



## Coronavirus Recovery Requires Focus on Business Basics

*Economic shockwaves from the COVID-19 pandemic likely will continue to ripple for a while, Iowa manufacturing experts say.*

What does that mean for your business? CIRAS has helped companies recover from the 2008 floods, the Great Recession, and other major disruptions. These experiences have convinced our staff that successful companies can survive crises if they are able to excel at the basics of business.

"I'd go back to Business 101," said Mike O'Donnell, program director of the CIRAS Manufacturing Extension Partnership. "First of all, that means really understanding your entire cash flow picture at all times. Number two, understanding your customers—what their situations are, what their cash flow

looks like, and whether you're able to meet their needs."

CIRAS project manager Marc Schneider said companies should keep close tabs on conditions with their suppliers and try to be flexible with employees. For example, now may be a good time to add staggered shifts for parents forced to remain home because of closed schools.

In general, Iowa manufacturers should get comfortable with uncertainty—as well as extensive cleaning and social distancing inside the factory.

"I think the big thing to remember is that this has been a massive disruption

of the entire global supply chain in every industry, all at the same time," O'Donnell said. "That means the comeback also will have to flow through supply chains. Even if things come back really strong, there's going to be a bubble that flows through that will be very unpredictable."

CIRAS advises companies to pay close attention to government stimulus plans and assess how that aid may shape the market for their products. Is now a good time to shift your marketing or production to capture a new kind of customer?

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Above all, O'Donnell cautions, don't let day-to-day crises stop you from thinking critically about the bigger picture.

"This event has caused ripples across supply chains and economies across the globe in terms of both raw materials and seemingly unrelated consumer goods," O'Donnell said. "When the crisis subsides, there may be even larger ripples as supply chains adjust to the new reality. Firms should learn from this experience and implement appropriate risk mitigation and business continuity plans."

Mike Ralston, president of the Iowa Association of Business and Industry, said most Iowa manufacturers appear to be on

solid financial footing, with good balance sheets and without too much inventory. Companies with supply chains that include China are facing complications, but they appear to be solving them.

"The real question is, 'How long does it last?'" Ralston said. "Waiting it out sounds simple. But it's going to be tough."

*Many of the following pages include checklists covering some of the issues businesses should be watching during the pandemic. Visit <https://www.ciras.iastate.edu/covid-19/> for more resources and for the latest on industry impacts of COVID-19.*

➤ **For more information, contact Marc Schneider at [maschn@iastate.edu](mailto:maschn@iastate.edu) or 563-221-1596.**

## A Letter to Iowans: How CIRAS Is Working during COVID-19

*The CIRAS mission is to "enhance the performance of industry through applied research, education, and technical assistance." During times of crisis, we do everything we can to continue serving Iowa companies while ensuring the health and safety of our team and yours.*



With that in mind, CIRAS for months has been deeply involved in executing its emergency response and continuity plans. We're now working largely from home, but we're continuing to serve Iowa businesses—albeit in some altered ways:

- CIRAS experts have postponed live events and shifted in-person visits and counseling sessions to virtual meetings and videoconferencing.
- Services involving laboratories and students have been delayed.
- *CIRAS News* is being released in an electronic-only format this month as a response to Iowans cut off from their workplace's physical mail.

In addition, CIRAS has taken several new steps during the COVID-19 pandemic:

- We launched [www.ciras.iastate.edu/covid-19](http://www.ciras.iastate.edu/covid-19) to provide you with up-to-date resources on how your business should respond to the coronavirus (see checklists on the following pages).
- We continue reaching out to businesses statewide to understand how you are being impacted and if we can help (see survey on page 20).
- We have added several new services, altered the focus of others, and expanded our online educational offerings (see box on page 3).

Because of the emergency, CIRAS will not charge companies for any of our COVID-19 response services.

We believe healthy businesses are the foundation of healthy Iowa communities. Please reach out to us at [ciras.info@iastate.edu](mailto:ciras.info@iastate.edu) if your company needs help during these difficult times.

Ron Cox, CIRAS Director

**On the Cover:** A worker at The Dimensional Group in Mason City cuts plastic for face shields. See story on page 3.

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

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## How We're Working

Until the pandemic passes, a large part of CIRAS services will involve the following:

- **HELPLINE**  
[ciras.info@iastate.edu](mailto:ciras.info@iastate.edu)  
CIRAS experts will respond to your questions within 24 hours and help you decide what actions you can take for your business.
- **FINDING CAPITAL**  
CIRAS experts will help you make informed cash flow decisions during significant supply and demand swings.
- **REPLACING REVENUE**  
CIRAS will help you quickly identify and act on paths to new sales.
- **SUPPLY CHAIN**  
We can find and connect you with new suppliers throughout Iowa and the nation.
- **RETOOLING PRODUCTION**  
CIRAS offers technical support to help you upgrade your processes to meet changing needs and markets.
- **HR HELP**  
Emerging COVID-19 laws are complex and confusing, but we'll help you understand what's best for your company.
- **EDUCATION**  
We've created a [COVID-19 website](#), new webinars, online forums, and other ways to help you get information you need.

**For more information, email [ciras.info@iastate.edu](mailto:ciras.info@iastate.edu) and we will respond within 24 hours.**



## Iowa Manufacturers Respond to COVID-19

*Tens of thousands of face shields were delivered to Mary Greeley Medical Center in April as part of a CIRAS-coordinated effort to help Iowa manufacturers meet this state's tremendous demand for personal protective equipment (PPE).*

That's just one of many instances in which Iowa industry has been coming together to overcome COVID-19.

Governor Kim Reynolds has praised Metalcraft in Mason City and John Deere plants around the state for their efforts to make PPE. Meanwhile, broad campaigns in Ames, Iowa City, Cedar Rapids, and elsewhere were seeing 3D printers tasked to make equipment for first responders. Dozens of manufacturers converted their operations to making face shields, cloth face coverings, and patient gowns by the thousands.

"We're just trying to help out where we can," Metalcraft COO Kyle Bermel told the *Mason City Globe-Gazette*.

Similar sentiments were voiced by Mason City-based The Dimensional Group and Ottumwa-based Angstrom Precision Molding. The two companies, with encouragement and support from CIRAS, joined forces in early April to begin manufacturing face shield kits for Iowa medical personnel.

Manufacturing began April 8 and quickly passed 150,000 units per week.

CIRAS continues working with hospitals, state agencies, and other professional associations to find fast solutions to emerging PPE needs. Our goal is for Iowa companies to take the lead in fulfilling manufacturing requests, because doing so allows companies to mitigate the pandemic's impact on their businesses and employees. CIRAS has supported this work by coordinating designs, finding raw materials, and locating production capacity. More projects are in the works.

➤ **For more information or to report manufacturing needs, email [ciras.info@iastate.edu](mailto:ciras.info@iastate.edu).**







## Iowa COVID-19 Preparedness Checklist

CIRAS is providing the following checklist to help Iowa businesses better respond to and reduce the risks of COVID-19. Due to the changing nature of the COVID-19 pandemic and lessons learned, we will be updating this checklist as the virus and controls are better understood. For a more detailed version of this list, click [here](#).

If your business has a practice you would like to share or anything else that should be included, please email [ciras.info@iastate.edu](mailto:ciras.info@iastate.edu).

### Gather Information

- Review the Centers for Disease Control and Prevention (CDC) and Iowa Department of Public Health websites for information on COVID-19 or current health crisis.
- Identify a resource at your company to monitor the crisis and potential impacts to business.
- Conduct a risk assessment of your operation, including such areas as staffing, business partners, supply chain, customers, and potential shutdowns of suppliers, customers, or transportation links.
- Identify potential cash-flow and financing requirements to sustain your business.

### Ensure Safety and Well-being of Your People

- Minimize people on site.
- Implement screening processes.

- Ensure social distancing at all times.
- Implement CDC cleaning guidelines.
- Implement facility modifications.
- Ensure good hygiene practices.
- Use proper PPE.
- Support employee wellness.

### Respond to a COVID-19 Exposure

- Protect your people.
- Conduct thorough environmental cleaning.
- Inform authorities if appropriate.

### Update Business Policies

- Examine leave policy.
- Implement flexible working.
- Suspend business travel.
- Post workplace posters.

### Assess Financial Impacts

- Ensure cash availability for operations.
- Identify alternate sources of sales.

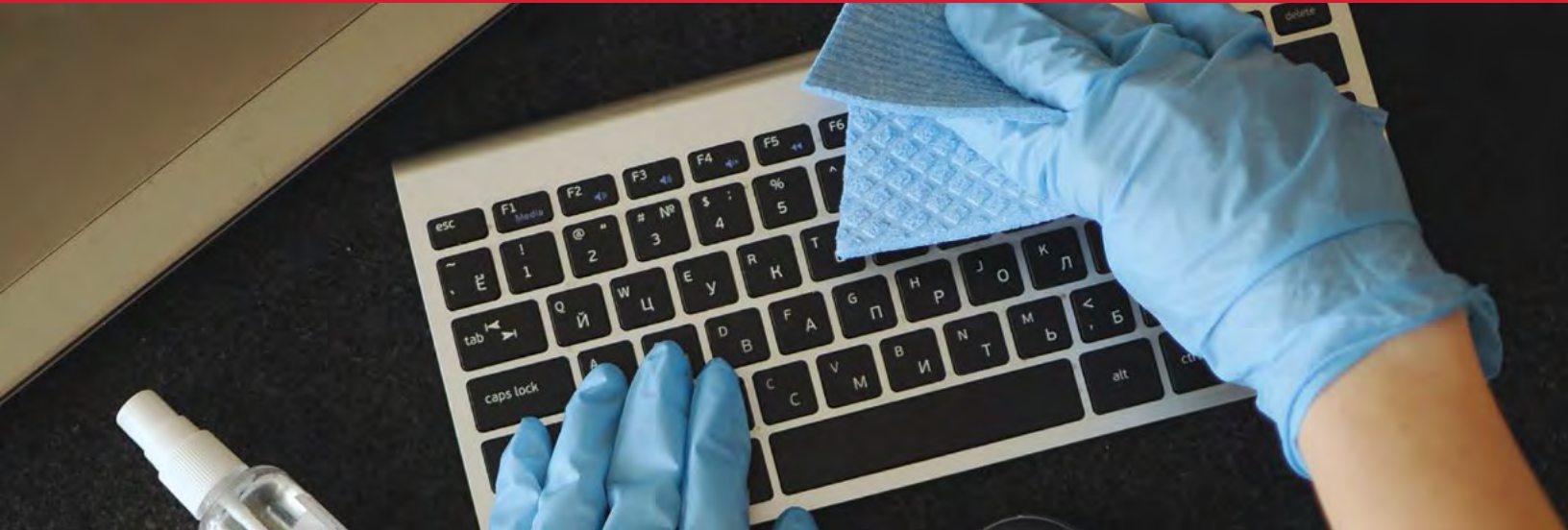
### Identify Continuity Risks

- Closure of nonessential businesses.
- Suppliers, carriers, and customers.

### Communication Plan

- Communicate to employees.
  - Communicate in many forms.
  - Plan and act based on facts, anticipating there will be anxiety and misinformation.
- Communicate to stakeholders.
  - Create a list of stakeholders (media, suppliers, customers, state and local officials) so you're ready if there is a positive test in your facility.

➤ For more information, email our COVID-19 helpline at [ciras.info@iastate.edu](mailto:ciras.info@iastate.edu).



## Responding to a COVID-19 Exposure

This advice is based upon recommendations from the Centers for Disease Control and Prevention ([www.cdc.gov](http://www.cdc.gov)) and Iowa's Department of Public Health ([www.idph.iowa.gov](http://www.idph.iowa.gov)). Please check these sources for the latest updates and recommendations.

### Protect Your People

- Employees (or visitors) who display acute respiratory illness symptoms (i.e., cough, shortness of breath) upon arrival at work or during the day should be separated from other employees and sent home immediately.
- Provide the employee with a copy of CDC's 2019 [nCoV fact sheet](#) describing how to get treatment.
- Contact the IDPH for help determining appropriate follow-up. Review their [business guidance](#) recommendation.
- If possible, identify which areas of your facility were visited by the sick individual and who had contact with that person. Consult with the IDPH (they may recommend a 14-day home self-quarantine for those staff members).
- Consider a temporary shutdown of the facility to thoroughly clean it before reopening for business.
- Associated with this would be implementation of any flexible leave, flexible working, or work-from-home arrangements.

- Communicate with your staff, suppliers, customers, and business partners on your facility status and plans.

### Conduct a Thorough Environmental Cleaning

- Refer to CDC's [environmental cleaning and disinfection recommendations](#) for what steps are required at your site.
- To minimize potential for exposure to respiratory droplets, close off areas used by any ill persons and wait as long as practical (if possible, up to 24 hours) before beginning cleaning and disinfecting. Open outside doors and windows to increase air circulation.
- Ensure all cleaning staff receive proper training in advance and have proper PPE (personal protective equipment). The recommended PPE includes gowns, gloves, and goggles or face shields.
- Review [OSHA requirements](#) for dealing with cleaning products and proper use of PPE.

- Cleaning staff should clean and disinfect all areas (e.g., offices, restrooms, machines, and common areas) used by the ill persons, focusing on frequently touched surfaces.
- If surfaces are dirty, they should be cleaned using a detergent or soap and water prior to disinfection.
- For disinfection, diluted household bleach solutions, alcohol solutions with at least 70 percent alcohol, and most common [household disinfectants](#) should be effective.
- Do not use compressed air or water sprays to clean potentially contaminated surfaces, as this may aerosolize infectious material.
- Ensure the cleaning staff follow proper and frequent hand-washing practices.
- Properly dispose of or clean PPE, laundry, and refuse.

### Additional information:

[www.ciras.iastate.edu/COVID-19](http://www.ciras.iastate.edu/COVID-19)

➤ For more information, email our COVID-19 helpline at [ciras.info@iastate.edu](mailto:ciras.info@iastate.edu).





## Screening Employees

*Pandemics like COVID-19, also known as coronavirus, create a variety of unusual circumstances to which you must be able to adjust quickly. This guide provides information and best practices related to screening your employees at the workplace related to the COVID-19 pandemic.*

### Screening Visitors and Employees

Employers should become aware if visitors or employees returning to work after an absence have potentially been exposed to COVID-19. This would include requesting them to identify if they had travelled outside the United States, been on a cruise, or had contact with a person suspected of COVID-19.

**Recommended steps:**

- Ensure you have controlled entry points to your facility that are separate from your general employee areas.
- Set up a simple, easy, and fact-based screening location or desk at these locations and ask visitors and employees to self-declare positive responses to the screening questions.
- Stagger shift start times to allow for social distancing while employees are waiting to be screened.
- Consider implementing a plan to measure your employees' temperatures upon entry to your facility.

### Measuring Employees Temperatures

As of March 18, the EEOC permitted employers to begin measuring employees' body temperatures. However, fevers by themselves are not determinative (see below). Employers may ask employees if they are experiencing any of the symptoms of the pandemic virus. For COVID-19, these include symptoms such as fever, chills, cough, shortness of breath, sore throat, muscle pain, or loss of taste or smell. Any information obtained about employee illness must be maintained by employers as a confidential medical record in compliance with the ADA.

**Detailed recommended steps:**

- Employers should develop and stick to an objective procedure for employee screening. Considerations that should go into that process include the following:
  - What is the consequence of a measured fever? Options should include being restricted from the workplace and/or referred to a medical professional.

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- What will the impact be on employee compensation?
  - Is remote work an option for this position?
  - Companies should provide written instructions telling employees to follow [CDC guidelines](#) on how to end any home isolation.
- During the screening process:
- To provide consistency, employers should limit the number of designated temperature-taking employees.
  - If a medical professional is on staff, that individual should administer the screenings. If no medical staff is available, then the ideal administrator should be within HR or senior management.
  - Consider requiring that screeners wear personal protective equipment (PPE) while in close contact with employees.
  - Steps should be taken to ensure that employees standing in line to have their temperature taken remain at least six feet apart. (Staggered start times can help reduce the potential for crowding.)
  - A separate, private area should be established to temporarily hold any individuals who fail the initial screening away from the general employee population.
- Maintain employee privacy throughout the process.
- Employee temperature and other health information should be kept confidential, but not in the employee's personnel files.
  - One option is to store only the name, job position, date, and time connected to a measured fever, along with that person's contact information.
- Companies seeking to screen employee temperatures should use infrared cameras or infrared thermometers so they can do so in the least invasive means possible. Refer to the [CIRAS Thermal Scanning guide](#) for more detail.

- The CDC considers someone to have a fever when he or she has a measured temperature of 100.4 degrees Fahrenheit or above.
  - Ensure you understand the error margin for your particular device on human skin. Industrial infrared cameras generally are not suitable for measuring temperatures within a narrow range.
- Any detected fevers should be confirmed with use of a clinical or medical thermometer, preferably through a medical professional.
- [FDA regulations](#) state that infrared cameras are "intended for use as an adjunct to the clinical diagnostic procedures in the diagnosis, quantifying, and screening of difference in skin surface temperature changes."
  - Elevated temperature readings from an infrared device do not prove the presence of COVID-19. (Accurately measured fevers can exist for many reasons, and not all people infected with COVID-19 exhibit fevers.) However, infrared devices can highlight the potential need for further testing.

**Additional Resources:**

**CIRAS COVID-19 Website:**

[www.ciras.iastate.edu/COVID-19](http://www.ciras.iastate.edu/COVID-19)

**Centers for Disease Control and Prevention (CDC):**

<https://www.cdc.gov/>

**Iowa Department of Public Health (IDPH):**

<https://idph.iowa.gov/>

**U.S. Equal Employment Opportunity Commission (EEOC):**

<https://www.eeoc.gov/>



➤ For more information, email our COVID-19 helpline at [ciras.info@iastate.edu](mailto:ciras.info@iastate.edu).



## CIRAS Urges Importance of Planning for Supply Chain Disruption

As the COVID-19 health crisis impacts global supply chains, CIRAS is stressing the importance of having a plan in place prior to disruptions to your supply chain. The following checklist can help your company react to and prepare for disruptions.

### If your supply chain is already impacted:

- Let CIRAS know so we can advise of available resources or support.
- Consider short-term and long-term impacts when making decisions (your ability to make sales, impacts on production schedule, staffing, etc.).
- Realize alternative suppliers are probably getting similar requests from other companies and have capacity limits and/or higher prices.
- Contact CIRAS to see if we are aware of any alternative suppliers within Iowa or nationally through the Manufacturing Extension Partnership National Network™.

### If you suspect there may be disruptions to your supply chain:

- Contact your suppliers, carriers, forwarders, and brokers immediately to confirm.

- If possible, build inventories of your short raw materials and secure production and transport capacity from your supply chain partners.
- Start sourcing alternative suppliers as needed.
- Identify a resource at your company to monitor the crisis and potential impacts to your supply chain.

### Preparing for the next disruption:

- Conduct a Total Cost of Ownership (TCO) analysis to revisit overseas sourcing.
- Conduct a risk assessment of your supply chain and implement changes to handle risks.
- Consider dual sourcing (locally and overseas) for critical components.
- Have a disaster response plan in place.
- Have a process to monitor global events to identify potential supply chain disruptions early.

### Other Considerations

- Communication is key—talk to your customers, suppliers, carriers, forwarders, and brokers about potential supply chain disruptions and how you can work together to mitigate issues.
- Remember that the impacts vary across the global supply chain, so local suppliers can also be affected based on their sources of supply.
- Travel and workforce issues overseas can impact your local supply chain.
- Remember that you face competition for global product and transport resources.

### Additional information:

[www.ciras.iastate.edu/COVID-19](http://www.ciras.iastate.edu/COVID-19)

➤ For more information, email our COVID-19 helpline at [ciras.info@iastate.edu](mailto:ciras.info@iastate.edu).





## Operations Management Best Practices

Pandemics like COVID-19, also known as coronavirus, create the need for a new approach to managing operations within your manufacturing, warehousing, or distribution business. This guide provides information and best practices related to minimizing the risk of COVID-19 within your workplace. Companies should review these best practices and implement those that are feasible within their operation.

### Employee Distancing in Operations

The following is a list of items a company can implement to maintain employee distancing:

- Move as many job functions (e.g., office/admin) to remote working arrangements as possible.
- Stagger start times so all employees are not entering the facility and operating floor at the same time.
- Stagger break and lunch periods to minimize the number of staff in your break and lunch rooms.
- Rearrange workstations on the floor to maintain a minimum six-foot separation. Where a minimum separation can't be maintained, consider installing clear physical barriers or shields between operators.
- Move as many meetings as you can to a virtual format (or eliminate them). For remaining meetings, space out attendees to maintain minimum separation. Replicate meetings to reduce attendee size per meeting.

- Schedule shifts to avoid overlap so an entire shift can vacate the premise before the next shift arrives.
- Zone your operation and limit staff to only the zones they need to be in to do their work.
- Create new shifts and split employees between shifts to limit exposure to a single shift.

### Operations Management Best Practices

Best practices in managing your operation to minimize any COVID-19 exposure include the following:

- Increase the frequency and depth of sanitizing efforts, focusing especially on high-traffic areas, high-touch items, break rooms, restrooms, controls, and tools.
- Conduct a routine cleaning in between each shift, and disinfect all touched surfaces.
- Provide sanitary wipes throughout the facility and train employees on using them constantly to clean high-touch surfaces.

- Train employees on self-responsibility behaviors (and refresh the training regularly) in regard to protecting themselves from exposure (frequent handwashing, eliminating physical contact, distancing, etc.).
- Post signage within your facility to promote proper activity. Refer to [signage provided by the CDC](#). (Example above.)
- Identify key personnel to your operation and create schedules and procedures to isolate them from your other staff to minimize the risk of exposure.
- Improve and expand the cross-training of your employees across multiple job duties.
- Remove all unnecessary items from the operating area to minimize the number of exposed surfaces.
- Review if it is possible to remove lids, covers, doors, and other items that require contact to operate.
- Increase ventilation rates and increase the percentage of outdoor air that circulates into the facility.

➤ For more information, email our COVID-19 helpline at [ciras.info@iastate.edu](mailto:ciras.info@iastate.edu).

# What Is an Essential Business?

Multiple states have issued executive orders requiring people to “stay at home” and for nonessential businesses to shut down because of the COVID-19 pandemic. As CIRAS News was being finalized, Iowa had NOT issued a stay-at-home order related to nonretail and manufacturing businesses. This guide provides information for understanding what the federal and most state governments consider to be an essential business.

## Essential Business Determination

To date, the stay-at-home orders that have been issued rely on a company to self-determine if they are an essential or critical business. Most of these executive orders rely on guidance put out by the federal government on critical infrastructure industries/workers related to COVID-19. The Cybersecurity and Infrastructure Security Agency (CISA), which is part of the Department of Homeland Security, has provided a definition of critical infrastructure industry for use by the states, CDC, and related entities to make decisions.

Steps to self-determine as an essential business:

- Review the [CISA critical infrastructure industries](#) list versus your industry and specific business scope. Check both the industries listed and types of services or

products under that industry to see if your business qualifies as an essential or critical business.

- If your business is not included in this list but you are a supplier to a company that is included, you may still be considered an essential business by the state.
- There may or may not be a formal method to appeal the industries, products, or services included per state.
- Be aware that each state may use a slightly different method or list to determine their essential businesses.

## Impact on Nonessential Businesses

Most stay-at-home orders have the following provisions for nonessential businesses:

- They are allowed to perform minimum business activities to

preserve their facilities, equipment, and inventory.

- Staff may go on site to perform necessary payroll and related functions.
- Company employees may continue to work from home, and the company can continue to maintain and support the necessary IT and communication equipment to support this.
- Proper social distancing procedures should be followed.

## Cross-border Information

- Travel of employees living in one state to another state for work is not affected, though nonessential travel is discouraged.
- The movement of goods and cargo is not affected by these stay-at-home orders.



➤ For more information, email our COVID-19 helpline at [ciras.info@iastate.edu](mailto:ciras.info@iastate.edu).



## Supporting an Effective Telecommuting Workforce

Pandemics like COVID-19, also known as coronavirus, create a variety of unusual circumstances that you must be able to quickly adjust to. This guide provides information and best practices related to establishing a telecommuting workforce and supporting an effective virtual workplace for your employees and business.

### Establishing a Telecommuting Workforce

The following is a list of items a company should consider when temporarily switching to a virtual environment or remote working situation in response to business disruptions like COVID-19:

- Identify which business functions and work positions can be done remotely (at home).
- Identify which specific employees would be impacted by allowing telecommuting.
- Ensure telecommuting employees have proper equipment and services to support working remotely. This includes mobile phones, computers/laptops, printers/scanners, headphones, and related items.
- Establish appropriate Internet and cellular services and identify how any employee-borne costs (e.g., increased Internet charges) would be reimbursed or supported.

- Review what software, access, log-ons, and related support each employee will need to do their job.
- Identify what IT support is required and who may need access to your facility.
- Conduct tests of the equipment, connectivity, access, and function with each individual employee BEFORE starting remote work, if possible.
- Create or review trainings and/or instructions on how to use online video-conferencing tools.

### Telecommuting Best Practices

Below is a summary of best practices in regard to maintaining and fostering an effective virtual workforce:

- Establish a telecommuting policy.
- Encourage employees to maintain a normal work schedule and to keep a healthy work-life balance.

- Instruct employees and supervisors to hold regular meetings and establish clear expectations.
- Encourage all employees to overcommunicate with their coworkers.
- Continue education and training for employees through virtual platforms.
- Regularly check in with employees to ensure they have the necessary equipment and resources.

### Additional Resources:

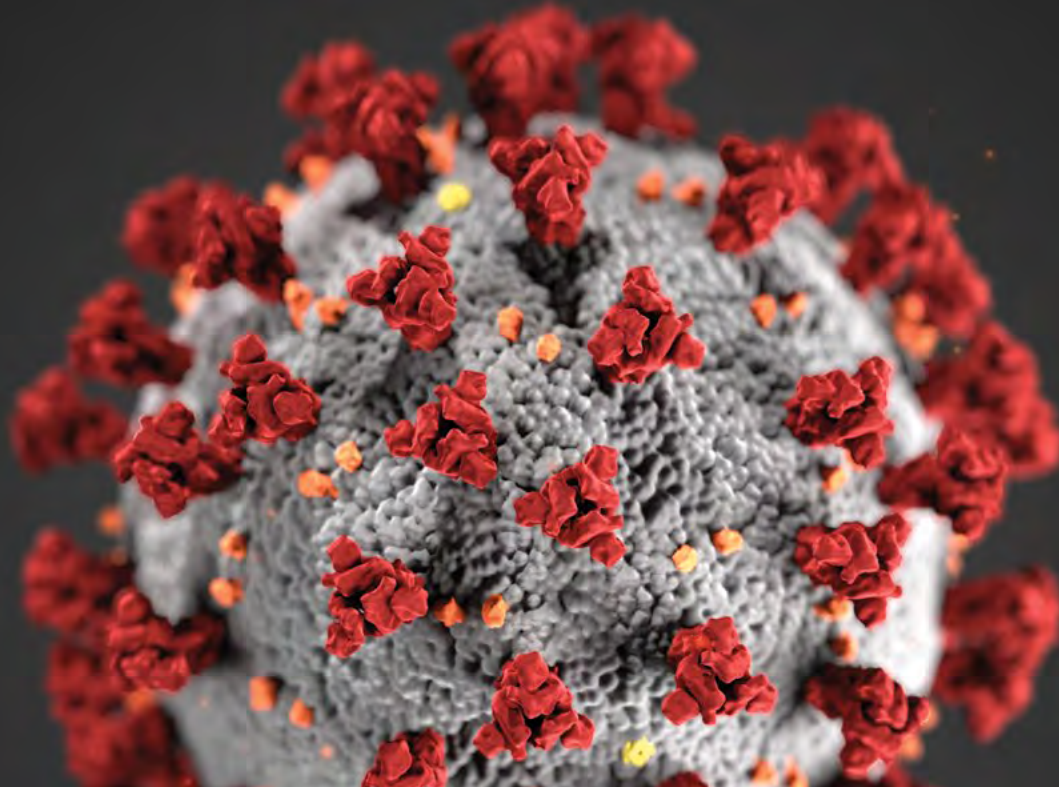
[Iowa State University ITS—Digital Accessibility: Making Remote Work Accessible](#)

[Gallup—How to Manage Remote Employees](#)

[Robert Half—Remote Control: How to Make Telecommuting Work for Your Team](#)

➤ For more information, email our COVID-19 helpline at [ciras.info@iastate.edu](mailto:ciras.info@iastate.edu).





## Understanding the Families First Coronavirus Response Act (FFCRA)

The Families First Coronavirus Response Act (FFCRA) was created to help alleviate COVID-19 related workplace challenges. Effective April 1, 2020, certain American employees are eligible for the benefits offered by the Emergency Paid Sick Leave Act and Emergency Family and Medical Leave Expansion Act, both part of the FFCRA.

The FFCRA will reimburse covered employers with tax credits for the cost of providing employees with paid leave for specified reasons related to COVID-19.

The type of leave and the pay rate are dependent on the employee's COVID qualified leave. The department's Wage and Hour Division administers the paid leave portions of the FFCRA.

### Summary of the Emergency Paid Sick Leave Act (EPSLA)

Employees are eligible for up to two weeks, or 10 days, of paid sick leave, subject to an 80-hour cap for full-time employees.

#### Qualifying Reasons for Leave:

An employee is unable to work (or unable to telework) due to a need for leave because the employee:

1. is subject to a federal, state, or local quarantine or isolation order related to COVID-19;
2. has been advised by a health-care provider to self-quarantine related to COVID-19;
3. is experiencing COVID-19 symptoms and is seeking a medical diagnosis;
4. is caring for an individual subject to an order described in (1) or self-quarantine as described in (2);
5. is caring for a child whose school or place of care is closed (or childcare provider is unavailable) for reasons related to COVID-19; or
6. is experiencing any other substantially similar condition specified by the Secretary of Health and Human Services, in consultation with the Secretaries of Labor and Treasury.

### Summary of the Emergency Family and Medical Leave Expansion Act (EFMLEA)

An employee can use EFMLEA leave to care for his or her child whose school or place of care is closed (or childcare provider is unavailable) due to COVID-19 related reasons. Up to 12 weeks of job-protected leave with continuation of health insurance is provided. The initial two weeks are unpaid (employee may use accumulated leave from employer – or EPSLA leave, if he or she qualifies). The remaining 10 weeks are paid at two-thirds the employee's regular rate of pay.

To be eligible for this leave, an employee must be employed for at least 30 days prior to when leave begins.

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## How the FFCRA Affects Your Company

The paid sick leave and expanded family and medical leave provisions of the FFCRA apply to certain public employers and private employers with fewer than 500 employees.

Small businesses with fewer than 50 employees may qualify for an exemption if the leave requirements would jeopardize the viability of the business. While the exemption process is not yet defined, small businesses should document evidence if they plan to request an exemption.

### ***How Are Employees Counted?***

When counting employees, employers should include full- and part-time employees within the United States, employees on leave, and temporary employees and day laborers. Independent contractors are NOT included.

### **Required Documentation**

Employers who plan to claim tax credits under the FFCRA for payment of leave should retain appropriate documentation, as instructed by the Internal Revenue Service (IRS).

For employees who take expanded medical leave to care for a child whose school or care provider has closed or is unavailable due to COVID-19, additional documentation may be required for employers. This might include postings from websites, newspapers, or email communication.

At this time, the Centers for Disease Control and Prevention (CDC) is not encouraging employers to require a positive COVID-19 test result or a health-care provider's note to validate an employee's illness or inability to return to work.

### **More Information on the Families First Coronavirus Response Act (FFCRA)**

<https://www.dol.gov/agencies/whd/pandemic/ffcra-employer-paid-leave>

This includes full information on the following:

- What leave must be provided to employees by covered employers
- Who are considered covered employers
- How to calculate compensation based on leave type
- Qualifying reasons for leave and how to determine duration of leave
- Employer tax credits for qualifying paid leave
- Employer posting requirements ([Employee Rights poster](#))
- Penalty and enforcement details

### **Other Resources:**

[Department of Labor](#)

- [Families First Coronavirus Response Act: Questions and Answers](#)
- [COVID-19 and the Family and Medical Leave Act Questions and Answers](#)
- [Wage and Hour Division of U.S. Department of Labor—News Releases](#)



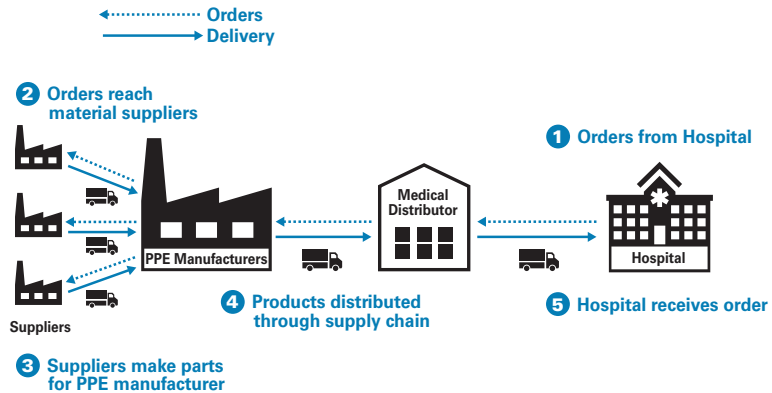
➤ For more information, email our COVID-19 helpline at [ciras.info@iastate.edu](mailto:ciras.info@iastate.edu).

# The PPE Supply Chain: Why It's So Difficult

We've created this primer as a way to help Iowans understand why the struggle to find Personal Protective Equipment for medical workers can be so complex. During normal demand, the supply chain for PPE can provide products very quickly and cheaply.

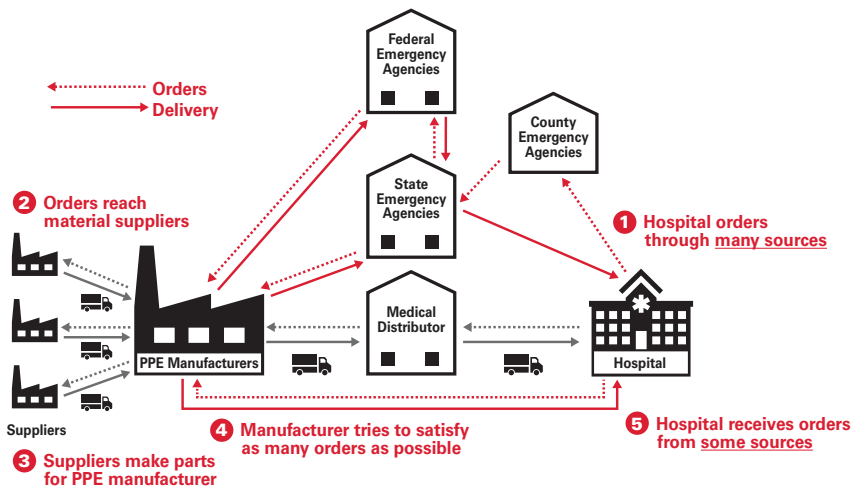
## Traditional PPE Supply Chain

- The customer initiates an order. Information flows down the supply chain through distributors to original equipment manufacturers and their suppliers.
- Components then move through the supply chain and are assembled into the final product, which moves to the customer.
- To keep costs low, companies have “leaned” the supply chain by reducing inventories and by trying to maintain a level flow of orders.
- When the demand is constant, customers rapidly receive their orders.



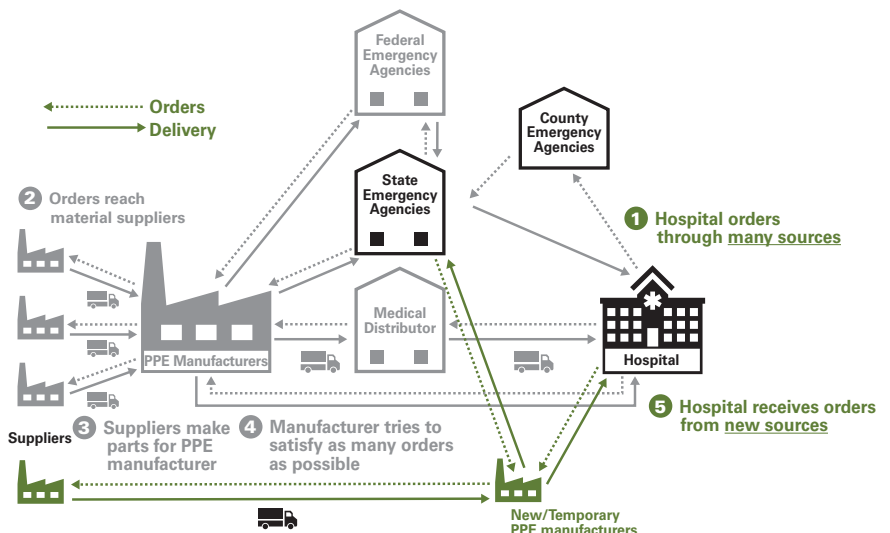
## Emergency PPE Supply Chain

- In the current pandemic, several new channels have developed to deliver PPE.
- Hospitals, medical clinics, and long-term care facilities are now placing orders directly to manufacturers, to the state of Iowa, and to their traditional medical suppliers.
- Existing factories may not have the capacity to produce to the demand and may not have time to ramp up production.
- In some cases, due to competition or depleted inventories, a PPE manufacturer may not be able to get key components from a supplier.



## New Iowa PPE Supply Chains

- Iowa manufacturers have been innovative, partnering with new suppliers to develop PPE and deliver it directly to Iowa medical facilities and to the state of Iowa.
- They can do this faster in some instances because the supply chains are shorter. However, delays can still occur because of a lack of timely orders or because of difficulties getting key resources.



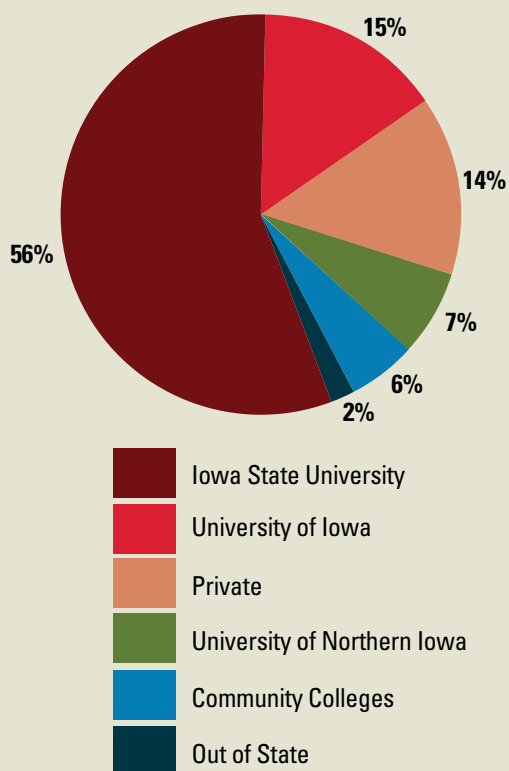


# IEDA Program Supported 363 Interns at Iowa Companies in FY2019

*Iowa small and medium-sized businesses added 363 college interns in fiscal year 2019, thanks to two state programs that can be especially helpful to Iowa employers in times of reduced revenue.*

The Iowa Student Internship Program and the STEM Internship Program both are operated by the Iowa Economic Development Authority (IEDA) to promote the hiring of STEM students and increased technical expertise in certain industries. In the year ending June 30, 2019, the programs spent a combined \$1.3 million to subsidize the salaries of 363 interns (who worked a combined 408 semesters).

State data show that a total of 121 businesses hired students from 19 institutions. More than one-half of the interns came from Iowa State University.



➤ For more information, visit [www.iowaeconomicdevelopment.com/WorkforceTraining/student](http://www.iowaeconomicdevelopment.com/WorkforceTraining/student).

# Engineering Community Outreach Offers Fun for Families at Home

*It's not just your company that has been forced to adapt to COVID-19. Iowa children are operating differently, too.*

With many schools closed, Iowa State University's Engineering Community Outreach is stocking its [website](#) with easy-to-do activities designed specifically for kids and families. Offerings include a daily theme involving something to do hands-on with items around the house, a deeper dive into the STEM concept, a program or movie to watch together, and a little bedtime boredom buster.

Organizers plan to load new activities each day, plus some LEGO build challenges for students to complete and be recognized. Click the link above, or sign in for Fun at-Home Updates [here](#).

**Engineering Community Outreach programs exist to encourage diverse young people to experience the fun and innovation in engineering. For more information or to share an activity or resource idea with us, email [isek@iastate.edu](mailto:isek@iastate.edu).**

The screenshot shows the Iowa State Engineering Kids website. At the top is the 'isek' logo and navigation tabs for HOME, FLL, FLL JR., CAMP, and MFG DAY. The main content area is titled 'Fun at-Home Activities!' and includes an introductory paragraph, a list of activity formats (Today's thing to do, Today's deeper dive, Today's couch time, Today's bedtime boredom buster), and a section for 'Today's Thing to Do! - April 20, 2020'. The featured activity is 'Leap Years' with a 'Deeper Dive' section and a link to 'The Leap Second Explained | Space Time | PBS Digital Studios'.

## COVID-19 Causing Increased Sales in Some Industries

*It's no surprise that there is a major boost in the procurement of personal protective equipment and medical supplies amid the COVID-19 pandemic. According to the COVID-19 report on federal spending data from the Federal Procurement Data System, other industries are seeing an uptick in demand as well. The \$2.2 trillion stimulus is allocating various agencies additional funds to address needs related to the pandemic, and it's not all for medical supplies.*

### Computer Hardware/Information Technology

Many agencies are now equipping their staff to work remotely, which means an increase in the purchase of laptops, docking stations, tablets, monitors, etc. The \$2 trillion stimulus bill includes \$12 million for the Office of Personnel Management to increase their remote capabilities and acquire needed technology to change their paper-based application processes to electronic ones. FEMA was allocated nearly \$45 million for enhancements to information technology.

### Janitorial Services/Cleaning Supplies/Remediation

To help curb the spread, almost all buildings where people still have to report to work are upping their cleaning and disinfecting routines.

The General Services Administration's Federal Buildings Fund, for example, will receive an additional \$275 million for "deep cleaning" efforts at federal facilities around the country. The Transportation Security Administration (TSA) will also receive \$100 million for similar efforts.

Current janitorial contract holders at all levels of Iowa government may be stretched for labor to accommodate these additional needs, creating an opportunity for newer contractors to subcontract with them.

### Staffing Agencies

The Department of Veterans Affairs is being issued \$20 billion to help fund their medical care and telehealth services. They have already issued several temporary medical staff contracts for health screeners,

nurses, and pharmacy and medical technicians. Another large need is in the legal profession. The U.S. Attorney's Office is turning to GSA schedule holders for paralegals and legal assistants.

In short, Iowa companies should realize that the ongoing pandemic has shifted much of the government's purchasing tendencies. Federal, state, and local agencies have different needs now than they did before the emergence of COVID-19. If you think you have a product or service that can help fulfill one of those needs, the CIRAS Procurement Technical Assistance Center (PTAC) can help you get started navigating the process.

➤ **For more information, contact your regional PTAC government contracting specialist or email Jodi Essex at [jodir@iastate.edu](mailto:jodir@iastate.edu).**

Toilets are one example of a disaster need that can fall under a prearranged government contract. With CIRAS assistance, Waste Solutions of Iowa recently was awarded a three-year deal to provide (within 48 hours of being called) toilets and hand-washing stations for Iowa Homeland Security and Emergency Management.





## Getting Started: Disaster Contracting Amid COVID-19

*A federal disaster has recently been declared for the State of Iowa, allowing local, state, and tribal authorities in Iowa to receive federal funding in response to COVID-19. This leaves many businesses wondering how they can get in on the action and provide goods/services during a disaster.*

The Federal Emergency Management Agency (FEMA) steps in to provide support and resources when state resources are overtaxed due to a declared disaster. Per FEMA's website, "Emergency response is most successful when it is locally executed, state managed, and federally supported."

It is important for a business to properly register in the appropriate databases, such as the System for Award Management ([www.sam.gov](http://www.sam.gov)) and FEMA's Industry Liaison Program. Many agencies use these databases to find businesses that can respond to urgent needs in a particular area, because the Stafford Act requires FEMA to contract with businesses located in the affected area when feasible and practicable.

While FEMA does contract for goods/services during a disaster, what's less understood is the importance of connecting with and registering with agencies in your own backyard. A large portion of disaster response is locally executed. Agencies will use existing contracts when possible. If no existing contracts can be used, they will follow regular procurement policies to obtain the good/service unless they can document that following the regular procedures will threaten public health, safety, or welfare. In this instance, they can procure goods/services in a more streamlined manner.

Relief efforts also are state managed. FEMA will coordinate any relief efforts with the Iowa Department of Homeland Security & Emergency Management (HSEMD). That agency maintains a Qualified Vendor List of businesses they can call on during a disaster. Businesses that want to be considered for this list can register on their Vendor Opportunities website.

➤ **For more information or assistance getting started with government contracting, contact your regional government contracting specialist with the CIRAS Procurement Technical Assistance Center (PTAC).**



# SCAM ALERT

## Beware of COVID-related Scammers

*State officials have warned Iowans to watch out for illegal activity as the nation continues working through COVID-19.*

Concerns include the following:

- **Bogus COVID-19 treatments or cures**—The FDA and FTC have sent warning letters to seven companies accused of selling unapproved products (including teas, essential oils, and colloidal silver) claiming to treat or prevent the virus.
- **Increased phishing attempts**—Beware of email attempting to obtain personal information for processing recovery aid or loans. You also should be suspicious of any email claiming to be from the CDC, WHO, or anyone else professing to be a coronavirus expert.
- **Price gouging**—Iowa law makes it illegal to raise prices unreasonably above the price at which the relevant merchandise or service was sold immediately before the pandemic. Businesses or individuals found in violation could face civil penalties of up to \$40,000 under the Iowa Consumer Fraud Act.

The Iowa Attorney General's office reminds you that government agencies will not reach out electronically to obtain any aid-related information. Beware of misspelled URLs and do not click on links in unsolicited emails.

➤ **For more information, visit** <https://www.iowaattorneygeneral.gov>.





Work in progress at M's Machine and Manufacturing.

## M's Makes Most of CIRAS Events

*For Candace Drahn, part of staying ahead means discovering what you don't know.*

"As a small business, it's hard to get out and educate yourself about industry trends," said Drahn, vice president of M's Machine and Manufacturing in Monona. "CIRAS kind of condenses everything into the small business mindset that I need. . . . It gives me a good overview of what I need to be doing on a particular topic."

Employees of M's Machine and Manufacturing have interacted with CIRAS more than 25 times over the past five years, mostly through classes,

workshops, and webinars that lasted less than a single day. Since 2016, the company has reported an economic impact of more than \$87,000 based on what they've learned from those events.

"Because small manufacturers wear so many hats at one time, it's really hard for them to focus on a particular area and stay current," said retired CIRAS account manager Sean Galleger. "CIRAS does a lot of the research for them."

In 2018, CIRAS and its partners held nearly 300 educational events attended by more than 8,200 people. Roughly 75 percent came from companies with 100 or fewer employees.

For the time being, CIRAS has shelved in-person events because of the COVID-19 pandemic. However, companies of all sizes can still take part in a wide variety of educational webinars.



Drahn praised CIRAS as a valuable source of reliable, up-to-date industry information.

"As a job shop, our costs have to remain low, because nobody's going to pay a high-dollar amount to have some value-added work done on a part when there are a lot of us out there that can do the work," she said. "We need to do what we have to do to stay competitive."

### AT A GLANCE

**M's Machine and Manufacturing Company**

**FOUNDED:** 1981

**OVERVIEW:** Machine shop for cost-effective, on-time precision parts.

**EMPLOYEES:** 28

**IMPACT:** More than \$87,000 since 2016.

**FOR MORE:** [www.ms-machine.com](http://www.ms-machine.com)

➤ For more information, check the calendar at <https://www.ciras.iastate.edu/events-workshops/>.



## New Technologies

Jake Behrens has joined CIRAS as a project manager focused on new technologies. Jake received a bachelor's degree in agricultural systems technology from Iowa State University, after which he conducted research at Iowa State University for nearly seven years in material development and testing, product design and implementation, test method development, and test analytics.

In 2016, Jake received a master's degree in industrial and agricultural technology from Iowa State University. Since then, he has served the Department of Agricultural and Biosystems Engineering as a teaching laboratory coordinator, managing advanced manufacturing lab spaces and supporting student capstone projects.

Jake's role at CIRAS includes working within Industry 4.0 services and supporting the Iowa State Digital Manufacturing Lab powered by Alliant Energy.



## Business Development

Mary McGraw has joined CIRAS as business development manager. Mary has a bachelor's degree in advertising from Iowa State University and has been working for the university since 2011.

Mary began her Iowa State career in the College of Engineering's Department of Aerospace Engineering, where she was responsible for office operations, special projects, human resources, special events, and assisting the department chair. In 2016, she moved to the College of Engineering Dean's Office, where she served as a human resources coordinator—a role that included duties dealing with recruitment, learning and development, classification, and policy development.



## Data Analysis

Robbie Nelson has joined CIRAS as a marketing data analyst.

Robbie graduated from Iowa State University with a bachelor's degree in history in 2010. He then spent eight years working as a home underwriter and a data analyst for two different divisions of Wells Fargo, compiling and analyzing data for reports used by business leaders. Robbie also has worked as a product and strategic analytics specialist for Brokers International and as a marketing data analyst for NCMIC, a malpractice insurance company.

His new role will involve using digital tools and information to help CIRAS improve our ability to identify and engage with the Iowa businesses that need assistance.



## Strategy

Steve Wilson has joined CIRAS as a strategic adviser.

Steve has nearly 20 years of experience helping businesses improve, specifically focusing on Lean and operational excellence. He spent 15 years leading Zoned Strategies, a consulting business focused on client training and coaching. He also worked with multiple companies as a third-party CIRAS consultant. Steve has a bachelor's degree from Kennedy Western University and is an ASQ-certified Lean Six Sigma Black Belt.

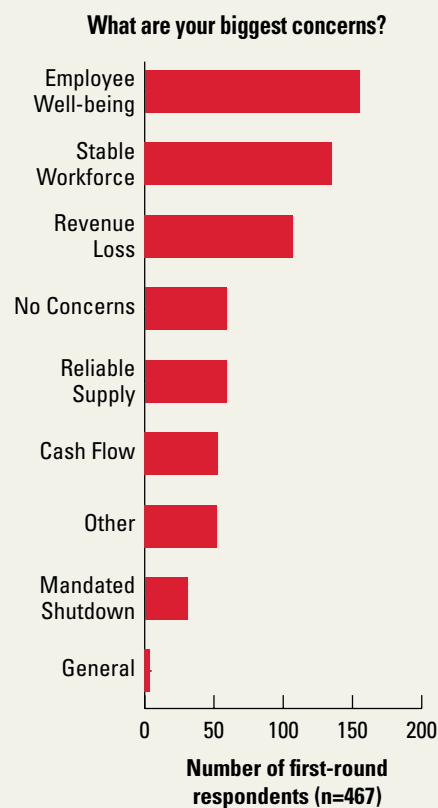
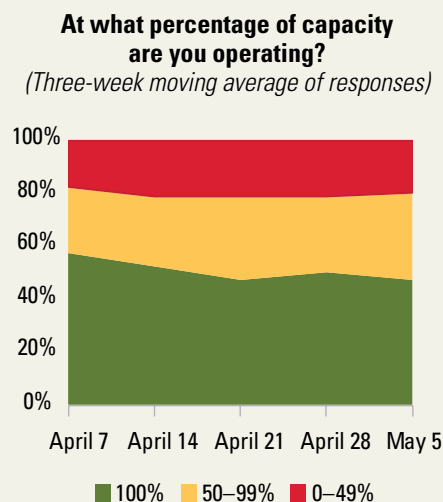
Steve's new role at CIRAS will include account manager responsibilities in northeastern Iowa and providing client services involving Lean manufacturing and continuous improvement.

# Conquering a Pandemic Requires That You First Understand It

Below are the results from a few of the first attempts to measure the impact of COVID-19 on Iowa businesses.

## CIRAS Survey

An ongoing CIRAS phone survey that began March 16 and had 506 respondents as of May 5.

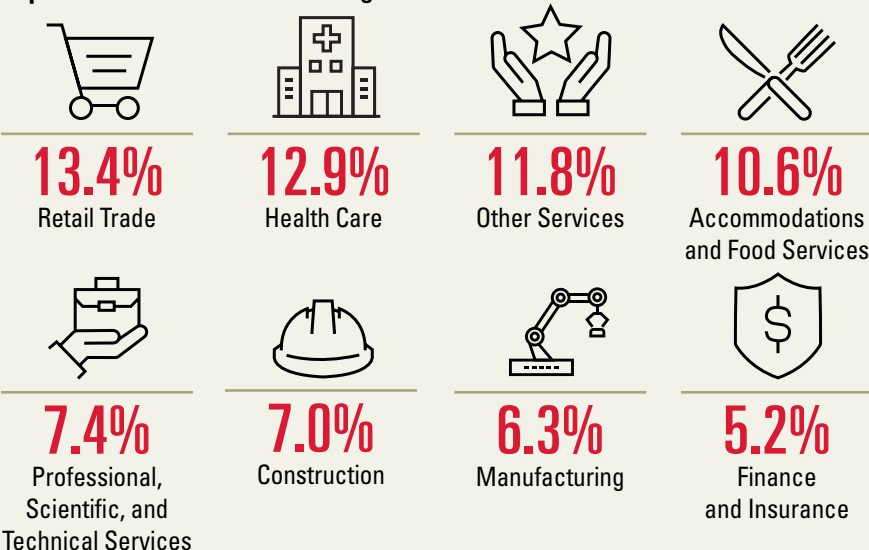


> CIRAS: <https://newswire.ciras.iastate.edu>

## Iowa Economic Development Authority (IEDA) Survey

A survey of 13,905 businesses conducted by the IEDA/University of Northern Iowa Institute for Decision Making and Strategic Marketing Services from March 17 to March 23.

The IEDA survey covered a broad cross section of the Iowa economy, with 83.6% reporting a direct negative impact from COVID-19. Largest industry sectors represented include the following:



### Top three areas impacted:

- Business operations (67.1%)
- Business development/sales (63.8%)
- Customer demand of products/services (62.4%)

### What assistance or resources would be helpful to your organization?

- Financial assistance—85.2%
- Communication and information—12.5%
- Unemployment/Workers comp—10.8%
- Tax relief—8.6%

> IEDA: [www.iowaeconomicdevelopment.com/UserDocs/news/IEDA\\_Exec\\_Summary\\_FINALv2\\_4-8.pdf](http://www.iowaeconomicdevelopment.com/UserDocs/news/IEDA_Exec_Summary_FINALv2_4-8.pdf)

### Extension Offers Resources to Aid Employee Well-being

Taking care of your team in the wake of COVID-19 means worrying about their family and financial stress just as much as their temperatures, Donna Donald believes.

“If you want to keep your business in a positive state, you’ve got to have good employees and engaged employees,” said Donald, a field operations specialist with Iowa State University’s Human Sciences Extension and Outreach. “If your workers have all of this other stuff going on in their lives, how can they focus on work?”

Human Sciences Extension and Outreach operates a [Finding Answers Now](#) website and an *Iowa Concern* phone line to provide resources to Iowans struggling during a crisis. In addition to one-on-one financial education and online relationship classes, Iowans can receive confidential and no-cost help with the following:

- Child care and parenting concerns.
- Mental health concerns, including an online suicide prevention class.
- Tips for eating healthy on a budget.

For more information, download [this flyer](#) or call 1-800-447-1985.



## Greater Des Moines Partnership Survey

A survey of central Iowa businesses conducted on behalf of the Greater Des Moines Partnership from March 16 to March 24.

More than 80 of 601 respondents to the Greater Des Moines Partnership survey asked how they could help others.

How is your organization being impacted by COVID-19 (coronavirus)? The most popular responses included the following:



**62%**

We are making other changes to the way we operate.



**47%**

We are starting to restrict spending because of the uncertainty.



**41%**

We are encouraging team members to work remotely.

What is your organization doing to address the growing concerns over the spread of COVID-19?

The most popular responses included the following:

**64%**

Routinely sharing updates on COVID-19 with employees and external audiences

**62%**

Rescheduling or canceling large meetings and events

**61%**

Updating our organizational priorities, policies, and operating procedures as needed

**60%**

Encouraging additional cleaning of workspaces and common areas

**55%**

Rethinking our own upcoming workplace activities, meetings, and events

**52%**

Stocking up on sanitizer and cleansing wipes for staff use

**52%**

Mandating additional cleaning of workspaces and common areas

**49%**

Encouraging virtual content delivery modes rather than in-person gatherings

**43%**

Encouraging employees to conduct business remotely, including meetings and daily work duties

Does your business anticipate needing financial assistance?

**49%**

At this time, nearly half of the survey respondents did not anticipate needing financial assistance.

**13%**

Approximately one-eighth of respondents said they are concerned their business may not be able to sustain or overcome this financing challenge.

The remaining respondents cited their financial impact as follows:

**24%**

Anticipate needing up to \$100,000 in financial assistance for their business

**7%**

Anticipate needing \$100,000–\$250,000 in financial assistance for their business

**3%**

Anticipate needing \$250,000–\$500,000 in financial assistance for their business

**3%**

Anticipate needing more than \$500,000 in financial assistance for their business



## American Power Systems Named Regional Exporter of the Year

A former graduate of the CIRAS-administered ExporTech program has been named Small Business Exporter of the Year by the U.S. Small Business Administration's Region 7 office.

American Power Systems, a Davenport manufacturer of alternators and other electrical equipment for specialty vehicles, attended ExporTech classes provided in fall 2017 by CIRAS, Iowa's U.S. Commercial Services office, the Iowa Economic Development Authority, and other partners on behalf of the Quad Cities Chamber.

According to an SBA news release, sales at American Power Systems then grew "about 58 percent between 2016 and 2018, with exports making up 18 percent." The award recognizes the company for "its increased growth in export markets, their effective use of federal and state export programs, and their overall dedication to exporting."

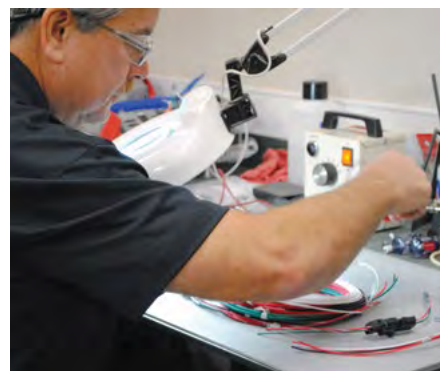
CIRAS account manager Glenn Volkman praised the company's success in opening new markets, noting that the strategy is something that also could help companies seeking to recover from the aftermath of COVID-19.

"American Power Systems is a great example of what exporting can do to the right kind of small business," Volkman said. "It can have a tremendous impact."

"American Power Systems is a great example of what exporting can do to the right kind of small business. It can have a tremendous impact."  
— Glenn Volkman

ExporTech is a three-part program developed as part of the MEP National Network along with the U.S. Department of Commerce. Classes involve hands-on sessions with a few companies each year.

Business leaders work with experts to craft individual plans for marketing and selling their products overseas.



### AT A GLANCE

**American Power Systems Inc.**  
**FOUNDED:** 2006  
**EMPLOYEES:** 13  
**OVERVIEW:** The company began by powering high-end automotive add-ons, such as stereo equipment. It now focuses on armored and security vehicles.  
**IMPACT:** After attending ExporTech, the company's overseas sales have increased by 18 percent.  
**LEARN MORE:**  
[www.americanpowerinc.com](http://www.americanpowerinc.com)

➤ For more information, contact program manager Marc Schneider at [maschn@iastate.edu](mailto:maschn@iastate.edu) or 563-221-1596.

## Gallegger Retires as Account Manager

Sean Gallegger, a CIRAS account manager, retired in January 2020 after serving manufacturers in northeast Iowa for more than 11 years.

Throughout his work at CIRAS, Sean used his financial knowledge to help small and medium-sized manufacturers understand the possible futures in front of them and connect real change with an impact to their bottom lines. He enjoyed working with clients, building relationships, and educating Iowans about what CIRAS could offer. Sean left his CIRAS career with a deep appreciation for the manufacturers he served. (That appreciation also drove him to return to CIRAS recently on a temporary basis, advising clients about ways to deal with the financial impacts of COVID-19.)



“From an overall business standpoint, Iowa manufacturing is very strong,” he said. “The Midwest is the backbone of the United States, and Iowa is a key part of that. I think it can weather just about anything and remain strong.”

# EVENTS

## EVENT LIST

In order to follow expert guidance for dealing with COVID-19, CIRAS has canceled or postponed a wide variety of in-person events through at least July 31. To continue to educate Iowa businesses, we have moved most of those events online and are developing new content for a wide variety of webinars.

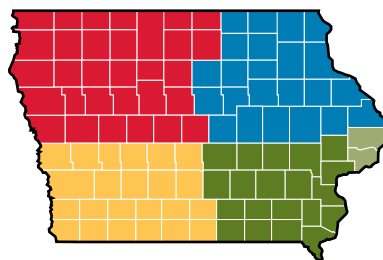
For the latest information on what we have to offer, visit [www.ciras.iastate.edu/events-workshops/](http://www.ciras.iastate.edu/events-workshops/).

## CIRAS Engage. Educate. Embed.

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

### Locate your county to find your best introduction to CIRAS.

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



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### CIRAS PARTNERS

- Iowa State University
- Center for Crops Utilization Research
- 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
- Alliant Energy
- 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

1805 Collaboration Place, Suite 2300, Ames, Iowa 50010-9166

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## GROWING YOUR BUSINESS

# Industry 4.0: Teaching Your Business to Monitor Itself By Shankar Srinivasan

*OK. We realize that this day may seem far away. But stop for a second and imagine: What if your business was boring?*

What if, instead of daily firefighting and crisis mitigation, you had time for creative or strategic tasks such as pursuing new business opportunities? What if your company could monitor itself, make process corrections, and improve on its own?

Welcome to Industry 4.0.

What is it? The term refers to society's 4th Industrial Revolution—the next major step following the introductions of steam power in the late 1800s, mass production in the early 1900s, and robotics in the 1970s. Industry 4.0 is a state where all of the equipment and processes in a manufacturing setup are interconnected, where data is continuously gathered via sensors and analyzed by computer models, and where the results are used to optimize processes on the fly. Properly done, this creates massive productivity and efficiency improvements even as quality skyrockets. Simply put, Industry 4.0 is the place where the digital and physical worlds intersect, and you get the maximum possible benefit out of both.

This may sound like fantasy, but much of it is already here. GM's OnStar uses sensors to monitor your vehicle's health and send you a monthly report. Google's network of NEST thermostats and other Wi-Fi connected products can figure out when you are home and adjust your house's lights and temperature accordingly. Meanwhile, autonomous vacuums wander our homes regularly, performing mundane tasks so we can focus on higher-value work.

Industry 4.0 is inevitable, and it will drastically revamp the way you and your competitors do business. Are you worried about threats from new business models? Why not make yourself as efficient and as competitive as possible? If nothing else, you may find that you've alleviated your perpetual search for skilled workers by making better use of the workers you already have.

CIRAS wants to help Iowans ease the transition to Industry 4.0. We have an assessment tool to help you learn where you stand, and we can help you get where you need to be.

**For more information, contact Shankar Srinivasan at [srigshan@iastate.edu](mailto:srigshan@iastate.edu) or 515-290-6702.**