



Enhance Customer Value with Augmented Reality

A global supplier of vending equipment and services turned to CIRAS last year for advice on maintaining quality customer support during the pandemic. CIRAS suggested implementing an augmented reality (AR) tool provided by TeamViewer. The solution proved so effective the company plans to use it after pandemic concerns subside.

“One of our biggest concerns early in the pandemic was how to service machines for customers who didn’t want or couldn’t have visitors,” said Paul Ihn, vice president of engineering and new product development at The Wittern Group. CIRAS project manager, Shankar Srinivasan “told us about TeamViewer,

and we could see its potential for getting us through the lockdown. But a year later it’s still a regular tool in our toolbox. We continue using it—even expanding its original uses—because it works. It reduces costly service calls, helps us respond more quickly to customers, and saves us and our customers money.”

The Wittern Group, located in Clive, is a third-generation, family-owned company that manufactures, sells, and services automated vending equipment. Their machines are used to dispense products as diverse as fresh seafood, bottled beverages, medical supplies, phone chargers, and more.

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“We get 250 to 300 calls daily for parts and service, which isn’t unusual given the number of machines we have in the field,” said Ihn. “We used to send someone out to handle each call, but now we use TeamViewer to provide real-time technical support for many issues.”

CIRAS has previously used TeamViewer successfully for various remote-access applications. With TeamViewer’s recent acquisition of another company, they began offering a new assisted reality tool—TeamViewer Assist AR.

“We knew there would be solid uses for it in the COVID environment, and we latched onto it as a potential client solution pretty quickly,” said CIRAS project manager Jake Behrens.

Here’s how the technology works: A customer known as a remote user downloads free software on a mobile device they already own, like a smartphone or tablet. The remote user provides a unique code to a member of the Wittern team known as an expert user. The expert user, who has the full TeamViewer software on their laptop or desktop computer, uses the code to create a two-way video and audio call. Once the connection is established, the two parties can navigate through various tasks using advanced features of the software like live-tracked on-screen 3D annotations and in-app file sharing.

“Service technicians still go out when there’s a high-level problem like changing a power box,” Ihn said. “But there are many other issues that can be resolved just by enabling us to see what the customer is seeing and then walking them through the solution.”

Using TeamViewer has cut time and travel costs for the company. And by Ihn’s estimation, it has saved hundreds of thousands of dollars in potential repair costs on machines under warranty.

“Let’s say a particular machine has a control board issue and it continually goes to sleep,” Ihn said. “We might

AT A GLANCE

The Wittern Group

FOUNDED: 1931

OVERVIEW: Based in Des Moines, Iowa, The Wittern Group is a leading global dispensing solutions provider, offering the industry’s most comprehensive range of integrated, full-line automated dispensing equipment, services, and technology.

EMPLOYEES: 200

IMPACT: Substantial savings on potential repair costs for machines under warranty as well as time and travel costs to service machines.

FOR MORE: www.wittern.com

have 1,200 machines in the field with that particular problem. Now, out of those 1,200 cases, one-third of our customers might be comfortable without live instructions. But the remaining 800 to 1,000 will say they’re uncomfortable making the repair on their own.”

“If the machine is under warranty, we absorb the cost to fix it, which is between \$250 and \$350 per call. But if we can successfully show them what to do using TeamViewer, we can greatly reduce that expense.”

Sessions between users are recorded, and Wittern has built a library of those recordings to help their team members understand some of the problems customers encounter. They also use the technology as a training tool to familiarize their workers with new or new-to-them equipment.

The Wittern Group has a long history of working with CIRAS. And while those interactions have been positive, Ihn is especially enthusiastic about their latest collaboration.

“We wouldn’t have known about TeamViewer or its uses for our company without CIRAS,” Ihn said. “They’ve given us a tool that we use every day to enhance the comfort level of our customers and reduce what we spend on labor. It’s truly been a win-win for us.”

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

On the cover: AR technology enables Wittern to virtually interact with a customer.

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

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Fox River Mills has recently added 30 new jobs to its Osage production facility.

Sales Grow After Rethinking Supply Chain Costs

Fox River produces high-performance socks at a plant in Osage. The company has increased sales, invested in new equipment, and added jobs since implementing a new sales approach based on a Total Cost of Ownership (TCO) model.

The Osage manufacturer has seen revenues increase by \$1.5 million since updating their sales approach with a TCO model developed in partnership with CIRAS.

Fox River has been a leading producer of outdoor, sport, and lifestyle performance socks since 1900. Though sales of their products were impacted at the start of the COVID pandemic, company leaders were convinced that the right tool could help them reverse the trend and support efforts to grow revenue.

"They needed something to illustrate to their clients not only the direct cost per unit but also the other expenses such as freight, duty, purchasing, and indirect costs," said Marc Schneider, CIRAS project manager. "That's where a customized TCO model comes in. It gathers and compares all relevant data associated with getting or owning a product from suppliers in different global locations. And that helps customers make a more informed decision about the products they buy."

"Now retail buying teams can see the true costs of sourcing cheaper goods with longer supply chains versus spending a little more up front to avoid lost sales and markdown expenses."
— Brad Ballentine

CIRAS held a series of online meetings with Fox River to gather information in five categories ranging from actual product price to transportation fees to inventory

and warehousing costs. Factors unique to overseas goods such as duty taxes and import fees, rate of labor cost increases, and changes in currency rates, as well as supply chain risks, were also considered.

"The TCO model adds up all the costs associated with each of these factors and then does a side-by-side comparison with other suppliers," Schneider said. "Typically, we find that the purchase price per unit might be lower for items sourced from low-cost countries, but the TCO per unit for a domestically sourced product is similar to—and sometimes even lower than—goods from an overseas supplier."

After adapting the TCO model to the unique needs of Fox River, CIRAS worked with the company as they successfully piloted a presentation using the model. Fox River continues to use the TCO approach.

"The TCO model that was built by the CIRAS team allows for clear buying

decisions," said Fox River CEO Brad Ballentine. "Now retail buying teams can see the true costs of sourcing cheaper goods with longer supply chains versus spending a little more up front to avoid lost sales and markdown expenses."

"We look forward to further implementation of the TCO model with our customers and the expansion of the measurements to include environmental impact," Ballentine continued. "As we highlight the savings associated with shorter lead times, we are seeing a correlation to sustainability efforts. Shorter supply chains help reduce waste associated with overproduction along with reduced transportation emissions associated with long supply chains."

Additional sales revenue has enabled Fox River to invest more than \$400,000 in plant equipment and information systems. The company has also added more than 30 new jobs.

AT A GLANCE

Fox River

FOUNDED: 1900

OVERVIEW: Leading producer of outdoor, sport, and lifestyle performance socks.

EMPLOYES: 200

IMPACT: \$1.5 million increased sales, \$400,000 invested in plant equipment, and more than 30 new jobs.

FOR MORE: www.foxsox.com

➤ For more information, contact Marc Schneider at maschn@iastate.edu or 563-221-1596.



Left: An On With Life client uses a 3D printed assistive device. Right: Fishing pole mounts have also been created with 3D printing.

3D Printing Devices Ease Everyday Challenges

An Ankeny-based rehabilitation facility has partnered with CIRAS to develop a cost-effective solution to an everyday challenge faced by some of the people it serves.

On With Life (OWL) works with people who have sustained a traumatic brain injury, stroke, concussion, or other neurological disease. Many of the people it serves use wheelchairs and have impaired use of their hands due to their injuries. OWL staff were searching for ways people could safely heat food on a stovetop, even when they couldn't see over the sides of the pot they were using. They found their answer at a CIRAS virtual tour of Iowa State's Digital Manufacturing Lab. The tour showcased the use of 3D printing to create customized pieces for various business needs.

"What CIRAS was doing for businesses seemed analogous to the work of developing custom living aids," said Joe Walters, OWL director of analytics. "The challenge was figuring out how a medical facility like ours could explore the possibilities of the technology and bring it in-house, assuming it made sense for us."

Chris Hill, director of the CIRAS Technology Assistance Program, worked with OWL to create a 3D printed mirror assembly that could be quickly inserted into a mount on a wheelchair. The mirror enables hands-free monitoring so the user can safely heat food on their own. Iowa State student and CIRAS intern Cassie Swacker, who is an OWL volunteer, and Jake Behrens, a CIRAS project manager, provided design and printing assistance.

"A strength of 3D printing is the ability to quickly and cost effectively make a high mix of parts. Each OWL client can have unique needs, so being able to address them with 3D printed parts will change lives," said Hill.

"What CIRAS was doing for businesses seemed analogous to the work of developing custom living aids. The challenge was figuring out how a medical facility like ours could explore the possibilities of the technology and bring it in-house, assuming it made sense for us."

— Joe Walters

The original scope of the project was expanded during the design process when other applications became apparent. For example, the design team discovered that by splitting the rod, the mirror could be used to search for dropped items or to look at the contents on the upper shelves of cupboards.

The success of the mirror device led to exploring other ideas, including a cupholder that can be mounted to wheelchairs.

"Cupholders that can hold the larger water jugs our persons use aren't available for purchase," said Walters. "In asking CIRAS for assistance, they proposed developing an adjustable cupholder that can be used as a standard holder on any wheelchair."

The experience OWL has had with 3D printing has been so positive that they decided to raise funds to purchase their own equipment. Walters and Hill recently collaborated on a presentation showcasing the use of 3D technology in developing customized assistive devices for people with disabilities.

“It’s been inspiring to work with the CIRAS team,” Walters said. “They not only brought our initial idea from concept to device, but they have been generous with sharing their time and expertise. Adopting a new technology requires a learning curve, and they have been there as we progressed through the process.”

The project has also given Swacker a glimpse of the career path she hopes to follow after her Iowa State graduation. Swacker is a sophomore majoring in mechanical engineering with a biomedical engineering minor.

“This project has given me the chance to learn about and experiment with a variety of engineering technologies, and to get experience with following the design process,” she said. “It’s easy to get caught up in classes and lose sight of what I’m working toward. Working on this project has helped me look forward to my remaining years of study and my future career as an engineer.”

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

AT A GLANCE

On With Life

FOUNDED: 1981

OVERVIEW: Provider of neuro rehabilitation services.

EMPLOYEES: 279

IMPACT: Ability to customize living aids for each person; improved quality of life.

FOR MORE INFORMATION:
www.onwithlife.org

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 some recent awards and how they’re being used to help CIRAS in its work with Iowa companies.

More than \$745,000 has been received from the U.S. Defense Logistics Agency (DLA) renewing CIRAS as Iowa’s Procurement Technical Assistance Center (PTAC). The money is matched with CIRAS funds to provide more than \$1.2 million of one-to-one counseling to Iowa businesses that want to compete for government contracts. The funds also enable PTAC to host training, educational, and networking sessions to help companies build relationships with agencies and prime contractors.

The PTAC program is transitioning from the DLA to the Department of Defense Small Business Programs, a move that will not impact current funding.

CIRAS has received its annual award from the National Institute for Standards and Technology (NIST) Manufacturing Extension Partnership (MEP). As part of a long-term agreement, \$2.2 million of federal money is matched with CIRAS funds to create an MEP program budget of \$4.4 million. CIRAS also won a competitive award in the amount of \$920,000 to improve diversity in manufacturing by creating a structure for an internship program that will build a pipeline of future employees for MEP centers and small- to medium-sized manufacturers.

Last year, CIRAS received \$1.4 million through the Iowa Legislature’s Economic Development Appropriations Bill to fund our Technology Assistance Program (TAP), which works with businesses to lessen the risk of adopting new technologies. Support includes educational events, connections with Iowa State faculty and industry leaders, workshops, and direct one-on-one project assistance. Funding is also used to support the Digital Manufacturing (Industry 4.0) Lab to showcase various technologies to companies.

The Iowa Department of Transportation (DOT) awarded CIRAS \$133,000 to help prepare Disadvantaged Business Enterprises (DBEs) compete for highway construction projects and other DOT-funded work.

The grant dovetails with government contracting services available through PTAC. The DBE Support Services program can assist DBEs with all aspects of their business such as marketing, website development, financial accounting processes, estimating, and bidding to name a few. The PTAC program will supplement those efforts by assisting the DBEs with understanding the entire government procurement process and helping them pursue other government work aside from the DOT.

Finally, CIRAS has received another \$138,000 installment of a grant from the federal Economic Development Administration (EDA) to help rural communities and businesses explore new approaches to systemic workforce shortages. This innovative approach to workforce planning, known as the Iowa Workforce Innovation Network, is matched with CIRAS funds and other grants for a program budget of \$276,000. Additionally, the CARES Act is providing another \$150,000 for workforce-related programs to assist with pandemic recovery.

AT A GLANCE

RJ Thomas Manufacturing, Inc.

FOUNDED: 1959

OVERVIEW: Maker of the Pilot Rock brand of benches, picnic tables, trash receptacles, bike racks, charcoal grills, campfire rings, and bear-proof products.

EMPLOYEES: 92

IMPACT: Expanded list of potential clients and learned new cybersecurity certification rules.

FOR MORE: www.pilotrock.com

Manufacturer Gets Help Navigating New Bid Process

A Cherokee manufacturer has utilized their ongoing relationship with CIRAS to understand a new bid process, expand its list of potential customers, and learn how to certify its cybersecurity protocols.

Bob Simonsen, marketing manager at RJ Thomas Manufacturing, recently contacted CIRAS Procurement Technical Assistance Center (PTAC) government contracting specialist Mary Zimmerman for assistance with a federal bid invitation. The government was transitioning to a new website for bids, and some companies, like RJ Thomas Manufacturing, weren't getting notified.

"Mary used her sources to contact the issuing office," said Simonsen. "We were able to respond to the bid, and though we didn't get the award, we feel better positioned for the next opportunity."

RJ Thomas Manufacturing builds and sells park equipment including benches, picnic tables, charcoal grills, bike racks, trash bins, and more. Zimmerman has

provided leads for them to increase their work with the federal government.

"I gave them a list of other agencies to contact like the National Parks system," said Zimmerman. "Generally, the first step is to review the website. Some sites are user friendly, but some require a bit more work to drill down to find the opportunities and potential contacts. That's something I can help with."

The company also recently took advantage of a webinar detailing the process to certify cybersecurity protocols. The federal government now requires Cybersecurity Capability

Maturity Model (CCMM) certification for all contractors that want to work with them.

"Our products are currently considered off-the-shelf items, so certification

"Our products are currently considered off-the-shelf items, so certification doesn't yet apply to us. But it was helpful to learn about something that will probably trickle down. When that happens, we'll be prepared, thanks to CIRAS."

— Bob Simonsen

doesn't yet apply to us," said Simonsen. "But it was helpful to learn about something that will probably trickle down. When that happens, we'll be prepared, thanks to CIRAS."

Interactions between RJ Thomas Manufacturing and CIRAS have grown beyond government bidding assistance. Last year, Simonsen and another employee participated in a series of webinars on web design and evaluation. The company's human resources department regularly checks the CIRAS website for pertinent webinars and updated COVID information. Simonsen said the company's production department often reaches out to CIRAS as well.

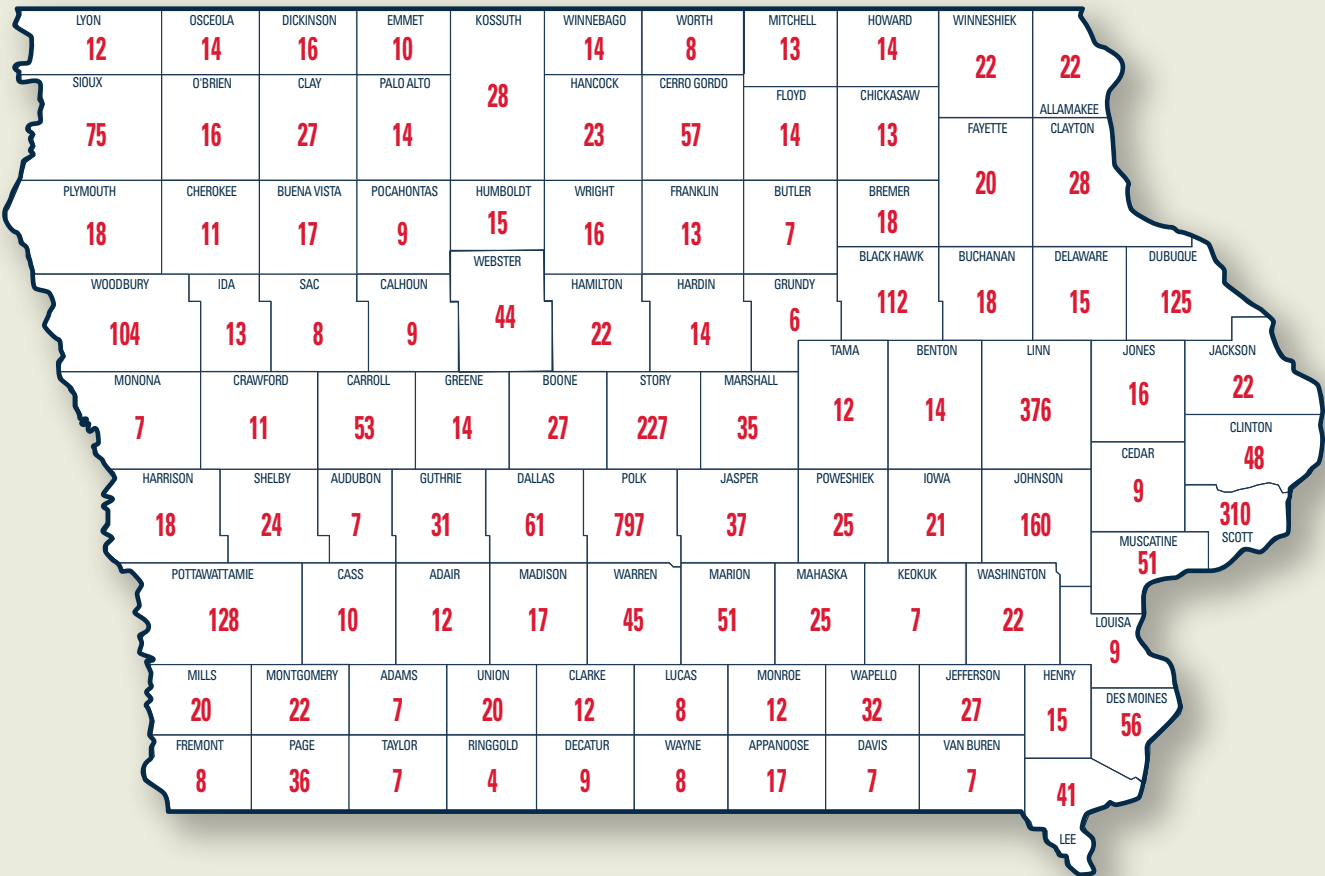
➤ For more information on assistance with the government contracting process, contact Mary Zimmerman at maryz@iastate.edu or 515-450-1278.

New leads and a new understanding of the government bid process are opening doors for RJ Thomas Manufacturing, maker of park equipment and more.



CONNECTIONS: More than 4,100 Distinct Clients Served

Distinct Clients Served, 2016–2020



When the pandemic hit Iowa in the spring of 2020, the need for industry to have access to rapidly changing information grew exponentially. CIRAS responded with a variety of virtual roundtables, webinars, and training focused on helping companies filter the noise and make informed business decisions.

More than 400 online events attended by more than 1,200 people were offered in the final nine months of 2020. Recordings for more than 60 of these sessions remain available online at www.ciras.iastate.edu/covid-19-webinar-library.

Many of the sessions focused on interpreting expert guidance and developing operational strategies for issues such as contact tracing, safety guidance, and vaccination plans. Others shifted the conversation to proactive business options in the face of uncertainty. From restoring

Weekly COVID-19 Roundtable
March 2nd, 2021



<https://www.ciras.iastate.edu/covid-19/>

CIRAS held more than 400 online events in 2020.

revenue through federal and state emergency response efforts to reshoring manufacturing, CIRAS, our partners, and experts around Iowa and the nation helped Iowa manufacturers survive and thrive in a postpandemic world.

In parallel to emerging COVID education, CIRAS continued providing our full suite of services to manufacturers throughout

Iowa. In 2020 alone, more than 1,600 businesses from 93 Iowa counties received assistance on projects or attended educational workshops from CIRAS staff or partners.

For more information, contact Marc Schneider at maschn@iastate.edu or 563-221-1596.

Economic Imp

THREADS, a woman-owned company located in Algona, creates unique and custom screen printing, embroidery, and custom-cut products for both the commercial and government markets. Tricia Garry, owner, said CIRAS helped make her accountable through their government contracting counseling, mentoring, and “reassurance that she was on the right track.” Tricia said that even with the pandemic, 2021 has been the best in the 10 years of her business. She gives much of the credit to CIRAS, stating, “I don’t think I could have made it through without them.”



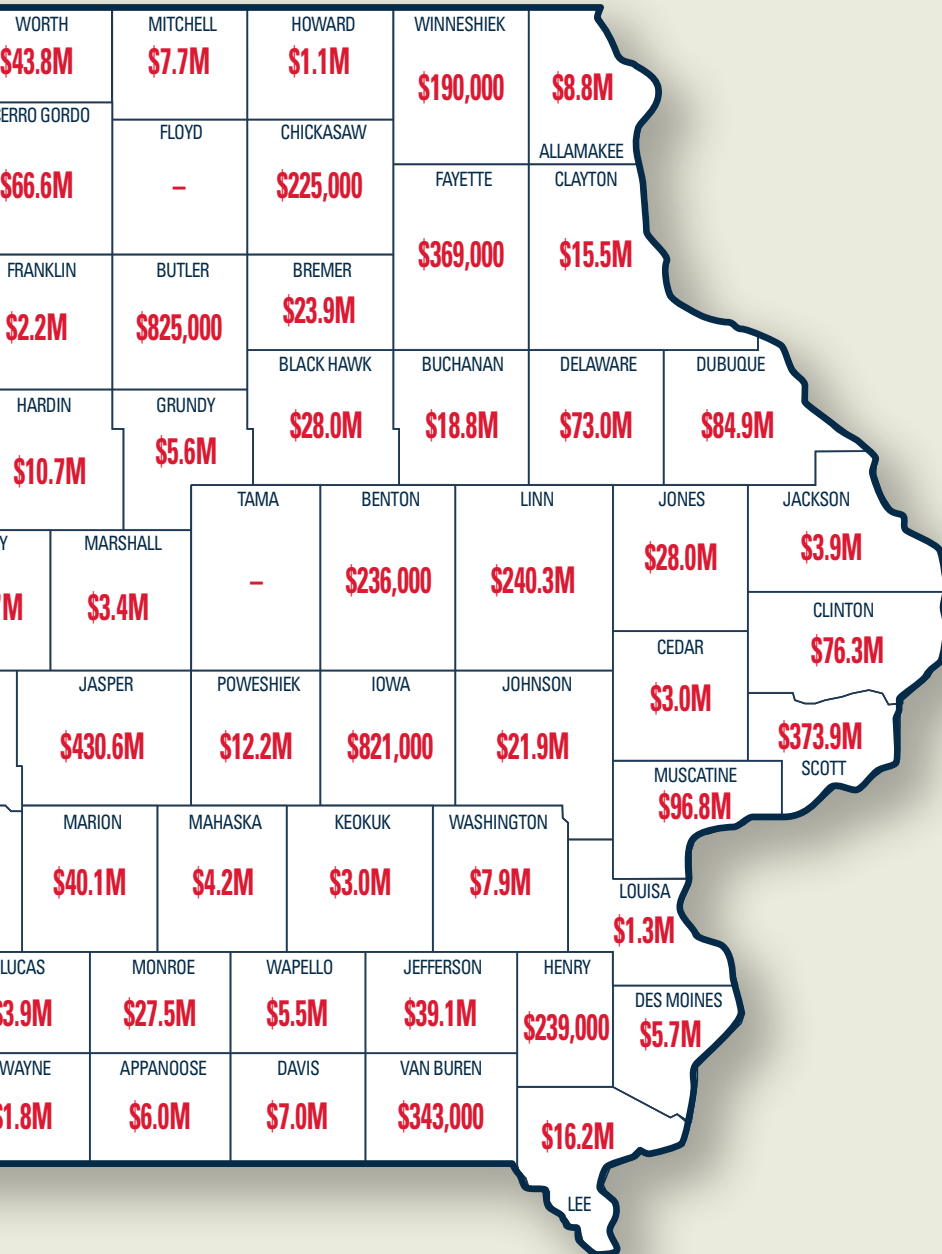
The **IOWA SUSTAINABLE BUSINESS FORUM (ISBF)** helps Iowa businesses share state-specific proven best practices in environmental and social responsibility. Founded in 2014, the ISBF now consists of more than 40 organizational members, led by Barilla, Casey’s, CIRAS, Frontier Co-op, Kum & Go, and West Liberty Foods. “ISBF presents a wonderful platform for sustainably-minded companies across Iowa to come together and share their unique experiences and insight regarding environmental and social business topics,” said Alicia Simmons, sustainability manager at Frontier Co-op. “It provides us all the opportunity to openly and honestly share our thoughts, learn from one another, and ultimately help to expand opportunities in our state.”

LYON	OSCEOLA	DICKINSON	EMMET	KOSSUTH	WINNEBAGO
\$4.8M	—	\$82,000	\$577,000	\$19.2M	\$2.7M
SIoux	O'BRIEN	CLAY	PALO ALTO		HANCOCK
\$11.4M	\$4.6M	\$2.1M	\$95,000	\$5.4M	
PLYMOUTH	CHEROKEE	BUENA VISTA	POCAHONTAS	HUMBOLDT	WRIGHT
\$4.0M	\$514,000	\$3.9M	\$2.6M	\$12.7M	\$11.2M
WOODBURY	IDA	SAC	CALHOUN	WEBSTER	HAMILTON
\$85.7M	\$36.8M	\$1.2M	\$60,000	\$151.5M	\$26.9M
MONONA	CRAWFORD	CARROLL	GREENE	BOONE	STOR
\$19,000	\$9.8M	\$4.8M	\$8.7M	\$10.6M	\$239.7
HARRISON	SHELBY	AUDUBON	GUTHRIE	DALLAS	POLK
\$1.1M	\$1.7M	\$6.1M	\$1.1M	\$21.9M	\$439.5M
POTTAWATTAMIE	CASS	ADAIR	MADISON	WARREN	
\$3.7M	—	\$733,000	\$2.1M	\$6.4M	
MILLS	MONTGOMERY	ADAMS	UNION	CLARKE	
\$2.1M	\$314,000	—	\$1.9M	\$2.4M	
FREMONT	PAGE	TAYLOR	RINGGOLD	DECATUR	
\$4.6M	\$949,000	\$28,000	—	\$25,000	

ORIGINAL SAW, an industry leader in radial saw production, needed assistance in improving their human resources capabilities. CIRAS helped the Britt-based company update documentation to improve and clarify accountability, resulting in a financial impact to the business of more than \$40,000.

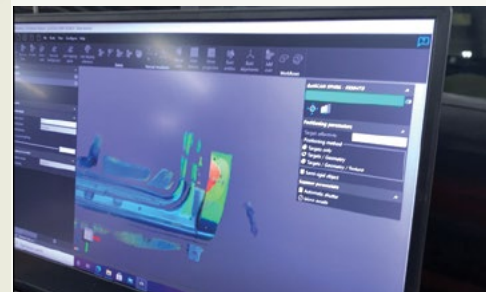
than \$3 Billion

act, 2016–2020



BIRMINGHAM MANUFACTURING, a small manufacturer of condensate evaporating pans located in Birmingham, sought assistance in improving their digital marketing. CIRAS helped the company implement a new sustainable website structure, marketing strategies, and e-commerce capabilities. “Guiding me through the process was the thing I appreciated the most. Not only are they great at what they do, but they want me to understand what needs to be done and how to do it,” said company president Michael Nunn.

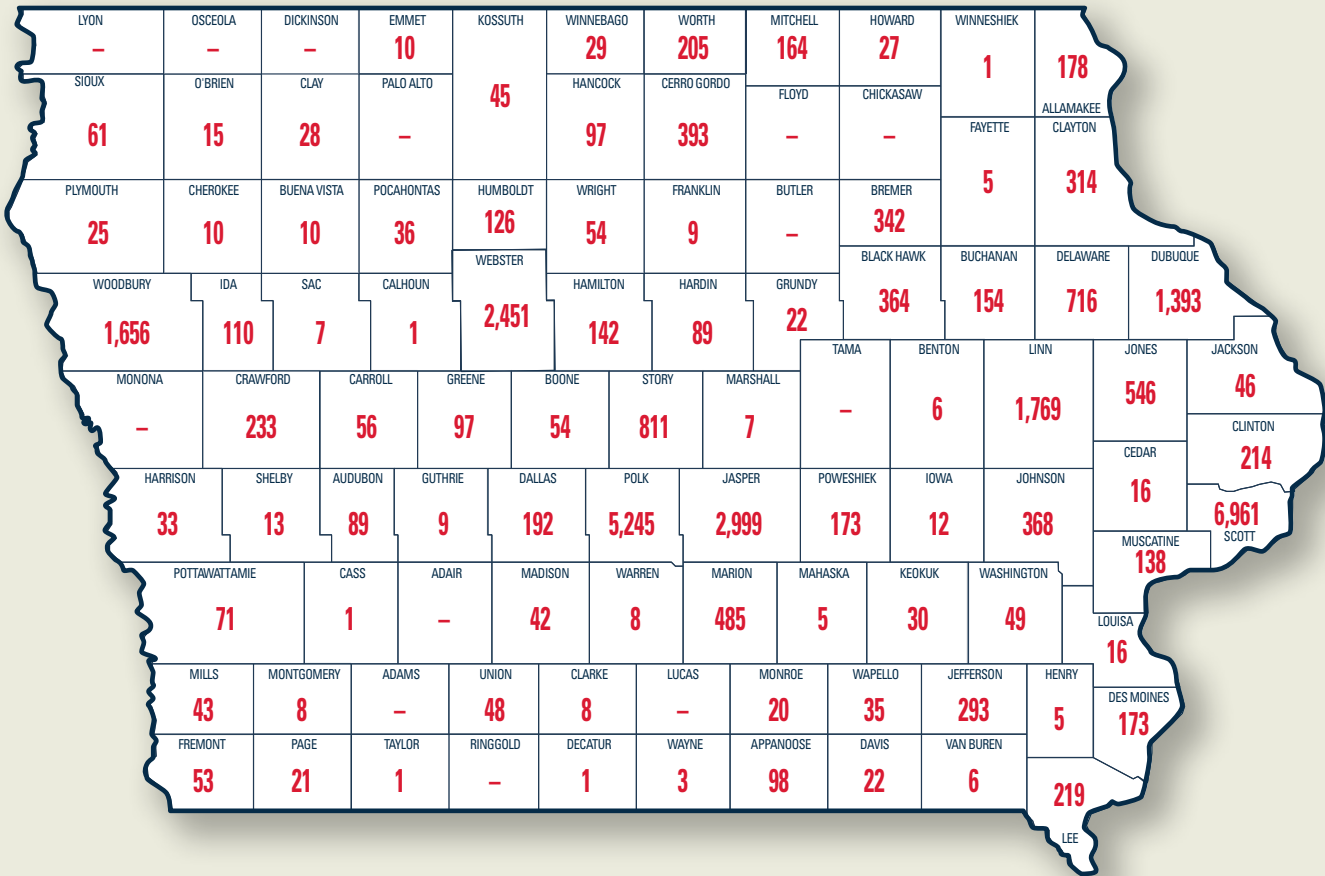
CIRAS, Northeast Iowa Community College, and faculty from the Iowa State Department of Statistics teamed to provide training in reliability engineering to **TRIMARK CORPORATION**, a New Hampton-based manufacturer of door access systems. An improved ability to analyze products under different operating conditions will help create or retain sales of up to \$200,000 per year.



Ames-based **ORIGINAL APPEARANCE MANUFACTURING (OAM)** produces aftermarket automotive products. They recently implemented Industry 4.0 scanning and 3D printing technologies to gain speed to market and product development efficiencies. OAM owner Zach Kowalik said, “We are now planning to release more than five times the number of new products within the same timeframe. These technologies allow us to be a first-to-market innovator of high-precision automotive products. CIRAS really helped us get moving in the right direction.”

JOBS: More than 31,000 Added or Retained

Jobs Added or Retained, 2016–2020



The Iowa Economic Development Authority's 2020 Manufacturing 4.0 plan identified five key strategies focused on preparing Iowa's manufacturers for the fourth industrial revolution, in which the physical and digital elements of factories become fully integrated. As global manufacturing transforms, it is critical that manufacturers apply technology to fill existing workforce gaps and create new, higher-skilled jobs for Iowans.

As part of the plan to improve adopting and utilizing Manufacturing 4.0 technology, the state created the *Manufacturing 4.0 Technology Investment Grant Program*. CIRAS is providing no-cost assessments to all applicants to help them make informed investment decisions to improve their chance of success.

Independence-based **PRIORITY CUSTOM MACHINING** was one of more than 150



Priority Custom Machining was able to identify new opportunities as a result of an industry 4.0 assessment through CIRAS at Iowa State.

Iowa manufacturers that reached out for an assessment. The company, which specializes in high-precision metal cutting, was able to identify opportunities to implement new technologies. CEO Robert Hearn stated, "The assessment helped me identify opportunities to grow my business and reaffirmed CIRAS as a valuable resource."

From implementing technologies to retaining jobs or accessing new markets

to grow jobs, CIRAS provides a variety of services to help manufacturers thrive while providing future-ready jobs. In 2020, more than 7,400 jobs were created or retained because of the assistance companies received from CIRAS and its partners.

For more information, contact Shankar Srinivasan at srigshan@iastate.edu or 515-290-6702.

Company Gets VA Certification in Record Time

An Anamosa company is better positioned to compete for government work after connecting with Julie Fagle, a government contracting specialist with the CIRAS Procurement Technical Assistance Center (PTAC).

Gregory Husmann, of Husmann Development Inc., reached out to Fagle late last spring for assistance with a bid on a new Veteran Affairs (VA) clinic. Husmann is a veteran and his company, which remodels and develops commercial real estate, can compete for VA and Federal Aviation Administration (FAA) set-aside contracting opportunities. "First, he needed to be certified as a Veteran Owned Service Business (VOSB), and that's a process that can take several months," Fagle said.

"There are lots of rules and terms and paperwork," she continued. "It's not uncommon to wait three to six months for certification, but we were able to get it done more quickly than that. Now they're set and they can work directly with the VA on any project that's a good fit for them."

Julie Fagle and her fellow PTAC counselors are approved by the VA to aid veterans who are seeking VOSB certification. She also has connections with government personnel that she leverages whenever she works with a client on certification. Her expertise and connections helped expedite Husmann's certification.

"Without her help, I don't think we would've been certified as quickly as we were," said Carol Husmann. "She was professional and thorough, and she really helped us understand what we needed to complete and provide."

Though Husmann was not awarded the clinic bid, the company is confident that their new standing as a VOSB will open the door to new jobs in the future.

For more information, contact Julie Fagle at jafagle@iastate.edu or 319-310-8612.

■ Inventory Management 101 Workshop

March 9, 2022

In-person event in Davenport, IA, to provide attendees the basic understanding of measuring and controlling inventory.

■ CIRAS Digital Manufacturing Lab Tour

March 10, 2022

In-person event in Ames, IA, of the CIRAS Digital Manufacturing Lab powered by Alliant Energy, a facility created to help manufacturers explore potential technologies. The tour will include an overview of the available technologies and breakout sessions with CIRAS experts to discuss particular applications of interest in more detail.

■ YouTube for Digital Sales and Marketing

March 16, 2022

Virtual event that covers how to use YouTube and video content to help prequalify customers and improve the sales process. The training will cover different types of videos that can be created, what topics to cover, how to use video at every stage of the buying process, how to set up and shoot videos, and more.

■ Human Resource Series: Where Are Our Workers? The Prodigious People Pursuit

March 16, 2022

Virtual event to connect experts and explore the underpinning human resource challenges that companies face. CIRAS's Iowa Workforce Innovation Network (iWIN) offers best practices, services, workshops, and research-based information to help Iowa's communities and businesses thrive. Join CIRAS for this monthly Human Resources Roundtable as we share best practices.

■ Managing Your Supply Chain during Times of Chaos

March 22, 2022

CIRAS and the Iowa Lakes Corridor Development Corporation will provide an in-person event in Spencer, IA. This event will cover various topics, some of which include managing your supply chain during disruptions, building a resilient supply chain, utilizing Total Cost of Ownership in decision making, and finding new suppliers via supplier scouting. This event will feature a panel of manufacturing executives who will share their supply chain challenges and how they successfully managed through disruptions.

For details on these and other events, visit www.ciras.iastate.edu/events-workshops.

Tapping into University Resources

A partnership with the Iowa State University Office of Biotechnology gives CIRAS access to the sophisticated equipment and technical expertise of the Materials Analysis and Research Lab (MARL) to help manufacturers solve complicated problems.

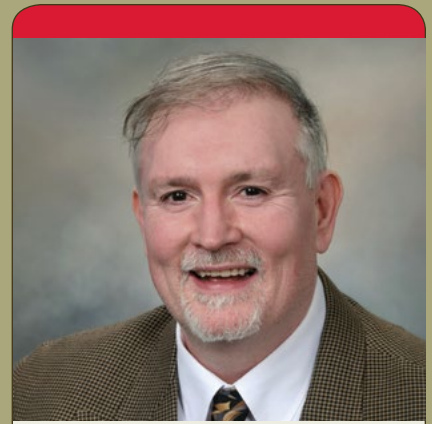
CIRAS was recently contacted by Danfoss Power Solutions in Ames for answers on a corrosion issue. A rust protection product used by the company was causing some damage to the parts it was supposed to protect. Jake Auliff, senior manager of tribology and materials engineering at Danfoss, had a hypothesis but it needed to be confirmed. None of the CIRAS labs had the right equipment for the analysis needed to test Auliff's theory, so CIRAS turned to MARL for assistance.

"Being part of Iowa State University allows CIRAS to leverage the expertise and equipment of the entire university," said Chris Hill, director of the CIRAS Technology Assistance Program. "MARL's decades of material evaluation experience greatly enhances the support CIRAS can provide to Iowa companies like Danfoss."

CIRAS promotes company access to labs on the Iowa State campus, like MARL, because most companies are not aware of the wide variety of campus resources and expertise that are available to them. CIRAS staff serve as the connection between the company and the resources. They know which labs are helpful for a specific problem and they can also shepherd companies through the process.

For the Danfoss project, CIRAS and MARL manager Warren Straszheim used a piece of equipment called an x-ray photoelectron spectrometer to determine how the rust remover was interacting with the metal parts. By using MARL's analytical equipment and expertise, Danfoss was able to confirm their hypothesis that a commercially available rust remover was damaging selected heat-treated components. Danfoss changed the rust remover they used for these parts and the problem was resolved.

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



Mark Facile has joined CIRAS as a project manager specializing in productivity.

Mark holds a bachelor's degree in manufacturing engineering from Iowa State University and a master of business administration from Drake University. He joins CIRAS after spending more than 27 years in manufacturing, using his broad engineering experience to improve process efficiencies and drive company results. His experience includes a variety of manufacturing processes, quality, manufacturing research and development, and project management roles. Mark has worked with multiple Fortune 500 companies to resolve cost, timing, process, and quality issues.

CIRAS ADVISORY BOARD

Three Members Appointed to CIRAS Advisory Board



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General Manager
 Engineering Services &
 Products Company
 Dyersville, Iowa



MIKE ESPESET
President
 Story Construction
 Ames, Iowa



BRUCE HANSEN
Vice President of Business Development
 Iowa Area
 Development Group
 Des Moines, Iowa

Lab Helps Manufacturers Explore Industry 4.0 Technologies

CIRAS and industry partners continue to invest in new technologies for Iowa manufacturers.

Ramco Innovations recently donated a selective compliance articulated robot arm (SCARA) to CIRAS. The company is a technology partner in the Digital Manufacturing Lab created in 2019 with substantial donations from Alliant Energy and the Iowa Economic Development Authority. The lab is designed to help Iowa manufacturers get advice on using technology to address workforce or productivity issues. It also offers the opportunity to test and refine solutions in minimal-risk ways before investing in them.

Chris Hill, director of the CIRAS Technology Assistance Program, said Ramco and other partners are “key to success in helping companies de-risk technology adoption. We can demonstrate how technologies like robotics could be used for various applications and help companies understand the advantages and limitations of the various lab technologies.”

Robots like SCARA are designed to automate processes on the plant floor. For example, the machine can do tedious, repetitive tasks like assembly operations, giving employers the flexibility to use workers for tasks that are more challenging and require problem-solving skills.

“It’s hard to fill positions these days, and once you find people, it’s hard to keep them doing a repetitive task,” said Joe Stoltz, vice president of technology at Ramco. Robotic automation addresses both concerns, Stoltz added, who also pointed out the value of being a CIRAS technology partner.

“It’s a good partnership because CIRAS works with a lot of small- to medium-



CIRAS project manager Jake Behrens demonstrates the use of a SCARA robot donated by Ramco.

sized manufacturers that could benefit from our services,” he said. “They do a great job educating manufacturers on the technology, trying to reduce the fear of the unknown.”

In recent months, the lab has acquired other new tools including a vision system for inspections, smart sensors for vibration and temperature mapping, smart tower lights for remote monitoring, and 3D additional printers. CIRAS has also added wearable sensors from Iowa-based MākuSafe. Hill has worked with several companies on the use of sensors in their plants, which led to the adoption of the technology.

“Having a partner like CIRAS, who is a proven leader in innovation for manufacturers here in Iowa, has been invaluable,” said Matt Joens, customer success lead at MākuSafe. “Their ability to showcase our product in the digital lab and present the possibilities for wearable safety technology and integrating the connected worker into

advanced manufacturing environments is advantageous for all stakeholders. We’ve been able to conduct exploratory meetings with prospective customers in which we can fully demo the capabilities and functionality of the product. That has certainly helped us secure a number of implementations with various manufacturers around Iowa. Their understanding of challenges that face manufacturers in Iowa has been demonstrated by the success we have had in partnering with CIRAS and the companies they work with on a regular basis.”

“It’s hard to fill positions these days, and once you find people, it’s hard to keep them doing a repetitive task.”

— Joe Stoltz

The lab is hosting a series of monthly tours throughout 2022. The three-hour, in-person events are designed to familiarize visitors with new technologies and how they can be leveraged for specific

tasks. Registration for tours is available online at www.ciras.iastate.edu/events-workshops.

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



ILC Annual Conference keynote speaker John Foley interacts with attendees.

Hybrid ILC Conference Draws Record Number of Businesses

A record-breaking 120 companies and organizations were represented at the 10th annual CIRAS Iowa Lean Consortium (ILC) conference October 26 and 27. More than 320 people participated in the event either in person or online. The conference featured two keynote speakers and more than a dozen breakout sessions.

“We were very pleased by the response to the conference,” said Tracy Schuster, ILC program director. “One thing we kept hearing was how ready people were to be together again. And for those who wanted an in-person experience but couldn’t travel to the conference center in Altoona, we offered a satellite location and online option so they could gather a bit closer to home.”

The goal of the conference was to reconnect attendees with each other and with resources to help build cultures of continuous improvement.

“We believe that when people thrive organizations thrive, and when organizations thrive so do the communities we all live in,” said Schuster in her opening comments.

Kicking off the 2021 event was keynote speaker John Foley, a former Blue Angels pilot who now helps companies and organizations achieve higher levels of performance using parallels between aerobatics training and

workday performance. He discussed the importance of excellence, teamwork, trust, precision, and focus in building a culture of excellence.

“Here are the three things an elite team needs: connection, alignment, and commitment to execution,” he said. “When these things come together, you get an incredible breakthrough performance.”

Foley also discussed closing the gap in the “high-performance zone” between where you are as a company and where you want to go.

“That’s what Lean is all about,” he said.

The second keynote speaker was best-selling author Neil Pasricha, who discussed resiliency and happiness in times of change.

Pasricha debunked an old formula that claims

that great work and great success lead to happiness.

“It’s the opposite... we need to train our brains to be happy,” he said. “Then we’ll do good work and be successful.”

As part of the training process, Pasricha advocates beginning each morning by recording things you will let go of, things you are grateful for, and things you will focus on. His second piece of advice is to have a weird hobby, which research shows promotes creativity, and finally he advises going “untouchable for an hour before bedtime.”

In other words, shutting off cellphones and other electronic devices.

Breakout presentation recordings are available in the ILC Members Only Area. Not a member? Join today and plan to attend the 2022 Annual Conference October 25 and 26.

“Here are the three things an elite team needs: connection, alignment, and commitment to execution. When these things come together, you get an incredible breakthrough performance.”
— John Foley

Webinars Address Need for Resiliency

The COVID-19 pandemic taught Iowa companies many things about their operations, but perhaps the greatest lesson was the need to develop more resiliency to better handle business disruptions regardless of their origin. To help companies with preparedness, CIRAS hosted a series of business resiliency webinars last spring on 19 topics ranging from building resiliency in manufacturing operations to using TCO tools to reduce supply chain risks to leveraging online meeting tools.

Marc Schneider, CIRAS project manager, led the weekly series. The sessions were recorded and are accessible for a limited time at www.ciras.iastate.edu/covid-19-webinar-library.

“Only about half of the companies represented had some level of preparedness,” said Schneider. “We focused on how to position a company to survive (and thrive) during a business disruption. Research shows that companies that have incorporated or put an effort into building resiliency into their organization have a smaller impact during a disruption compared to the average company. They also recover much faster.”

A critical component of the series was sharing lessons learned from the pandemic, as well as best practices. Schneider enlisted other CIRAS experts to respond to the needs of companies to prepare for a post-COVID world where issues like remote work and online commerce will have great prominence.

More than 70 companies registered for the series. Their responses to the event affirmed the need to look at strategies to make companies remain robust during challenging times.

“I think the biggest thing I took away from the series was that I was not alone in my concerns about the future of our economy and our business,” said Deana Hoeg-Ryan, business manager at Dobson Pipe Organ Builders in Lake City. “The series covered selling, technology, risk management, finding employees...all of which are important to our business. It also helped me to understand more about COVID in the workplace, which was constantly evolving. I also realized that I was thankful to have CIRAS to turn to should I need help, and as it turned out we needed their help.”

For other participants, like Steve Schneiders, COO of Stellar Industries in Garner, the series provided an opportunity to evaluate current efforts in dealing with business disruptions. “It further allowed us to gauge our practices against others across the state. The weekly touchpoint gave us the information in a timely manner, so adjustments could be made quickly. Things were so fluid and moving so fast, it was hard to stay current. Without a doubt, this helped,” he said.

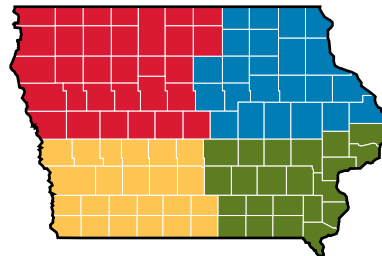
For more information on business resiliency, contact Marc Schneider at maschn@iastate.edu or 563-221-1596.

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 \$3 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 a statewide account manager for the food industry and five regional government contracting specialists*. More staff information can be found at www.ciras.iastate.edu/staff.asp.



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GROWING YOUR BUSINESS

Growing in a Labor Shortage *By Ron Cox*

Iowa is one of the best states in the country at leveraging our workforce population. We have historically low unemployment (4th best over three decades) and historically high labor force participation rates (5th best).

Iowans' willingness to work is a great state strength, yet we continue to have labor force shortages that are hampering our ability to grow. The reasons for the labor shortage are many and varied. Across the country, fertility rates are declining just as the large baby boomer population has begun retiring. The country has also seen a gradual decline in labor force participation rates and a recent reduction in immigration rates. More locally, Iowa's continued low population growth has exacerbated the state's labor force problems. Data trends suggest COVID accelerated what was likely to happen in Iowa in the near future.

These labor shortages have not affected all companies equally. While many have struggled to find workers, others have been successful at growing both their workforce and sales.

We have seen successful companies follow a similar approach, starting with the company leader deciding to change how they look at workforce. Many of the companies we have spoken with are targeting their workforce efforts

and addressing specific workforce issues related to both current and potential employees.

We have witnessed more companies discussing the need to address immigration issues at the state and federal levels. Some companies are increasing wages significantly to be one of the highest paying companies in their community. Many are doubling down on their retention efforts by improving their benefits packages. Others have started hiring out-of-state employees. Enhancing company culture has been a more common discussion topic in recent years, with employers considering incentives like more flexible scheduling and partial remote work. Many companies have been more open to hiring a mix of full- and part-time employees. Lastly, we have seen a significant increase in companies looking at their internal processes, including automation, so they can continue to grow output despite the tight labor market.

Iowa's workforce shortages likely will not end soon, so changing hiring strategies may be necessary for company growth.

For more information on developing strategies to attract employees and grow in a tight labor market, contact Brenda Martin at bkmartin@iastate.edu or Ron Cox at rcox@iastate.edu.