



AT A GLANCE

Danfoss Power Solutions

FOUNDED: The company has had a presence in Ames since 1971.

OVERVIEW: Provides hydraulic, electronic, and electrical solutions for construction, agriculture, and other markets.

EMPLOYEES: 1,050 in Ames.

IMPACT: More than \$20 million from CIRAS projects over the past six years.

FOR MORE: www.powersolutions.danfoss.com

Danfoss Explores Exciting Possibilities of 3D Scanning

Craig Klocke believes machines one day will be much more efficient because an electronic eye will constantly be checking what they make.

Installing scanners at the end of a production line would allow manufacturers to continuously watch for the changes that come when cutting tools are wearing out, said Klocke, head of additive design and manufacturing for Danfoss Power Solutions in Ames.

"As tools wear, as machines wear, the scanning would allow the machines to adjust," Klocke said. "You'd end up with a better product, and you'd know exactly when it was time to replace a part or tool. You'd have continuous adjustment of the process."

Quality control is just one of the possible ways that Klocke believes 3D scanners could quickly help improve the manufacturing at Danfoss. After testing the technology with help from CIRAS, Klocke expects Danfoss to purchase its own 3D scanner later in 2020.

"CIRAS makes it really easy to evaluate the new technologies," Klocke said.

"This gives us a chance to see what could happen in those unique, one-of-a-kind situations where we can't yet justify purchasing something by itself."

Last year, CIRAS worked with Danfoss to scan and reverse engineer some parts that frequently were breaking during a cleaning process. In another project, CIRAS helped the company define the digital model for a part and begin 3D printing the replacement itself—thereby saving weeks that previously were spent waiting for a new version to arrive.

Scanning technology is multifaceted, said Chris Hill, director of the CIRAS Technology Assistance Program. "If you don't have designs for your components in a digital format, this is one way to get there," he said. "We're also working with the dimensional verification application. This could allow companies to understand part variation and see whether what they're making or testing is really what they want."

Scanning is becoming essential, Klocke believes, in helping manufacturers keep old-but-essential machines producing products. Some pieces you simply can't afford to be without.

"In some cases, we only have 2D drawings," Klocke said. "In some other cases, we don't even have the drawing. Now the thing is broke, and we need to fix it. What are we going to do?"

Danfoss also is exploring the use of scanners as a test to quickly check what's produced in its 3D printing hub. Such a process would allow the company to spot problems without waiting for something to be tested on the production line, Klocke said.

Those are just a few of the ideas that Danfoss is exploring involving the use of new technologies to improve the production process, Klocke said.

"We're just getting started."

➤ For more information, contact Chris Hill at chhill@iastate.edu or 515-313-8251.

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On the Cover: Danfoss intern Quentin Hill demonstrates a fan used to clear debris from inside a CNC machine. CIRAS used scanners to show the company how to design 3D-printable replacements for when fan blades break.

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

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CIRAS Solves Perplexing Case of Computer Corrosion

Methodical detective work by a CIRAS metallurgist helped a Hiawatha computer company keep a new product on track—and preserved the potential for an estimated \$25 million in new sales.

Crystal Group, a manufacturer of rugged computers for use in extreme military and industrial environments, was working on machines for a new autonomous vehicle last spring when the company noticed a problem. CIRAS project manager Adam Boesenberg ultimately diagnosed some corrosion in the computers' cooling systems as stemming from the use of a coolant that has known problems interacting with aluminum parts.

Austin Kleinmeyer, a mechanical engineer with Crystal Group, said Boesenberg's work ultimately helped the company place new specifications on its supplier, who had provided aluminum without the correct type of protective coating. Solving the problem required repeated tests of multiple parts before Boesenberg could confirm that the requested coating wasn't there.

"CIRAS helped us analyze the corrosion and trace it back," Kleinmeyer said. "We don't have the testing resources to do that. The CIRAS lab enabled us to look at the problem more holistically and understand the full cause and effect."

"This is a common problem," Boesenberg said. "What they were requesting from the supplier wasn't necessarily what they got."

In unrelated tests, Boesenberg also helped the company confirm that residue on a circuit board had been caused by an overheated motherboard and not any other kind of issue. Such work was incredibly valuable, Kleinmeyer said, because it helped Crystal Group prove to its customer that a corrective action for the issue was underway.

"The CIRAS lab is a very valuable resource for Crystal Group to partner with when deeper analysis is required than what our internal resources provide," Kleinmeyer said. "Having contacts at the CIRAS lab allows us to respond quickly to our customers with a definitive action and resolution, and that is paramount."

➤ **For more information, contact Adam Boesenberg at aboesenb@iastate.edu or 515-294-5903.**



"CIRAS helped us analyze the corrosion and trace it back. We don't have the testing resources to do that. The CIRAS lab enabled us to look at the problem more holistically and understand the full cause and effect."

— Austin Kleinmeyer

AT A GLANCE

Crystal Group

FOUNDED: 1987

OVERVIEW: Makes (and provides customized engineering and other services for) rugged computer systems for military and industrial applications.

EMPLOYEES: 290

IMPACT: Potentially \$25 million in sales tied to a new autonomous vehicle system.

FOR MORE:
www.crystalrugged.com

AT A GLANCE

Metalcraft

FOUNDED: 1950

OVERVIEW: A leader in the manufacture of bar codes, serialized tags, and RFID tags for asset tracking.

EMPLOYEES: 108

IMPACT: \$1.5 million from various projects over the past two years.

FOR MORE: www.idplate.com

Cobots Proving to Be a Smart Choice at Metalcraft

There are many reasons Iowa manufacturers come to Ramco Innovations looking for automation.

“Certainly, a lot of it is that it’s hard to fill a lot of positions these days,” said Joe Stoltz, vice president of technology for the West Des Moines company. “And once you find people, it’s hard to keep them doing a repetitive job.”

“It’s just something that we’re trying to do during the day to give our folks a break.... It’s nice to have a lot of flexibility.”
— Jim Miller

So how do you get more work done without adding staff? The correct technological solution for any particular company depends on exactly what you need machines to do. But Iowa manufacturers can’t answer those questions until they understand their options.

That’s why Ramco decided to join CIRAS as a technology partner in the new Digital Manufacturing Lab powered by Alliant Energy. The new lab opened in September in the Iowa State University Research Park, creating a place where Iowa companies can experiment with different technologies and see what works best for their particular businesses. (See story, page 6.)

Chris Hill, director of the CIRAS Technology Assistance Program, said Ramco and other technology partners will be “key to our efforts at using the lab to help companies de-risk technology adoption.”

For Stoltz, “it’s turned out to be a good partnership, because CIRAS is in a lot of the small-to-midsize manufacturers that need our services. They do a great job of educating the manufacturers on the technology, trying to reduce the fear of the unknown.”

Metalcraft, a Mason City manufacturer of ID tags and labels, recently purchased

a collaborative robot from Ramco—a machine designed to easily work alongside humans.

Metalcraft has its cobot installed on a cart so that the company can quickly add more labor when and where it’s needed to keep up with

fluctuations in consumer demand. The machine switches between spots on the production line, either stacking sheets of metal or pushing buttons to program ID tags.

“It’s just something we’re trying to do during the day to give our folks a break,” said Metalcraft’s Jim Miller. “We can let them do something that’s a little more challenging, more fulfilling, and we’re

trying to get a little more throughput. . . . It’s nice to have a lot of flexibility.”

Metalcraft is still learning about technology, Miller said—through Ramco, attending trade shows, and contact with CIRAS.

“What we’re finding is that this cobot is not perfect for every situation we have, but there are a lot of places where it fits our needs,” Miller said. “We’re being cautious.”

“We still want to grow,” he said. “We just want to make sure that we’re competitive.”



➤ For more about collaborative robots, contact Abhay Grover at agrover@iastate.edu or 515-509-1485.



The Graziano Brothers deli counter.



President and CEO Frances Graziano.

CIRAS Shows Graziano Brothers a Path to New Future

Toward the back of a long, narrow office, tucked away in a storefront that has been a south Des Moines landmark for more than 107 years, Frances Graziano sat behind a paperwork-laden desk last September and chuckled.

Was she scared? Absolutely.

"It's terrifying," said Graziano, president and CEO of the Graziano Brothers food company. "It's absolutely terrifying. Is the product going to work? Do we have everything in place? Are we going to have a handle on the quality control? Is there going to be a market for our product outside of its current geographic area?"

Early this year, for the first time since 1912, the manufacture of Graziano Brothers sausage took place somewhere outside the small brick building on

South Union Street. The change, which followed roughly 18 months of planning and preparation alongside CIRAS experts, is part of a broad, multistep plan to breathe new life into a historic family business and position it for a much longer future.

"They were constraining themselves," said CIRAS account manager Brenda Martin. "Now, they can really start to explore the opportunities."

Exploration began in early 2018, when Martin and Graziano paused to chat outside a meeting of the Iowa Meat Processors Association. An inquiry about ergonomic sausage machinery quickly sparked a much broader look at the company.

Frances, a third-generation Graziano owner, had been concerned for some time about the future. The majority of Graziano Brothers' revenue comes from wholesale sausage sales. Manufacturing space limits long had restricted any

"It's been wildly successful. They're thrilled with the candidates...because it was the family who made all the decisions."
— Joy Donald

growth in production, while the retail storefront and distribution areas needed upgrades. It was not clear which problem should be tackled first.

"There were many components that we had to look at," Graziano said. "The next step was going

to have to be a big one. There was no in between."

With help from CIRAS, the company started by building a specialized professional team around Frances. CIRAS project manager Joy Donald worked with the Graziano family to recruit a new board of directors for the company. Frances' relatives, while maintaining ownership, last summer ceded their board roles to a team of food industry experts—a team that Donald had helped the family identify and recruit.

When the new board, with CIRAS assistance, later laid out a new strategic plan, it received full family support.

AT A GLANCE

Graziano Brothers Inc.

FOUNDED: 1912

OVERVIEW: In addition to a Des Moines retail grocery, Graziano Brothers uses a recipe from its Italian immigrant founders to manufacture sausage for wholesale and retail customers across Iowa.

EMPLOYEES: 15

IMPACT: The company expects more than \$1 million in new sales over the next five years, plus future investments as it grows.

FOR MORE: www.grazianobrothers.com

"It's been wildly successful," Donald said. "They're thrilled with the candidates...because it was the family who made all the decisions."

"Some businesses have a lot of legacy, and they end up getting stuck," said CIRAS project manager CJ Osborn. "When a business wants to take it to the next level, it is a privilege to guide them on that journey."

A CIRAS evaluation ultimately found that building constraints at the historic Graziano's factory would make expansion there too expensive. Osborn and CIRAS consultant Jim Poe then performed a make-versus-buy study. As a result, Graziano Brothers last fall partnered with another nearby manufacturer to have it begin making Graziano sausage using the old family recipe.

Frances Graziano says some sausage varieties will continue to be made on South Union Street. But larger capacity at the new plant means Graziano Brothers, long a popular brand in Iowa restaurants and grocery stores, now will be able to expand into new markets and other states.

And more is coming. Early this year, the company began its first-ever effort to computerize inventory and distribution. E-commerce is on the horizon. Eventually, Graziano also hopes to upgrade the South Union grocery store, perhaps by adding more food options and ready-to-eat Italian meals.

"We have the most fantastic opportunity here," she said. "We could be the Eataly of Des Moines, Iowa."

CIRAS was instrumental in every part of the transition, Graziano said, heaping praise on everyone with whom she worked.

"Not only were they great counselors, but they were able to figure out the process and the analytics behind it," she said. "We're way ahead of where we were two years ago. We wouldn't be there if I hadn't found the resources at CIRAS."

For more information, contact Brenda Martin at bkmartin@iastate.edu or 515-570-5282.

NDE Testing Projects Help VT Industries Save Time, Avoid Costs

A Holstein, Iowa, maker of doors and countertops saved time and money last summer after CIRAS experts helped the company quickly identify problems with two potential products.

Aron Fleischmann, an engineer with VT Industries, said his company will avoid tens of thousands of dollars in potential warranty work because CIRAS helped pinpoint the cause of cracking discovered during inspections of shipments from a supplier.

Fleischmann took some of the cutting boards to Dave Utrata, CIRAS project manager with Iowa State University's Center for Nondestructive Evaluation, and CIRAS project manager Adam Boesenberg. CIRAS used CT scans and microscopic analysis to discover that cracks had begun in places where the wood had been improperly joined, apparently as the wood dried out while changing climates.

"The long and short of it was that it was cracking because, in this instance, they just had not glued everything together properly at the edges," Utrata said.

Fleischmann said the CIRAS lab report helped VT Industries focus the company's supplier on solving the glue problem and maintaining the company's high-quality standards.

In a different project, Utrata helped VT test a new material to confirm its x-ray-



Countertop cracking along glued surfaces.

shielding properties. VT Industries, which makes a lead-lined door for use in hospital x-ray rooms, had been evaluating supplier options for x-ray shielding materials.

Utrata's tests showed that the material did provide shielding but that the necessary amount of it would make the door too thick to be profitable.

"Because of Dave, we didn't unnecessarily waste resources trying to do a lot of marketing work," Fleischmann said. "His ability to give us a quick 'No' was very beneficial."

Fleischmann praised CIRAS and the valuable tools it possesses for helping Iowa companies with product development.

"When we get an issue like these, CIRAS is an immediate sounding board," he said. "Because they do this so often, they have the necessary expertise and experience that they can figure out how to approach the problem."

For more information, contact Dave Utrata at heydave@iastate.edu or 515-294-6095.

AT A GLANCE

VT Industries Inc.

FOUNDED: 1956

OVERVIEW: Maker of doors and countertop surfaces for homes and businesses across the country.

EMPLOYEES: 450

IMPACT: Roughly \$20,000 from 2019 testing projects; more than \$24 million from CIRAS projects in 2016 through 2018.

FOR MORE: www.vtindustries.com



FOR THE RECORD

Key pillars of the CIRAS support structure have been renewed by separate federal agencies in moves that mean CIRAS will continue to maintain access to its vast network of expertise. The U.S. Defense Logistics Agency in July renewed CIRAS as Iowa's local Procurement Technical Assistance Center. CIRAS will receive roughly \$750,000 during fiscal 2020. The money will be matched with CIRAS funds to provide more than \$1.25 million of assistance to Iowa businesses in navigating the world of government contracting.

CIRAS also has received another year of funding under its agreement with the National Institute of Standards and Technology (NIST) to serve as Iowa's affiliate of NIST's Manufacturing Extension Partnership. As part of a long-term agreement, \$2 million of federal money will be matched with CIRAS funds to create a program budget of \$4 million.

Finally, CIRAS has received another \$138,000 installment of a grant from the federal Economic Development Administration to assist rural communities in their search for skilled workers. The new initiative, to be known as the Iowa Workforce Innovation Network (iWIN), will be matched with CIRAS funds for a program budget of \$276,000.

Now Open: Digital Manufacturing Lab Powered by Alliant Energy

Trent Waters knew his purpose.

"I'm learning the possibilities," said Waters, an engineer with Dee Zee truck accessories in Des Moines. "You come here and look at all this, and then you start thinking, 'We can do that.'"

Waters is one of more than 200 Iowa manufacturers who have visited Iowa State University's Digital Manufacturing Lab powered by Alliant Energy since it opened in September at the Iowa State University Research Park.

The new lab is designed to help de-risk technology for Iowa manufacturers by giving them a place to experiment with technologies such as vision systems and collaborative robots. Companies will be able to get advice on a new approach to dealing with workforce or productivity issues, then test and refine the idea before they invest any money.

The lab's creation was made possible by substantial donations from Alliant Energy and the Iowa Economic Development Authority.

"We're here to celebrate something pretty cool," Joel Schmidt, vice

president of business development for Alliant Energy, said at the ribbon cutting. "It's more than a lab run by great minds with some really cool machines. We're celebrating a great partnership that we know will leave a lasting impression on the future of this state."

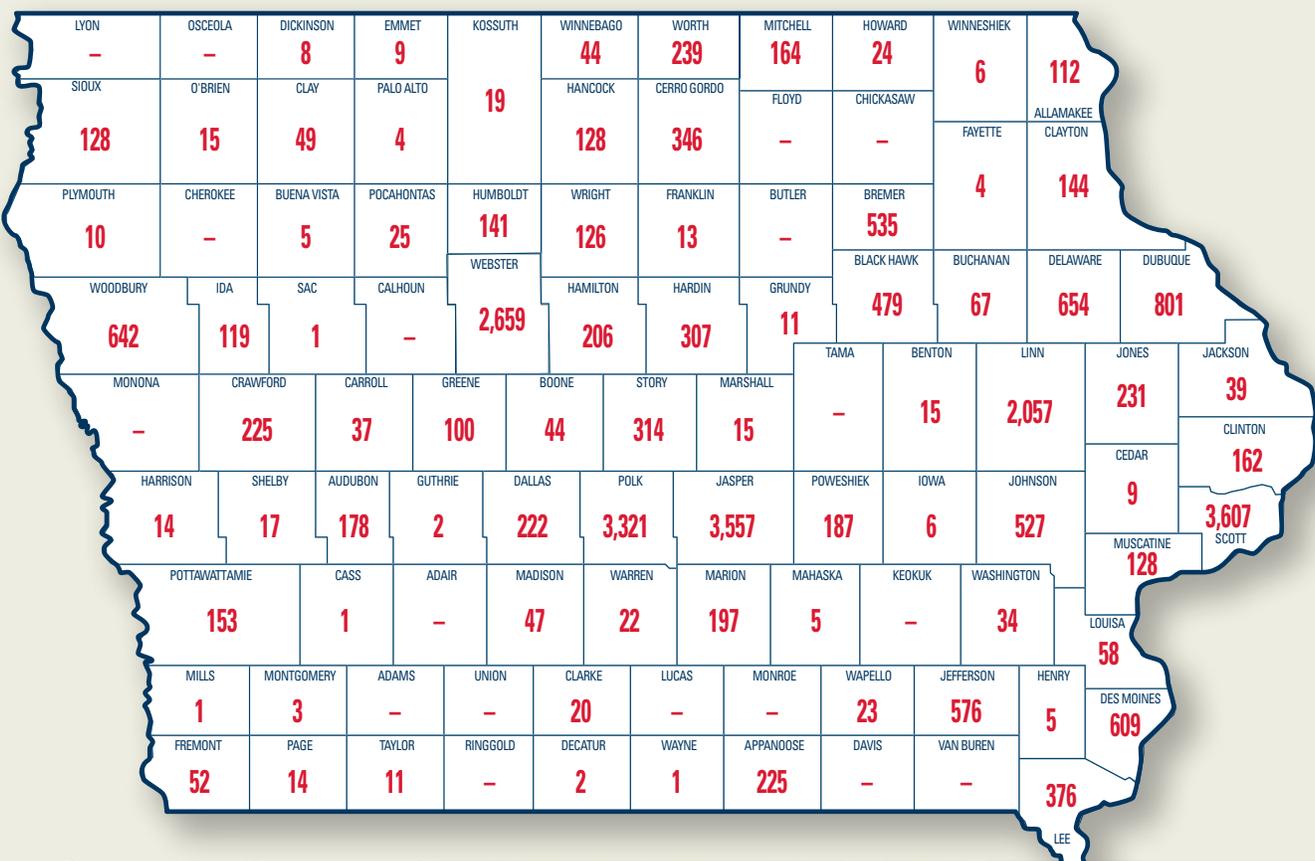


The Digital Manufacturing Lab opened to the public on September 26, 2019. Among other things, it includes collaborative robots (foreground above) and 3D scanning (below).

➤ For more information, contact Abhay Grover at agrover@iastate.edu or 515-509-1485.

JOBS: Nearly 26,000 Added or Retained

Jobs Added or Retained, 2014–2018



Loran Balvanz believes his company will change agricultural tillage forever— thanks partly to assistance from CIRAS and Iowa State University.

Balvanz, president of USM Wear Technologies in Eldora, has been working for years with Iowa State experts to develop new ways to test and improve the company’s patented CADEN Edge. The process, which involves welding a bead with particles of tungsten carbide along the edge of tillage tools, has been shown to make tillage sweeps and ripper points last several times longer than conventional equipment.

“We’re giving farmers an advantage by giving them equipment that lasts longer,” Balvanz told *CIRAS News* in 2017.

That opinion apparently is shared by Agrisolutions, an Illinois-based manufacturer that sells four million agricultural tools annually to companies around the world. Agrisolutions, which last summer announced plans to purchase



USM Wear Technologies welding center in Paton, Iowa.



Balvanz’s company, wants to incorporate the CADEN Edge into its offerings. “I would say that by the end of 2020, you’ll see it almost everywhere,” Balvanz said in October.

USM Wear Technologies says the company added four jobs in the three years following its first work with CIRAS and Iowa State Agricultural and Biosystems Engineering professor Mehari Tekeste. But much more growth will be coming, Balvanz said.

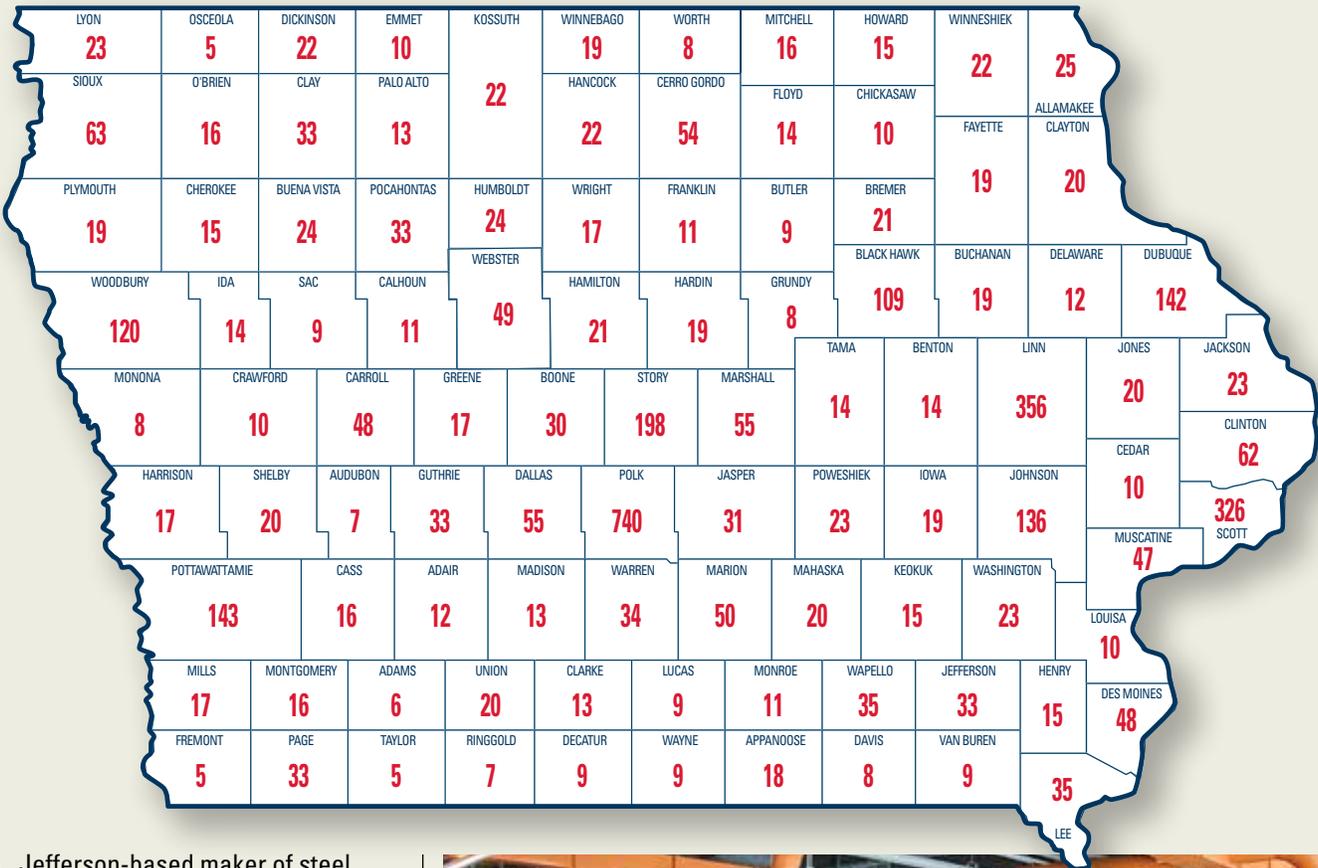
Over the past five years, CIRAS and its partners have worked with more than 4,100 Iowa companies like USM Wear Technologies, helping create or retain nearly 26,000 jobs.

Balvanz praised Iowa State’s role in spreading success. “A lot of great things are coming from this.”

For more, visit www.ciras.iastate.edu/ciras_services/faculty-connections/.

CONNECTIONS: More than 4,100 Distinct Clients Served

Distinct Clients Served, 2014–2018



A Jefferson-based maker of steel athletic equipment expects to emerge from 2020 “100 times better” once the company completes its CIRAS-assisted recovery from a disastrous 2018 fire.

Chris Conner, general manager of Power Lift, said a relatively small blaze in the company’s assembly department spawned massive smoke and water damage that forced Power Lift to scrap much of its machinery and goods.

“We basically had to gut the building of our equipment and all our sold product, parts, and inventory,” Conner said. “Basically, we had to start over from scratch.”

Shortly before the fire, CIRAS had helped reorganize the company’s metal fabrication area to accommodate new equipment. After the blaze, CIRAS worked with Power Lift again on a complete revamping of its production line. CIRAS waived a



Power Lift equipment at a high school in Texas.

customary fee for services due to the fire-related hardships.

Conner said the reorganized factory has drastically reduced its handling of material and goods, making Power Lift more efficient and more productive than ever.

“Had you guys not helped us out, we’d still be scratching our heads, twiddling our thumbs, and tripping over each other—still trying to get our processes in order and our flow in the right place,”

Conner said. “I don’t know if it’s really possible to put a value on all the help and support that CIRAS has given us over the course of a year and a half or so.”

Power Lift is one of more than 4,100 Iowa companies that have worked with CIRAS and its partners over the past five years. Combined, that work has generated an economic impact of more than \$2.5 billion.

For more information, visit www.ciras.iastate.edu.

Triplett Office Essentials Buoyant about Bidmatch

For Steve Cochren, it amounts to sustenance—and it arrives at about the same time.

“I read my BidMatch every day at lunch,” said Cochren, who works in sales at Triplett Office Essentials in Urbandale. “It makes me aware of opportunities that I may not have been aware of before.”

BidMatch, a software service that’s available to all active clients of the CIRAS Procurement Technical Assistance Center (PTAC), scours government databases to deliver a list of government procurement opportunities tailored to what an individual client sells.

“We’ll set it up specific to a client so that, if they only do business in the state of Iowa, it will only search Iowa,” said PTAC program manager Jodi Essex. “If they only want state and local, it’ll do that. Or, it can search nationwide all the way out to Puerto Rico and Guam. We’ll set it up to the client’s specific geographic region, their keywords, and their industry. Then, they get the matches relevant to them each day.”

For Cochren, the service is both a way to expand his networking ability and an early warning about opportunities coming later. For example, the office furniture company sees great value in knowing who is responsible for the design and construction of future government building projects.

“These people just are not in our contact circle,” he said. “That PTAC BidMatch email not only makes me aware of the opportunity, but more importantly, it makes me aware of it early.”

As an example, Cochren cited a \$10,000 order his company received in August from an agency that was unknown to him before one of the noontime emails.

“It’s a great resource,” he said. “I like it a lot.”

For more information, contact Jodi Essex at jodir@iastate.edu or 515-715-0881.

Steve Cochren



AT A GLANCE

Triplett Office Essentials Corporation

FOUNDED: 1973

OVERVIEW: The company offers interior design, office furniture, office supplies, and promotional assistance.

EMPLOYEES: 44

IMPACT: More than \$38,000 in government contracts over the last two years.

FOR MORE: www.triplett.info



Spring Career Fairs 2020

Business, Industry, and Technology Career Fair

Wednesday, February 12, 2020

Noon to 5:00 p.m.

Hilton Coliseum

Business, Liberal Arts and Sciences,
Human Sciences

CONTACT: buscs@iastate.edu

Design Career Fair

Thursday, February 20, 2020

Noon to 5:00 p.m.

Scheman Building

CONTACT: designcareers@iastate.edu

Engineering Career Fair

Tuesday, February 11, 2020

Noon to 5:00 p.m.

Hilton Coliseum and Scheman Building

CONTACT: ecs@iastate.edu

People to People Career Fair

Wednesday, February 12, 2020

Noon to 5:00 p.m.

Scheman Building

Focuses on human/social services, education,
health/wellness, government, and hospitality;
Hosted by the Colleges of Human Sciences and
Liberal Arts and Sciences

CONTACT: hscareers@iastate.edu

Teacher Education Fair

Monday, March 2, 2020

1:00 p.m. to 4:00 p.m.

Alumni Center

CONTACT: hscareers@iastate.edu

■ **Creating Your Government Marketing Strategy**

February 11, 2020
9:30 a.m. to 10:30 a.m.
Webinar

■ **CIRAS: 3D Printing and Polymer Lab Tour**

March 5, 2020
9:45 a.m. to 2:15 p.m.
Ames

■ **Industrial Fermentation and Downstream Processing Workshop**

March 18–20, 2020
7:15 a.m. to 4:00 p.m.
Ames

■ **Dry & Semi-Dry Sausage Short Course**

April 14–16, 2020
8:00 a.m. to noon
Ames

■ **You Are a Certified Targeted Small Business (TSB)—What’s Next?**

April 15, 2020
9:30 a.m. to 10:30 a.m.
Webinar

■ **Writing Federal Proposals**

May 5–6, 2020
8:00 a.m. to 5:00 p.m.
Clive

■ **ILC Kentucky Lean Tour**

May 5–7, 2020
Tour of Lean facilities
Kentucky

■ **Capture Planning: Proven Strategies to Increase RFP Win Rate**

May 7, 2020
8:00 a.m. to 5:00 p.m.
Clive

For details and more events, see www.ciras.iastate.edu/events-workshops.

ILC Annual Conference Covers Continual Improvement of Your Company, Yourself

Leadership is not a concept that’s reserved solely for the titans of industry and society, Drew Dudley told a group of Iowa business leaders last fall. It’s also what happens when people are intentional about the way they behave and try to make their daily decisions fit their values.

“Personal leadership is recognizing that a gap exists between who you want to be and how you’re behaving, acknowledging that you’re responsible for its existence, and coming up with a plan to close it just a little bit every day,” Dudley said.

Dudley, an author and consultant on leadership development, was one of three keynote speakers at the Iowa Lean Consortium’s Annual Conference October 30–31.

The sold-out ILC conference was attended by more than 400 business leaders from companies in a wide variety of industries, including health care, government, financial services, construction, and manufacturing. Speaking in addition to Dudley were Jim Morgan, a senior adviser for the Lean Enterprise Institute, and Tammy Rogers of the Meyvn Group.

Dudley urged his audience to take time to identify their personal principles and use them on a daily basis to drive behavior—even if unwelcome consequences result. “Once you actually have that clear criteria, decision making both personally and professionally becomes a simple process—although not an easy one,” he said.

Dawn Mouw and Erin Barkema, of the Iowa Department of Public Health, said Dudley’s talk, like other sessions at the ILC Annual Conference, would help their agency improve. “Events like this help us figure out how we motivate people,” Barkema said. “How do we share information that we’ve gotten today to try to motivate people to do things in a better manner?”

“Once you actually have that clear criteria, decision making both personally and professionally becomes a simple process—although not an easy one.”
—Drew Dudley

The ILC conference included 16 opportunities for attendees to join breakout sessions covering all aspects of continuous improvement. One featured Brijesh Malhotra, a senior consultant at Productivity Inc., describing how daily management systems help a company’s workers move in line with the overall corporate strategy. If goals are properly aligned and you’re monitoring the right metrics, then everyone understands what should be done and why it’s important.

“Operating systems form the foundation for what you do every day,” he said. “That builds your leaders. That builds your culture.”

The next ILC Annual Conference is scheduled for October 27–29, 2020.

For more information, visit www.iowalean.org.



Drew Dudley, leadership expert, on October 31.



From left: Austin, John, and Shelly Tiefertalher; Jordan and Jesse Bremer.



Preparing for a New Era at Tiefertalher Quality Meats

It all started roughly 38 years ago, when John Tiefertalher needed a job to take part in a high school vocational program.

Tiefertalher, then 18, visited the local Holstein, Iowa, meat locker. Uncertain how to act, he clumsily introduced himself and assumed that somebody would call him later. When no one did, he eventually admitted to the teacher that he still lacked a place to work.

“He says, ‘Let me go talk to the owner. I know him,’” Tiefertalher recalled. “The next day, he comes back and says, ‘Go there tomorrow. You’ve got a job.’”

“I’ve been here ever since.”

Tiefertalher Quality Meats now has 20 employees and a string of state and national awards for producing quality bacon, beef, jerky, and hot dogs. And now, Tiefertalher is preparing to leave.

With help from CIRAS, Tiefertalher and his wife, Shelly, have finalized plans to step down from their roles at the company on January 1, 2023, and

pass control to their children, Austin Tiefertalher and Jordan Bremer.

Preparing for the looming handoff involved walking through all the obvious technical and legal aspects of a succession. But it also required some fundamental discussion about the minute, day-to-day details of John and Shelly’s jobs at the company.

For Jordan, the process was reassuring.

“They’ve helped other people go through this, so you know that what they’re saying is true,” she said of CIRAS. “They’re helping us put our best foot forward.”

“The biggest thing is that for us not to be here, somebody has to be able to do all of the jobs we do,” John said. “Some of the jobs we do, the kids don’t see. So they’re starting to get their minds wrapped around that.”

The three-year handoff horizon will give Austin and Jordan time to master the

backroom business and strategic aspects of the company—and to ensure that others are ready to take over for work that the younger generation is doing now.

The family can do that, Tiefertalher said, largely because CIRAS helped them work through all the possible pitfalls. “If we’re aware of them, we can check them off before we get there.”

The long handoff also gives Tiefertalher a chance to practice letting go. CIRAS experts warned him, he said, that older leaders sometime have difficulty stepping aside. He thinks he can do it.

“But we’ll see,” Tiefertalher said. “Can you swim the English Channel? You don’t really know until you start swimming.”

“The biggest thing is that for us not to be here, somebody has to be able to do all of the jobs we do. Some of the jobs we do, the kids don’t see. So they’re starting to get their minds wrapped around that.”
— John Tiefertalher

AT A GLANCE

Tiefertalher Quality Meats

FOUNDED: 1991

OVERVIEW: Family-owned meat locker producing, among other things, beef, bacon, jerky, and skinless brats.

EMPLOYEES: 20

IMPACT: More than \$950,000 from a variety of CIRAS projects over the last three years.

FOR MORE: www.tqmeats.com

➤ For more information, contact Brenda Martin at bkmartin@iastate.edu or 515-570-5282.

Industry 4.0: The New CIRAS Framework for Finding Answers

The world seems to be changing faster than it ever has. At every turn, new technologies create new opportunities and new threats to your business—new ways to analyze data, make smarter decisions, do more, make things faster, be better, and capture more value.

Collectively, this convergence of technologies and practices is being referred to as Industry 4.0, and it's headed toward (or already at) the doorsteps of Iowa manufacturers.

To help Iowans adapt, CIRAS is changing itself.

Over the summer, CIRAS began refocusing its manufacturing programs to better meet the current and future needs of Iowa companies. Six CIRAS experts have been named as lead points of contact on nine cutting-edge technological topics. The Industry 4.0 team has become the front line in helping manufacturers navigate the world of cybersecurity, cloud computing, automation, and other areas. Manufacturers with questions about a particular issue now will be able to go to a single CIRAS point person for help.

"We're establishing frontline points of contact and developing strategies for how we help Iowa companies through each of these areas," said Mike O'Donnell, program director for the CIRAS Manufacturing Extension Partnership. "The goal is to make it easier to get manufacturers the help they need."

O'Donnell warns that Iowa companies are in the midst of sorting themselves into two camps—those who understand and can profit from new technologies, and those who can't. Time is running out if you don't want to be left behind.

Chris Hill, director of the CIRAS Technology Assistance Program, says



the hard part for manufacturers is that "all this change is happening at once."

"In the past, a company seeking to improve could focus on a specific process or program, such as Lean," Hill said. "You did that one thing and focused on doing it well."

"Industry 4.0 is a broader approach," Hill said. "We're taking information from the physical world (your manufacturing process), analyzing it in the digital world, then using that to decide what to change in the physical world. The analysis expands your capabilities in a lot of ways. But to get there, companies have to have a good handle on both what their processes need and what information they need to analyze."

"Our job is to help you avoid information overload."

For more information, visit www.ciras.iastate.edu/staff-directory/ to contact one of the people below.

Area	Contact
Cybersecurity	Shankar Srinivasan
Augmented and Virtual Reality	John Roberts
Big Data	CJ Osborn
Robotics and Automation	Abhay Grover
Additive/3D Printing	Chris Hill
Simulation	John Roberts
System Integration	Abhay Grover (hardware) and Andrew Friend (process)
Cloud Computing	Shankar Srinivasan
Internet of Things	Andrew Friend

Communications Company Finds Flexibility with Help from CIRAS PTAC

For Margaret Sherry, life as a government contractor means she has the opportunity to work as a professional communications expert but still has the flexibility she needs to commit to her family's needs.

Sherry, who previously held communications management jobs at Amtrak, Houghton Mifflin Harcourt, and Transamerica, stepped away from corporate life to start a strategic communications consulting firm. A former White House and U.S. Senate employee, Sherry considered government projects as a way to build her business project by project while freeing up time to focus on her 3-year-old's speech therapy needs. But there was a lot she didn't know.

"Going out alone was a little scary," said Sherry, of Swisher, Iowa. "I felt confident about my capabilities, but I wasn't familiar with all the nuances and complexities of putting a shingle out on your own and navigating the RFP world. What CIRAS did was broaden the breadth of opportunities that were available to me and shed light on some of those nuances."

Samantha Ferm, a government contracting specialist with the CIRAS Procurement Technical Assistance Center, showed Sherry how the BidMatch computer system could scour the Midwest for government contracting opportunities that fit her particular skills. Ferm also helped her perfect the language for potential government contracts and build relationships with a community of other solo business owners.

Last summer, Sherry's company, Cedar Integrated Communications, was awarded a contract to evaluate communications for a county government agency in Minnesota. Sherry continues to pursue new contracts and plans to grow at a manageable rate.

"The help from CIRAS enabled me to compete for projects that never would have come my way otherwise," Sherry said. "Samantha provided some technical expertise to guide me through this journey, but she also helped open the door to a valuable network of creative professionals."

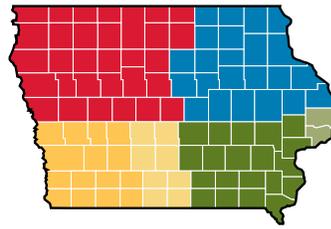
For more information, contact Samantha Ferm at siferm@iastate.edu or 319-333-9558.

CIRAS Engage. Educate. Embed.

Since 1963, we have delivered proven services to enhance the performance of industry. Our approach—Engage. Educate. Embed.—creates specific solutions that allow each business and its community to prosper and grow. Coupled with a satisfaction guarantee, our typical client has achieved a 200% ROI. Clients have reported an economic impact of more than \$2.5 billion over the past five years.

Locate your county to find your best introduction to CIRAS.

In addition to four regional account managers, CIRAS has seven regional government contracting specialists,* a statewide account manager for the food industry, and one for economic development. More staff information can be found at www.ciras.iastate.edu/staff.asp.



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GROWING YOUR BUSINESS

Testing Your Assumptions about Your Customers *By CJ Osborn*

Every business needs to make a case to their customers explaining why their particular product or service is the best option for fulfilling customers' needs.

That sounds simple enough, but it doesn't always happen. According to a study by Simon-Kutcher, 72 percent of all new products miss their revenue targets. Those companies that *do* have a successful launch share a common trait, according to the study: they understand the value that their products provide to customers.

It is very important to invest whatever time you need to understand what your customers are seeking. Companies can start to help themselves in that regard by asking the following: "What are we accepting as truth about our customers' needs that we have not verified? What do we *really* know?"

In the spirit of "walking before you run," I'd encourage you to try a simple experiment to test your understanding:

1. Write down the top three one-word reasons that you (and your team) believe your customers will share in describing why they choose to purchase your product or service over other options.

2. Ask that same question to 5–10 customers. To minimize bias, keep the wording neutral: "We want to ensure we understand your perspective on what you value most from our products and services. Using just one word per idea, what are the top three reasons you choose to work with us?" Document exactly what they share. Don't paraphrase!

3. Compare the results from steps 1 and 2.

If the responses are aligned, a good next step is to check and see if your marketing and sales materials prominently feature those reasons.

If the responses from your customers are not as consistent as you'd hoped, please contact your CIRAS account manager. There are several things CIRAS can do to support you—from resources like the book *Value Proposition Design* to an upcoming class on Market Research Tools (February 25–26 in Ames) or a specific project with CIRAS to better understand your customers.

For more information, contact CJ Osborn at cjosborn@iastate.edu or 641-840-0505.