



Cy-Hawk Partnership Helps TAP Extend Technology

Charles Romans sees tremendous possibility in the relationship he's building with his counterparts on the other side of Iowa.

Romans is the 3D design prototype director for ProtoStudios, a University of Iowa rapid prototyping facility that's part of the MERGE innovation lab in downtown Iowa City. Despite his black-and-gold employer, Romans and his staff have been working closely with CIRAS project manager Mark Williamson and Chris Hill, director of the CIRAS Technology Assistance Program (TAP), for more than a year as part of a joint effort to learn from each other and give taxpayers the maximum benefit from the equipment each agency controls.

"Yes, Virginia, there is a Santa Claus!" Hill said with a chuckle. "It is possible for Hawkeyes and Cyclones to work together."

As part of its broad mission to spread awareness of industrial technology, CIRAS has been using its metal 3D printer to help ProtoStudios create innovative new medical devices for doctors at the University of Iowa Hospital. Similarly, ProtoStudios has helped CIRAS create two product prototypes for an Iowa company via a

cutting-edge new 3D printer that can use multiple colors and materials as part of the same build.

Both sides see tremendous value in the exchange so far—and a tremendous possibility to do more down the road.

Romans imagines joint research someday on ways to redesign machinery so that complicated assemblies can be replaced by single 3D-printed parts, whereas Hill envisions public events where experts from both institutions

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Chuck Romans displays items produced with a new J750 PolyJet printer.

would join forces to teach Iowans the nuances of 3D printing technology.

“I think we’ve got a good start,” Romans said. “The relationship is going to develop over time. But we’re definitely going to do more to play together where we can.”

Hill, meanwhile, sees the real benefit to CIRAS as being that “we get to work with our clients using a technology that Iowa State does not have.”

“The state of Iowa in general benefits from this, because we’re leveraging the technologies that the state made investments in across the Board of Regents universities,” Hill said. “We’re being more efficient with those tax dollars. This helps us provide companies with access to a wider range of technologies.”

Romans said University of Iowa doctors were pleased by the medical devices CIRAS helped create. Both currently are being evaluated by a board that’s been tasked with determining whether surgeons need to follow any new or additional sterilization steps when using 3D-printed devices.

Meanwhile, Mason City-based Ozonics, LLC, has been saving time and money by showing 3D-printed prototypes from CIRAS and ProtoStudios to a focus group of hunters. Ozonics makes ozone-generating devices that hunters use as

a means to eliminate their own scents. Nathan Meyer, the company’s director of engineering, said the highly competitive business requires continuous upgrades and a high level of responsiveness to customer needs. Printed prototypes can go a long way in making sure that products are salable by the time they hit the market, he said.

“With this technology, we get an ability to have a broader choice of different methods and options,” Meyer said. “In prototyping, the parts are not necessarily exactly what they’re going to be in production. Some of it is fragile, and you don’t really get the mechanical functionality to it. That’s not what we got from CIRAS.”

Hill sees the CIRAS-ProtoStudios relationship as another important tool to help TAP fulfill its broader mission of making companies more aware of cutting-edge technology.

“Really what we’re doing is an educational case study,” Hill said. “We’re using the projects as a learning tool to get companies to a level where they feel comfortable, where they can understand the pros and cons of various technologies and decide how to use them. We want to get them to the point at which they can interface with a private company and know the questions to ask.”

On the Cover: Neil Quellhorst, of ProtoStudios, explains a machine’s capabilities during an Iowa City tour for CIRAS’ Chris Hill and Mark Williamson.

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

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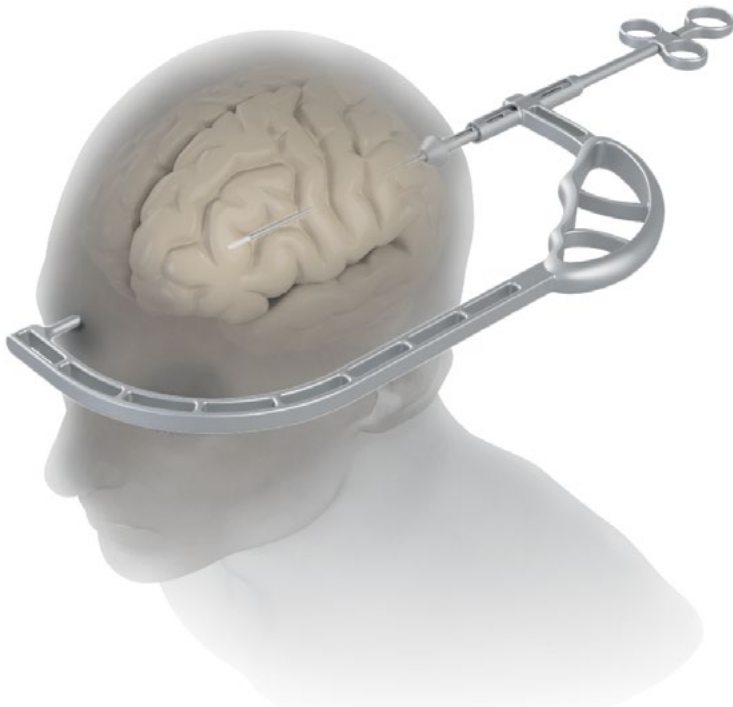


Chuck Romans holds a 3D-printed keychain tag that ProtoStudios produced for a Fashion Circus event during the 2018 Iowa City Block Party.

Technology sharing is just part of the relationship that's evolving between CIRAS and the University of Iowa. Two Iowa City-based CIRAS staffers—project manager Joy Donald and government contracting specialist Samantha Ferm—began working out of offices at MERGE last fall. Both will focus on connecting eastern Iowa businesses with a variety of CIRAS services.

More potential partnerships between the two universities remain under discussion. Stay tuned.

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



Devices built on the CIRAS metal printer included a “Caroline Guide” to help surgeons pass a catheter into the cerebra ventricles.

CIRAS Will Use New EDA Grant to Create iWIN for Iowa

Iowa companies need workers, but the state population simply isn't growing fast enough to provide them. From 1960 to 2010, U.S. states grew by an average of nearly 100 percent, while Iowa grew by only 10 percent—third lowest in the nation.

“Other states are winning the job growth battle,” said CIRAS director Ron Cox. “We need to dramatically change our approach if we are going to slow this 50-year trend.”

Solving Iowa's workforce problem is the focus of an award CIRAS recently received from the Economic Development Administration (EDA). The five-year, \$1.38 million effort will allow CIRAS 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 directed at communities with populations of 5,000 to 25,000 that are within commuting distance of a metropolitan area. About 30 Iowa communities meet these requirements.

The goal is to supplement traditional workforce-training models with a community-focused approach to workforce management. With iWIN, workforce is examined from four strategic viewpoints: (1) the regional STEM pipeline; (2) nontraditional attraction/retention efforts, including engineering talent; (3) employee output through incorporation of sustainable productivity initiatives; and (4) the building of a “virtual” workforce with automation systems.

Camille Schroeder, a program manager at Iowa State University, will lead day-to-day work under the program. Partners include the College of Engineering at Iowa State University, the Iowa Area Development Group, ISU Extension, local Councils of Government, and others.

For more information, contact Camille Schroeder at camilles@iastate.edu or 515-294-9965, or visit www.ciras.iastate.edu/eda.

Process Intensification—Bringing Lean to the Process Industries

By Andrew Friend

At its core, Lean manufacturing is about reducing waste through continuous improvement. The RAPID Institute—one of 14 federally funded Manufacturing USA institutes that were created to make U.S. manufacturing more competitive—wants to build on the Lean concept by transforming process industries via the principles of modular process intensification.

What does this mean exactly? It boils down to three key elements.

Transformation.

Consider the auto industry. Fifty years ago, it was dominated by vertically integrated companies that owned their entire supply chains and produced relatively few offerings. Today, the auto industry has completely transformed itself into a horizontal system of independent, multitiered suppliers who enable mass customization of the automobiles.

In contrast, if we look at the petrochemical industry, a refinery built in 2018 is not much different from a refinery built in 1970. Many improvements have been made between those years to enable greater efficiencies, energy savings, and waste reduction. But changes have been *progressive*, not *transformational*.

Today, process industries such as chemicals are facing increased pressure due to scarce resources, increased regulation, and changing market

demand. If manufacturers are to remain relevant in today's global marketplace, they must transform themselves. How?

Process Intensification. According to the RAPID Institute, process intensification is what happens with “any technology development that leads to substantially smaller, cleaner, and more energy-efficient processes.” It's about:

- Rethinking process design;
- Shrinking processes and making them much more efficient or combining multiple steps into one;
- Training and educating the workforce to operate these new technologies; and
- Reducing cost, reducing waste, and improving efficiency.

Modularization. Like process intensification, modularization is a mind-set shift. Traditional process plants are stick built, meaning all the raw materials and labor are gathered onto a remote site where the plant is built. Modularization challenges this model by breaking up the plant into “blocks,” building these blocks in a factory-type environment, and then

shipping blocks to the plant site, where they are assembled. Modular building techniques already have been adopted by many industries; most food- and beverage-can manufacturing plants are built off-site. This is because modularly built plants are up to 30 percent cheaper to construct and come online up to 50 percent faster, which means quicker recovery of committed capital. Modular plants also are more flexible, allowing plant capacity to more closely follow market demand.

Transforming processes by adopting process intensification and modularization can help manufacturers redesign their businesses and remain competitive. The RAPID Institute offers technology development funding, networking opportunities, and access to subject-matter experts.

For more information, visit www.aiche.org/rapid or contact Andrew Friend, CIRAS liaison between the RAPID Institute and Iowa manufacturers, at afriend@iastate.edu or 515-520-2803.

An example of modularization: the Bio-Polymer Processing Facility at Iowa State University. (Photos: Jeni Maiers, CCUR)



Theisen Cleaners Grows by Systematically Soliciting Local Governments

A Neola, Iowa, cleaning business was able to move out of a family home and into its own storefront last summer, thanks largely to growth sparked by a CIRAS-created strategy for marketing to local governments.

Theisen Cleaners was born in 2016 when Jamie Theisen, after many years spent cleaning houses for herself and various employers, decided to launch a new residential cleaning service. Her husband, Joe Theisen, eventually joined her. By 2017, the couple was thinking of expanding the effort, possibly by branching out and cleaning area businesses.

Then, Joe Theisen met Andy Alexander, a government contracting specialist with the CIRAS Procurement Technical Assistance Center (PTAC).

“Andy kind of took me in a different direction,” Theisen said. “He helped me open a lot of doors in local government.”

With Alexander’s help, Theisen identified the key contact people for 172 town governments, 15 counties, and one major city within 60 miles of Neola. Alexander helped the Theisens create and polish a formal statement of their capabilities, then Joe Theisen set about contacting each person on the list.

Theisen landed three contracts on the first pass and made additional connections with an association of general contractors. He now has a 200-person list of potential customers that he emails quarterly. Theisen Cleaners has added an additional 1.5 employees since it launched, and the company expects more growth.

Joe Theisen credits Alexander with putting him on a path to contracting success.

“Andy has been awesome,” Theisen said. “Without his help, this probably wouldn’t have gotten very far. He’s helped us a lot.”

For more information, contact Andy Alexander at andyalex@iastate.edu or 402-547-0333.

Theisen Cleaners cut the ribbon on a new storefront last year.



From left, David P. Spalding, dean of the Ivy College of Business; CIRAS Director Ron Cox; Iowa State University President Wendy Wintersteen.

CIRAS Director Cox Lauded for Economic Development Work

CIRAS director Ron Cox was one of 15 College of Engineering faculty and staff who received Iowa State University’s highest honors during an annual awards ceremony on September 14.

Cox, who started as a CIRAS field agent in 1997 and has served as CIRAS director since 2001, received Iowa State’s Award for Achievement in Economic Development in Iowa.

University officials say the award was created “to recognize faculty and staff members for outstanding ISU-based achievements in advancing the economic development of the state of Iowa.”

The award is reserved for campus employees who either started businesses that employed Iowa residents or provided “specific documented support to Iowa companies” and thereby benefited those firms.

Cox’s award came roughly one year after he and CIRAS program director Mike O’Donnell were jointly selected as “Manufacturing Champions” during a 2017 awards dinner hosted by the Iowa Association of Business and Industry. In announcing that award, an ABI official praised Cox’s “two-decade record of public service while acting as a relentless advocate for Iowa manufacturing.”

■ **Fermenting Essentials—
Accessing Equipment and
Essentials**

February 21, 2019
8:30 a.m. to 2:30 p.m.
Ames

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

March 7, 2019
9:45 a.m. to 2:15 p.m.
Ames

■ **Creating Your Government
Marketing Strategy**

March 27, 2019
9:00 a.m. to 10:30 a.m.
Webinar

■ **Preparing a
Winning Proposal**

April 2, 2019 (Clive), April 24 (Cedar
Rapids), April 25 (Davenport), or
May 7 (Sioux City)
1:00 p.m. to 3:30 p.m.

■ **Supercharge Your
Organization with
Collaborative Management**

April 2–3, 2019
9:00 a.m. to 4:00 p.m.
Johnston

■ **An Introduction to Leader
Standard Work**

April 4–5, 2019
9:00 a.m. to 4:00 p.m.
Johnston

■ **Materials, Structures,
and NDE Tour**

April 18, 2019
9:45 a.m. to 2:15 p.m.
Ames

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

April 24, 2019
9:00 a.m. to 10:00 a.m.
Webinar

■ **GovCon 101**

May 6, 2019
9:00 a.m. to 10:30 a.m.
Webinar



MarketWise Group Provides a Place to Share Ideas, Answers

Once every other month for five years, Donna Bruesewitz has taken a day away from her office and driven somewhere to learn from others who do what she does.

Bruesewitz is one of five original members who still attend regular meetings of MarketWise NE. The northeast Iowa business networking group was founded five years ago by the Iowa Association of Business and Industry (ABI) in partnership with CIRAS. Bruesewitz first joined the group when she was communications manager at Stellar Industries, and she finds so much value in the meetings that she asked to continue participating when she changed jobs last summer to become marketing director for Milkhouse Candles in Osage.

ABI launched the group—along with others such as LeanWise, the CFO Roundtable, and the Operations Excellence Roundtable—by partnering with CIRAS and numerous other experts across the state. The goal was to help functional managers develop through the sharing of experiences, lessons, and best practices with colleagues just down the road.

“It’s been a great opportunity to bounce ideas off of each other and learn how other people do things in the same situation,” Bruesewitz said. “It’s a great resource—if for no other reason, just to make sure that you’re doing something right.”

Steve Vaught, president of Organizational Architects in Des Moines, has facilitated

MarketWise NE since the start. The six-per-year daylong meetings are supported by \$600 annually from the members’ employers. Meetings start with an outside educational speaker who presents on a group-selected topic. Lunch follows, then a session with Vaught facilitating discussions on member-presented issues. Others are encouraged to ask clarifying questions and use their experience to suggest possible ways that members could handle the issue.

“You’re meeting with others who have the same issues as you, and you’re going to build relationships with them,” Vaught said. “It’s a place to ask for assistance and discover, ‘Hey, I’m not alone in this. There are others with the same challenges I have.’”

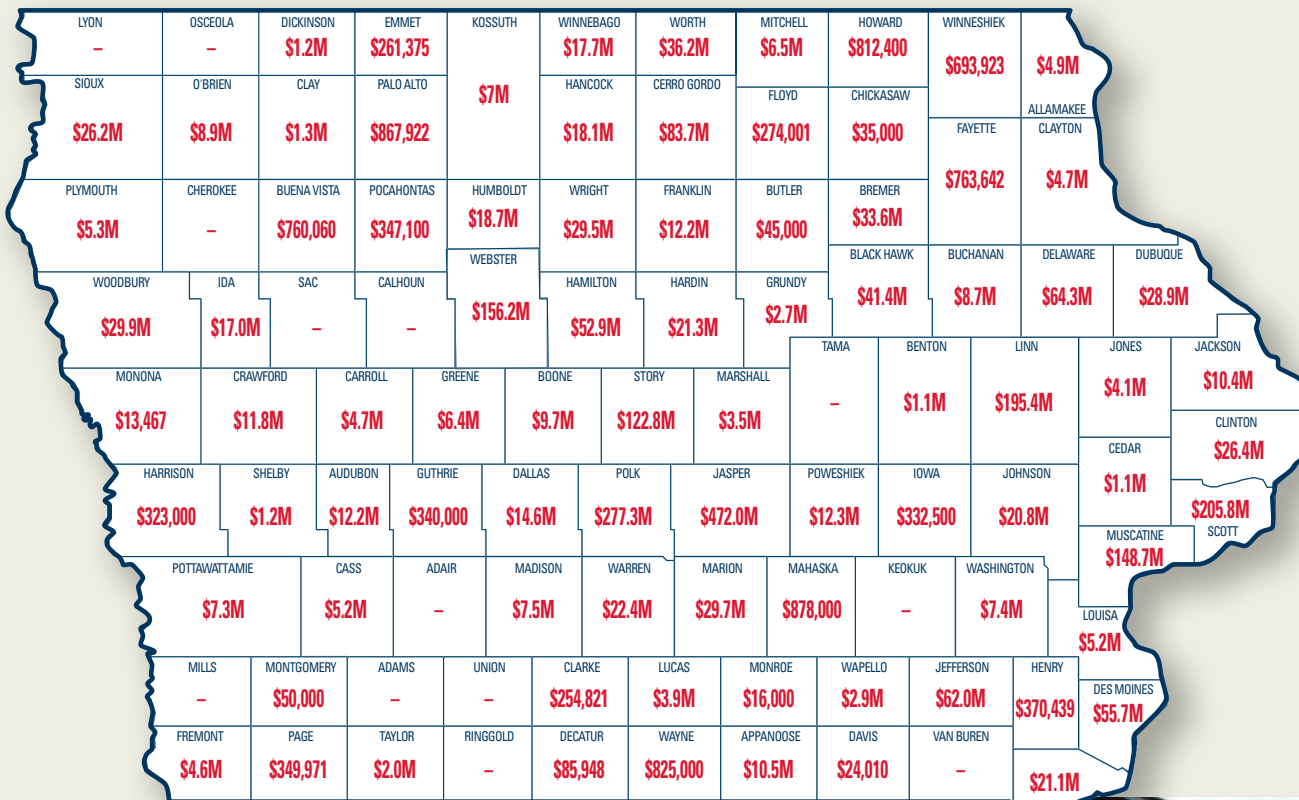
CIRAS account manager Sean Gallegger, who has co-facilitated MarketWise NE since the beginning, said peer networks like this help all of the members improve their common game.

“The group as a whole can improve collectively, because everybody’s got such different experiences and different levels of skills,” Gallegger said. “Everyone can get better. As a group, we can go tackle problems and issues that people normally wouldn’t take on by themselves.”

➤ **For more information, contact Sean Gallegger at galleger@iastate.edu or 515-290-0181.**

IMPACT: \$2.6 Billion

CIRAS' Economic Impact, 2013–2017



ISU Research Helps PigEasy Prove Potential

A Templeton, Iowa-based maker of farm machinery intends to launch a new product this summer after Iowa State University research—provided through the CIRAS Technology Assistance Program (TAP)—helped the company prove that its invention works.

PigEasy LLC, a six-year-old company created by a longtime Iowa pork producer, is predicting four new employees and at least \$1 million in new revenues over the next few years from BrEasy, an upcoming product designed to improve the air quality in large hog barns.

The device, which essentially serves as a baffle to help ventilation fans pull the worst gasses away from hog manure pits, was tested on four southwest Iowa hog farms in 2017. Research by Daniel Anderson, an associate professor of ag and biosystems engineering at Iowa State, showed that the modified fans

An Example of BrEasy installed.



reduced in-barn odor and ammonia levels by an average of 25 to 30 percent.

“Before the Iowa State study, it was just conjecture,” said Katie Holtz, PigEasy marketing director. “Not only did that point us toward a path to get to where we wanted to go next, but it also gave us momentum.”

PigEasy is still figuring out the full impact of its innovation. The company complimented Iowa State research with additional tests to explore BrEasy’s impact on other aspects of farm

operation, including barn heating costs and overall pig health.

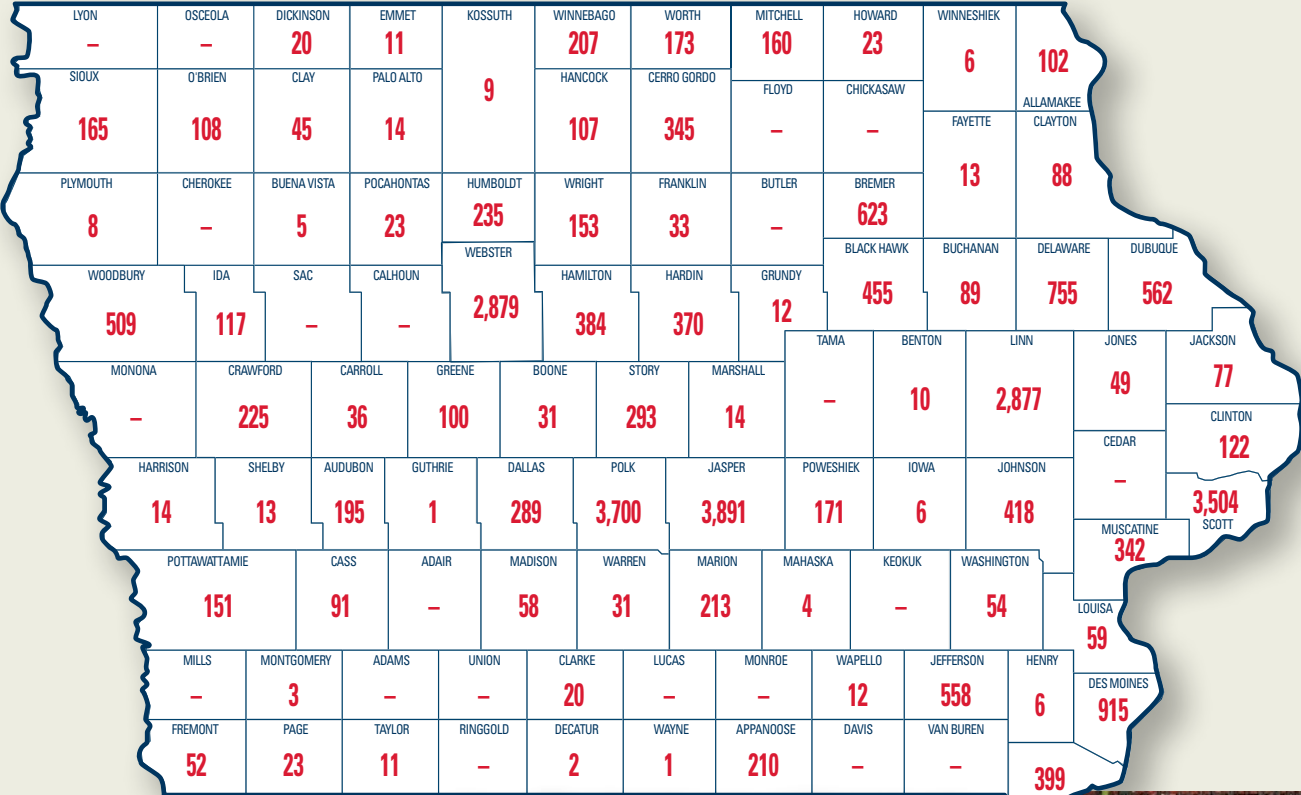
“But without the Iowa State study, we wouldn’t be where we are,” Holtz said. “It’s a really big deal.”

Over the past five years, CIRAS and its partners have worked with nearly 4,000 companies like PigEasy. Combined, the projects had an economic impact of more than \$2.6 billion.

For help growing your company, explore www.ciras.iastate.edu.

JOBS: 28,062 Saved or Retained

Jobs Saved or Retained, 2013–2017



Legacy Manufacturing in Marion plans to add up to 15 new employees after a CIRAS-assisted automation program helped the company reshore production of one of its most popular products.

Josh Shepherd, Legacy’s assistant operations manager, said the company turned to CIRAS for help bringing production of its 3/8-inch, 50-foot Flexzilla hoses back to the United States from Taiwan.

“At this point, we’ve already hired five people just on this one line alone, and we’ve only just started to get up and running,” Shepherd said. “We may need another shift.”

Those new workers were part of the 28,062 jobs that clients added or retained over the past five years because of work done by CIRAS and its partners.

Shepherd said Legacy returned work to Iowa for reasons including port



congestion and long production lead times. “Some of the reasons have to do with cost, but a lot of it is just flexibility.”

By the time Legacy turned to Chris Hill, director of the CIRAS Technology Assistance Program (TAP), the company already had found an American supplier for its raw hose material. But a key problem remained: the new supplier was shipping hose to Marion in 5,000-foot sections. How was the company going to quickly and cost efficiently get the hoses straightened, cut, assembled, and packaged?

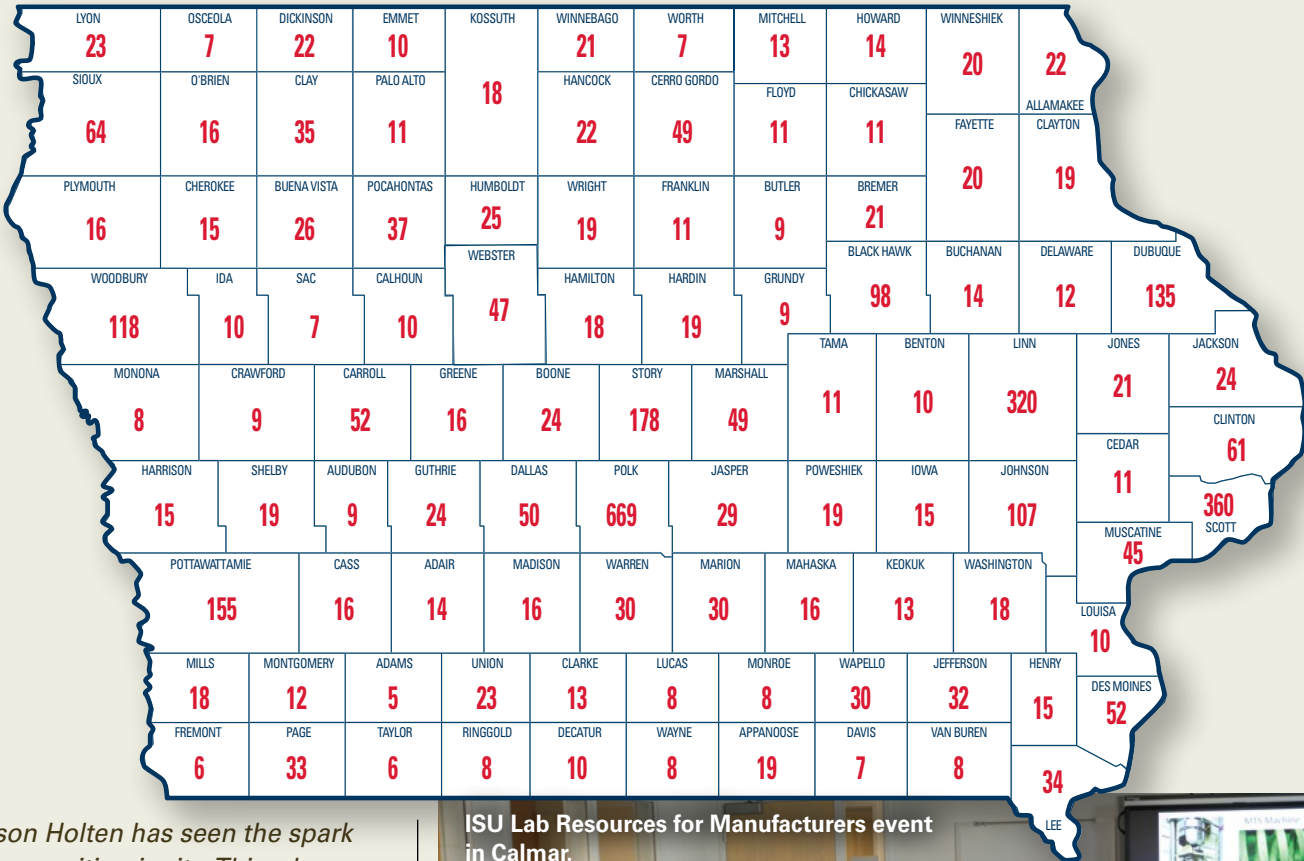
CIRAS worked with Iowa-based Berg Automation and ultimately devised a special turntable (to unwind each hose after it’s been shipped coiled in a box) and coordinating sensors to monitor the hose’s progress as it heads toward a cutter. New employees then handle the cut hose as it’s affixed with connectors and packaged.

“We’re still tweaking the process,” Shepherd said. “But it looks great.”

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

CONNECTIONS: 3,939 Distinct Clients Served

Distinct Clients Served by CIRAS, 2013–2017



Alison Holten has seen the spark of recognition ignite. This, she explains, is why it is so important for CIRAS to work with local partners to carry the capabilities of Iowa State University to the rest of the state.

Holten is the business and community solutions program manager at Northeast Iowa Community College (NICC) in Calmar, and she works closely with rural Iowa industry. In November, 13 people from seven companies attended a joint CIRAS–NICC educational event on “ISU Lab Resources for Manufacturers.” The event, which covered a wide variety of Iowa State’s testing capabilities, was the latest in a regular series of CIRAS technology road shows. (Similar events also have covered ISU capabilities in scanning, 3D printing, and digital design.)

Manufacturers “don’t know that they can use something from CIRAS until

ISU Lab Resources for Manufacturers event in Calmar.



they see what’s available,” Holten said. “Then, you can see that light bulb go off, and they realize, ‘Hey, they can help me deal with this problem that’s been bugging me for a long time.’”

Dave Utrata, a CIRAS program manager who works in the Center for Nondestructive Evaluation, joked that Iowa State’s approach with lab resources is the opposite of an “if you build it they will come” philosophy. “You’re not going to have someone drive three hours from a corner of the state

when they’re not sure what they’re going to see,” Utrata said. “It makes more sense for us to go to them.”

Nearly 4,000 different companies have come to CIRAS for help over the past five years. Dozens of those relationships were started by CIRAS-led tours of the Iowa State research labs.

For more information, watch the CIRAS event calendar at www.ciras.iastate.edu/events.asp.

WORKFORCE PIPELINE: 2,358 Interns Placed

Iowa State University interns at Iowa companies, 2017



There are many reasons why Jeff Underwood ended up working in the Iowa State University Research Park, but it all boils down to people.

Underwood, vice president of enterprise innovation for Muscatine-based Kent Corporation, said the agricultural food company opened its first Ames office largely because it wanted to be closer to Iowa State's cutting-edge researchers and its deep pool of potential employees.

Iowa State University students continue to help worker-strapped companies around the state. Last year, the university placed a total of 2,358 interns at 1,002 businesses in 268 Iowa communities.

"Mostly, what got us here is the world-class talent," Underwood said. "We wanted to be more involved in club activities, meeting students, and participating in university events so we can increase our presence on campus at Iowa State."

Kent Corporation open house in ISU Research Park.



"Plus, we're also after a closer relationship with CIRAS and all the services they provide."

Kent, which held an open house at its Ames facility in August, was the latest in a string of companies to open satellite offices for student workers. The list includes Vermeer Corporation, Sukup Manufacturing, John Deere, and BrandFX. CIRAS account manager Derek Thompson said companies see value in building relationships with faculty and students (frequently through CIRAS) and giving employees alternatives.

"How do you attract and retain key salaried employees who don't want to live in rural Iowa?" Thompson asked. "One way is by giving them a chance to work in Ames and come to the factory once a week."

Underwood said Kent opened its Research Park office "because we saw this model work for other Iowa businesses. CIRAS is making it easy for companies to make this decision."

For more information, find your regional CIRAS account manager at www.ciras.iastate.edu/staff-directory/.



Eregbu joins CIRAS as an administrative and finance specialist.

Ericka Eregbu has joined CIRAS as an administrative specialist. Ericka, who studied business at Grand View University in Des Moines, has more than 10 years of experience in accounting and administration. After working several years for the Foundation for Chiropractic Education and Research, she spent roughly nine years as a manager of accounting and administration at the Des Moines Quality Control Center for Papa John's Pizza. At CIRAS, she will handle a variety of administrative duties from her office on the Iowa State University campus in Ames.



Niceswanger will focus on government contracting help for those in Des Moines.

Justin Niceswanger has joined CIRAS as a government contracting specialist with the Procurement Technical Assistance Center (PTAC). He will be based out of a CIRAS office in Clive and will serve business owners who are located inside the city of Des Moines. Justin, who graduated with a bachelor's degree from Buena Vista University in Storm Lake, was a teacher for five years before embarking on an 11-year career in government purchasing. He most recently worked as a contracting specialist for the U.S. Attorney's Office for the Southern District of Iowa. Before that, Justin worked as a buyer for the city of Des Moines, the Veterans Health Administration in Coralville, and the USDA in Des Moines and Ames. His job with CIRAS will involve helping Des Moines businesses find their way into government contracting at the federal, state, and local levels.

Co-Line Manufacturing Expands—With Help from IADG and USDA Rural Development

A rural Mahaska County manufacturer is still ramping up its newfound capacity after a massive expansion came online thanks to a \$2 million loan arranged under a CIRAS partner's program to benefit rural Iowa industry.

Co-Line Manufacturing began in 1979 as a welding shop south of Sully, Iowa. In 2016, Co-Line broke ground on a 120,000-square-foot expansion that now houses production space for multiple products, plus a new paint and powder coating line.

The build-out received enormous support, according to Co-Line accountant Monica Nikkel, from a \$2 million loan arranged by the Iowa Area Development Group (IADG).

"It was the best thing out there," Nikkel said. "That amount of money at 0 percent interest; you can't beat that."

Bruce Hansen, vice president of business development for IADG, said Co-Line's financing was a pass-through loan from

a USDA Rural Economic Development Loan and Grant program designed to spur economic development in rural areas.

IADG serves as the business and community development office for Iowa's Rural Electric Cooperatives, member municipal-owned electric utilities, and independent telecommunications companies across Iowa. IADG and its sponsoring utilities have been working since 1985 to help businesses succeed in rural Iowa. "That commitment is reflected in the fact that Central Iowa Power Cooperative, a wholesale provider to Pella Cooperative Electric Association—

Co-Line's local electric provider—was a key sponsor for the loan," Hansen said.

IADG also is a CIRAS partner and works alongside the Manufacturing Extension Partnership (MEP), a federal program that CIRAS oversees in Iowa, to help

facilitate the growth of small- and medium-sized manufacturers.

"IADG and its sponsors work to attract capital investment and jobs, which helps rural communities," Hansen

said. "Where we can be helpful with financing, IADG connects companies with USDA resources, our utilities' revolving loan programs, or other financial resources."

"It was the best thing out there. That amount of money at 0 percent interest; you can't beat that."

— Monica Nikkel

➤ **Rural companies seeking more information about the program can contact Bruce Hansen at bhansen@iadg.com or speak with their local CIRAS account manager.**



AT A GLANCE

Tortilleria Sonora Inc.

FOUNDED: 2009

EMPLOYEES: 7

OVERVIEW: Family-owned maker of tortillas for sale in supermarkets throughout Iowa.

IMPACT: An estimated \$1.5 million improvement, including \$400,000 in reduced costs and \$500,000 in new and retained sales.

LEARN MORE:

<https://www.facebook.com/Tortilleria-Sonora-Inc-133185070054691/>

Tortillas start through one side of the Tortilleria Sonora oven and come out the other (see page 13).

Tortilleria Sonora Steps Out on Path to Food Safety Certification

Life began moving faster after Betty Garcia got the phone call.

It was the fall of 2017, and a Des Moines-area produce company was planning to launch a line of ready-to-eat meals. The company was wondering whether Tortilleria Sonora would be interested in supplying tortillas. First, there were a few questions about the business. Would Garcia mind filling out a questionnaire?

As she searched for answers, Garcia realized she was behind. The Food Safety Modernization Act (FSMA), a 2011 federal law that completely revamped the way food-related businesses are regulated in the United States, was in the process of placing tough new restrictions on the 20-year-old tortilla factory. A window for getting into compliance with the law was preparing to close.

“I had no idea there were deadlines for certain things,” said Garcia, who now serves as chief financial officer for a business her parents founded while Garcia was in high school. “That phone call helped me realize I was on a time budget.”

A few more calls—including one to the administrator of Iowa’s Targeted Small Business program—helped Garcia find CIRAS. And CIRAS helped her begin to see the solution.

“Major food companies want to avoid problems under the FSMA, so they increasingly are seeking to do business with companies who already meet the higher standards. This could be an excellent step for them.”

— Kim Anderson

Today, Garcia can point to a nearly \$1.5 million improvement in her business since a CIRAS project manager helped put Tortilleria Sonora on a path to food safety certification. Garcia credits a CIRAS gap assessment with showing her what she needs to do to comply with the new standards and, eventually, to go beyond what’s required for a company the size of Tortilleria Sonora.

“More and more food companies are requiring compliance with the new regulations before they’ll do business with you,” said Kim

Anderson, a food safety project manager who works jointly for CIRAS and the Iowa Grain Quality Initiative in Iowa State University’s Agriculture and Natural Resources Extension and Outreach. “She’s a lot farther along than a lot of places are, so being compliant and being able to talk about that fact will put her at a tremendous competitive advantage.”

Meanwhile, Garcia also is working with government contracting specialists in the CIRAS Procurement Technical Assistance Center (PTAC) to help promote Tortilleria Sonora’s high standards to food-buying federal agencies.

Garcia intends over the next year or so to completely revamp the company, adding warehouse space and upgrading machines. Tortilleria Sonora already has several brands for sale in major Iowa supermarkets, but new government contracts would help fuel the necessary upgrades.

"It's a challenge," Garcia said. "But I'm excited to see where we will be in two years. . . . I see it growing. I see it growing for sure."

Tortilleria Sonora was born roughly 25 years ago in a crowded Texas kitchen.

Oswaldo and Esther Barcelo, displaced by the Iowa flood of 1993, had fled Des Moines to go live with Esther's family. They ended up supporting themselves by selling tortillas to a Texas supermarket. But once their daughter, Garcia, grew old enough to return to Iowa and start a family, there was a pull for the entire family to return north.

Tortilleria Sonora was incorporated in Iowa in 2009. Garcia, who by then was working for an insurance company, came aboard shortly thereafter to help with the finances. She now is running point on efforts to plan what the business will look like for its next decade.

Anderson, the CIRAS project manager, believes Tortilleria Sonora will end up in a good competitive position if it can achieve independent food safety certification—an official, third-party stamp of approval that the business is following all the correct safety procedures.

"Major food companies want to avoid problems under the FSMA, so they increasingly are seeking to do business with companies who already meet the higher standards," Anderson said. "This could be an excellent step for them."

Garcia agrees, acknowledging that the journey won't be short.

"CIRAS is what launched it," she said. "Even though some of it has been painful, they've been willing to jump up and say, 'How can we help?' That has been very awesome."

➤ **For more information, contact Kim Anderson at kandrson@iastate.edu or 515-686-9032.**



Iowa officials toured the Schumacher facility in 2018.

Balanced Scorecard Helps Schumacher Company Soar

Getting a radically revamped business on the right long-term path generally requires fresh insight and some concentrated planning.

Schumacher Company, a Germany-based maker of farm machinery and equipment, drew upon CIRAS expertise to balance and prioritize operations at a time when the agricultural economy was plummeting. Maximilian Droste, director of North American operations for Group Schumacher, said CIRAS helped lead his company through planning and creation of a balanced scorecard following major change tied to a new factory.

CIRAS project manager Joy Donald helped leaders set priorities after Schumacher invested roughly \$4.5 million into its new American manufacturing operations. "We did a SWOT analysis (strengths, weaknesses, opportunities, and threats) that then translated to an action plan," Donald said. "My role was to provide structure and be an unbiased guide, to basically walk them through the analysis and help them understand what their highest priority should be."

Droste said the process helped leaders make the right decisions after Schumacher merged two Iowa locations into a newly constructed facility in Durant. Technology needs, new procedures, and new staffing needs all were clamoring for attention at the time.

"It's always good to have another set of outside eyes," Droste said. "I think what Joy really did was help us focus on what was really important. Our goals are aligned now."

For more information on balanced scorecards, contact Joy Donald at jdonald@iastate.edu or 319-359-0206.

AT A GLANCE

Schumacher Company, L.C.

FOUNDED: 1994

EMPLOYEES: 50

OVERVIEW: Germany-based maker of farm machinery and equipment.

IMPACT: More than \$4.5 million of investment based on priorities CIRAS helped the company set.

LEARN MORE:

www.groupschumacher.com



Clean Environment Jobs Sparked after CIRAS Makes Connection

An innovative new package of environmentally friendly cleaning products began selling online and in eastern Iowa Goodwill stores last fall, thanks partly to an introduction that led the company to CIRAS.

“CIRAS has just been a godsend for us,” said Ken Budke, owner and “chief innovator” for Natural Soy Products Ltd. and its subsidiary, the Clean Environment Company.

Company leaders credit Julie Fagle, a government contracting specialist with the CIRAS Procurement Technical Assistance Center (PTAC), with tipping the first domino that led to a novel production arrangement between Cedar Falls-based Clean Environment Company and Waterloo-based Goodwill Industries of Northeast Iowa.

Under the deal, a half-dozen clients from Goodwill job training programs have been working since September, taking 55-gallon drums containing each of six concentrated cleaners and repackaging the liquid into 6-ounce tubes. Tubes then are sold on Amazon.com and in 10 Waterloo-area Goodwill stores as a six-

pack of concentrated, nontoxic cleaners.

Joe Barber, president of the Clean Environment Company, said this method lowers shipping costs, reduces the number of plastic bottles going into landfills (since customers use their own), and makes products more cost effective for individuals at all income levels. It also provides valuable work for disabled and/or socially disadvantaged Goodwill clients.

Chris Harshberger, vice president of business development for the agency in Waterloo, said Goodwill currently packages both retail and Amazon orders. Should future business warrant, a similar deal could be replicated with Goodwills in other states.

“We’re going to launch here,” said Barber. “But we’re really hoping that this partnership has benefits all around.”

Company officials say the arrangement sprang from conversations after Budke was introduced to Fagle by Jill Lippincott, director of Iowa’s Targeted Small Business (TSB) program. The TSB program exists to help companies owned by women, minorities, the disabled, and service-disabled veterans.

For Fagle, the deal proves the value of networking via programs like TSB. “The key to success,” she said, “is through building relationships and cultivating your network.”

AT A GLANCE

Natural Soy Products

FOUNDED: 2002

EMPLOYEES: 10

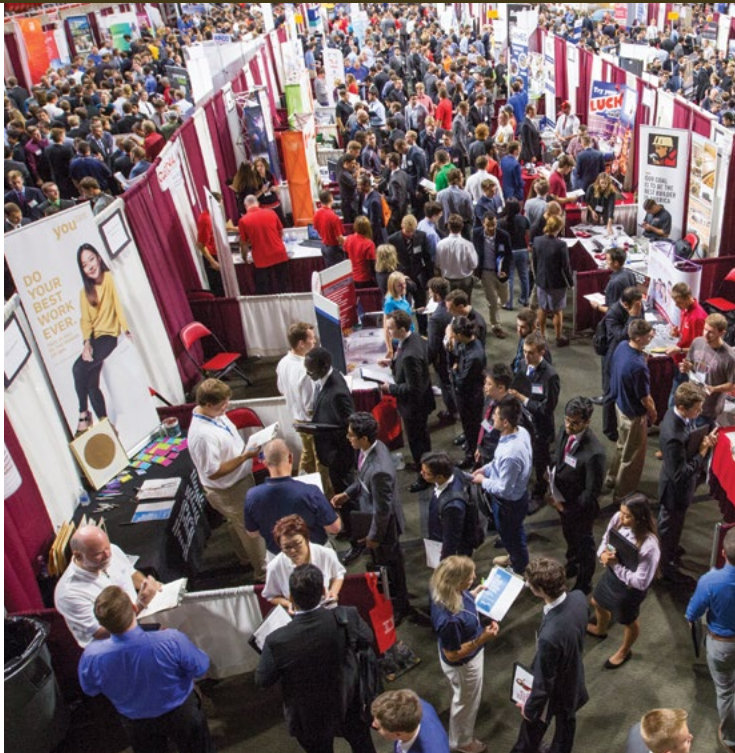
OVERVIEW: Maker of clean and bio-based solutions for everyday commercial and residential products.

IMPACT: Reduced start-up costs, increased support for Goodwill jobs

LEARN MORE:

www.naturalsoyproducts.com

➤ For more information, contact Julie Fagle at jafagle@iastate.edu or 319-310-8612. Or, visit www.iowaeconomicdevelopment.com/tsb.



Spring 2019 Career Fairs

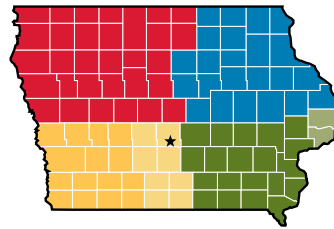
- Agriculture and Life Sciences Career Day**
 10 a.m. to 2 p.m., Wednesday, February 6, 2019,
 Memorial Union
 CONTACT: mikegaul@iastate.edu
- Engineering Career Fair**
 Noon to 5 p.m., Tuesday, February 12, 2019,
 Hilton Coliseum and Scheman Building
 CONTACT: ecs@iastate.edu
- Business, Industry and Technology Career Fair**
 Noon to 5 p.m., Wednesday, February 13, 2019,
 Hilton Coliseum (Business, Liberal Arts &
 Sciences, Human Sciences)
 CONTACT: hscareers@iastate.edu
- People to People Career Fair**
 Noon to 5 p.m., Wednesday, February 13,
 2019, 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
- Design Career Fair**
 Noon to 5 p.m., Thursday, February 21, 2019,
 Memorial Union
 CONTACT: tiffany@iastate.edu

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 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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- Center for Nondestructive Evaluation
- College of Engineering
- Department of Economics
- Department of Environmental Health and Safety
- Engineering Career Services
- Extension and Outreach
- Iowa Grain Quality Initiative
- Meat Science Extension
- Polymer and Food Protection Consortium
- Structural Engineering Research Laboratory
- Iowa Area Development Group
- Iowa Association of Business and Industry
- Iowa Economic Development Authority
- Iowa Farm Bureau
- Iowa Sustainable Business Forum
- North Iowa Area Community College
- Northeast Iowa Community College

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GROWING YOUR BUSINESS

Exporting Means More Business via a Broader Market *by Marc Schneider*

Small and medium manufacturers (SMMs) typically look across the street, state, or country to expand their customer bases and grow their businesses. A few are more aggressive and look across borders to reach customers via exporting so they can achieve even greater growth.

There are many reasons why a company should, at a minimum, research and investigate whether exporting its products might be a profitable and successful way to find growth. These reasons include the following:

- The U.S. market has limited growth, and manufacturers here face stiff competition—not only from other domestic firms, but also foreign companies. Meanwhile, the rest of the world, especially Asia-Pacific and other developing regions, is experiencing faster growth with a burgeoning middle class of buyers. The International Trade Administration (ITA) estimates that more than 80 percent of global purchasing power resides outside of the United States. Trying to tap into that 80 percent might be a better strategy for companies than fighting for greater market share in the United States.
- Studies have consistently shown that manufacturers who export are more successful. One study found

that manufacturers who exported grew by 37 percent while non-exporters shrunk by 7 percent in the same time period.

- Access to a larger global market allows companies with niche products (as opposed to mass-market items) to create economies of scale that otherwise may not be possible in the domestic market. If you manufacture a product that fits a narrow market segment, obtaining global customers gives you a greater chance to survive and grow.
- Market diversification via exporting can reduce your risk from seasonality impacts and/or downturns in your domestic market. Studies from the ITA show that exporters have less shipment and revenue volatility—something that is linked to greater company survival rates.

Becoming a successful exporter does require a good export strategy, learning and improving certain skills, and understanding new markets. CIRAS can help.

For more information, contact Marc Schneider at maschn@iastate.edu or visit www.ciras.iastate.edu/ciras_services/exporting/.