## **IOWA STATE UNIVERSITY**

**Center for Industrial Research and Service** 



Volume 58 | Number 2

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# **Investing in Automation for Future Growth**

Lisle Corporation began business in 1903 and still uses a portion of its original building today.

While rightfully proud of its history, this Clarinda-based manufacturer is forward thinking, especially when it comes to the future of its workforce. Lisle is collaborating with CIRAS to make smart decisions to help ensure they have the staff and technology necessary to meet their customers' needs.

Ron Cox, previous CIRAS director, sounded the alarm on lowa's workforce challenges, which, he said, won't be going away any time soon.

"I hope I'm wrong; but if I'm right and you didn't plan for this, you're going to be in a lot of hurt," Cox said.

During the height of the COVID-19 pandemic, Lisle had strong sales and increased its workforce by 13%. But Lisle also knows the challenges it could

face down the road, said CEO Mary Lisle Landhuis.

"The battle for labor will continue to be a struggle for years to come," she said. "We've been here for 120 years, and to continue our success we have to be forward thinking."

Landhuis brought in CIRAS to speak to her team because "it's good for leadership to understand the situation we are in and will face moving forward." The presentation



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www.ciras.iastate.edu

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.

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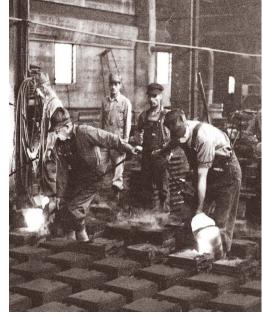
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Long-standing dedication to continual improvement has been paramount in Lisle's ability to grow from a small foundry in 1903 to a leader in the automotive aftermarket industry in 2023.

and discussion motivated the Lisle leadership to make changes.

In April the company participated in a CIRAS Industry 4.0 assessment. A key outcome

of this process is prioritizing ideas for improvement. For Lisle, operational efficiency and productive application of technology rose to the top.

"Productivity and technology go hand in hand. Technology and automation can help a business meet their productivity goals," said Andrew Friend, CIRAS project manager. "Automation also can improve jobs that are repetitive and dangerous, and it can upskill people to more value-added positions."

Lisle has a quality lab where a short run of a product is evaluated to ensure specifications have been achieved before proceeding with the entire production run. Since Lisle is producing a variety of products at any given time, the quality-check process can take time, potentially slowing production, which can cost the company revenue.

They are phenomenal facilitators. They've guided us through this project and are experienced in the particular areas we are looking at.

To speed up the process, one potential solution being evaluated is a vision system, a high-tech camera system that can quickly and accurately examine 2D features of a product. Vision

system stations can be set up near a production work cell, expediting the quality-check process.

For certain applications, these systems can provide a kind of "alternative workforce," said Friend. They also reduce variation because a single system is doing the inspection, as opposed to a variety of staff working with different instruments. "With a three-shift operation, making sure qualified inspectors are available when needed is a challenge. The vision system gives you a qualified standard around the clock," Friend added.

In June, the Lisle team visited the CIRAS Digital Lab powered by Alliant Energy to learn more about vision systems and do a proof-of-concept test on some of their production parts. "Allowing clients









Lisle's early product mix of lawnmowers and horse drawn well-drilling machines has evolved over time to a full portfolio of 800+ automotive specialty tools sold worldwide.

to test-drive a vision system in our lab helps de-risk the adoption of that technology," said Friend.

Lisle is now "evaluating various technologies for automating our quality inspection process to gain efficiencies so we don't hold up production jobs for inspection times, and to help inspectors inspect complex parts accurately," said Landhuis.

Lisle has implemented several ideas that came out of the Industry 4.0 assessment, including enhanced employee training, improved tracking of suppliers, and automating job prioritization.

Landhuis had high praise for the CIRAS team.

"They are phenomenal facilitators.
They've guided us through this project and are experienced in the particular areas we are looking at," she said. "It's good to

have another set of eyes on what we're doing and help with idea generation that is going to work best for us."

"Collaborating with a client like Lisle has impact well beyond the century-old walls. This is especially true for lowa's rural and smaller communities," said Friend.

"Manufacturing is the largest contributor to the state's GDP, and many manufacturers are located in small communities," Friend said. "These companies are pillars in their communities; we want to help them prosper and grow."

For more information, contact Andrew Friend at afriend@iastate.edu or (515) 520-2803.

Mary Lisle Landhuis CEO, Lisle Corporation

#### LISLE CORPORATION

FOUNDED: 1903 | EMPLOYEES: 290

OVERVIEW: Manufacturer of automotive tools, mechanic's creepers, and lubrication and tire products.

IMPACT: Automation solutions to address future workforce challenges.

#### **Staff News**

Ty Hill has joined CIRAS as a project manager on the Industry 4.0 team. Ty received his master of engineering (systems engineering) from Iowa State University. He has more than 20 years of engineering experience across numerous manufacturing processes including the areas of automation, process improvement, quality, and safety. In this role, Ty will help companies make significant impacts through technology.

For more information, contact Ty Hill at tyhill@iastate.edu or 515-357-4379.

Pam Lane joined CIRAS as a project manager on the workforce team.
Pam is a certified human resources professional with a bachelor of science degree in management communications

and human resources. Her experience includes HR leadership positions in manufacturing, specializing in strategy, recruitment, and employee relations. Pam's role will include supporting lowa businesses with workforce-related solutions.

For more information, contact Pam Lane at pamelal@iastate.edu or 515-567-0687.



# Manufacturing 4.0 Assessments **Exceed Expectations**

lowa manufacturers are eager to incorporate advanced technologies into their enterprises. That was clear by the overwhelming response to the Technology Investment Grant Program led by the Iowa Economic Development Authority (IEDA). The goal of the effort is to assist lowa manufacturers in becoming more competitive by adopting and leveraging new smart technologies.

manufacturers.

in October.

"The level of interest and excitement among companies was far beyond what we could ever have imagined," said Mike O'Donnell, CIRAS program director. "We underestimated how much a small contribution from the state could impact the readiness of manufacturers to embrace technology."

As part of its Manufacturing 4.0 plan, IEDA provided \$1.9 million

in technology investment grants to manufacturers with 3 to 75

employees. More than \$5 million in federal funds from the

American Rescue Plan Act was added, making more than \$7 million in grants available to small- and medium-sized

CIRAS supported the process through pre-application

assessments to help leaders make informed decisions on

their investments. Although original expectations were 50

to 100 on-site reviews, the CIRAS team conducted more

than 230 on-site assessments before that phase ended

"We assessed the entire business, spending time on their

Ensuring an **Effectively Trained** Workforce

Adopting and Utilizing Manufacturing

4.0 Technology

Accelerating Manufacturing Start-ups and Scale-ups

**MANUFACTURING** 4.0's FIVE **STRATEGIC PRIORITIES** 

**Improving** Supply Chain Linkages

Enabling Infrastructure for Digital **Technologies** 

factory floor and in the office to get a full understanding of strengths, weaknesses, and opportunities," said O'Donnell. "And then we'd return with a one-page summary that said, 'Here's what we think are your biggest opportunities for technology, and here are some things we think you need to work on."

More than 115 manufacturers were awarded grants to purchase specialized equipment ranging from advanced software to collaborative robots and much more. Clients who received grants have already reported an economic impact totaling nearly \$70 million.

Increasing technology adoption is one of five priorities in IEDA's strategic plan for the manufacturing industry. Other priorities focus on infrastructure for digital technologies, supply chain connectivity, workforce training programs, and help for start-ups and scale-ups. CIRAS is involved in these efforts, partnering with other institutions and agencies including Iowa community colleges, the Iowa Association of Business and Industry, the University of Northern Iowa, Professional Developers of Iowa, the Iowa Department of Education, and Iowa Workforce Development.

Access lowa's full plan at lowamfg.com.

> "As we move forward into the next stage, we're developing resources for people to use and partnerships that will be fruitful to manufacturers," O'Donnell said.

> O'Donnell noted that other states are launching similar programs. He regularly receives calls for information on lowa's plan for manufacturers.

"lowa is leading the nation in this effort, and that has been great to see."

For more information, contact Mike O'Donnell at 515-509-4379 or modonnll@iastate.edu.

# Continuous Improvement Vital to Company's Success

For companies new to continuous improvement (CI) or in the early stages of building a CI team, Tony Hogan has five pieces of advice: choose momentum over perfection; get comfortable in the gray; know what problems you're solving; bring everything back to business metrics; and make progress visible.

"Leave lots of space for learning," said Hogan, president and chief operating officer of World Class Industries (WCI). "Good news can wait for me. Give me

**WORLD CLASS** 

**INDUSTRIES** 

**FOUNDED: 1953** 

**EMPLOYEES: 250** 

global OEMs.

**OVERVIEW: Provides** 

integrated supply and

assembly solutions to

**IMPACT**: Leverages ILC

membership to improve

improvement manager.

business practices.

Recently hired first-

ever continuous

the bad news and then let's talk about how we're going to deal with it."

WCI provides contract assembly and kitting to global OEMs like John Deere, Caterpillar, and Bobcat, and it also works with small- to medium-sized manufacturers. Headquartered in Hiawatha, the

company has eight locations in the United States and one in Germany, as well as a workforce of about 250 people. And for Hogan, each one of those people matters and each contributes to the company's success.

WCI is a member of the Iowa Lean Consortium (ILC). Jen Michael, WCI's



A World Class Industries employee press fits parts together for a custom order.

CI manager, credits their ILC membership with providing resources to improve business practices and stay current with trends in supply chain and manufacturing.

"They really embody the foundation of Lean, which is respect for people," said Tracy Schuster, ILC program director. "They're very transparent about their lessons learned and how they can grow as a team. Everything they learn flows right back into their overall strategy."

For Hogan, CI is as essential to his company's productivity and success as traditional business functions like finance, accounting, and human resources. The CI team is a key part of discussions and collaborations.

"Like other members of the leadership team, they help us clarify the problem, determine the data we need to measure the problem, and help with strategies to move forward," Hogan said.

For more information, contact Tracy Schuster at tschust@iastate.edu or 515-715-0164.



## **Upcoming Events**

#### Supplier Scouting: Strategies to Prepare for the Next Disruption

#### March 23

Join us for this 1-hour webinar as we discuss supplier scouting and simple tips for implementing a program within your business to ensure future preparedness for the next disruption.

## Meet the Buyers: Eastern Iowa April 12

Join this in-person event in which businesses can network and develop relationships with state/ local and federal government agencies, prime contractors, and other businesses in the government contracting space.

# ■ Your I4.0 Journey: Tackling Workforce Shortages with Automation

#### April 13

This in-person event will help attendees understand the basics of industrial automation, including how it works and how to prepare.

#### Ivy Sales Innovation Summit: Ivy College of Business

#### May 17

This is the second Ivy Sales
Innovation Summit, a collaboration
between the Ivy College of
Business and Iowa State
University's Center for Industrial
Research and Service. Designed
for leaders that are seeking best
practices in sales, the event
features established sales leaders
from Iowa companies, nationally
recognized Iowa State faculty,
Principal CEO Dan Houston, and
other outstanding keynotes.

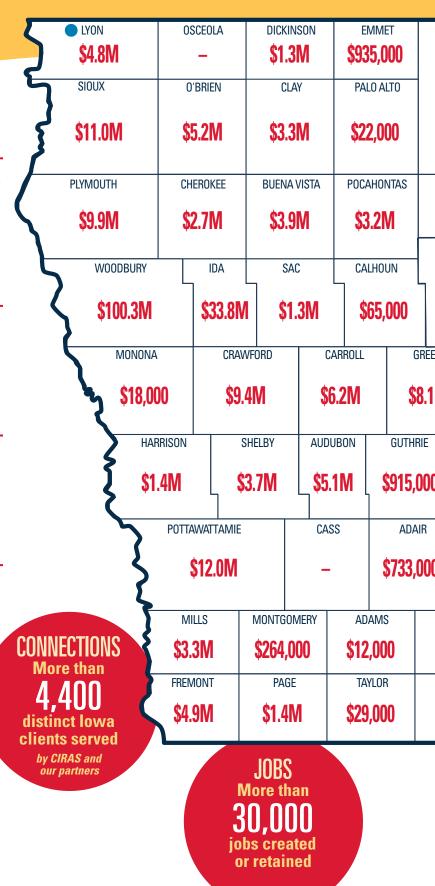


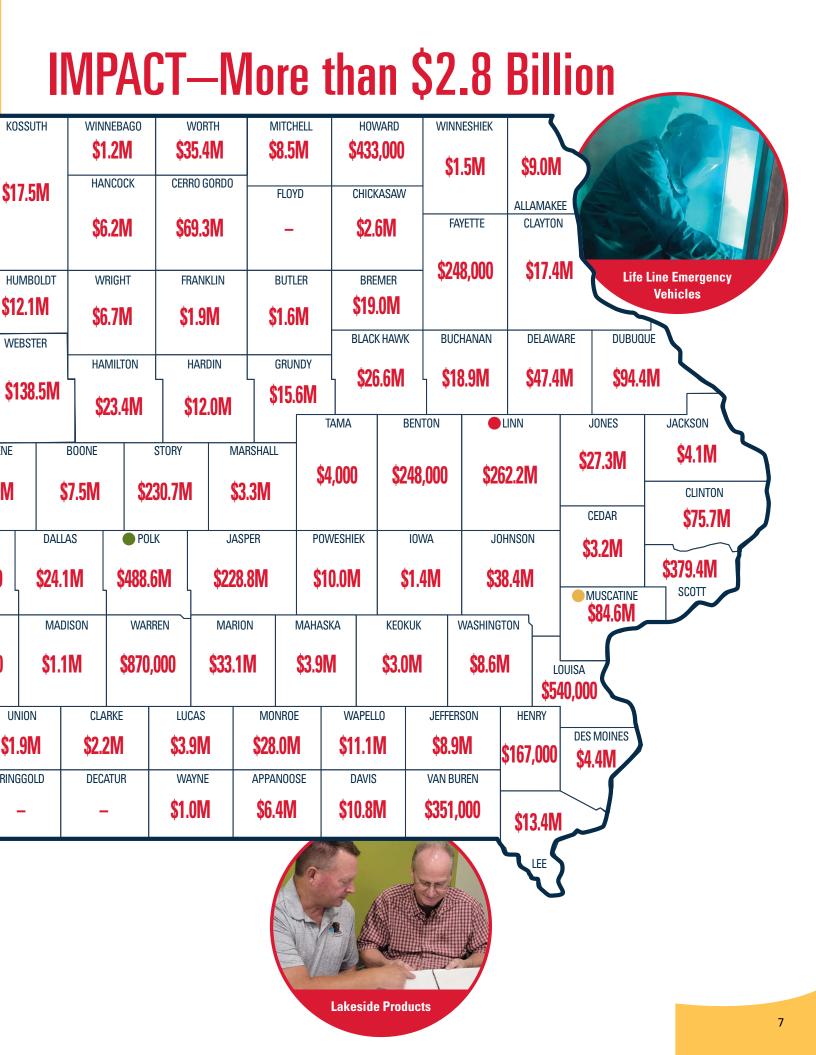
Visit www.ciras.iastate.edu/ events-workshops for details on these and other events.

# Over the Past Five Years: 2017—2021

- Dutchland Foods, a high-quality pastry producer in Lester, partnered with CIRAS to support their expansion efforts and quality programs. With insights from the CIRAS team, Dutchland was able to optimize their ingredient delivery system and increase sales. CEO Pete Van Wyhe stated, "We really appreciate the many programs that CIRAS provides to help companies like ourselves."
- Carver Pump from Muscatine, struggled for nearly three years to receive payment on a federal defense contract and reached out to CIRAS for help. CIRAS leveraged their relationships with the federal government to identify a point of contact that had authority to address the issue and process the payment.
- Polk City-based Lakeside Products manufactures pet goods for owners, breeders, veterinarian clinics, and more. With help from CIRAS and Lakeside's contract molder, the company reduced the cost of producing door panels for its pet doors by 25%. "We couldn't ask for better results than that," said owner Bruce Beguhn.
- Folience Inc., an employee-owned umbrella company in Cedar Rapids, received the National 2022 Employee-Owned Company of the Year award from the ESOP Association. CIRAS helped Sumner-based Life Line Emergency Vehicles, a Folience company since 2017, build technical and management skills. "With employee ownership, you're investing in the people and the community," said Daniel Goldstein, Folience president and CEO.

CIRAS responded to rapidly changing supply chain needs through hosting 5 workshops and conducting more than 50 supplier searches. Workshop partners included lowa State University faculty, University of Iowa faculty, and other public and private groups. One attendee stated, "[t]his is one of the best, most informative seminars I have been to in a while."





## For the Record

Federal grants and awards reinforce the efforts of CIRAS to achieve its goal to "enhance the performance of industry through applied research, education, and technical assistance." Here's a list of recent awards and how they're being used to help CIRAS in its work with lowa companies.

#### **CIRAS Support Comes From**

Manufacturing Extension Partnership (MEP) program helps companies grow by implementing new technical and management practices.

#### **Funding:**

U.S. Department of Commerce \$2.3M in FY23

■ APEX Accelerator assists companies in navigating the contracting processes for federal, state, and local governments.

#### **Funding:**

U.S. Department of Defense Small Business Programs \$693.000 in FY22

■ University Center (EDA) program develops workforce management plans for rural communities clustered near metropolitan areas.

#### **Funding:**

U.S. Department of Commerce \$138,000 in FY22

■ Technology Assistance Program (TAP) provides expertise to lowa businesses to reduce their risk of deploying technologies.

#### **Funding:**

Iowa Legislature, Economic Development Appropriations Bill \$1.4M in FY23

Disadvantaged Business Enterprise (DBE) Supportive Services program helps business enterprises find success in competing for and performing on Iowa DOT contracts.

#### **Funding:**

U.S. Department of Transportation \$152,000 in FY22

# Three Members Appointed to CIRAS Advisory Board



TONY HOGAN
President and COO
World Class Industries
Hiawatha, IA



MARGARET HORSFIELD
Strategy and Transformation Officer
ImOn Communications
Solon, IA



LUIS LEON
Owner and Principal Engineer
LT Leon Associates Inc.
Des Moines, IA

# Digital Lab Expands Partnerships

The CIRAS Digital Manufacturing Lab powered by Alliant Energy recently added two new partners, Pratum, an information security company, and ProPlanner, specialists in tools for complex assembly manufacturing.

"Partnerships are key to our efforts to de-risk technology adoption for lowa companies," said Chris Hill, CIRAS program director. "Our technology partners play a key part in our support by expanding the breadth and depth of technologies we can showcase."

As part of their partnership, ProPlanner moved next to the lab and integrated their workstations with lab-based equipment and devices. This gives lab visitors access to ProPlanner capabilities

including bar code scanners, torque tools, and other equipment that runs the company's Manufacturing Execution System (MES).

Customers rely on MES to determine the most efficient manufacturing and assembly process to create a specific unit.

"Modified products can be put into production in days, instead of weeks and months," explained Dave Sly, ProPlanner president. "We're excited to show lab visitors just how that's done."

The Digital Manufacturing Lab opened in September 2019 with substantial support from Alliant Energy and the Iowa Economic Development Authority. Current technologies include robots, wearable sensors, 3D printers, scanners, smart cameras, exoskeletons, and more.



The lab recently added a workstation and software that provides instructions for complex assembly and associated data collection.

"The combination of

education, consulting,

and collaboration

provides immense

benefits to the

companies."

A shared vision of utilizing technology to improve competitiveness of lowa manufacturers is the primary reason companies are partnering with the lab.

"The lab gives companies a chance to see how we can

help them use automation to improve their processes, and it does it in an environment that reduces any anxiety or fear of the unknown," said Brad Vorrie, Ramco Innovations application engineering manager.

Ramco donated a \$25,000 selective compliance articulated robot arm (SCARA) designed to automate tedious, repetitive tasks like assembly operations. The West Des Moines company has expanded their partnership to include collaboration on webinars and in-person seminars.

Experimenting in a low-risk environment has led to an investment in technology by several companies. Iowa Customs, a provider of aftermarket customized truck accessories, credits the lab with helping them "fast track projects" by demonstrating the possibilities of robotics and hand-held scanning technology.

While the equipment and space matter, the guidance of CIRAS staff is what creates lasting change.

"Since we started this partnership over three years ago, I have seen growth in the types of technology demonstrated and the complexity of problems solved by the CIRAS Industry 4.0 staff," said Nick Peterson, strategic partnerships manager at Alliant. "The combination of education, consulting, and collaboration provides immense benefits to the companies who are navigating complex and, at times, costly decisions about their technology investments."

For more information, contact Jake Behrens at jbehrens@iastate.edu or 515-815-5003.

# Cleaning for Hope Finds Success While Helping Others

Starting a business from scratch isn't easy, but with hard work and determination, Lily Okech made it happen.

Okech is a refugee from Uganda who arrived in the United States in 2005 as a ninth-grader without the ability to read or speak English. She soon learned to do both. In 2018 Okech started Cleaning for Hope, a Des Moines-based commercial cleaning service.

"I was a single mother with four boys to feed," Okech said. "I was cleaning a local church and when people saw my good work, they asked me to clean their houses. Within a year, I had more clients than I could handle so I started hiring

people." Okech now has six employees. Today, Cleaning for Hope specializes in commercial cleaning. Their growing client list includes the Iowa Department of Transportation (IDOT), which recently awarded the company a \$49,500 contract. Okech credits the CIRAS APEX Accelerator with positioning her to successfully compete for the award as well as future government work.

Kelly Freel, CIRAS government contracting specialist, helped Okech with her System for Awards Management (SAM) registration, which is required for all entities interested in doing business with the federal government. Freel then helped Okech register with the Small Business Administration as a woman-owned and disadvantaged business, and she showed her how to research online bid opportunities.

"The company received notification of a bid opportunity, and asked for help with the bid forms," said Freel. "I provided education on the bid process, and Lily was awarded the first government contract she bid on. I was elated to hear the good news."

Part of Okech's motivation in seeking help from CIRAS to grow her business stems from her commitment to her community. Okech hires refugees, single moms, and others in need of skills training and jobs. She also collects unwanted items like clothing and furnishings from her clients and distributes them to people in need. Her story and her journey to becoming an American citizen in 2014 are chronicled in a book she wrote that will be released in April 2023.

"When I first started cleaning, it was just for me and my boys," said Okech. "But when I saw what cleaning did for my boys and me, it led me to start a cleaning business that will not only help my family but will help the community as well. That has been my passion since I came to America. And I like working with people who have a passion to succeed, too. And that's what I found in Kelly. I don't think I would have found this success without her."

For more information, contact Kelly Freel, 515-620-6265 or kmfreel@iastate.edu.



Lily Okech, owner of Cleaning for Hope, turned a parttime job into a thriving business.



## **Dubuque Screw Products Gains Space with New Process Flow**

Iowa State sophomore engineering student and CIRAS intern Cassie Larsen was ready to take on a new challenge

> an opportunity with **Dubuque Screw** Products (DSP). The northeast Iowa business

when she learned about

needed a new shop layout for its expanding facility.

"The company had a few ideas, but they were open to anything that

would maximize factory throughput," said Larsen. "That sort of openness was appealing but also challenging because there were several directions I could go."

Cassie Larsen,

CIRAS student employee.

Using Flow Planner software, Larsen created different layouts for plant leaders to consider. Each layout used process maps that simulated the way products would flow through the plant. Workstations could be moved around to help develop a plan for maximum efficiency.



Larsen's work was supervised by CIRAS project manager Kirk Haaland. He made the initial contact with the company, showed Larson how to use the software, and provided guidance as she moved through the process.

DSP leadership was pleased with Larsen's work.

"We are confident we have a plan that gives us the best balance of current needs and future growth opportunities," said Chris Hohmann, production manager at DSP. "We believe implementing this plan gives us the opportunity to gain an additional 50% market share and increase the efficiencies of our current processes by 10%."

Established in 1946, DSP is a precision machine shop specializing in small- to medium-sized round and prismatic components of various levels of

complexity. The precision machining. company previously **IMPACT**: Opportunity to worked with CIRAS gain 50% market share on a Manufacturing and increase current processes by 10%. 4.0 grant, which resulted in the purchase of a video measuring microscope to inspect components with complex features.

**OVERVIEW:** World-class

For Larsen, working on the project has helped solidify her career plans.

"Before taking on this role, I wasn't exactly sure what I wanted to do with my industrial engineering major," she said. "But this project and others I have done for CIRAS made me realize that I want to work in some aspect of manufacturing."

For more information, contact Kirk Haaland at khaaland@iastate.edu or 515-520-7623.

#### **CIRAS CONTACT INFORMATION**



Locate your county to find your best introduction to CIRAS.

Your strategic advisor can help connect you with the expertise you need for your business.



All staff information can be found at www.ciras.iastate.edu/staff-directory.

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**WORKFORCE SOLUTIONS** 

## **Tell Your Story**

"We are a great place to work"

This is one of the most common things we hear when visiting companies throughout lowa. Most of the time, they are right. Great culture, supportive leadership, strong pay and benefits—yet they still have trouble attracting employees.

Why? Every employer that is looking for people says, "We are a great place to work." "We work long hours with a bad culture and no path for growth" doesn't make a great advertisement. Here are some successful practices we've seen that help great places stand out:

- Let your employees do the talking. Encourage people on your team to write reviews on Google Maps, Facebook, Glassdoor, Indeed, and others. Have a contest for employees to make a short video on why they work at your business, and post the winners to your career webpage and social media.
- Build your digital presence. Your website and social media should treat potential employees like you treat customers. Use language that responds to what they want, add photos of real people working on your shop floor, and clearly identify the jobs available, pay scales, and benefits.
- Collect the badges. Use external standards to prove how great you are. Programs like Iowa Economic Development Authority's Best Place for Working Parents, a nonprofit like Best Places to Work for, or the U.S. Department of Commerce's Job Quality Framework show people that others objectively confirm that you do what you say.
- Show Off. In Iowa, we're humble. But humble will not win the war for talent. If you are great, make sure everybody knows. Strong leaders? The Iowa Association of Business and Industry honors Manufacturing Legends. Great factory? Consider IndustryWeek Best Plants award. Forward-thinking technology? The Technology Association of Iowa honors leaders with their Prometheus Awards. People want to work for companies that others recognize.

Many of the above items will require you to step out of your comfort zone and take bold strategic steps. As the competition for people intensifies, leading companies will need to be different to win.

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