Decker to Develop Innovative New Products and Services

Decker Plastics is on a mission to develop proprietary products, according to company president Mike Decker. "We want to grow revenues and grow profits," he says. "To do that you have to be innovative in developing new products and new services. In business you're either growing or dying a slow death."

The Council Bluffs company, established in 1955 and currently employing approximately 25 people, manufactures plastics primarily for the food industry. Bob Decker, Mike's father, serves as CEO of the business, which the family acquired in 2000.

Following their attendance at an Internet marketing strategy workshop a year ago, the Deckers met with CIRAS project manager Paul Gormley to discuss innovation and how to develop a system that nurtures idea generation and ultimately leads to developing new products and services.

"People aren't born innovative," Gormley says. "It is work for most of us. Some people allow themselves to be innovative and don't mind when someone says

that's a little crazy, but most of us have to challenge ourselves to think beyond total practicality. We have to allow ourselves to look outside the norm because that's where innovation comes from."

Gormley leads ideation workshops called CREATE sessions to help businesses generate ideas for new products, services, processes, business models, and marketing messages.

A CREATE session was held for Decker Plastics at an off-site location in December of 2012. The session included members of the management team as well as

representatives of their sister company, Decker Sports. In addition, Gormley brought in CIRAS project managers Brenda Martin and Shankar Srinivasan to serve as catalysts for the session.

"Brenda really understands the requirements and opportunities in the food industry, while Shankar's expertise is in polymer processing—that is, plastics," Gormley explains. "I wanted to see if they could come in and shake up a group

that understood only a certain level of both. I wanted to see how the Decker team and the catalysts would interact with each other."

The result was very positive, according to Mike Decker. "Brenda and Shankar brought their real-world experiences as well as their educational expertise to the table, which was very insightful and helpful," he explains. "They are not emotionally connected to our

business, which allowed them to be objective. They highlighted the customer needs and emphasized what food companies and food processors are



looking for in terms of quality control and new products or services."

In his work with companies, Gormley focuses on innovation being a team effort. Oftentimes, he points out, companies get mired in the day-to-day-operation of the business. Each person has their assigned duties, such as engineer, marketer, and accountant, and they essentially work in silos. No one picks up the role of being the person that helps all of these people work together and be the entrepreneurs that initially helped the business get started.

"We're trying to help companies build that entrepreneurial spirit, give them ways to innovate together," Gormley says. "No one team or person is responsible for everything."

With the completion of the CREATE session, Decker Plastics has begun the process of developing a strategy for continuous innovation with ongoing assistance from CIRAS.

"People aren't born innovative. It is work for most of us. Some people allow themselves to be innovative and don't mind when someone says that's a little crazy, but most of us have to challenge ourselves to think beyond total practicality. We have to allow ourselves to look outside the norm because that's where innovation comes from."

—Paul Gormley

➤ For more information, contact Paul Gormley at 319-721-5357 or gormley@iastate.edu.

CEO Peer Council Service Now Being Offered

The first CIRAS Iowa manufacturing CEO Peer Council was launched in April, in collaboration with the Iowa Lakes Corridor Development Corporation (ILC). Key manufacturing leaders from the Spencer, Iowa, area are participating in monthly facilitated sessions that provide research-based tools, resources, and support for growing their businesses and creating bottom-line results.

Proven bottom-line results

The CIRAS CEO Peer Council is based on the proven, long-standing success of CEO Peer Councils within the national Manufacturing Extension Partnership (MEP). Each CEO Peer Council invites key high-level decision makers of Iowa-based manufacturers to participate in a strategic monthly membership group.

Through partnership with MEP Center Enterprise Minnesota, Susan Clark, CIRAS project manager, learned about the numerous CEO Peer Councils' successes in other states. Clark participated in a newly formed CEO Peer Council in Minnesota and facilitated an established group. An annual survey of the Owatonna, Minnesota, 10-member CEO Peer Council recently reported a cumulative increase of more than \$70 million in sales. "We have generally found that attendance in the Peer Council has encouraged companies to take on improvement actions and projects that they probably would not have done on their own. They tend to encourage each other," stated Dick Pedersen, Business Development Consultant at Enterprise Minnesota.

How it works

During monthly meetings facilitated by CIRAS, council members bring issues facing their organization to the group. CIRAS identifies resources and experts to help members grow their businesses. Member-driven topics range from company growth strategies and leadership development to succession planning and human resource planning. Members are also encouraged to tour each other's organizations.

"Leaders who know the value of networking are prime candidates for a CEO Peer Council. It focuses on real-time issues at an even deeper, more productive level," Clark says. "The meetings' structured format has proven to produce a high return on investment."

The goal is to help business leaders test, shape, and balance planning for the future with acting decisively and aggressively in the present. CEO Peer Councils have proven to help members avoid costly pitfalls, accelerate their business growth, and get real-time answers to their most pressing issues.

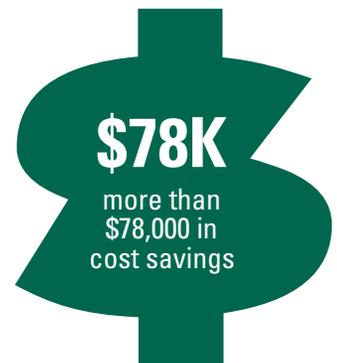
"It doesn't have to be lonely at the top anymore. Leaders are busy. They don't want to waste their time," Clark says. "We're part of a national network that knows the value of membership on behalf of each other."

Potential members are given a three-month trial period before deciding to commit to a full annual membership, which includes monthly half-day meetings with a noncompetitive manufacturing peer group and access to national resources through CIRAS. "It's like having your own personal board of directors," Clark adds.

Plans for the future

Kathy Evert, president and CEO of the ILC, says she hopes the new CEO Peer Council members will learn from and support each other, determine new ways to improve or grow their companies, and identify new collaborative efforts.

"As the ILC launches a new workforce initiative for the region, the CIRAS CEO Peer Council will be a critical resource to long-term success and sustainability," Evert says.



The average company response to an annual survey of one Minnesota-based CEO Peer Council. CIRAS is working with Iowa-based manufacturers to launch similar CEO Peer Councils around the state.

➤ **If interested in starting a peer council in your area of the state, contact Susan Clark at 515-294-4475 or skclark@iastate.edu.**

Iowa Business Council and CIRAS Partnership Helps Iowa Companies Succeed

CIRAS is known in Iowa for helping small- and mid-sized companies enhance their operations and support them to succeed. CIRAS' partnership with the Iowa Business Council (IBC) is a key relationship that enables CIRAS to help those companies and more.



Elliott Smith

"The relationship between business and CIRAS is an intangible asset and I use it frequently to gauge how successful businesses are in the state, regardless of company size or community."

—Elliott Smith

members, many of whom are executives at small- and mid-sized Iowa businesses. At the council's meetings, Smith shares survey information on the state's economic outlook, including data on sales, employment, and capital spending.

The meetings also provide CAC members the opportunity to compare the economic outlook and interests of IBC companies with other Iowa businesses and discuss any market, supply chain, or workforce issues facing Iowa companies.

In addition, CIRAS benefits IBC members through its work to help small- and mid-sized businesses review or analyze their processes to ensure they are operating as efficiently as possible. These efforts help companies find better ways to source materials, handle inventories, or manage supplies, and they can impact IBC members since they often are customers of those smaller companies.

The partnership

The IBC is a nonpartisan group of 21 CEOs from Iowa's largest companies, three Regents university presidents, and the Iowa Bankers Association's president. According to Elliott Smith, IBC's executive director, IBC member organizations employ nearly a quarter million Iowans.

"The relationship between business and CIRAS is an intangible asset and I use it frequently to gauge how successful businesses are in the state, regardless of company size or community," Smith says.

Smith works with CIRAS to host the biennial Iowa Advanced Manufacturing Conference and serves on the CIRAS Advisory Council (CAC).

Through serving on the CAC, Smith shares information with and learns from other council



Smith says Iowa companies have weathered the downturn in good shape because of their dedicated workforce, how efficiently they operate, and their culture of persistence. "It's impressive and an attitude I try to convey back to larger company leaders," Smith says.

Efforts impacting Iowa businesses

In addition to participating on the CAC, many of the IBC's efforts also benefit CIRAS and its clients. The two biggest initiatives the IBC is working on in 2013 are education reform and health and wellness. The education initiative started in response to Iowa high school students' declining assessment performance over the past 20 years and employers' needs to have higher-quality employee prospects. The initiative focuses on improving education from prekindergarten through 12th grade.

The health and wellness initiative is driven in part by skyrocketing costs of health care and insurance, which impacts companies of all sizes and their ability to offer benefits to their employees. The initiative focuses on trying to get people to develop healthier lifestyles, because healthier employees can significantly reduce health care costs and increase productivity.

Through CIRAS' and the IBC's joint and separate initiatives, both organizations are working to improve the state's economy. "CIRAS does a tremendous job of helping drive companies to do things they thought they weren't capable of doing before and moving the state forward in a lot of different industry segments," Smith says. "CIRAS has been a valuable asset to Iowa State University and the IBC, and certainly to the citizens of the state."



Iowa Business Council

Grow Your Business with Government Contracts

Each year the federal government awards companies billions of dollars in contracts. In 2012, Iowa companies secured more than \$153 million in government contracts as reported by CIRAS clients. To take advantage of these contracting opportunities, small business leaders can network with government agencies and prime contractors, as well as learn from successful business executives, at two different events hosted by CIRAS September 12 in Cedar Rapids, Iowa.

3rd Annual Corridor Procurement Conference

At this conference, Cedar Rapids/Iowa City corridor business leaders can listen to keynote speakers present on three topics—diversity; hiring, retention, and organizational culture; and social media. Attendees can discover current and upcoming contracts and network one on one with city, county, state, and federal government officials, as well as with prime contractors, looking for well-qualified small business suppliers.

For additional information about this event, contact Julie Fagle at 319-310-8612 or jafagle@iastate.edu.

Eastern Iowa Partnership and Networking Event: Manufacturing

Iowa manufacturers and their suppliers throughout the state are invited to a special event to help them identify new markets, partnerships, and suppliers, as well as discover best practices in contracting and increase their company's visibility across the state.

The event features a keynote speaker and offers an interactive round-table format for networking with up to six different companies at a time. The goal is to help companies of all sizes identify potential collaborators and think creatively to develop strategic partnerships to grow their business and secure federal, state, and local government contracts.

"It's not always about finding the biggest companies to work with, but finding partnerships that make sense," says Beth White, a CIRAS government contracting specialist.

For additional information about this event, contact Beth White at 563-370-2166 or whiteb@iastate.edu.

I have experienced the top-level professional services provided by CIRAS while working for a good-sized company and with a couple smaller companies. I served on the CIRAS Advisory Council and have found the staff to be very knowledgeable and responsive to the needs of the manufacturing community in Iowa. CIRAS has been and continues to be an excellent resource for helping Iowa manufacturing firms grow and prosper. I salute CIRAS for staying so relevant by adapting to the changing economic and competitive environment in Iowa and beyond. Best wishes for continued success in the next 50 years.

—Wes Merryman
PMW – Precision Metal Works



- **Theory of Constraints—What is the Goal?**
August 20, 2013
9:00 a.m.–3:00 p.m.
Waterloo, Iowa
- **3rd Annual Corridor Procurement Conference**
September 12, 2013
8:00 a.m.–Noon
The Hotel at Kirkwood Center
Cedar Rapids, Iowa
- **Eastern Iowa Partnership and Networking Event: Manufacturing**
September 12, 2013
1:00 p.m.–5:00 p.m.
The Hotel at Kirkwood Center
Cedar Rapids, Iowa
- **Defense Logistics Agency DIBBS Overview**
September 25, 2013
Webinar: 1:00 p.m.–2:30 p.m.
- **TAP Your Steam System Training**
October 1–2, 2013
8:00 a.m.–5:00 p.m.
Johnston, Iowa
- **HACCP Workshop for Meat, Poultry and Egg Plants**
ISU Meat Laboratory
October 17–19, 2013
8:00 a.m.–5:00 p.m.
Ames, Iowa
- **Theory of Constraints—What is the Goal?**
October 22, 2013
9:00 a.m.–3:00 p.m.
Altoona, Iowa
- **ABI Manufacturing/Environmental Conference**
October 31, 2013
8:00 a.m.–4:00 p.m.
Des Moines, Iowa
- **FabTech 2013: Networking and Product Show (CIRAS sponsored bus)**
November 20–21, 2013
Chicago, Illinois

For details, see the events section of the CIRAS website, www.ciras.iastate.edu.



Since 1963, we have been improving the profitability of businesses. We partner with companies and communities to help them prosper and grow. A typical partner achieves a 2,000% return on its investment—an astonishing \$20 of impact for every \$1 invested. A vast network of university and industry experts brings years of professional experience to CIRAS, making us a leading integrator of solutions in Iowa, contributing more than \$1.8 billion of reported impact during the past 5 years.

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Miller, JoAnn • Associate Director	515-294-4449	jvmiller@iastate.edu	Campus														•
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Clark, Susan	515-294-4475	skclark@iastate.edu	Campus								•	•					
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White, Beth	563-370-2166	whiteb@iastate.edu	Bettendorf						•								
Wilcox, Ruth	515-290-1134	rwilcox@iastate.edu	Grundy Center					•									•
Willett, Michael	319-234-6811	mwillett@iastate.edu	Waterloo									•					

CIRAS PARTNERS

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 Center for Crops Utilization Research
 College of Engineering
 Department of Environmental Health and Safety
 Engineering Career Services

Engineering-LAS Online Learning
 Industrial Assessment Center
 Institute for Physical Research and Technology
 Meat Science Extension

Des Moines Area Community College
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THE INNOVATION CYCLE

Leveraging the Innovation Cycle: Definition by Paul Gormley

For an idea to become an innovation, it must pass through the four phases of the innovation cycle: Definition, Discovery, Development, and Delivery. In this article, the first of those four phases, Definition, is discussed in greater detail.

Definition can be broken into four main elements: ideation, documentation, collection, and promotion. Each element plays a role in moving a spark of an idea to a solid concept that can be thoroughly examined for value.

Teams of people do not create ideas, individuals do. Research shows, however, that both expert innovators and novices can benefit from a team-based ideation system. An effective ideation system will typically start with a way to stimulate nontraditional thinking, which expands opportunities and provides a framework for teams to focus on potentially innovative ideas. Used appropriately, team diversity, associations, external stimuli, and even humor have been shown to generate more creative and innovative ideas.

Ideas become real when they can be communicated without their creator's assistance. In other words, documentation is what makes an idea real. To effectively communicate an idea's value, you need to include several key elements, including target customer and value proposition. By providing a documentation format that

ensures the inclusion of those elements, the idea and its proposed value can be better understood.

A well-defined collection process for gathering and sharing ideas with key decision makers improves a company's ability to act. This can reduce frustration among those who invested time and energy earlier in the process and improve organizational buy-in of the innovation system.

Since no organization has unlimited resources, the promotion of a manageable number of ideas is necessary. Innovative companies are able to quickly elevate ideas with the most promise and move them to the next phase, discovery. Understanding the capacity of the system and having a process to selectively commit resources will lead to better results.

Organizations that feel they could benefit from a more systematic approach to the definition phase should start by examining their present approaches to ideation, documentation, collection, and promotion. If you would like further information on how CIRAS can help you become more innovative, please contact CIRAS at 515-294-3420.



To participate in the innovation discussion, join our LinkedIn group at [linkd.in/12tVLy1](https://www.linkedin.com/groups/12tVLy1).