

Appendix

CARES Act Stories From Across the MEP National Network™

**A state-by-state listing
of selected projects and initiatives
made possible by CARES Act funding**

**Appendix for NIST MEP report “Impacts of CARES Act Funding Across the MEP
National Network™”**

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Alabama – Alabama Technology Network (ATN)

ATN Releases Return to Work Mitigation Plan

ATN subject matter experts compiled a Return to Work Plan in response to COVID-19. The document establishes a well-defined and crafted plan that can serve as a template to guide manufacturers in their efforts to resume operations. It is based on COVID-19 guidance and best practices as recommended by the Centers for Disease Control and Prevention (CDC), the Occupational Safety and Health Administration (OSHA), the Alabama Department of Public Health, and other governmental regulations and guidelines. Additional elements of the plan include disinfection protocol, self-distancing, employee monitoring, signage and a return-to-work checklist. A dedicated email address was created, allowing manufacturers to contact ATN subject matter experts with extensive manufacturing experience in environmental health and safety, industrial hygiene and food safety. Experts are available to answer any questions or assist in creating personalized plans.

Virtual Training Developed for Manufacturers

When the pandemic resulted in a statewide lockdown in March 2020, ATN was quickly presented with the challenge of converting their face-to-face training lectures and materials into a virtual learning environment. Given the situation, ATN wanted to focus on creating virtual webinars, training and workshops that focused on topics related specifically to COVID-19 or OSHA regulatory training that would be critical for manufacturers to access. The initial webinar topics that were created included ergonomics, environmental regulations overview, toxicology 101 and ISO 45001 safety management system overview. Along with the webinars, ATN's environmental, health and safety team continued to provide assistance by producing informational videos and other learning tools that could be used at any time for manufacturers. Some of the topics included were respiratory protection cleaning procedures, overview of industrial hygiene, hazard awareness of industrial hygiene, and cleaning products not to mix as you sanitize your workplace. Additional webinars developed later were fall protection, hazmat DOT (which meets the requirements set out by the U.S. Department of Transportation's (DOT) 49 CFR 172.704(c)(2) standard, with the focus on providing a hazmat employee with the general provisions of the regulations), incident command and Resource Conservation and Recovery Act (which gives the U.S. Environmental Protection Agency, or EPA, the authority to control hazardous waste from cradle to grave).

Alaska – Alaska MEP (AMEP)

Personal Protective Equipment Matchmakers

In the midst of the COVID-19 pandemic, Alaska MEP, part of the MEP National Network™, played an instrumental role in helping to keep manufacturers open and operational by acting as a matchmaker between Alaskans in need and manufacturers that have transitioned to produce personal protective equipment (PPE). The Alaska MEP network of 600 Alaska-based manufacturers includes more than 70 manufacturers capable of manufacturing various PPE items. In particular, Alaska manufacturers produced PPE that met the agreed-upon designs of the health care industry and the state of Alaska. As well as matchmaking, Alaska MEP was also able to help transition several Alaska manufacturers to convert their operations to manufacturing PPE and secured an amendment to Senate Bill 241 that provided a waiver of liability for health care providers and local manufacturers of PPE. Additionally, Alaska MEP put together a retooling handbook as well as shared resources to keep critical manufacturers operating safely, such as redesigning workflow operations to keep employees six feet apart. To learn more about Alaska MEP's efforts during the COVID-19 pandemic visit <https://alaska-mep.com/covid19-resources>.

Arizona – Arizona Commerce Authority (AZ MEP)

Arizona MEP Launches Emergency Assistance Program (EAP)

Arizona MEP (AZ MEP) created a robust and easy-to-use online process to facilitate emergency assistance to manufacturers affected by the COVID-19 pandemic. AZ MEP invited manufacturers to apply to the EAP via an online survey. Applications were reviewed to determine eligibility based on challenges and impacts including:

- Loss of revenue
- Loss of productivity
- Layoffs and absenteeism
- Interruption of supply chains

Accepted applicants were required to complete an assessment about the company's leadership, strategy and planning, sales and marketing, financial management, operations, human resources (HR), supply chain, cybersecurity and safety. The response data was analyzed and converted into easy-to-understand graphs that provided AZ MEP client advisors with an overview of company health and specific challenges, and allowed them to map AZ MEP services to client needs. The aggregate data from over 200 accepted applicants provided insight into the highest priority needs of Arizona's manufacturers.

Arizona MEP Steps Up Strategic Planning and Sales Training

Many of the Arizona manufacturers that were accepted into AZ MEP's EAP suffered a loss of revenue due to the COVID-19 pandemic. After completing the EAP application and assessment, AZ MEP identified numerous strategic and growth planning projects that could help manufacturers recover. Many had never done strategic planning and had little knowledge of its positive impact on business success. AZ MEP started with a detailed evaluation of the current state of all aspects of the business and worked with the clients to define specific long- and short-term objectives and timelines. Value propositions, market assessments and gap analyses performed as part of the assessment often led to the development or improvement of the sales process and function. AZ MEP performed varying levels of sales training from basic selling skills to effective sales leadership to help clients implement the changes.

Financial Assessment and Planning

Financial assessments, education and planning were other important needs AZ MEP identified through the EAP application and assessment process. Small privately-owned manufacturers often operate based on having sufficient cash flow but haven't analyzed their financial data to understand where they may be underperforming and how to address financial challenges. As the COVID-19 pandemic began to create financial uncertainty, the financial assessments and benchmarking AZ MEP performed were crucial to helping manufacturers take some mitigating actions immediately and plan for the future. To implement the recommendations in the assessment, AZ MEP worked on forecasting, financial planning and cost accounting projects. As a result of these projects, AZ MEP clients better understand how to evaluate company performance using cost accounting techniques and create financial plans.

Arizona MEP Helps FABRIC Scale to Mass Production for Isolation Gowns During COVID-19

FABRIC is a business incubator in Tempe that provides business and collaboration support to grow and keep startup fashion brands in Arizona. At the start of the COVID-19 pandemic, FABRIC started receiving requests for PPE. They launched a war room board to understand what was needed to produce reusable isolation gowns, and began sourcing medical-grade reusable material. With orders for gowns exploding, FABRIC turned to Arizona MEP to help scale production. In six weeks, AZ MEP helped FABRIC increase production from 24 gowns to 1,250 per day with goals to achieve 2,000 gowns per day.

FABRIC can also now demonstrate to its startup fashion brands that it has the capacity and capability to develop and manufacture high-volume and specialty apparel. Read this inspiring story:

www.azcommerce.com/tech-connect/manufacturing/arizona-mep-helps-fabric-scale-production-for-isolation-gowns-during-covid-19



Arizona MEP Provides On-Site Recruiting and Staffing Assistance

For manufacturers that had to hire new staff because they pivoted to providing alternative products or because of COVID-19 social distancing and safety protocols, AZ MEP provided on-site hiring and recruitment assistance. This included being the main point of contact for all supporting staffing agencies and working as an extension of the company's HR department. Here are ways AZ MEP supported clients:

- Organizing marketing efforts to create awareness of job fairs
- Screening and qualify potential candidates
- Administering clients' screening software to potential candidates
- Managing all external partners' software solutions to drive interest
- Measuring progress against key performance indicators
- Subsidizing some direct hire fees

AZ MEP also engaged community colleges with manufacturing programs, state of Arizona Office of Economic Opportunity resources, apprenticeship programs and local manufacturing companies experiencing layoffs to recruit new hires.

Arkansas – Arkansas Manufacturing Solutions (AMS)

Center Operations During a Pandemic

As of the end of June 2021, the Center has attempted to contact 1,903 manufacturers by phone and staff were able to reach 793 unique manufacturers to fill out a COVID-19 survey concerning their status and details around production levels, workforce and supply chain. Out of this number, at least 1,135 attempted, were new client contacts, or 44% of the Center’s market. Of this number, 49% were companies located in rural areas. Phone surveys specifically related to COVID-19 impacts and updated information on production levels, supply chain issues and workforce needs. Feedback on workforce from these surveys: 84% reported stable, 6% down and 10% show increased workforce levels. On production companies reported 59% stable, 15% reduced levels and 26% have increased production levels.

The Center created a Healthy Workplace Playbook and blasted it to 3,265 companies. 686 companies opened the link. AMS also did a similar e-blast on the Center’s Supply Chain Playbook.

AMS identified a list of 45 companies who currently produce PPE in the state and has been doing matchmaking both internal to Arkansas and outside the state when an interest develops. Center staff have identified at least two new companies preparing to produce mass quantities of PPE equipment and worked with the state agencies to procure supplemental funding.

AMS has developed a series of webinars for workplace health, supply chain, technology and other areas of interest. In conjunction with other Centers, AMS offered 138 different virtual training and webinars to their client base.

The Center continues to promote healthy workplace, supply chain assessments, marketing, business continuity and other assistance projects. In total, the Center will complete 53 surveyable COVID-19 assistance projects with clients. A summary of outreach activities follows.

AEDC-MS	COVID-19 Phone Survey	Supply Chain Responses	Company Contacts Made	Federal and State MEP Contacts	Other Stakeholder Contacts	Virtual Training and Webinars Offered
Total	793	56	1903	513	625	138

California – California Manufacturing Technology Center (CMTC)

CMTC – Responding to the COVID-19 Impact on Manufacturers With Assessment/Plan of Action Service Offering

CMTC was immediately impacted by COVID-19 with the state’s stay-at-home order in March 2020. Manufacturers needed help determining if they could remain open and assistance with frequently changing state and federal operating guidelines. Manufacturers also had needs in plant safety, access to capital, remote selling, supply chain and workforce. However, each manufacturer needed to deal with the challenges in their own way. To provide unique solutions, the CMTC field operations team quickly designed a remote service offering delivered through telephonic conversations with recommendations specifically tailored to a small and medium-sized manufacturers’ issues called plans of action. CMTC used telemarketing resources to contact manufacturers statewide. To expand capacity to serve manufacturers, third party manufacturing experts were used. CMTC has continued throughout the pandemic to assess manufacturers, conducting COVID-19 impact assessments for 2,082 manufacturers; many were not clients in the Center’s Salesforce database. <https://www.cmtc.com/>

CMTC – Changing and Adapting to the New Realities of COVID-19 With Remote Offices, Remote Sales and Remote Service Delivery

The pandemic required CMTC staff to rethink all aspects of how they conduct business. CMTC quickly addressed office-based employee needs, providing what was needed to work from home such as furniture/supplies and technical tools like computers, software and remote access solutions. New policies and procedures were developed, especially as to how CMTC served clients. CMTC initially stopped conducting client visits and established protocols for visiting clients in alignment with state criteria. CMTC relied on email, phone and Zoom meetings to sell and deliver services. Services were redesigned and the Center electronically supported operations with web content and webinars. CMTC leveraged partners, contractors, consultants and telemarketing to help create and deliver many new offerings. CMTC successfully pivoted to complete remote selling and delivery. The shift resulted in better-than-expected client impacts and the Center has a more modern and capable future business model.

CMTC – Expanding Coverage of California Geographies and Delivering New Services Through Partners for COVID-19 Response

CMTC took on the challenge created by the pandemic to find ways to not only better serve their current client base, but to broaden the Center’s reach to impact more manufacturers in the state. The Center needed to expand its existing partnership program. CMTC identified new partners with a manufacturing focus in new areas, some with different capabilities. The search resulted in adding 16 new partners to the CARES Act National Emergency Assistance Program (NEAP). Not only was this a success for the NEAP program by providing access to 2,600 manufacturers, but several partners will remain in the partnership program as CMTC moves beyond COVID-19 funding, with some in underserved areas. Another example of success from a new partner came from working with Lendistry, which orchestrated financial support from the state through a California COVID-19 relief grant program. CMTC promoted a branded web portal along with fielding questions from manufacturers for the five rounds of application submissions, with 4,475 manufacturers receiving awards (170 were clients).

Colorado – Manufacturer’s Edge (ME)

The Colorado Manufacturers COVID-19 Taskforce – Assessing and Addressing the Needs of the Manufacturing Community in Unprecedented Times

In the early days of the pandemic in 2020, Manufacturer’s Edge partnered with H2 Manufacturing Solutions to convene representatives from health care, industry, higher education, and municipalities from across the state of Colorado and form the Colorado Manufacturers COVID-19 Taskforce. The taskforce worked directly with Gov. Polis’ office to support the state’s efforts to monitor and address the ever-evolving needs of the community. Outcomes from the taskforce’s work included a program that helped manufacturers stay open by addressing shortages of face masks and other PPE, a safety program designed to assess and then implement COVID-19 mitigation measures, a feasibility study on 3D-printed nasal swabs and a fundraising arm that provided grants to businesses in need of assistance. The taskforce also provided an opportunity for Manufacturer’s Edge to strengthen several long-standing relationships with partners like the Colorado Office of Economic Development and International Trade as well as Colorado State University, while simultaneously forging new connections within other entities such as the governor’s office, the city of Fort Collins, several Colorado counties and Columbine Health.

The Business Health Assessment – Leveraging the CARES Act to Help Colorado Manufacturers Prepare for the Post-Pandemic Environment

In 2021, ME launched the CARES Act Outreach Program to connect their team to manufacturers in one-on-one conversations around nine topics: production and operations, workforce, customer demand, supply chain, business continuity, research and development, outlook on industry, current pain points, and policies on or related to COVID-19 vaccinations. The program assessed the impacts of COVID-19 on business and operations of manufacturers, analyzed how the impacts of COVID-19 changed the way manufacturers do business, and identified areas where ME could assist manufacturers in recovery and the post-pandemic environment. As a result, ME expanded service offerings and resources, and revised the Business Health Assessment (BHA). The BHA is a survey, scorecard and readout that provides company leadership with an overview of the business. It identifies opportunities for improvement in leadership, strategic planning, customers, knowledge management, workforce engagement, operations focus and results. The BHA, a value of over \$5,000, is provided to qualified manufacturers at no cost and generates a roadmap for change that will generate impacts.

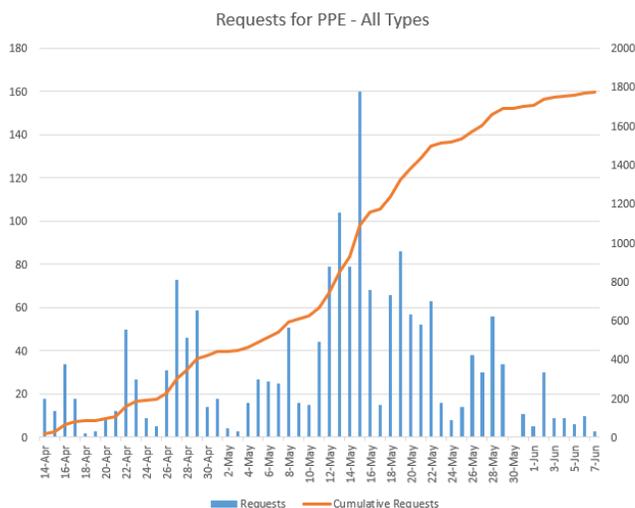
Connecticut – Connecticut State Technology Extension Program (CONNSTEP)

Connecting Health Care Providers to Manufacturers Pivoting to Help

The early stages of the COVID-19 pandemic disrupted the health care and first responder supply chains for PPE in two fundamental ways. The usual suppliers either shut down or were unable to import much-needed items such as masks and protective gowns, and the overall demand for PPE skyrocketed. This disruption was particularly acute for smaller health care providers, such as skilled nursing facilities, and for first responders.

Dozens of manufacturers in Connecticut quickly repurposed their operations to produce a variety of PPE-related items, however because these companies were not part of the normal PPE supply chain, a visibility gap existed between those entities searching for PPE and the manufacturers seeking to help. To close this gap, CONNSTEP created the COVID-19 response website and assigned Center staff to monitor requests and assist health care providers, first responders and other essential businesses to find sources for PPE. From mid-April to early-June, CONNSTEP assisted over 1,800 companies, connecting them to 48 manufacturers they identified as having pivoted their production operations (see below).

Matchmaking Site



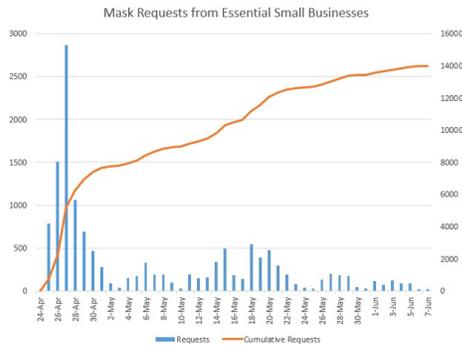
- Processed approximately 1,800 requests for PPE
- Identified 48 manufacturers in the state who have repurposed their operations to produce PPE
- 6 different kinds of PPE are being produced
 - Gowns
 - Masks
 - Hand Sanitizer
 - Face Shields
 - Shoe Covers
 - Caps

Assisting the Connecticut State Emergency Operations Center to Distribute Masks and Thermometers

In late March and early April 2020, Connecticut began receiving supplies of face masks with a goal to distribute them to essential businesses. The state allocated 500,000 masks for small businesses, and while they had a mechanism for distribution through the Emergency Operations Center (EOC), the state lacked the ability to identify those essential businesses that needed masks and where they were located. Through coordination with the state's chief manufacturing officer, CONNSTEP repurposed their matchmaking website to provide this intake mechanism. CONNSTEP worked with the EOC, establishing a real-time view to businesses requesting masks from the state's emergency stockpile, and provided communications support as needed to these businesses during the distribution process. The success of

this program prompted the state EOC to request CONNSTEP’s help in the distribution of no-touch thermometers that were essential to businesses restarting their operations.

Surgical Mask Distribution

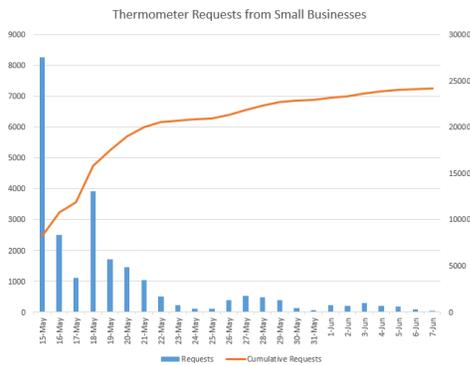


State allocated 500,000 surgical masks for distribution to essential small businesses

Processed approximately 14,000 requests for surgical masks in support of state initiative over a 3 week period

Approximately 450,000 masks have been requested through the site

Infrared Thermometer Distribution



State allocated 50,000 infrared thermometers for distribution to small businesses

Processed over 24,000 requests for thermometers in support of state initiative

Over 8,000 requests were placed by small businesses on the first day alone

Assisting Manufacturers to Increase Production of PPE

Connecticut manufacturers responded to the shortage of PPE by pivoting their normal operations to produce PPE, within their capability. One such manufacturer, Wepco Plastics, set up a new production line to produce face shields that were in critically short supply, with an initial capability of producing 4,000 units per day using six assemblers. Upon learning of Wepco’s initiative during the matchmaking process in early April 2020, CONNSTEP offered expertise at no cost to improve the throughput of the new line. CONNSTEP consultants worked with the team at Wepco to implement the five-step cellular design methodology, with an initial target of increasing production by 35% to 5,400 units by July 2020. With CONNSTEP’s assistance, Wepco Plastics exceeded the production goal of this critical PPE item to a target of 7,000 units per day, a 75% increase, without additional fixed-cost investment. Wepco was able to sustain this rate of production until the normal supply chain stabilized.

Delaware – Delaware Manufacturing Extension Partnership (DEMPEP)

Delaware MEP – Growing, Connecting, Building Delaware’s Manufacturing Ecosystem

Never in DEMPEP’s existence has their tagline been more accurate. During the outbreak of COVID-19, DEMPEP found itself pivoting to support the current needs of local manufacturers. Instead of focusing on helping clients go lean or develop an ISO 9000-compliant quality management system, DEMPEP was now the go-to resource for information about issues ranging from where to find masks and thermometers to how other companies were dealing with the crisis.

DEMPEP shared information by posting key, trusted resources on the Center’s website, then moved on to sharing information in a business-to-business format. Eventually, DEMPEP found a business-to-ecosystem setup could provide significantly more information and assistance. Creating virtual networking sessions on the topic of the new normal, manufacturers were able to benchmark with peers and share best practices for dealing with all things COVID-19. Delaware manufacturers were no longer alone, but a part of an entire ecosystem navigating the pandemic together.

DEMPEP will continue to evolve to serve the manufacturing community with the training and resources they need to not just survive but thrive.

Polymer Technology Pivots to Save Manufacturing Jobs and Fill Critical Need

Polymer Technologies, Inc. manufactures custom solutions for noise reduction, vibration isolation, thermal insulation, and air and fluid transmission that meet customers’ specific needs. Their selection of innovative materials includes hydrophobic melamine foams, elastomeric mounts, and custom molded foams that control vibration, noise and temperature. The company began in 1989, with headquarters in Newark, Delaware.

At the start of the COVID-19 pandemic, Polymer Technologies found business declining and became concerned layoffs would be imminent unless a new demand could be identified. The company was willing to pivot its talent and resources in other directions to offset the loss of current customer demand. After reviewing company capabilities and market needs, Polymer Technologies became interested in the idea of producing face shields, a critical need for hospitals battling the pandemic. To better understand the needs of the medical industry and to help define the design to produce a quality face shield, Polymer Technologies turned to DEMPEP for support.

DEMPEP used their network to connect Polymer Technologies with the vice president of supply chain for a local hospital. This connection provided direct contact with a potential customer. DEMPEP facilitated a clear voice of the customer to help Polymer Technologies finalize the product design and ultimately provide access to a network of health care providers in need of a PPE source. As a result of those services Polymer Technologies produced 7,500 face shields desperately needed in the health care community and retained eight jobs.

Florida – FloridaMakes

Connex Florida – Florida’s Supply Chain Database

FloridaMakes recently launched Connex Florida, a supply chain database tool for the manufacturing industry in Florida. This tool contains in-depth information on a broad range of Florida manufacturers, along with detailed search functions to highlight specific production capabilities, certifications, equipment, material types and more. The purpose of this tool is to help Florida manufacturers better connect with each other, be discovered and increase business opportunities. Connex has allowed Florida



manufacturers to find alternate suppliers, build new business relationships and improve the resilience of their operations. This tool is available to anyone, however, the ability to list detailed information, perform in-depth searches and exchange information regarding sourcing needs, requirements and opportunities is only available to validated Florida advanced manufacturing entities at this time. To find out more about Connex please visit

<https://www.floridamakes.com/home>. A short demonstration of the Connex platform and the resources available is available via YouTube: <https://www.youtube.com/watch?v=2nw26V5Q3Wg>

FloridaMakes Helps Manufacturer Produce N95 PPE Within 90 Days

Motivated by the PPE shortage at the pandemic’s onset, Demetech Corporation launched a bold endeavor to resolve the critical need for certified PPE. Their plan was a scaled strategic investment and rapid deployment to manufacture high-quality and high-volume PPE certified by the CDC National Institute for Occupational Safety and Health with U.S.-origin raw materials converted in their Miami Lakes, Florida facility within 90 days. Luis Arguello Sr., President and Founder of Demetech, personally guaranteed millions of dollars of investment. The FloridaMakes network began making connections with local hospital administrations. Demetech met their 90-day goal and began producing N95 certified respirators, adding 1,200 jobs. FloridaMakes worked through various state and national channels of demand including the MEP National Network. The company has made additional investments to consolidate production and optimize operations.

Link to the related video: <https://youtu.be/sN7Ag57-D3g>

Georgia – Georgia Manufacturing Extension Partnership (GaMEP)

Implementing Supplier Databases for Searching/Matching

The GaMEP was contacted by more than 50 firms regarding transition/assistance/questions related to conversion to PPE manufacturing, and approximately 28 supplier searches were conducted for primarily PPE resources with eight supplier matches for PPE materials. Other activities included information requests not related to supplier material searches and manufacturers offering services or plant capacity to manufacture PPE. The Center worked with the state of Georgia on the state's effort to create a list of manufacturers who could assist with the local PPE shortage and then helped vet the list for the state.

GaMEP Connects Atlanta-Based Distillery With Resources to Provide Critical Materials to First Responders During the COVID-19 Pandemic

In an effort to support their community during COVID-19, Old 4th Distillery decided to produce hand sanitizer to give away for free to surrounding neighbors. But after having more than 600 people stop by in one day, they decided to shift gears to support local first responders. GaMEP helped them source materials and provided them with connections to the Center's clients, partners, and Georgia Tech so that the company could continue to branch out into this new product line. See: <https://gamep.org/old-4th-distillery-manufactures-hand-sanitizer-to-protect-against-covid19/>

Two Georgia Manufacturers Partner to Produce Face Shields for COVID-19 First Responders

The GaMEP connected two Georgia manufacturing companies, Kia Motors America and TSG Resolute, and they partnered to produce face shields for the medical industry during the COVID-19 pandemic. Prior to the pandemic, the two manufacturers had never connected, but are now supporting each other in their mission to provide this critical equipment to groups such as the Georgia Emergency Management and Homeland Security Agency and local hospitals. See: <https://gamep.org/georgia-manufacturers-partner-to-produce-face-shields-for-covid-19-first-responders/>

COVID-19 Resources Webpage

In an effort to help manufacturers closely monitor the COVID-19 recovery effort, GaMEP created a webpage dedicated to the latest information on the virus, helpful links, relevant webinars, guides and FAQs. <https://gamep.org/coronavirus/>

Hawaii – Hawaii Technology Development Corporation (HTDC)

INNOVATE Hawaii

HTDC INNOVATE Hawaii E-Commerce and Digital Marketing Cohort Program

A large portion of the manufacturing landscape in Hawaii is specialty foods and products tailored for tourists visiting the Hawaiian islands. With the pandemic lockdown, sales quickly dried up and manufacturers had to find a way to pivot toward alternative revenue streams. HTDC INNOVATE Hawaii realized the need to create an e-commerce and digital marketing cohort program so manufacturers could reach new and existing customers in the growing e-commerce space. The cohort workshops were held entirely over Zoom, providing a 100% remote delivery program. To date, 27 Hawaii manufacturers have completed the cohort program. Additional cohorts are planned for the future. Supplemental e-commerce and digital marketing webinars open to all manufacturers in Hawaii aided those who may not have had the time to dedicate to a cohort. More information: <https://www.htdc.org/ecommerce/>

HTDC INNOVATE Hawaii PPE Supply Chain Program

HTDC INNOVATE Hawaii PPE Supply Chain Program provided grants of up to \$500,000 to small businesses in Hawaii to help establish a local supply chain of cleaning supplies and PPE in response to the COVID-19 public health emergency. The program awarded a total of \$9,913,828.90 to 36 companies. Hawaii manufacturers stepped up to help fill the demand for PPE by repurposing their manufacturing capacities. Distilleries started creating hand sanitizer and manufacturers used their existing machinery to create face shields and cloth face masks. Local businesses showed how a local supply chain can rapidly adapt and prioritize the needs of the community in ways that imported products cannot. Funding for this program has been provided by Act 009, Session Laws of Hawaii 2020 and in accordance with the requirements of the CARES Act. More information: <https://htdc.org/innovation-grant-ppe-supply-chain>

HTDC INNOVATE Hawaii CMfgA High School Manufacturing Cohort Program

This past fall, HTDC INNOVATE Hawaii strengthened its partnership with the Chamber of Commerce Hawaii and local high schools by creating a High School Manufacturing Cohort program based on the Society of Manufacturing Engineer's Certified Manufacturing Associate (CMfgA) credential. Four local high schools participated in the first cohort this past spring. Local manufacturers provided virtual guest tours and were guest speakers for the high school students to enrich the program and show the students firsthand what it is like in a manufacturing facility. Seventeen of the 36 students passed the final exam and earned the CMfgA Certification. Those who passed were offered job placement assistance. Recruitment has started for the second cohort with plans to expand the program statewide. Student testimonial:

https://drive.google.com/file/d/1VAKrIK9JtMcBV2PajPtQ4pb_bJ0fxgwJ/view?usp=sharing

Idaho – TechHelp

TechHelp Idaho – Supplier Scouting Program

In the spring of 2021, TechHelp worked with Vessel and the Idaho Manufacturing Alliance to create the Idaho Supplier Scouting Program (ISSP). The ISSP helps Idaho inventors and manufacturers find the raw materials, products and services needed to make and sell their products. The team also screens and shares incoming opportunities for Idaho manufacturers to meet the needs of other manufacturers nationwide. The ISSP grew during the COVID-19 pandemic when some Idaho manufacturers decided to change focus and reconfigure their supply chains to meet nationwide PPE needs. Vessel demonstrated such ability and passion for meeting supply chain needs that TechHelp sought to forge a partnership with the company around supplier scouting. The Idaho Supplier Scouting Program was built on the national MEP Supplier Scouting that leverages the knowledge and connections of MEP manufacturing experts in every state. Vessel is screening incoming supplier scouting requests from MEP to see if any Idaho manufacturers are positioned to fill those needs. Vessel will also scout supply and services needs for Idaho manufacturers and will route requests to MEP or other resources as needed. To find out more about supplier scouting in Idaho, visit: <https://www.techhelp.org/idaho-supplier-scouting/>

TechHelp Idaho – Learning and Deploying a Learning Management System

To better serve food processors during the pandemic, TechHelp’s Food Manufacturing Excellence team pursued a learning management system, vetting several learning platforms and building content in Articulate 360. The courses the team created include Allergen Management for Pre-Shift Meetings, Allergen Management for Subject Matter Experts, Current Good Manufacturing Practices, Introduction to Food Manufacturing for Entrepreneurs, Idaho Food Safety Cooperative and Introduction to Lockout Tagout.

For small and very small companies, the team created online options that had only a one-time development investment. These included online food safety workshops, gap assessments, and a partnership with the University of Idaho Food Technology Center to provide scale-up assistance to the very small manufacturers using the commercial kitchen. Target marketing of more value-added offerings was directed toward medium and large companies. These included safe quality food coaching, food safety plan development, market research, shelf life testing, leadership and technical training, process engineering and optimization, cost reductions and competitive assessments. To find out more about TechHelp’s learning management system offerings in Idaho see:

<https://techhelp.learningcart.com/content/Default.aspx>

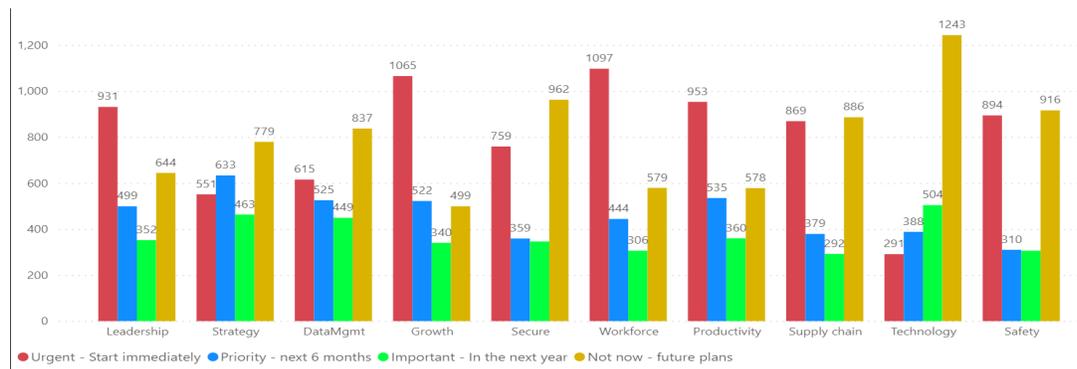
Illinois – Illinois Manufacturing Excellence Center (IMEC)

Together, 2,400 Illinois Manufacturers Speak Their Priorities – IMEC Listens

IMEC contacted every manufacturer in Illinois to find their priorities in rebounding from the pandemic. Over 2,400 Illinois manufacturers responded to this five-minute 10-question phone need assessment. Insights gained from the assessment proactively guided IMEC’s efforts to craft solutions for manufacturers. For example, “finding growth opportunity” jumped to a top priority, particularly for companies with less than 20 employees. In response, IMEC offered 48 growth-related webinars ranging from virtual sales to doing business with NASA. These events combined for 1,400 attendees and 62 growth-related, follow-up, one-on-one projects.

The needs assessment also provided a deeper understanding of manufacturer needs in key drivers for global competitiveness. IMEC is working with partners to develop roadmaps to address these needs comprehensively.

One county report can be found here: https://www.imec.org/scc_census/



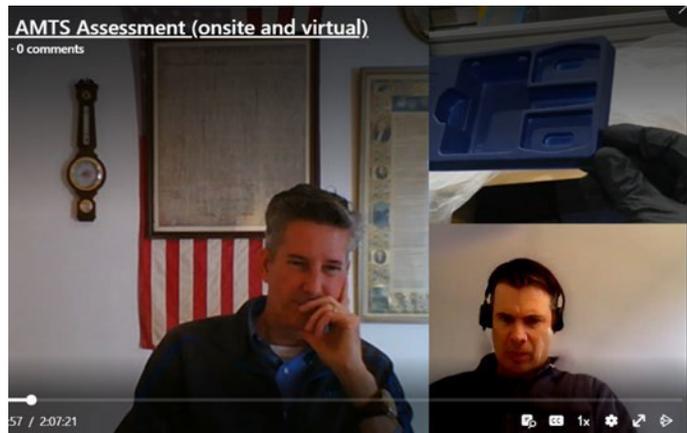
Strengthening U.S. Supply Chains Through Reshoring With Illinois Manufacturers

The pandemic cast a spotlight on the risks and vulnerabilities of global supply chains. IMEC, in close partnership with the Reshoring Initiative®, offered a program for manufacturers to identify opportunities for reshoring production. Through this program, manufacturers match up their production capabilities to imports of similar products. The manufacturer develops a highly qualified list of potential customers for potential reshoring. As of this writing, 59 manufacturers have initiated their analysis with 29 successfully completed. Manufacturer capabilities included PPE gown manufacturers, stamping manufacturers, distilling manufacturers, among others. The table represents the post-project estimated impacts from four manufacturers. They reported estimated aggregate impacts, jobs created and retained, increases in annual sales, retained annual sales and reductions in operating costs.

Impact Category	Total Impacts
<i>Jobs Created & Retained</i>	53 Jobs
<i>Annual Sales Increase</i>	\$810,000
<i>Annual Sales Retained</i>	\$100,000
<i>Operating Cost Reduction</i>	\$40,000
<i>Aggregated Impact</i>	\$2,702,004

Have Knowledge, Could Not Travel – A Telepresence Approach for Technical Experts

IMEC responded to the pandemic by exploring telepresence technology to serve manufacturers with knowledge from technical experts unable to travel to them. Using RealWear's HMT-1, local MEP staff members visit a client in person and provide remote technical experts a real-time video and audio link to the client's operation. The ability for the local user to have both hands-free and a natural camera angle allows for components to be manipulated, viewed at different angles, etc., at the request of the remote experts, almost like they are physically on-site.



Apps like Zoom are directly supported from the headset enabling recordings, session security, etc. A pilot application was completed exploring possible automation of a packaging operation with two experts over 500 miles away with a single local user. "The ability to have real-time collaboration, while on the shop floor, with experts throughout the state was great!" said Technology Specialist Jeremy Smith about the pilot.

Indiana – Purdue Manufacturing Extension Partnership (Purdue MEP)

Purdue MEP Expands Partnership With State Trade Association

To provide timely assistance, Purdue MEP and the Indiana Manufacturers Association (IMA) expanded upon their partnership to distribute a Return to Work Guide for Manufacturers, which was designed to help companies operate safely during the pandemic. The guide distribution was preempted by a webinar to discuss the contents and all recipients were subsequently contacted to address any additional questions specific to their company. The partnership also resulted in numerous online events, such as using additive manufacturing to address supply chain gaps, workforce development solutions and Manufacturing Day. Through this collaboration with the IMA, more than 5,000 Indiana manufacturers were reached.

Iowa – Iowa Center for Industrial Research and Service (CIRAS)

Experts: Be Prepared for Anything During Economic Recovery

CIRAS provided updates, data and expert advice to manufacturers as they navigated the complexity of the COVID-19 recovery, nationally and in Iowa. Data obtained from a CIRAS partner, the Iowa Association of Business and Industry, and a 23-week survey conducted by CIRAS were used to identify key issues and opportunities for manufacturing. Results of the data were discussed and business preparation tips were provided to help prepare for the bumpy road that lay ahead for Iowa businesses.

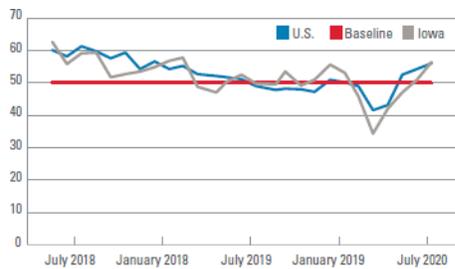


Figure 1: Historical data show the U.S. PMI, an economic survey tool, has been lackluster for months. Experts view PMI levels below 50 as a sign of a contracting manufacturing economy.

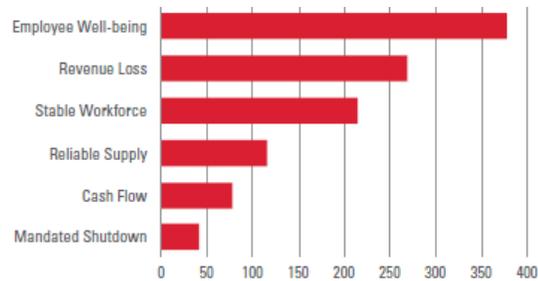


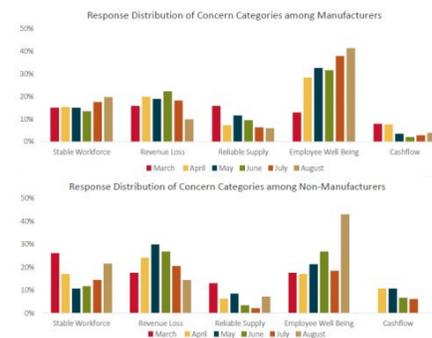
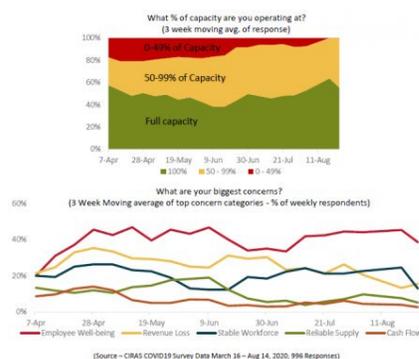
Figure 2: A CIRAS survey shows Iowa companies primarily were concerned with COVID's impact on the well-being of their employees. (Total respondents = 999)

CIRAS story link: <https://newswire.ciras.iastate.edu/2020/11/18/experts-be-prepared-for-anything-during-economic-recovery/>

CIRAS Survey: Employee Well-Being Led COVID-19 Concerns

Over several months, CIRAS conducted a phone survey to identify and communicate the needs of Iowa industry. Through the 23-week survey, several key themes emerged:

- Iowa's recovery initially started in June 2020.
- Businesses operating at reduced capacity peaked in June 2020, then started to generally improve.
- Supply concerns began to ease in June 2020 (and would reemerge in December 2020, outside of this survey period).
- Employee well-being remained the top concern.
- Cash flow never became a major concern.
- Businesses initially sought assistance with COVID-19-containment topics. Requests later migrated to business stabilization services.



CIRAS story link: <https://newswire.ciras.iastate.edu/2020/09/21/ciras-survey-final-update-employee-well-being-led-covid-concerns/>

Understanding Impacts of the CO₂ Supply Chain

In the early phases of the COVID-19 pandemic, reduced demand for ethanol for gasoline created regional shortages of carbon dioxide (CO₂). With ethanol as the largest single producer of CO₂ in the United States, shutdowns and slowdowns had a significant impact on availability and price of CO₂, impacting the food and beverage industries. CIRAS partnered with the Iowa Economic Development Authority, the Iowa Department of Agriculture, and a variety of industry associations to understand the scope of the problem and provide recommendations for next steps should the shortage continue.

CIRAS Supplier Scouting Helps Bring Business to Iowa

World Class Industries, an assembly and supply chain integration company based in Hiawatha, Iowa, expects to see at least \$5 million a year in new business after CIRAS facilitated a partnership with Timilon, an air purification company. Iowa entrepreneur and Timilon investor John Pappajohn reached out to CIRAS partner North Iowa Area Community College (NIACC) Pappajohn Entrepreneurial Center (JPEC) searching for Iowa companies that possibly could assemble EnviroKlenz purifiers. CIRAS and the NIACC JPEC used internal data and manufacturing expertise to identify companies with the manufacturing capabilities, capacity and quality necessary to meet the company's needs, recommending six firms to Timilon, including World Class Industries (WCI). WCI was selected by Timilon and began producing 24,000 units per year just a few months after the initial inquiry.



Assembling air cleaners at World Class Industries.



CIRAS story link: <https://newswire.ciras.iastate.edu/2021/02/01/ciras-supplier-scouting-helps-bring-business-to-iowa/>

New Normal: Dickson Industries Growing With Gowns

A Des Moines, Iowa, company with an eight-decade history of working with fabrics in the food and medical industries is returning to its roots following the COVID-19 pandemic. When the coronavirus decimated demand for food industry products, Dickson officials realized that they were ideally situated to help fill part of Iowa's need for PPE. Dickson Industries began producing hospital isolation gowns to fill emergency shortages in spring 2020 and since has decided to continue. The business was able to enter this market through assistance from CIRAS in understanding emergency use authorizations and medical production standards, allowing them to produce for both emergency demand and long-term needs. CIRAS



Production of Dickson Industries reusable hospital isolation gowns.

story link: <https://newswire.ciras.iastate.edu/2020/08/14/new-normal-dickson-industries-growing-with-gowns/>

Pandemic Prompts Collaboration Among Iowa Manufacturers

The Dimensional Group, a maker of custom packaging and commercial printing products in Mason City, Iowa, faced a downturn in business due to the COVID-19 outbreak and pivoted to produce much-needed face shields with the help of CIRAS. CIRAS provided engineering support, manufacturing advice and connected the company with another Iowa company to begin the production of shields within 10 days. “To go from nothing to shipping product in eight or 10 days, that is something that never happens,” said The Dimensional Group President Adam Gold. This Iowa-based partnership produced more than



Shannon and Adam Gold at a press at The Dimensional Group used to cut face shields.

1.3 million face shields within two months, eventually reaching nearly 2 million with the majority going to the state of Iowa to be used throughout the state. CIRAS story link: <https://newswire.ciras.iastate.edu/2020/08/14/pandemic-prompts-collaboration-among-iowa-manufacturers/>

Weekly Webinar Series Focuses on Post-COVID-19 Business Resiliency

COVID-19 has taught Iowa companies many things about their businesses – from the importance of understanding their supply chains to the strengths and limitations of Zoom. CIRAS leveraged these lessons to turn the conversation to long-term resiliency, leading weekly webinars on a variety of topics including using technology to make your factory more agile, using total cost of ownership tools to reduce supply risk, and developing a flexible labor force. CIRAS story link:

<https://newswire.ciras.iastate.edu/2021/02/24/new-weekly-webinar-series-focuses-on-post-covid-business-resiliency/>

Online Orders Are an Elixir Following COVID-19 Collapse

A family-owned Iowa meat producer sought help from CIRAS in managing the online portion of their business. In response to COVID-19, the company had to temporarily close its retail store to customers and owners were confused on how to best serve customers through the pandemic. CIRAS experts helped build a new online ordering system. The company quickly turned on its new system and took roughly 350 orders during the first five days. The online system led to increased sales, better use of employee time and improved organization. CIRAS story link:

<https://newswire.ciras.iastate.edu/2021/02/01/online-orders-are-an-elixir-following-covid-19-collapse/>



An order being assembled.

CIRAS Helps ALMACO Assess COVID-19 Risk From Suppliers

An Iowa-based manufacturer of seed research equipment turned to CIRAS for help in assessing vulnerability to supplier problems tied to the pandemic. CIRAS used the CIRAS supply chain risk assessment to evaluate vulnerability from several sources. The assessment looked at factors such as how important each supplier is to the company, alternative sources available, supplier performance and geography-based risks. The resulting report helped rank vulnerabilities and focus attention where the greatest number of potential problems existed. It was estimated that the work saved the company roughly \$192,000 in costs tied to avoided inventory shortages and maintained \$500,000 in revenue that could have been lost because of delayed or canceled orders. CIRAS story link: <https://newswire.ciras.iastate.edu/2021/04/29/ciras-helps-almaco-assess-covid-19-risk-from-suppliers/>



An ALMACO combine harvests product

Doing Enough? CIRAS COVID-19 Assessment Helps You Make Sure

Like most responsible companies navigating a pandemic, Larson Manufacturing worked hard to secure its manufacturing facility in Lake Milles, Iowa, against COVID-19. Among other things, the company posted signs, upgraded its cleaning procedures and installed social distancing barriers. But was that enough? To make certain, Larson became one of Iowa's first companies to receive a free CIRAS virtual COVID-19 Preparedness Assessment. CIRAS evaluated the facility on 65 criteria across 13 categories. "Even though we felt we were doing pretty well, we thought we'd seek out the opportunity to find out if there were any gaps we needed to fill," said Brian Throne, Iowa Operations Manager for the door and window company. "I think we learned a lot." CIRAS story link: <https://newswire.ciras.iastate.edu/2020/09/02/doing-enough-ciras-covid-assessment-helps/>



New posting inside employee entrance

Kansas – Kansas Manufacturing Solutions (KMS)

Assessing the State of Manufacturing in Kansas

As the effects of the pandemic began to hit the United States, agencies and organizations nationwide were scrambling to source PPE and manufacturers that could pivot to produce PPE. Organizations were also trying to figure out how to preserve the manufacturing industry in general, given special constraints on the ability to produce in challenging times with workforce, supply chain and safety issues. KMS set out to understand the landscape of Kansas manufacturing. The immediate step was to commit the entire team and some external partners to outbound calls to companies in the state, trying to understand current production as well as capacity of those who were or could produce PPE. This allowed KMS and the state to identify and build a state supply chain of PPE. Additionally, KMS conducted a statewide needs assessment survey in summer 2020 to understand how the pandemic affected Kansas manufacturers and then how the Kansas MEP could adjust services to meet the current and critical needs. The outcome of this survey was that KMS-built service offerings that met companies where the most critical needs were, particularly in the areas of HR, strategic planning, sales and new client acquisition services, shifting to a digital marketplace, and operational improvements.

COVID-19 Human Resource Practices

One of the issues identified with Kansas manufacturers is that they were having a hard time navigating the new COVID-19 environment in their facilities and how to create policies to protect both employees and the company. KMS created an HR handbook program that would work with the company to provide a COVID-19 policy customized to the company needs but ensuring that HR practices were established and followed. The Center partnered with an HR consultant and HR law consultant who created policies using legal, HR and insight from CDC, local government and health department best practices. KMS also found through this COVID-19 HR policy service offering that many companies did not have an HR handbook at all – KMS is providing this service to companies as well, when indicated.

Future State Optimization – Ushering Companies Into the Post-Pandemic World

KMS built a future state optimization (FSO) program that launched in early fall 2020. It is comprised of a comprehensive assessment to ascertain the current state of a company and will then take them through eight weeks of deep strategic planning and implementation to ensure their company gets and stays on a trajectory to sustainability and growth during these uncertain times. Starting with a deep dive discovery that interviews clients, staff and other stakeholders, along with looking at company analytics and financial data, the program takes a really comprehensive look at the current state of a company, and identify gaps and opportunities to improve, generate revenue and enter new markets. Over the course of the year, the program evolved into what is now called FSO – Agile. FSO – Agile is about moving quickly in identifying the current state of a company and creating a strategy and implementation plan that helps a company thrive in the pandemic and post-pandemic world. The program was built and beta tested for learning and optimizing before launching to the entire state in October 2020.

Kentucky – Advantage Kentucky Alliance (AKA)

AKA Provides No-Cost Manufacturing Videos to Kentucky Manufacturers

AKA produced over 55 videos, creating Kentucky's only video library of Kentucky manufacturers. These videos have been shared hundreds of times across Kentucky. They have effectively introduced Kentucky manufacturers to new clients hundreds of times over the past year and continue to introduce their capabilities and assets. One specific video, Purple Toad, had over 15,000 hits within the first week.

This service creates a professionally produced, high quality business video and multiple images for use in promotion, marketing and training across multiple online platforms. Media services include on-site video capture, drone footage (if appropriate) and up to twelve high-quality photo images. Precision editing and fine tuning create eye-catching and visually appealing works of art depicting people, assets and business that are aligned with a company's marketing, promotion and growth strategies. To find out more information about the more than 50 videos available, visit

<https://www.advantageky.org/manufacturere-showcase> and to get acquainted with Purple Toad click on <https://youtu.be/-QD-OYremGw>.

Louisiana – Manufacturing Extension Partnership of Louisiana

Not Just a Review – MEP of Louisiana’s COVID-19 Detailed Business Assessment

At the onset of the COVID-19 pandemic, the MEP of Louisiana developed one of the first tools to assess manufacturers quickly and effectively. The assessments properly assessed businesses affected by COVID-19 and were able to be completed on-site, via video or phone conference and resulted in recommendations for the affected company. As a result of the COVID-19 detailed business assessment, Louisiana manufacturers have been assisted by the MEP of Louisiana with supplier scouting and sourcing ventures as well as new digital marketing strategies as a pivot from their prior business models. Business owners can improve their decision-making and more accurately determine what they are doing right. They also identify what needs improvement, especially amid their experiences, and challenges to be addressed with the help of the MEP of Louisiana. To find out more about COVID-19 resources in Louisiana visit <http://mepol.org/covid-19-resources>.

Business Continuity Assessment Provides Manufacturers With More Ways to Limit Risks During Pandemic

In the first quarter of 2021, the MEP of Louisiana implemented the business continuity assessment tool onto the mepol.org website for manufacturers’ use during the COVID-19 pandemic. While Louisiana is a great place to live and serves manufacturers and global customers well, the geography also brings some concerns. Thousands of businesses are in areas likely to be impacted by coastal storm surge and flooding due to hurricanes impacting their areas as well as concerns from the pandemic. The business continuity assessment is a deep-dive risk analysis of 10 key areas to make recommendations to fortify a business. Clients can complete the assessment on their own time and, once they finish, are automatically provided with a risk report based on their responses. Based on their geographical location within the state, they are then contacted by a local Louisiana Community and Technical College System MEP of Louisiana project manager to review their results. To access the MEP of Louisiana business continuity tool, visit <http://mepol.org/businesscontinuity>.

Workforce Concerns During Pandemic Lead to New Partnership and New Program

The MEP of Louisiana has completed more than 150 COVID-19 detailed business assessments and the results have strongly reflected the same issue most all manufacturers are having across the nation: workforce. To solve this growing issue, the MEP of Louisiana has partnered with Louisiana Economic Development’s (LED) FastStart program to create a new workforce program. LED FastStart provides customized employee recruitment, screening, training development and training delivery for eligible, new or expanding companies. By working together the MEP of Louisiana and LED FastStart will be developing the first leveled-type manufacturing program, providing students with skills aligned to entry-level positions in the manufacturing industry.

Maine – Maine Manufacturing Extension Partnership (Maine MEP)

Two Maine Companies Pivot Together

During the first phase of the COVID-19 pandemic, the Maine MEP started working with companies immediately on pivoting product lines for PPE production. Maine MEP Senior Project Manager Bill Whittier was instrumental in helping to connect two local companies, Flowfold and Alfred's Upholstery, to partner on the production of face shields.

Flowfold had access to an abundant supply of clear, lightweight plastic and was quickly able to secure contracts with the state of Maine, and numerous hospitals and school districts. Within two weeks, there was demand for 500,000 face shields. This was way beyond Flowfold's capacity and Devin McNeill, Flowfold's CEO, turned to Maine MEP where Senior Project Manager Bill Whitter connected him to Alfred's Upholstery. Each week during the six-month engagement, Alfred's production increased to the point that they were making 30,000 face shields a week. During the face shield production, Troy and Rebecca Delano, Alfred's founders, were able to keep their 17 employees working, and also added 15 jobs.

Puritan Medical Products Swab Capacity Scale-Up

Puritan Medical Products located in Guilford, Maine, is the only domestic producer of COVID-19 swabs and one of two worldwide. In 2020, Puritan Medical Products received \$126 million in government contracts to build an additional manufacturing plant and scale up swab production from 20 million to 90 million per month. This rapid increase in demand led to an immediate need for an increase in staffing. In May of 2020, Puritan reached out to Eastern Maine Community College (EMCC) for workforce development assistance. EMCC then reached out to the Maine MEP to develop a 16-hour interactive training for machine operators with a focus on safety, quality and Food and Drug Administration (FDA) compliance. Since July of 2020 Maine MEP project managers have trained over 1,100 new Puritan employees, and Puritan has increased weekly manufacturing payroll by \$250,000 per week. Eastern Maine Community College and Maine MEP had worked together on workforce projects in the past, but Maine MEP's ability to respond to a quick call to action strengthened the relationships between the two organizations.

Maryland – Maryland MEP (MD MEP)

Maryland Manufacturing Network Supplier Portal Reaches \$1 Million in Sales

Since the onset of the COVID-19 pandemic, Maryland manufacturers have stepped up in a huge way to support the needs of essential workers and keep the state economy moving forward.

In May, MD MEP partnered with the Maryland Department of Commerce to launch the [Maryland Manufacturing Network \(MMN\) Supplier Portal](#). This website was designed to connect local manufacturers who were able to quickly produce PPE and other essential items with buyers in need. The response has been overwhelming, as in just a few short months, connections made through the MMN Supplier Portal have generated \$1 million dollars in sales. More than 336 local suppliers have registered on the site and have connected with more than 423 requests from potential buyers.

For health care facilities like the Clifton T. Perkins Hospital Center in Jessup, Maryland, the MMN Supplier Portal has been extremely helpful in securing the supplies they needed for their over 600 staff members to continue caring for their patients safely. Kelli Francis, Director of Procurement, said that locating N95 masks, gloves, hand sanitizer, disinfectant, wipes and other items was initially difficult.

“Because of the high demand, a lot of our typical state vendors couldn’t supply what we needed,” she said. “I came across the MMN Supplier Portal while searching for PPE suppliers on Google, and the website was very helpful and extremely easy to use. Within minutes of submitting our request online, we heard back from High Touch Business Services and we placed our order. We had our supplies within just a few days.”

Michael Myers, Bureau Chief of Purchasing for the Carroll County Government, was tasked with obtaining PPE for a large array of county agencies, including fire stations, EMS agencies, health care facilities and nursing homes, among others. In addition to the lack of supply, he says another challenge was finding trustworthy vendors. “From day one, we received a crazy number of unsolicited offers for PPE, but the sources were unreliable and untrustworthy,” he says. “We saw a lot of price discrepancies, products of poor quality and fraud.”

So, when MD MEP invited Myers to a webinar about the new MMN Supplier Portal, he was interested to learn that the website would be able to connect him with local companies who could deliver quality product at competitive prices. In less than 48 hours he had quotes from five local companies who could fulfill his request. He placed a large order for masks, gloves, gowns, N95 masks, face shields and more from Strategic Factory, who fulfilled 80% of the order within just two weeks, with the rest expected soon after.

“The delivery time has been outstanding compared to colleagues I’ve spoken to,” says Myers. “Some people are still waiting for supplies that were ordered two or three months ago.” From Myers’ perspective, the MMN Supplier Portal has been a win-win situation for everyone involved, as the local vendors are able to generate sales and the buyers are able to secure the products they need while supporting the local economy. “The response to the MMN Supplier Portal has far exceeded our expectations,” says Mike Kelleher, Executive Director, MD MEP. “Facilitating more than \$1 million in sales for Maryland businesses because of connections made through the site is a great indication of how significantly Maryland manufacturers have contributed to our state’s response to this pandemic. We’ve

seen many manufacturers overhaul their operations overnight to fill critical needs, and we're proud that the MMN Supplier Portal has supported their efforts."

Maryland Manufacturers Responding to the Challenge of COVID-19

COVID-19 has presented many unforeseen challenges to businesses, families and individuals across the United States. Throughout the pandemic the need for PPE and other critical items revealed critical weaknesses in the domestic supply chain. In response to these gaps, manufacturers across the United States and throughout Maryland responded to these needs and quickly pivoted their operations to produce these items for health care workers, first responders and critical workers to ensure that the state could continue to operate and spark economic recovery.

To highlight and showcase these stories of resilience and perseverance, the MD MEP developed and produced a documentary to tell the stories of Maryland manufacturing and their importance to the economy and community. The final video that was produced reflects the efforts of just a few of Maryland's manufacturers that responded to this challenge. Maryland Manufacturing: Resilience Through COVID-19: <https://youtu.be/ezubP27mknY> tells the story of the following companies:

- Strategic Factory: A print, graphic and sign manufacturer that was able to pivot through COVID-19 and leverage their relationships and supply chain connections to source and supply thousands of organizations with masks, shields, gowns and other protective equipment during the pandemic. Strategic Factory was active in the Maryland MEP's Manufacturing Network Supplier Portal and fulfilled several million in new business as a result of the connections.
- Triton Defense and Southern Maryland Loves You: Southern Maryland Loves You is a nonprofit organization located in Southern Maryland that had developed a technology for mass sterilization and sanitization of PPE and other medical equipment. Working closely with Triton Defense, the collective was able to manufacture and produce a "Hot Box" used to sanitize PPE through heat treatment. The process received emergency use approval from the FDA and played an important role in sanitizing equipment for several hospitals and health care organizations.
- Lyon Distilling and Charm City Meadworks: Like many distilleries, Lyon Distilling and Charm City Meadworks were able to pivot operations throughout the pandemic and produce hand sanitizers and other cleaning solutions. Collectively, these organizations produced several thousand gallons of sanitizers and were able to meet the short-term needs of the medical community.

Massachusetts – Massachusetts Manufacturing Extension Partnership (MassMEP)

MassMEP Cares Act Summary: July 29, 2021

In March 2020, as the COVID-19 pandemic swept the nation, the leaders of the Baker and Polito Administration, including Economic Housing of Development, established the Massachusetts Manufacturing Emergency Response Team (MERT) to assist in the response to the COVID-19 pandemic and the shortage of PPE. Members of the MERT include MassMEP, the Massachusetts Technology Collaborative (MassTech), Advanced Functional Fabrics of America, Massachusetts Institute of Technology (MIT), MIT Lincoln Labs, University of Massachusetts Lowell and Worcester Polytechnic Institute. The MERT mission is “to mobilize, organize and operationalize critical path work streams necessary for Massachusetts manufacturers to pivot their operations to produce needed materials and PPE.”

MassMEP, with MassTech, led the strategic outreach to the manufacturing companies that became essential and pivoted their business to produce PPE for Massachusetts and the country. MassMEP reached out to 539 Massachusetts manufacturing companies that came through the portal and designated the highest priority producers of PPE to assist with next steps and their needs. Of the 539 companies, 50 companies were deemed “green.” Of these 50 companies, 22 received state funding to help maintain PPE production. MassMEP tracked and reported to the state the production of the 22 companies and their products. The “yellow” and “red” companies were also part of the outreach and they were provided assistance, keeping manufacturing relevant in Massachusetts. In 2020, over 116 million pieces of PPE were produced and the projected forecast for 2021 is over 525 million pieces of PPE which includes ventilators, N95 masks, isolation gowns, nitrile gloves, viral kits and face shields.

The MERT 1.0 quickly pivoted into MERT 2.0 with the outreach and continued follow-up of the 50 companies using at least 12 full-time MassMEP employees for approximately 13 weeks, providing assistance and resources to the manufacturing companies producing PPE. MassMEP is still currently working with and advising many of those companies who pivoted and continue to produce PPE.

One of the successful outcomes of this program is that MassMEP was included as a subrecipient on an Economic Development Administration award for \$4.3 million to continue the efforts and sustain the process of using this program for any future disasters that may occur.

<https://massmep.org/m-ert-launches-manufacturers-portal-for-purchasing-ppe-and-hygienic-supplies/>
<https://massmep.org/podcast/give-me-the-greens-all-things-m-ert/>
<https://massmep.org/the-mass-manufacturing-community-responds-to-covid-19/>
<https://massmep.org/massmep-the-m-ert/>

Michigan – Michigan Manufacturing Technology Center (The Center)

RPB Safety: Supporting Health Care Heroes With Help From The Center

RPB Safety, the respiratory protection brand, was founded in the 1970s with the mission of creating the world's best respiratory equipment. Over their 40+ year journey of continuously developing new and better respiratory equipment for clients – from industrial soldiers to health care heroes – RPB has been committed to protecting customers for life's best moments. Family-owned and operated, RPB employs 40 at their Royal Oak, Michigan facility.

RPB was preparing for a modest but solid year of growth in 2020 with plans to enter the health field in 2021. However, when COVID-19 began to spread rapidly throughout the nation, RPB's focus shifted to supporting health care workers on the pandemic's frontlines. As RPB began developing and producing new respiratory equipment for the health field, they noticed several areas in operations were not as scalable as anticipated – including receiving, inventory control and finished goods inventory. For assistance RPB turned to the experts at the Michigan Manufacturing Technology Center (The Center), part of the MEP National Network.

After analyzing RPB's systems and structure, The Center made practical recommendations for improvements, including implementing automation into processes to increase efficiency while maintaining quality. The Center's support was crucial during this time of rapid change at RPB, enabling them to reach new levels of sales and bring new products to market quickly while continuing to serve their traditional industrial customers.

With The Center's guidance, RPB was able to complete a major shift in their supply chain strategy and inventory requirements to support a new line of health care-focused products in a compressed timeframe. One such product, the portable Powered Air Purifying Respirator PX5, received certification from the National Institute for Occupational Safety and Health in record time with RPB using a combination of human labor and automated systems to meet the high demand for the product. Both this and the health care-focused T200 headtop, combined with the appropriate hood, have been received well among health care workers due to the quality, flexibility and safety provided. The T200 earned OSHA's highest assigned protection factor score of 1,000. As a result of the services provided, RPB realized \$1 million in new sales, \$700,000 in cost savings and created three jobs.

As explained by Garth Ivory, RPB CEO, "The Center helps us fulfill our vision of 'protecting you for life's best moments.' The more streamlined our processes are, the more product we are able to get out the door and the more industrial soldiers and health care heroes we can protect. The Center helps us make that happen."

Minnesota – Enterprise Minnesota

Finding Opportunities Through Assessments

A key service that Enterprise Minnesota provides is conducting business assessments for manufacturers in eight critical business areas, including quality management system status, enterprise value, lean, leadership and others. Assessments allow manufacturers to get a valuable, third-party, expert opinion of where improvements can be made in their businesses and where opportunities may lie throughout the organization. The federal CARES Act funding allowed Enterprise Minnesota to expand the categories and accessibility of these assessments to reach manufacturers in all corners of the state, especially smaller manufacturers who may not typically have the resources to conduct a quality business review. In all, 118 assessments were conducted with 102 manufacturers in the past 11 months. This led to 86 follow-on projects in which clients invested with Enterprise Minnesota to act upon the assessment recommendations and improve their operations.

Accessibility and Connection in a Virtual World

As in-person meetings and visits to manufacturers ceased, Enterprise Minnesota pivoted many vital services to a digital-first format. This allowed its consultants to continue providing critical insights, information and services to clients in a rapidly changing environment. One of these new virtual services, called executive forums, were no-cost, roundtable-style virtual meetings with manufacturing executives from a specific geography facilitated by Enterprise Minnesota consultants. These local forums gave manufacturers a chance to connect and discuss what was happening in their communities while staying abreast of changing regulations. Other services made more accessible in a virtual format included manufacturing workshops, regional peer councils, business assessments and consulting service deliveries. Enterprise Minnesota consultants made a concerted effort to ensure consulting projects delivered in a virtual format were high quality and high value for clients.

Mississippi – Mississippi Manufacturers Association (MMA-MEP)

Mississippi Manufacturers Assisted Hospitals Experiencing Shortage of Isolation Gowns During Pandemic

With a team led by MMA-MEP Center at Mississippi State University's Center for Advanced Vehicular Systems-Extension, several Mississippi manufacturers and suppliers came together to produce isolation gowns to help three of the state's hospitals in need. These hospitals expressed concern to the Center's team that it became more difficult to locate disposable isolation gowns. These gowns are sanitary PPE used by medical personnel when they enter a room with a patient who has an infectious disease such as COVID-19. Procedures for isolation gowns are much like those for disposable gloves where a fresh gown must be used each time the medical staff enters a different patient's room. Small hospitals can go through more than 100 of these gowns each day.



MMA-MEP reached out to several Mississippi furniture manufacturers, many of which have in-house cut-and-sew operations in their plants, and materials suppliers, who were quick to respond. MMA-MEP worked with furniture manufacturers to come up with sample gowns that were approved by the hospitals, and with the design and product completed, all three hospitals were ready to begin placing their orders. The furniture manufacturers understood the temporary nature of the situation and were not planning to make this a business line, but glad they could contribute to the emergency response.

Training Employees During a Pandemic

During the pandemic, MMA-MEP implemented distance learning for manufacturers, an online e-learning tool. Mississippi's manufacturers could access the e-learning by simply requesting an access code. Mississippi's manufacturers may choose from a wide range of self-directed courses that include the use of graphics, 3D simulations, videos and complete explanations. The website offers over 400 courses in automation, electrical, fluid power, manufacturing processes, structural engineering and more.

A sustainable pipeline of talent is critical to the future of manufacturing during a pandemic. To find out more about MMA-MEP go to [Homepage – Mississippi Manufacturers Association \(mma-web.org\)](http://mma-web.org).

Missouri – Missouri Enterprise

Pivoting to Provide No Cost Training and Information During COVID-19

Missouri Enterprise received CARES Act funding on May 15, 2020. This funding was critical in that it allowed the Center to provide informational documents to Missouri manufacturers related to appropriate COVID-19 protocols. Equally important, Missouri Enterprise was able to use the Center's website to provide a list of resources and information to keep manufacturers and communities safe. Links to resources regarding how COVID-19 spreads, its symptoms, prevention, treatment and what to do if one becomes sick were also posted. In the first quarter alone the website was viewed over 15,000 times.

Realizing the pandemic forced many to shelter in place and limited many to virtual rather than in-person, Missouri Enterprise quickly pivoted training and awareness efforts to the web. The Center began providing relevant information and training to manufacturers via webinars. Following is a sampling of COVID-19-related and non-COVID-19-related webinars that helped during the pandemic:

- Legal Guidance to Navigate Health Policies – Navigating the new health order while protecting employees on the job
- First Steps to Reopening
- Training During the Disruption With Training Within Industry (TWI)

In addition to providing no-cost webinars, Missouri Enterprise created a COVID-19 response team of dedicated experts to focus their attention on helping and guiding manufacturers through the COVID-19 transition.

Missouri Enterprise was fortunate to have support from NIST MEP that provided financial resources to the Center so Center staff could help the many manufacturers experiencing COVID-19-related issues such as workforce, production backlogs, legal liability issues related to COVID-19 and more. The Center believes the information shared helped many employers protect employees and had some degree of impact limiting the spread of the pandemic.

Helping to Identify PPE and Associated Supply Chain Assistance

With the onset of the pandemic, critical PPE quickly became a scarcity and was in desperate need. Many manufacturers were facing backlogs and due to workforce shortages and other supply chain issues, businesses were stressed to meet deadlines.

Missouri Enterprise worked closely with the lieutenant governor's office and the Missouri Department of Economic Development to address the shortages of PPE equipment. As hospitals contacted the lieutenant governor's office regarding PPE-related equipment, they in turn contacted Missouri Enterprise for help identifying local manufacturers that could provide those items or could pivot to produce them. Further, the governor provided grant funding to Missouri manufacturers for pivoting to produce PPE-related equipment. Missouri Enterprise contacted manufacturers across the state to promote and support the changes needed to produce them. Additionally, the Center used MEP Connect to engage with MEP Centers across the nation to find manufacturers that could either provide PPE or pivot to produce PPE. Other MEP Centers also contacted Missouri Enterprise for needs from their respective states.

Further, Missouri Enterprise created a COVID-19 products and service directory to support and sustain manufacturing in the Show-Me State. The directory featured products and services made and/or offered by the Missouri manufacturing community to help other businesses in the state protect their employees on the job. The site also featured similar products made or offered by companies across the nation. Although the Center could not vet the companies nor their products or endorse them, this was a free resource to make it easier for companies to find local sources for protective products for their workers.

Clearly, the pandemic has severely impacted the nation economically and personally. One thing that became very clear in the early stages of the pandemic was that while the Missouri Enterprise team sometimes thought government and private businesses didn't know who or what MEP was, it quickly became apparent that more entities knew about MEP and the National Network than originally thought. Because of the positive response to the pandemic people know MEP can make a difference to those who truly want help, growth or positive change ... not just locally, but nationally.

Montana – Montana Manufacturing Extension Center (MMEC)

Partnerships for PPE

Early in the pandemic Montana health care facilities faced critical shortages of PPE and other supplies. MMEC partnered with the Montana Hospital Association and the Governor’s Coronavirus Task Force to develop and maintain a spreadsheet and webpage with information on the PPE and other critical supplies needed by health care facilities, as well as the manufacturers who were pivoting production or had the capacity to do so. Based on this information that clearly defined both needs and opportunities, Blue Cross and Blue Shield of Montana (BCBSMT) provided a \$10,000 donation to two companies to support the purchase of raw materials for face masks and shields. For more information, see the [BCBSMT news release](#).

Leveraging National Network to Overcome Supply Challenges

Early in the pandemic, Montana distilleries stepped forward to pivot their operations to the production of sanitizer. These distilleries had the expertise and capacity to make the sanitizer product itself – the challenge came in securing packaging materials. Personal size sanitizer containers and closures had gone into very short supply, and manufacturers focused on providing containers and caps to the larger sanitizer producers. With the help of CARES Act funding, MMEC provided several support services to manufacturers during the pandemic, including reaching out to national contacts to source hard-to-find materials. One MMEC business advisor secured a donation from a major manufacturer of more than 15,000 bottles and 15,000 caps for Montana’s distilleries. Over the following few months, MMEC was able to acquire over 142,000 bottles and caps for distilleries around Montana, at no charge. As a result, one Montana distillery alone manufactured 7,000 gallons of hand sanitizer from March 2020 to December 2020 and donated the product to more than 20 organizations. Read more on the [MMEC website](#).

Weekly Meetings Facilitate Statewide Communication and Cooperation

The Montana manufacturing community consists of small and medium-sized manufacturers spread across a very large region. At the beginning of the pandemic, MMEC began hosting weekly calls to disseminate the latest information, as well as to facilitate collaboration between companies and partners. MMEC secured the participation of legislative representatives, state and federal agencies including the Small Business Administration, the Montana Department of Labor and Industry, the Montana Department of Commerce, and private sector partners such as banks and insurance agencies. As a result, manufacturers heard firsthand, timely updates on rapidly evolving legislation, programs and services, and had the opportunity to ask questions of state officials and other partners. From the weekly calls, small groups of manufacturers were formed to address specific issues, with MMEC facilitating and providing support. These working groups assisted Montana companies with successfully pivoting production to various types of PPE, including hand sanitizer, sewn face masks, injection-molded masks and others. The small groups continued to meet weekly or as needed to collaborate on sourcing materials and distribution.

Nebraska – Nebraska Manufacturing Extension Partnership

CARES Act Funding Keeps Anderson Industrial Engines Humming

Anderson Industrial Engines Co., Inc., headquartered in Omaha, Nebraska, distributes and packages industrial engine and electrical generator sets. Working with the Nebraska MEP they determined that Entrepreneurial Operating System (EOS) would help them power through challenges presented by the COVID-19 pandemic. Using CARES Act funding, the Nebraska MEP engaged Leadership Resources, Inc. to assist Anderson through the EOS process which helped Anderson retain four positions, invest \$60,000 in employee development, \$2,500 in information technology, and avoid \$10,000 in reduced turnover expenses.

EOS Drives Growth for RealmFive

RealmFive develops and manufactures hardware and software solutions that enable the remote collection of data and device control for the agricultural market. They turned to the Nebraska MEP for EOS consulting. Using CARES Act funding, Nebraska MEP engaged Leadership Resources, Inc. as a third-party provider to work with RealmFive's leadership team. The consultation resulted in RealmFive investing \$1 million in new products and processes, creating 2-5 new jobs and investing \$25,000 in employee skills training.

Nevada – Nevada Industry Excellence (NVIE)

Promoting Resiliency Through Advanced Manufacturing

Nevada Industry Excellence introduced a webinar series aimed at assisting manufacturers to explore and implement advanced manufacturing principles to help them become more resilient in the face of future disruptions. Webinar topics included: Minimize Downtime and Maximize Production with Industrial Internet of Things (IIOT), Collaborative Robotics – Improving Manufacturing Through Human-Robot Interaction, and Small Business Innovation Research (SBIR)/Small Business Technology Transfer Research (STTR) Programs. These specific webinars reached a total of 36 unique manufacturers and 135 individuals in total. NVIE continues to operate its robust and highly successful webinar program. Since the pandemic started, the Center has hosted 27 webinars. Over the last six months, a total of 438 individuals have participated in the webinar series. In total, NVIE's webinars have had nearly 1,200 participants.

Vertically Aligning Advanced Manufacturing Certifications to Address Workforce Crunch

NVIE created a Nevada Manufacturing Forum which provided a space for manufacturers to come together and share their experiences and resources. A specific result from that forum was the promotion and adoption of an advanced manufacturing certification standard for high school students matriculating into community colleges. The two largest school districts in Nevada adopted Smart Automation Certification Alliance certification programs along with two of the largest community colleges in the state. This has created a vertical integration and education path for high school students to earn dual credit toward completing advanced manufacturing degrees at community colleges. This manufacturer-supported effort will help address the shortages of qualified, manufacturing-ready employees to move Nevada into the future of Industry 4.0.

New Hampshire – New Hampshire Manufacturing Extension Partnership (NHMEP)

NHMEP Pivots 13 Services for Remote Delivery

NHMEP quickly realized the need to move as many services to remote as possible as New Hampshire manufacturers started to close their doors to the public. Many manufacturers saw this slow down as a prime opportunity to train employees and to be prepared for when business picked back up to full demand. NHMEP added three new services to help 125 manufacturers, including a sales training collaborative, marketing training collaborative and multiple safety trainings. NHMEP surveyed New Hampshire manufacturers to find their current challenges during the pandemic and partnered with third parties for services like safety training and cybersecurity. The Center also created webinars from their normal on-site services and hosted over 223 companies in the last 18 months.

NHMEP emailed printouts to companies and used Zoom to teach and quiz attendees to keep the training as interactive as possible. These webinars were very successful at attracting new clients and even attracting larger manufactures that have internal training programs. After doing follow ups to the webinars with manufacturers, NHMEP found that a few of them had created their own 5S program and had created value stream maps in small areas of their business, creating large cost savings. The Center also offered one-on-one value stream mapping that helped a company create a whole new process, as all office staff was working from home and communication about new projects needed to be improved. NHMEP also offered one-on-one setup reduction training using Zoom and the cloud to share videos, and helped a company reduce setup time on multiple machines.

A vast majority of the companies that attended the free webinars and info sessions have smoothly converted to clients. These clients were excited to have NHMEP staff come on-site and do face-to-face training once restrictions were lifted. The most common feedback received from the webinars was, “This was the best training and most concise training I have received over a webinar so far.” Some services have stayed entirely remote and some have gone to hybrid on-site and off-site. NHMEP is also going to continue doing information sessions remotely in the future.

The following are the services that were provided virtually:

5S Basics	ABC's of Returning to Work Safely
Fundamentals of ISO	Achieving Sales Goals
Principles of Lean Webinar	Sales Training Collaborative
Value Stream Mapping	Marketing Strategies Collaborative
Geometric Dimensioning and Tolerancing	OSHA Safety Certificate
Setup Reduction	Annual Governors Advanced Manufacturing Summit
Blueprint Reading	

New Jersey – New Jersey Manufacturing Extension Program (NJMEP)

COVID-19 Critical Supply Chain Database (CSC Database) – Connecting New Jersey Manufacturing

NJMEP created the CSC Database in response to supply chain disruptions caused by the pandemic. Led by Robert Stramara, Chief Operations Officer (COO), a webpage was created to capture the needs and capabilities of New Jersey manufacturers specifically during the COVID-19 pandemic. This database was promoted and updated daily. It consisted of manufacturers that were struggling to source raw materials, those that had excess inventory of raw materials and/or PPE products, and manufacturers of PPE or other hygienic equipment. Manufacturers like Mira Plastics were able to benefit by being connected with suppliers of PPE which allowed them to keep their facility open.

The CSC Database also helped forge new partnerships and strengthen existing relationships within the state. New Jersey turned to NJMEP to find new local manufacturing partners and reasserted its position as the go-to conduit for state/manufacturing interaction. Read Mira Plastics' full success story here: https://www.njmep.org/blog/success_stories/mira-plastics-sources-and-remains-open-ppe-thanks-to-njmep-collaboration/

Helping Connect Pivoting Manufacturers With State Purchasers

Manufacturers working to pivot their production lines to help offset the PPE shortage were facing countless rules and regulations unfamiliar to their business. Businesses like Bluetrack, Inc. have also never worked with the state on a contract basis. NJMEP worked with manufacturers that were shifting their production lines and pivoting their product offerings to meet this void in the market. NJMEP provided critical information in real-time as workplace policy and safety guidelines changed to dampen any interruptions while manufacturers were installing and training on new equipment. Bluetrack's account manager also worked with NJMEP's advocacy team, and newly-developed CSC Database team leader and COO Robert Stramara, to connect with the state and make them aware of their PPE capabilities, capacity and product offerings. From this NJMEP engagement, Bluetrack was able to secure a massive order from the state for the new PPE products. Read the full success story, here: https://www.njmep.org/blog/success_stories/bluetrack-inc-creates-new-revenue-streams-and-boosts-business-through-njmep-collaboration/

Stimulus Support for All New Jersey Manufacturing

The stimulus support service offerings were developed to provide a way for manufacturers to offset the cost of training in a variety of focus areas, each of which were designed to improve operations and increase competitiveness in a COVID-19 environment. Sixteen service areas were specifically developed and designed in response to the COVID-19 pandemic. Manufacturers that begin a stimulus support project offset 20 billable hours of training to expand access to critical education and insight. These programs include Business Recovery Strategies for Manufacturing Companies, Working and Managing in a Post-COVID-19 Environment, Digital Marketing for Manufacturers, ISO 9001:2015, Virtual Lean Training and Consulting, and more.

Providing Manufacturers With Expanded Services to Drive Sales in a Post-Pandemic Environment

Manufacturers lost the ability to promote themselves through tradeshows and conventional peer-to-peer engagement over the pandemic. To offset this disruption, NJMEP expanded its business growth suite's digital marketing service. A new resource was brought on and leadership worked with this new digital marketing resource to create a five-part training course.

Manufacturers could offset some of the costs of the course through CARES Act funding. Word Center Printing was the first manufacturer to take advantage and had this to say about the solution. Marilyn Silverman, Owner of Word Center Printing stated, “We did an extensive upgrade of our website, and NJMEP’s resource taught me and the staff how to boost posts on Facebook. He also taught me the value of having relevant Google reviews and how to put more emphasis on the services that we wanted to sell.”

New Mexico – New Mexico Manufacturing Extension Partnership

A Craft Winery Emerges From the Pandemic

Jerry and Lynda Burd have operated Black Mesa Winery, the Velarde, New Mexico winery they purchased from the original owners who founded it in 1992, for 21 years. Three years ago, the Burds added hard cider to their production of award-winning wines. The winery's 12 employees create alcohol from grapes and apples grown on-site or purchased from nearby small producers, and the tasting room overlooking the vineyard is a tourist destination on Highway 68, the main artery between Santa Fe and Taos. The winery sells to regional restaurants and bars, wine club members and consumers from more than 35 states who select products from their website.

When the coronavirus pandemic temporarily halted tourist traffic and shuttered restaurants and bars throughout New Mexico, the winery had an inventory worth \$100,000 and fewer avenues to deliver its products to customers. The Burds were able to keep products moving out the door through online wine tasting events, shipments to more than 400 wine club members, and creative drive-by tours that kept customers engaged. With time on their hands and employees to keep occupied, they contacted New Mexico MEP Innovation Director Scott Bryant, part of the MEP National Network, to help them consider changes that could streamline processes, open new markets and increase market share when the pandemic ended.

Using growth strategies and lean methodologies, Bryant broke down each step involved in producing the winery's 30 wines and four flavors of cider. To improve efficiency, Bryant suggested shortening the distance between production and shipping operations to minimize the time spent filling orders, and he urged the closure of gaps between different processes by adding wheels to equipment used in more than one place. He also suggested switching to a lightweight packaging system that could save transportation and shipping costs, and minimize handling. As a result of the services provided, Black Mesa Winery realized \$50,000 in cost savings while increasing 2021 sales over 2019 sales by 15% during the pandemic.

New York – New York Manufacturing Extension Partnership (NYMEP)

Center for Economic Growth (CEG) – New York State Reshoring and Rebuilding Supply Chains

As part of the CARES Act, New York state awarded the CEG and two other regional NYMEP Centers \$800,000 to target programming to support reshoring and rebuilding the supply chain. CEG provided 23 \$10,000 grants for small and medium-sized manufacturers to reshore manufacturing activities, implement resources to strengthen their supply chain, or increase their domestic competitiveness to original equipment manufacturers through improving operations and processes. CEG also conducted several surveys for New York state to understand the breadth and impact of supply chain disruptions due to COVID-19. To learn more about CEG, visit ceg.org.

Manufacturing and Technology Enterprise Center (MTEC) – Virtual Assessments and Assistance Program

During COVID-19, MTEC led a statewide effort to incentivize companies to engage in virtual projects. MTEC developed an online tool that regional NYMEP Centers used to perform 104 assessments, surpassing a goal of 90. These combined efforts across New York state resulted in 79 projects, an amount that far exceeded the Center's goal of 35 projects. Across seven NYMEP regions, 40 companies were each awarded a \$10,000 grant for a virtual project. The most common project areas were marketing (33%), workforce development (16%) and engineering (12%). Although lean manufacturing was challenging to deliver virtually, cybersecurity was not. Post-pandemic, MTEC anticipates continuing cybersecurity services in this manner to limit travel costs and offer competitive pricing. For more information about MTEC, visit mfgtec.org.

FuzeHub – Virtual Events for Business Development and Resource Engagement

During the COVID-19 pandemic, the cancellation of tradeshow and other in-person events meant that manufacturers didn't have a way to meet with each other or with funded resources. Through two virtual manufacturing expos and two virtual manufacturing forums, FuzeHub enabled 227 companies and 442 attendees from across New York state to meet with 165 exhibitors during the first half of 2021. FuzeHub also sponsored a [virtual solutions forum](#) in August 2020 that sparked a [supply chain connection](#) resulting in \$70,000 of sales per month and the addition of six full-time employees for a single manufacturer. In addition, FuzeHub's [Manufacturing Reimagined](#) program provided New York state manufacturers with a series of 10 virtual events where they learned how to emerge from the pandemic with greater resiliency. Topics included crisis workarounds, safety, Industry 4.0 and supply chain. FuzeHub contacted 3,540 manufacturers and engaged 348 attendees. To find out more about FuzeHub, visit fuzehub.com.

FuzeHub – Virtual Events for Improving Manufacturers' Digital Marketing Capabilities

During the COVID-19 pandemic, digital marketing became even more important as physical distancing prevented manufacturers from marketing their products and services in person. In New York state, FuzeHub offered a virtual, expert-led, hands-on workshop to manufacturers who want to improve their inbound marketing, outbound marketing, search engine optimization (SEO), paid search and personal development (i.e., buyer analysis). This half-day workshop, Driving Growth Through Digital Manufacturing, attracted approximately 20 New York state manufacturers and has resulted in five projects. A subsequent virtual event, Tips and Tricks to Building Your Website, attracted a similar number of participants and has resulted in several requests for proposal, including a website redesign and SEO audit, as part of FuzeHub's new marketing services program.

Industrial and Technology Assistance Corporation (ITAC) – New York COVID-19 Recovery Initiatives

ITAC is helping New York manufacturers to sustainably and efficiently secure PPE. There are three parts to this program. The first is a downloadable PPE demand self-assessment tool. The second involves working with the New York state Pollution Prevention Institute, which reviews and recommends sustainable PPE designs, reuse opportunities and cleaning practices. ITAC also developed a consolidated list of PPE manufacturers across New York state and collaborated with ThomasNet and Maiics to make finding and procuring PPE easier. In addition, ITAC awarded over \$250,000 in subsidies to help 26 companies maximize PPE lifespan and scale operations. Finally, the Center developed a procurement guide that highlights verified PPE manufacturers who have prioritized local production and sustainability. For more information about ITAC, visit [itac.nyc](https://itac.nyc.gov).

North Carolina – North Carolina Manufacturing Extension Partnership (NCMEP)

NCMEP Survey on the Impacts of COVID-19 on North Carolina Manufacturing

As part of its qualification process for CARES Act funding, NCMEP conducted a survey to assess needs as well as business conditions for manufacturers in North Carolina. Nearly 600 manufacturers from 81 (out of 100) counties completed the survey, providing useful information on their operations. The bulk of them listed laying off workers or closing the business as last resort options now and in the future even though 26% said that business was down significantly. They also indicated that worker training, new product development and bringing back some level of production were critical needs.

NC Manufacturer Pivots from Making Furniture to Gowns

Custom Contract Furnishings (CCF) is a furniture manufacturer located in High Point, North Carolina, that focuses on the hospitality industry. The company saw three months' worth of orders dry up virtually overnight in March 2020. To avoid layoffs, the company decided to create a protective gown solution for the health care industry. CCF completed NCMEP's form collecting information on PPE capabilities. This led to follow-up conversations between NCMEP and CCF, and these interactions ultimately led to the NC Emergency Management Division awarding a contract to CCF to produce Level 1 isolation gowns for the state of North Carolina, resulting in millions in retained and increased sales, new facility investments and the addition and retention of 105 jobs. CCF was also able to implement a quality management system, achieve their FDA registration and listing with the help of NCMEP's CARES Act funding. To find out more about CCF and its story, please visit <http://ncmep.org>

A New Wearable Software Medical Device Could Save Lives

Logiksavvy provides innovative technology solutions and IT services to address business needs. They provide solutions focused on artificial intelligence, Internet of Things (IOT), integration and data analytics. Logiksavvy is currently designing a patent-pending wearable technology – Software as a Medical Device (SaMD) that will provide pre-symptomatic detection of viruses and diseases. With assistance from the NCMEP CARES Act funding, Logiksavvy connected with an FDA expert to ensure their novel medical device technology would meet FDA compliance standards required for SaMD. The grant assistance helped Logiksavvy continue to pursue product manufacturability and marketability. Kathy Bratcher, Founder/CEO of Logiksavvy Solution, stated, "Without the support of CARES Act funding and NCMEP, we would not be as far along as we are today. The result of this delay would result in a longer path to market resulting in a missed opportunity to bring this product to market and save lives." To learn more go to <https://www.logiksavvysolutions.com/>

From Socks to Safe and Secure Masks

Renfro Brands, located in Mount Airy, North Carolina, is a leading innovation, design, manufacturer, and marketer of quality socks and legwear products. The closure of retail businesses at the beginning of the pandemic left the company with unused plant capacity that allowed them to pivot to manufacturing face masks. Renfro completed NCMEP's CARES Act assessment, indicating a need for PPE testing support. Using the funding, Renfro was able to have the necessary PPE testing conducted for their face masks. Their face masks needed to pass a certain level of bacterial and particle filtration efficiency testing so the masks would be able to protect the wearer as intended. This allowed Renfro to provide usable and safe masks out in the marketplace. The first 300,000 masks were reserved for the Forsyth

County Mask the City program. To learn more about Renfro, please visit <https://www.renfro.com/2021/01/interview-with-stan-jewell/>

Pivoting to Make Transportation Barriers

Queen City Engineering specializes in low-volume, high-precision production and prototype fabrication. As a result of the pandemic, they entered a new line of manufacturing, making transportation barriers or transportation driver shields to help stop the spread of the virus. Queen City Engineering was asked by a prospective customer to become ISO 9001:2015 certified. With NCMEP CARES Act funding, Queen City Engineering was able to implement ISO 9001, which led to them receiving several large-scale contracts that include aftermarket and only-approved School Bus Driver Barrier kit with Thomas Built Buses, and total upgrade and retrofit of the University of Michigan buses. They have now sold their barriers nationwide. Because of their success, they have been asked to speak on COVID-19 PPE panels at the North Carolina Public Transportation Association Conference and Transportation Association of South Carolina Conference. They have been able to transform their production practices to cut costs, drive employee performance, and most importantly put in place a quality system that will help them succeed going forward. To learn more, go to <https://www.queencityeng.com/>

NCMEP Helps Foam Manufacturer Reach Quality Goals and Increase Sales

In March 2020 the President of NCFI set a goal for the organization to finish its ISO 9001 certification in six months. NCFI was already in the medical bedding industry before the pandemic but when the pandemic hit, the need for medical bedding was dire and the organization saw this moment as a chance to grow. With CARES Act funding, NCMEP helped NCFI obtain ISO 9001 certification, train employees for skilled positions, streamline manufacturing processes and make it easier to work with clients like aircraft manufacturers.

Market Diversification is Critical

Atlas Precision Plastics is a full-service, plastic injection molder with full in-house design and tool building capability serving the health care, automotive, telecommunications, industrial and electrical markets. Atlas was impacted by the pandemic like many other manufacturers. Prior to the pandemic, 60% of their market was in the automotive industry, one of the hardest hit industries during the pandemic. Their sales were down, so this led Atlas to pivot to making PPE ventilator parts that were in short supply. It also prompted Atlas to look at strategies to diversify their market. With assistance from the NCMEP CARES Act funding, Atlas participated in a technology driven marketing intelligence (TDMI) project. The markets identified during the process yielded Atlas some key targets for their sales team to approach, and more importantly they learned a new process for thinking through how to prospect and acquire new customers. To learn more, go to <https://www.atlas-plastics.com/>

ISO 9001 Certification Made the Difference

Wirtz Wire is a leading nationwide provider of premier wire, conventional and small hole electrical discharge machining (EDM) services. Through the years their company has also made chip-making a competency as well, offering a complete source from design to finished product to meet customers' needs. Whether EDM machining to computer numerical control (CNC) milling and turning, they can supply the customer with the services they need. During the pandemic, Wirtz's sales decreased by 60%. As Wirtz looked for additional opportunities, potential customers were requiring ISO 9001 certification. With help from the NCMEP CARES Act funding, Wirtz was able to implement ISO 9001, and it has already created opportunities for machining contracts that would not have been possible without ISO 9001 certification. It has also helped them to improve their operations in many different areas because of the nature of the ISO certification process. Patrick Wirtz, President of Wirtz Wire stated, "Without the grant

assistance we've received, this would not have been possible. We are very grateful for the assistance from the NCMEP CARES Act funding!" To learn more, go to <http://wirtzwiredm.com/>

North Carolina Machine Shop Repositions to Support Medical Market Needs

K.A.M. Tool and Die (KAM) is a machine shop in Zebulon, North Carolina, that creates customized parts for industrial machinery with fast turnaround times. KAM's traditional market was local manufacturing. However in 2020, much of this market cut outsourcing due to COVID-19 market effects. KAM recognized they were not only experiencing a downturn in current orders, but if their market strategy did not shift, there could be larger, long-term consequences. KAM connected with NCMEP, which created solutions using CARES Act funding. They participated in a market research project focused on their Wire-EDM technology applicable in pharmaceutical and medical device manufacturing. Knowing this market was both prevalent in the region and growing due to demands from COVID-19, the project identified hundreds of potential customers, created strategies for connections and repositioned them for future growth. KAM's ownership shared, "Our sales and marketing approach will now be completely transformed as a result of this effort and the things we learned." In addition, they forecast investing in three to five new jobs, a building expansion and additional equipment. To learn more, go to <https://kamtool.com/>

Manufacturer Turns to E-Commerce to Maintain Business

Founded in 2012, Haand is a ceramic porcelain pottery manufacturer located in Burlington, North Carolina. The company employs 20 people and operates out of a 13,000 square foot converted hosiery mill. COVID-19 challenged Haand due to the shutdown of the hospitality industry. At the start of the pandemic, 95% of Haand's business came from the hospitality sector. Once quarantine happened, orders and sales dried up. The company quickly shifted to e-commerce. Business began to boom as consumers learned about the company and fell in love with their product. Haand reached out to NCMEP to do a business assessment to identify areas for improvement and help plan. The NCMEP assessment funded by the Cares Act provided Haand data that identified areas where they could use process improvement and quality measures to reduce time and waste, and improve profits. The funding also enabled Haand to work with an improvement specialist from NCMEP to work on-site implementing key changes.

North Dakota – Impact Dakota

Virtual Delivery Provides Needed Training to North Dakota’s Manufacturers

The COVID-19 pandemic threw a wrench in the manufacturing world. Many manufacturers were closed or not allowing anyone other than employees to enter their facilities. However, for those companies that were continuing to operate, employee training and technical assistance was still needed to assure their businesses were operating as effectively and efficiently as possible. Prior to the pandemic, Impact Dakota only provided its trainings and services in a classroom setting or on-site at a company’s facility. With the support of the additional funding provided by NIST MEP, Impact Dakota identified opportunities to restructure the delivery system for some of its training programs and technical service offerings – from in-person to virtual platforms. By doing so, Impact Dakota was able to provide the much-needed trainings and services such as the Lean Enterprise High Performance Manufacturing program, food safety training (i.e. Preventive Controls Qualified Individual), technical assistance and training relative to quality management systems, ExporTech and cybersecurity services.

Impact Dakota will continue to look at opportunities to structure and deliver more of its programming using a virtual platform. Not only does it reduce waste (travel time and travel expenses) for Impact Dakota and its staff but it also enhances the organization’s ability to broaden its service outreach to manufacturers located in the more rural areas of the state where in-person training typically was not being provided. Virtual delivery also provides cost savings to participating companies since their staff are not required to travel to receive the programming. Ultimately, the restructuring of service delivery from 100% on-site/in-person delivery to include virtual delivery allows more North Dakota manufacturers access to Impact Dakota’s services. Also, since most all of the MEP Centers across the country also adapted to using virtual platforms for service delivery, Impact Dakota now has expanded opportunities to offer broader services by being able to call on expertise not present within Impact Dakota, but offered throughout the MEP National Network. As a result of Impact Dakota redeploying its service offerings through a virtual format, the organization has offered services to 21 different companies that may not have otherwise received the training and/or services they required.

Implementation of Supplier Scouting System Makes Connections and Fills Gaps

The logistics of being in a large rural state can be challenging when supply chain disruptions occur. With the onset of the COVID-19 pandemic, Impact Dakota immediately responded to better position itself to collaborate with the MEP National Network to help solve supply chain gaps encountered by government entities, critical care service providers and manufacturers. Impact Dakota developed a supplier scouting system on its website to provide a medium in which to identify sources of needed parts and supplies. Impact Dakota’s supplier scouting system was initially created to help identify immediate short-term solutions to the supply chain disruptions caused during the early stages of the COVID-19 pandemic. However, the system is now used to help create linkages between manufacturers to identify domestic suppliers/contract manufacturers who can fulfill supply chain requirements. An example of the systems benefits – a North Dakota company is using the system to identify a domestic supplier for specialized machine parts. The initial nationwide search helped the company identify 65 different U.S. based companies to consider as they conduct their search for a company to supply their parts. To view the Impact Dakota supplier scouting website, click www.impactdakota.com/scouting.

Ohio – Ohio Manufacturing Extension Partnership

Pandemic Brings New Partnerships to Support PPE Solutions

From day one of the pandemic shutdown, Ohio MEP established an aggressive approach to meeting the needs to protect Ohioans. New partnerships were forged with local hospitals to understand the immediate needs. Engineering expertise was engaged for redesign directly with input from the hospitals. The Ohio MEP also enhanced the existing partnership with the Ohio Manufacturers' Association (OMA) to identify ways to meet the needs. MEP clients also came forward to be a part of the solution, pivoting to support PPE production. Ohio MEP, OMA, Ohio Hospital Association and JobsOhio formed the Ohio Manufacturing Alliance Against COVID-19. Local partners were connected to the MEP in a very deep and collaborative way not explored in the past. Several tools were made available including a marketplace for selling and buying PPE. Manufacturers remained essential in Ohio, continuing to "Make Things."

Press Release: [https://ohiomfg.informz.net/ohiomfg/data/images/PRESS%20RELEASE%20-%20Alliance%20Announces%20Exchange%20for%20PPE%20Makers,%20Buyers%20-%20\(4.20.2020\).pdf](https://ohiomfg.informz.net/ohiomfg/data/images/PRESS%20RELEASE%20-%20Alliance%20Announces%20Exchange%20for%20PPE%20Makers,%20Buyers%20-%20(4.20.2020).pdf)

Marketplace: <https://repurposingproject.sharetribe.com/>

Documentary video: <http://www.hardroadpictures.com/documentary#westillmakethings>

Center for Innovative Food Technology (CIFT) – Forging New Manufacturing Partnerships in Ohio

To help facilitate the development of new regional manufacturing partnerships for PPE, CIFT (the northwest Ohio MEP partner) coordinated a roundtable discussion with the largest regional hospital system, ProMedica, and three local PPE manufacturers, Form Labs (manufacturing nasal swabs), The Mold Shop (face shields) and Mark One (surgical masks). Each of these companies used support from the state to assist manufacturers who responded to the coronavirus pandemic by pivoting their manufacturing to PPE. Because of COVID-19, the event was a virtual roundtable, and each manufacturer had the opportunity to pitch their PPE product(s) to the purchasing decision-makers from ProMedica. The event was a resounding success in establishing new local manufacturing relationships.

CIFT – Meeting New Consumer Needs With Small and Medium-Sized Food Processors

Following over 35 calls with small and medium-sized food processors, CIFT identified three key needs to pivot during the COVID-19 pandemic. During this time, food processors struggled with supply chain, product waste and sales issues because of the shutdowns of farmers markets, local store access and other crucial market space loss. Due to these unprecedented and unpredictable market shifts, these small and medium-sized businesses struggled with sales and meeting new consumer needs. As a result of the assessments conducted by CIFT, a set of webinar topics was identified to assist the food manufacturers in pivoting to meet these new consumer needs. One example was access to information on e-commerce strategies, where the small-scale processor was provided information on considerations for an e-commerce platform, structural options and how to develop visibility and serve consumers in this new way. Additional information was provided in a learning session webinar for a better understanding of business costs. With shifting demand, ensuring packaging and ingredient supply chains were supporting business growth was a critical area of needed support from MEP. Businesses like The Guac Shop, Angry Irishman and other small and medium-sized companies were able to receive crucial information for operational success to survive and thrive following the COVID-19 pandemic.

Client Service Delivery During the Pandemic

Ohio manufacturers were considered essential operations, with essential employees during the COVID-19 lockdown. Ohio MEP engaged clients to meet the ever-changing safety guidelines to keep their employees safe. Many contacts were made through Zoom meetings and webinars, again to keep

employees safe. The partnership with the Ohio Manufacturers' Association (OMA) was key in connecting many clients to MEP support services. OMA was a guiding light through the pandemic to support a strong manufacturing base and guidance to meet the governor's orders. Manufacturing Advocacy and Growth Network (MAGNET, the MEP partner in northeast Ohio) developed several key tools to make the safety change implementation process easier. Ohio MEP continues to support manufacturing services in a diverse delivery model across the pandemic, workforce needs, and the diversity and inclusion landscape. Tools for Business Safety: <https://www.manufacturingsuccess.org/covid-19>

Oklahoma – Oklahoma Manufacturing Alliance (OMA)

OMA Business Assessments

In partnership with the Business Excellence Group, OMA has developed and implemented a comprehensive business assessment program to strengthen the resilience of the manufacturing sector in Oklahoma. This program is free for the small and medium-sized manufacturers in the state and it is designed to identify and mitigate the manufacturers' business risk from raw materials sourcing to product delivery and market risk. The assessments are conducted over a two to three day period, and it involves all the levels of the organization, from the C-suite to the assembly floor. Once the assessment is completed, a report identifies the strengths, weaknesses, vulnerabilities and improvement opportunities for the manufacturer. After the final report is delivered, OMA conducts a debriefing to present the risk mitigation strategies and improvement opportunities to jointly develop and implement the action plan. One key feature of the program is that it quantifies the benefits and return on the investment (cost of the action plan implementation). As of the end of June 2021, OMA has completed 48 assessments, achieving 185% of the original assessments goal (25 assessments). This initiative continues to attract interest. However, scheduling the needed time to engage with top management is challenging. But once the assessments are conducted, the C-suite embraces and commits to the opportunities.

Oklahoma Innovation Expansion Program

OMA is partnering with the Oklahoma Department of Commerce and the Oklahoma Finance Authority in a \$10 million Oklahoma Innovation Expansion Program for manufacturers. The program is designed to grow innovation and help manufacturers recover from the COVID-19 pandemic. The OMA will act as the outreach arm for the state, working directly with manufacturers.

New Career Pathways to Address Short-Term Demands

Oklahoma manufacturers are currently looking to hire experienced workers to help them meet their short-term demands. Manufacturers have not yet begun hiring-to-train workers, as they are unsure of the future economy. To address this growing need, OMA conducted three presentations to 18 different manufacturers on new career pathway ladders developed by the OMA in partnership with the Oklahoma Office of Workforce Development. Eight distinct career pathways were developed to document the progression of skills, competencies and education required for a variety of career opportunities within manufacturing.

Oregon – Oregon Manufacturing Extension Partnership (OMEP)

Oregon MEP Connects Domestic PPE Suppliers to State Database

To assist Oregon manufacturers through the challenges of the global pandemic, OMEP partnered with the Oregon Business Development Department to promote and manage a supplier database for PPE. This tool provided a searchable database of businesses that can help provide PPE. The system also served to connect businesses up and down the supply chain including raw materials, manufacturing needs, packaging, distribution, etc. Additionally, OMEP partnered with several local city and county organizations to promote their own hyperlocal PPE databases. On the supplier scouting side OMEP was able to make several valuable connections. OMEP received a request for the metal wiring needed for nose pieces in medical masks and connected the requester with an OMEP client, Eagle Precision, to supply these parts. Additionally, 22 Oregon manufacturers, many of whom were OMEP clients, pivoted to make PPE, soap, face shields and other medical supplies. OMEP supported clients through advisory consulting on an as-needed basis. News stories about manufacturers here:

<https://www.omep.org/celebrating-oregon-manufacturers-support-for-critical-workers/>

Oregon MEP Creates COVID-19 Workplace Safety Program for Manufacturers

OMEP created a comprehensive COVID-19 workplace safety program, including a workplace preparedness assessment, comprehensive checklist and playbook. OMEP's resources are the result of the evaluation and consolidation of available guidance from the MEP National Network, CDC, OSHA and OHA. The online self-assessment was designed to create awareness of the needs and potential gaps manufacturers may have in creating a safe work environment for employees. Twenty-nine individuals completed the assessment, which provided immediate feedback to respondents. Those who chose to enter their contact information received a customized visual heat map summary of assessment results. The comprehensive checklist was developed to help manufacturers move from basic understanding to action. It is a combination of Oregon-specific actions and nationally recognized best practices. Designed to support actions from the checklist, the playbook offers more detailed rationale and techniques.

Pennsylvania – Pennsylvania Manufacturing Extension Partnership

Catalyst Connection – National Supplier Scouting: Supply Chain Resilience During and Post COVID-19

Most Catalyst Connection clients have reported some negative impact on their supply chain due to the COVID-19 pandemic. Many manufacturers are not facing a critical absence of demand for their products but the incapacity to secure the raw materials, components and services necessary to produce their product. In many cases the demand for their products is at an all-time high and they are scrambling to reduce their backlog and ship orders on time. This new normal has forced manufacturers to reconsider their supply chain tactics, while also considering alternative sources for their critical products and services. Small and medium-sized manufacturers have come to the realization that COVID-19 is not the first global crisis to negatively impact global supply chains and it certainly won't be the last. The national MEP Supplier Scouting service has allowed participating clients to gain a clear visual of manufacturing in the U.S. by highlighting organizations across the country who have the capacity to support their supply chain. There is growing awareness that supply chains need to be more agile so they can react and adapt quickly to potential disruption. The need to be agile requires local, regional and national manufacturing options and this is exactly what the national supplier scouting initiative has provided to participating clients. The roster of clients that have participated in this initiative continues to grow and includes a diverse cross section of manufacturing in western Pennsylvania. Included in this roster are several startups who often struggle to build out their initial supply chain as well as develop a supply chain that is scalable. This initiative has been particularly helpful to these local startups.

Catalyst Connection – Bi2, Skill Mill 19 and Rhabit, New Services for Post-Pandemic Response

Like all organizations that serve manufacturing, Catalyst Connection needed to pivot their approach to something much more dynamic and agile to cover all the changing needs of small and medium-sized manufacturers. Catalyst Connection was able to use initial capacity created by COVID-19 to develop several new products and services to address the ever-changing needs of the Center's clientele.

Bi2: With a limited pool of candidates and increased turnover rates, many clients were left wishing their current workforce were better equipped to drive real, positive impact for the business. Now that the country is reaching the return phase of the pandemic it is the perfect time for organizations to create a more tailored approach to engaging their employees. The Business Impact Initiative (Bi2) prepares influential leaders to address the biggest opportunities manufacturers are facing today. By providing a world-class curriculum and customized, one-on-one coaching, this program focuses on driving transformation to address issues or opportunities specific to their organization. This combination of practical application and coaching helps guide each participant to identify critical projects of influence, leading to a clear, tactical path of redefining their contribution on the organization's strategic initiatives that results in a positive, sustainable impact on the business.

Skill Mill 19: At the onset of the pandemic upskilling and training were an afterthought for most manufacturers as they scrambled to keep their businesses afloat. However, most of these organizations continued to understand the importance of such initiatives and were searching for a solution. This solution would not only need to allow for remote learning but also for self-guided progress. Skill Mill 19 is a cloud-based learning management system created for manufacturers who want to advance their careers and make an impact on the industry. Individual learners have access to several courses and instructors who will guide them on their journey to enhancing their skill set and meeting employer and industry standards. Skill Mill 19 allows each learner to access and track their personal learning journey

by offering various technical skills and courses aligned with their own unique career path and organization. Manufacturers can leverage Skill Mill 19 to build learning journeys for incumbent workers that will help shape the future of the organization. Companies can easily track employee progress and generate reports along the way. Catalyst Connection's world-class learning library features learning content from providers including ToolingU, DDI and MEP. Development opportunities can also meet mandated training requirements such as including signatures on rosters and tracking certification expiration. Skill Mill 19 provides manufacturers with a trusted source for learning content while positioning companies as employers of choice. Catalyst Connection is the trusted resource for manufacturing firms. By leveraging best practices and premiere resources like DDI and ToolingU, Catalyst Connection is dedicated to helping companies and their people succeed.

Rhabit Analytics: The COVID-19 pandemic has presented unique challenges related to engaging and retaining talented employees. Even manufacturers that were on a path to becoming an employer of choice or that had a robust employer value proposition required additional insight into how to ensure that they attract and retain the most talented employees. Rhabit presented the Center and its clients with the perfect opportunity to tap into culture analytics. Rhabit collects continuous feedback on employees' behavioral alignment to company values. Rhabit transforms that feedback data into analytics dashboards and talent management tools. Rhabit provides the psychological safety needed to ensure feedback is useful for development. This turns every employee into a valued feedback provider.

Delaware Valley Industrial Resource Center (DVIRC) – SP Industries Contributes to the Fight Against COVID-19, Supports US Department of Health and Human Services' Operation Warp Speed Initiative
[SP Industries, Inc.](#), located outside of Philadelphia, Pennsylvania, manufactures cutting-edge specialty equipment, laboratory safety supplies, and home health care products serving pharmaceutical, biotechnology, industrial, original equipment manufacturers (OEM) and commercial markets. SP contacted DVIRC when President Donald Trump invoked the Defense Production Act on a contract SP had won with a customer focused on COVID-19 vaccine research, coded Project Omaha. SP was contracted to produce 20 freeze dryers to store COVID-19 vaccines. Typically, these freezers are made one at a time by a team of people that require 14-15 weeks to complete. However, SP needed to complete all 20 within 22 weeks. DVIRC assisted in the cellularization of SP's manufacturing floor to produce 20 at the same time. DVIRC continuous improvement experts worked with SP to meet the rigorous deadline. Working with production, engineering, operations, and administration to enhance the process, train people in new skills, evaluate and assess the process, and restructure the shop floor – ultimately meeting the deadline.

DVIRC – Rodon Group Responds to Supply Shortage and Develops Innovative COVID-19 Testing Swab
Since the start of the pandemic, over 360,000,000 tests have been conducted in the U.S. alone. Fox Chase Cancer Center, a research hospital in Pennsylvania, recognized suppliers could not meet the escalating needs as the supply of swabs plummeted. The chair of radiation oncology reached out to Joel Glickman, Chairman of [The Rodon Group](#), an ISO 9001:2015 certified high volume, high quality, custom plastic injection molding solutions manufacturer located outside of Philadelphia. Their globally competitive value eliminates the risks of sourcing offshore. Glickman's team developed a new nasal and oral collection swab. DVIRC worked with Rodon to facilitate their acceptance by FDA for emergency use authorization for a nose swab in support of use in determining exposure to COVID-19. Work included support for procedures, application and managing supply chain. The company expects to produce 40-50 million swabs annually. "We believe it's critically important, now more than ever, that high quality



health care devices be made safely in the United States,” said The Rodon Group CEO Michael Araten. Fox Chase Cancer Center connected with Rodon to develop and manufacture nasal and throat swabs to test for the virus. The new fluid trap-tip design enhances sample collection and release capabilities, making the process more comfortable for patients and more effective for medical professionals.

DVIRC – Rhoads Combats COVID-19 By Going Virtual

[Rhoads Industries](#) is a Philadelphia-based corporation that provides industrial fabrication, installation and maintenance services for commercial and government projects. In March 2020, Alan Shell, Senior Advanced Manufacturing Specialist with DVIRC, held the first of four Root Cause Analysis/Corrective Action Continuous Improvement (CI) courses. Then, the COVID-19 pandemic lockdowns hit. Through hard work and creativity from Rhoads and DVIRC, the training was seamlessly transitioned to virtual, socially distanced sessions by March 16. In fact, the communication within Rhoads was so exemplary, it won an [HR Department of the Year award](#). By the end of the project, Rhoads had made great progress in selecting and implementing a time-tracking software, [mJobTime](#). Through the CI training DVIRC provided, Rhoads employees’ mindsets have shifted, and they now mandate internal and external project leaders for software rollouts. What’s more, they know they can rely on DVIRC for support, no matter the circumstances.

MANTEC – OEE DataWatch, LLC: Scaling a Startup

OEE DataWatch, LLC, based in York, Pennsylvania, is an automation system integration company that applies decades of system integration and engineering expertise to design and deliver high-performance automation solutions to manufacturers. The COVID-19 pandemic seriously impacted OEE’s ability to grow as a startup. In early 2020, OEE DataWatch was in the startup process of scaling, and requested MANTEC’s assistance in marketing, business management, operations and other facets. The company shifted by seeking strategic sales opportunities. OEE DataWatch LLC was able to graduate out of the basement and move into a small operating space. OEE leadership attributes the startup success in 2020 to MANTEC’s assistance by seeing greater possibilities for the product and how to build a successful company. 2021 is looking promising with new connections. To learn more about MANTEC, visit <https://mantec.org>.

Northeastern Pennsylvania Industrial Resource Center (NEPIRC) – NEPIRC COVID-19 Impact Assessments Put Manufacturers on Path Forward

Amidst unforeseen challenges, smaller manufacturers struggled to comprehensively assess the impact of the COVID-19 pandemic across all facets of their business. If a particular impact was overlooked, the company’s ability to recover from the pandemic and return to pre-COVID-19 levels of employment and output may be hindered – perhaps significantly. NEPIRC partnered with Catalyst Connection to introduce an online COVID-19 Impact Assessment and Recommendation Report process that enabled manufacturers to evaluate the impact of COVID-19 on 10 critical business systems – operations, workforce, cybersecurity, supply chain, etc. – and receive customized recommendations from a NEPIRC expert within 48 hours. To date, companies that participated in NEPIRC’s no-cost assessment and recommendation process have reported \$15.2 million in retained sales, \$615,000 in cost savings and the avoidance of 135 layoffs in return.

NEPIRC – NEPIRC Plays Key Role in Development of PPE Locator and Medical Device Manufacturing Portal

Masks, gloves and other PPE fell into short supply during the pandemic. At the same time, additional domestic manufacturing capability was needed to produce components for respirators, ventilators and medical equipment. When Pennsylvania’s Department of Community and Economic Development

(DCED) sought to tackle those challenges, it tapped NEPIRC to join its task force. Working collaboratively, DCED, NEPIRC and other partners designed and launched Pennsylvania's Manufacturer Call to Action portal, which enlisted manufacturers interested in entering the medical device supply chain to catalogue their capabilities and allowed manufacturers seeking additional suppliers to upload product requirements. The team also created Pennsylvania's PPE and Supplies B2B Portal, which manufacturers used to pinpoint PPE item availability. Together, these tools helped manufacturers maintain safer work environments and pivot into medical device supply chains more quickly.

NEPIRC – NEPIRC Vaccination Webinar Benefits Small Manufacturers Across 12 States

When vaccines became available as a tool to combat the COVID-19 pandemic, small and medium-sized manufacturers had many questions regarding general employee vaccination policies, how to legally inquire about employee vaccination plans, how to handle employee questions or concerns about co-worker vaccination status, the legal ramifications of requiring or not requiring employees to be vaccinated, how to legally ask about vendor/customer vaccination policies and so forth. The NEPIRC used its CARES Act support to partner with a law firm specializing in the field of vaccination law and offered a series of Legal Aspects of COVID-19 Vaccination for Employers live webinars, which attracted more than 500 manufacturers across 12 states, and became the gold standard for follow-on events nationwide.

NEPIRC – NEPIRC Reopen Guide Assists Manufacturers' Reopening Efforts

Throughout the pandemic, a multitude of factors – ranging from governmental action to supply chain disruption to employee COVID-19 exposure – caused many small and medium-sized manufacturers throughout Pennsylvania to temporarily suspend operations. In some cases, their closure was for an extended period. NEPIRC recognized that reopening a manufacturing facility amidst the pandemic required special processes, precautions and protocols. NEPIRC partnered with New Jersey MEP to author its Manufacturer Return to Operations and Best Practice Guide. The document provided timely advice and instruction on how manufacturers could return to full operations while adhering to the latest CDC guidance and COVID-19-prevention best practices. The guide also supplied free checklists, signage, flowcharts and links to supplemental information. NEPIRC's Manufacturer Return to Operations and Best Practice Guide was used throughout Pennsylvania and assisted more than 200 firms.

Northwest Pennsylvania Industrial Resource Center (NWIRC) – COVID-19 Recovery Program (CRP) for Northwestern Pennsylvania

In early 2020 as the pandemic was forcing business shutdowns, NWIRC, part of Pennsylvania MEP and the MEP National Network, and their regional economic and workforce development partners, convened to discuss the potential negative impact COVID-19 would have on manufacturing. This team outlined a program to assist companies with identifying business and operational needs. The team became the catalyst for a seamless connection to available resources, including a bimonthly printed newsletter mailed to manufacturers in 13 northwestern Pennsylvania counties. The newsletter was used for outreach about CRP and included educational information.

The CRP process included an initial business assessment and financial analysis, followed by a thoughtful tactical action plan and company debrief to provide a business the custom support they need. Virtual or in-person meetings required a six-hour time investment from the company's management team. This

initial assessment and planning were no cost to the manufacturing company, as the work was funded by the CARES Act via NIST MEP. The business assessment addressed three foundational questions:

1. What does the business need to reopen or rebuild?
2. At what point does the business regain strength and stabilize?
3. How can the business sustain and grow?

Depending on the company's status, a high-level or in-depth cash flow analysis was offered by the most appropriate organization. Information collected was used to develop a tactical action plan with recommendations for various direct services, agencies, partners and consultants best positioned to assist. A briefing was presented to the company's management team to review recommendations.

Common challenges and recommended solutions resulting from assessment information and addressed in the implementation projects included:

Lack of diversification. Manufacturers in subsectors where OEMs or industries were shut down were hardest hit, including nonessential businesses such as giftware, furniture, print-screening and automotive. Most manufacturers within the region did not shut down, or if they did, it was only briefly. How did they avoid it? Most were considered essential businesses. Some previously diversified their customers, products and/or markets. Market and customer diversification were key recommendations in the CRP Tactical Action Plans (TAP) to enable companies to be successful throughout future downturns in the economy.

Process inefficiencies. Any sort of waste such as equipment downtime, inventory overproduction, or waiting on materials has an impact on the bottom line, so a key recommendation was engaging an industry expert to help pull the team together and identify areas of focus for ROI through improved productivity, delivery and morale.

Supply chain issues. Material shortages and longer lead times were ongoing problems. While the first part of 2020 saw small material shortages, research and discussions have shown this has become more significant through mid-2021. The challenge is that not only does it hold up orders for completion and delivery to customers, but it can also show up in cash flow shortages. Companies need to have a good understanding of what is happening throughout their entire supply chain and their own cash flow situation. Companies were referred to one of the partners in the CRP program, Steel Valley Authority, for in-depth cash flow analysis and counseling.

CRP COVID-19 Recovery Program

6 Triggers for Considering a CRP Assessment

- Decrease in sales
- High % of business with 1 or 2 customers
- Issue with production flow and/or efficiency
- Loss of a major customer
- Trouble hiring and retaining employees
- Facing layoffs or shut down

Get Started: Susan Hileman, NWIRC | CRP Program Manager | shileman@nwirc.org

CRP COVID-19 RECOVERY PROGRAM

Getting back to business.

- 1 BUSINESS ASSESSMENT**
A regional economic development partner conducts a 90 minute virtual business assessment with your company. Data will inform questions such as:
 - What does your company need to rebuild?
 - Where does the business stabilize?
 - How can the business grow and sustain?
- 2 CASH FLOW CHECK**
Depending on the status of your business, a high-level or in-depth cash flow analysis is conducted by the appropriate organization, such as NWIRC, SBDC, or Steel Valley Authority
- 3 TACTICAL ACTION PLAN**
A 1/2 day planning session with your company, to develop immediate action steps, as well as project recommendations to the appropriate regional organizations for a 3, 6, 9, or 12 month plan
- 4 BRIEFING**
30-minute virtual meeting with your company to review recommendations in the Tactical Action Plan
- 5 IMPLEMENTATION**
If your company moves forward with recommendations, referrals are made to the partner who can best assist and also scout available funding. Examples of these projects may include:
 - customer diversification
 - market resource
 - sales planning
 - automation
 - process improvements
 - training

To get started, contact your local economic development partner or CRP Program Coordinator, Susan Hileman (shileman@nwirc.org)

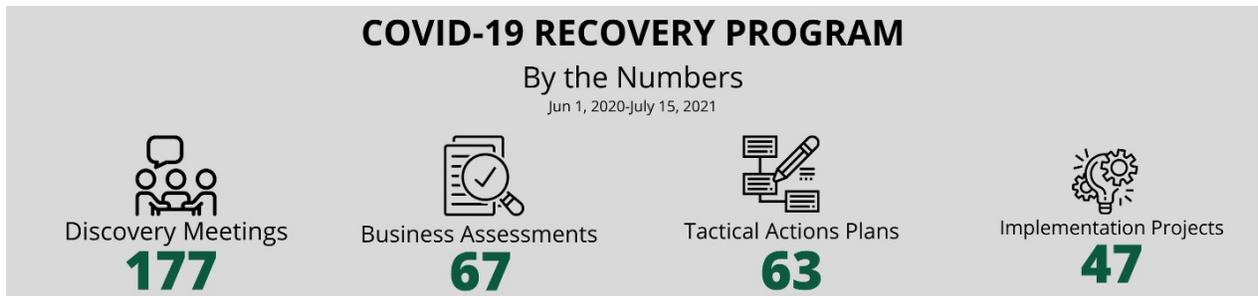
NWIRC **Steel Valley Authority** **SBDC PENNSYLVANIA** **pennsylvania**

Finding people. One of the most common challenges continues to be finding qualified employees. Companies were referred to local resources for help recruiting and counseled on strategies to implement for creating a culture that attracts and retains employees and for building a talent pipeline.

Companies participating in CRP were eligible for financial support from another funding stream to implement recommended initiatives, such as sales and marketing efforts, process improvements, strategic planning or attaining quality certifications.

Some examples include:

- A 30-person shop in Erie County specializing in precision computer numerical control (CNC) machining, milling and turning was in the process of implementing a succession plan, but also wanted to maintain focus on business growth. The TAP included an update to their strategic plan with action steps to meet the company goal of continued sales growth year over year, and insights into what future markets they should pursue.
- A five-person powdered metal company in Elk County, Elk County Powdered Metal (ECPM), with loyal, trained employees and a great company culture, also had stagnant sales volume and lacked the ability to reach new customers. Recognizing the potential of the internet to grow sales, the plan included a rebuild of their website to incorporate sales strategy and positioning. Ultimately, they added new customers, new parts and new employees.
- A 50-person manufacturer of tools, dies and industrial molds in Venango County had begun the process of working with the Procurement Technical Assistance Center (PTAC) to tap into Department of Defense (DOD) projects, but lacked the required certification to be considered a viable candidate. A gap analysis was conducted and recommendation made to acquire assistance to position the company for ISO Certification.



ECPM President, Paul Stilwell, noted the CRP process was made simple for busy manufacturers by pulling specifics about the company and providing recommendations ready to implement. “The SWOT analysis (strengths, weaknesses, opportunities, threats) was particularly helpful because a SWOT is part of ISO 9001 certification. It was great to have this updated for the end of the year.” He added that the process gave the ECPM team a clear direction for moving forward. Stilwell said that prior to the assessment, he typically didn’t pay much attention to the services available in the region. “Others aren’t aware or don’t understand the value of working with organizations such as NWIRC and SEWN. If another manufacturer asks me about CRP, I will tell them to pay attention, there’s a lot of help out there and a lot going on. The program was a godsend for ECPM.” For more information:

CRP: Getting Back to Business Video

4 ½ minute video use on website, social media: <https://youtu.be/pTLZf0KfFDE>

Navigating the Pandemic: COVID-19 Recovery Program Webinar

Webinar recording: <https://youtu.be/E4RN30kBdFQ>

Puerto Rico – Puerto Rico Manufacturing Extension Inc. (PRiMEX)

E-Commerce: The New Sales Channel for Small Companies!

Soto Farm is an agricultural company dedicated to the cultivation of fruits and vegetables. They currently have 20 employees and 228 acres to produce quality, fresh produce. However, with the arrival of the COVID-19 pandemic, they lost a large part of their sales. PRiMEX, through a Cares Act-funded assessment, identified their need to adapt to the new norm of doing business due to the pandemic. PRiMEX assisted Soto Farm's owner to develop new strategies and opportunities, a brand design (logo and product labels), creation and management of profiles in social media, and a new webpage that will be very useful for business growth. An estimated increase of 10% in sales is due to these marketing strategies and e-commerce. The owner Moisés Soto expresses gratitude to PRiMEX: "It has been an enriching experience to see how, thanks to its multidisciplinary services, it has fostered the development of our company, with a wide range of expert professionals in each service provided. Without a doubt, we are in a stage of growth, and part of that could not be possible without PRiMEX promoting the industrial development of small businesses in Puerto Rico." [Inicio - Soto Farm](#) (sotofarmpr.com)

Collaboration Means Success

One of the biggest challenges manufacturers faced during the COVID-19 pandemic was purchasing alcohol, hand sanitizer and PPE for the employees. Puerto Rico Industries for the Blind (PRiFID) is a military apparel manufacturer located on the west coast that employs close to 100 people with disabilities. To operate safely during this pandemic they need a large amount of alcohol to clean areas. Due to the pandemic, alcohol inventories were scarce. Local distilleries transformed their production lines to fulfill these needs. PRiFID contacted PRiMEX for assistance and PRiMEX immediately reached out to Sol Taíno Artisan Spirits, a distillery located in the island's mountains. Fortunately, they responded and scheduled deliveries of alcohol drums each week to PRiFID.

<https://www.facebook.com/puertoricoindustries>



We Must Start Right Now!

The pandemic disrupted the worldwide supply chain, especially the supply of face masks, hand sanitizer, alcohol and other PPE needed to prevent the COVID-19 virus spreading. Inventories were low and the ability to obtain these products was limited. To comply with all the regulations established by PR-OSHA, PRiMEX assisted local government efforts in fulfilling the island's PPE needs. PRiMEX established an action plan to contact all the possible companies within the manufacturing sectors of apparel, mattresses, automotive seat covers, shoes, flags and luggage, among others, to identify production capacities to supply local needs, especially those of first responders. PRiMEX assisted these companies in preparing the required PR-OSHA protocols to control and prevent COVID-19 virus spread in the workplace, which companies needed in order to receive permission to start operations. About 30

Rhode Island – Polaris MEP

MEP-Led Assessments Guide COVID-19 Response/Funding for Rhode Island Manufacturers

They couldn't come to the MEP Center, so Polaris MEP went to them. MEP-led assessments – by phone, online and via COVID-19 safety visits – were critical to prioritizing areas of need, and to informing and guiding funding from CARES Act and the state of Rhode Island for more effective solutions.

Efforts to assess and mitigate the impact of the disruption included:

- PPE production capabilities surveys
- A series of CEO surveys that quantified which areas of business were hardest hit – data directly justified new initiatives such as a reshoring pilot. News articles that reported the survey results were positive press for the sector that highlighted how essential every manufacturer really is.
- Telephone outreach program proactively asking, “What do you need most?”
- The talent exchange self-reporting system – this didn't just assess which manufacturers were laying off or furloughing workers, it created an identified pool of skilled workers from which hiring manufacturing companies could draw.

For more information, see: <https://polarismep.org/blog/providence-business-news-manufacturers-affected-by-covid-19-invited-to-participate-in-talent-exchange/>; <https://polarismep.org/blog/survey-of-rhode-island-manufacturing-business-owners-hints-at-varied-recovery-timeframes/>; <https://polarismep.org/blog/ri-manufacturing-leaders-say-workforce-and-technology-needed-to-reboot-manufacturing-post-covid/>; <https://www.youtube.com/watch?v=TwKr-ZyxfDA>

Identifying and Meeting Needs By Making Matches in Rhode Island, For Rhode Island

Whether it was disinfectant, masks or specialty fabrics, Polaris MEP aggressively pursued matches in Rhode Island and for Rhode Island manufacturers. First, the Center surveyed the state for PPE production capabilities. Then, all staff worked to make local matches such as a wire maker with a textile company with an elastics specialist. Some matches were Polaris MEP-facilitated coalitions of several manufacturers, collaborating to create needed PPE.

Polaris MEP proactively conducted an outreach campaign, calling a large portion of Rhode Island's manufacturers to ask what they needed. Whatever the pain points, project managers responded with resources that started with in-state suppliers. The team also increased its use of the national MEP Supplier Scouting service. For example, a Rhode Island composites company had developed an ink with virus-killing properties. Polaris MEP tapped the Network to source nonwoven cotton to create new products such as N95 masks.

For more information, see: <https://polarismep.org/blog/3-best-practices-and-1-new-resource-for-managing-covid-19-supply-chain-disruption/>; <https://pbn.com/five-questions-with-chris-cinieri/>; <https://polarismep.org/blog/governor-gina-raimondo-recognizes-polaris-meps-role-in-sourcing-ppe-gowns-for-covid-19-response/>

Match-Making + Mask-Making in Rhode Island

Polaris MEP took a leading role in supporting manufacturers pivoting to mask-making and in Rhode Island's PPE development overall. The company partnered with the Rhode Island Textile Innovation Network, state representatives and design associations on a MasksRI initiative that helped home-sewers scale up to making masks in bulk to meet the need. Polaris MEP linked existing manufacturers to supplies, partners and testing facilities for new PPE products.



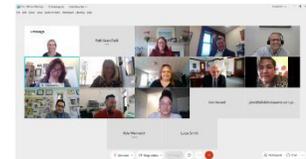
Notably, Polaris MEP brought together six Rhode Island manufacturers – Propel, LLC, Darlington Fabrics, Stretch Products, North East Knitting, Eagle Tool and Providence Braid – to make cloth nonmedical masks. The masks were sourced with mostly RI-made materials and sewn domestically. Propel LLC led this project and sold more than two million masks. The MEP Center supported the unique mask-making collaboration with business support, supplier scouting and direct introductions.

For more information, see: <https://polarismep.org/blog/governor-gina-raimondo-recognizes-polaris-meeps-role-in-sourcing-ppe-gowns-for-covid-19-response/>

A Different Flavor for Pivoting Products in Response to the Pandemic

Think pandemic pivots were only masks and disinfectant? Polaris MEP played an important role in a cross-sector initiative that had a very different flavor.

DishUp RI is an innovative effort bringing together food innovators (local incubator Hope & Main), hospitality (Rhode Island Hospitality and Tourism Association), state agencies and Polaris MEP. Through DishUp RI, local restaurateurs became “resto-preneurs” who within just a few months took signature dishes/flavors from their eatery kitchens to retail shelves.



The MEP Center delivered insights critical to transformation from special recipe to sellable product. Polaris MEP helped launch more than a dozen startup food/beverage manufacturers:

1. Supporting the layout of an expanded co-packing kitchen at the incubator
2. Maximizing efficiency with a co-packing kaizen event
3. Coaching of chefs/owners on lean manufacturing and flow as they converted recipes to food production

The initiative was funded by federal CARES Act money and state grants. It took a complete supply chain, working from the end goal (retail shelves) backwards.

For more information, see: <http://www.mybackyardnews.com/2021/05/21/hope-and-man-dish-it-up-rhode-island/>; <https://www.newsbreak.com/rhode-island/newport/living/1566307323302/greater-newport-chamber-discover-newport-announce-task-force-to-reopen-region>; <https://www.providencejournal.com/story/entertainment/dining/2021/06/02/ris-restaurants-selling-signature-dishes-daves-marketplace-aunt-carries-kleos-chomp-kleos-rasoi/7449129002/>

South Carolina – South Carolina Manufacturing Extension Partnership (SCMEP)

South Carolina Emergency Supply Collaborative – Portal to Connect Providers with Organizations in Need

A collaboration between SCMEP, the South Carolina Hospital Association, the South Carolina Department of Commerce and SCBIO resulted in the expedited launch of a new online South Carolina Emergency Supply Collaborative web portal. Located at www.SCCOVID19.org, the portal connected parties in need of essential supplies and equipment with those that could provide it quickly and efficiently. It allowed industry and community partners with the ability to quickly produce, source, test, certify or contribute critical medical supplies to directly connect with the health care providers, first responders and members of industry in search of those essential supply needs in one easy step. The South Carolina Emergency Supply Collaborative then joined forces with the national team at PPE Exchange to provide a dramatically expanded and fully automated resource for accessing PPE and supplies for all South Carolina businesses. To read more about this collaboration, visit <https://scmep.org/scmep-news/>.

South Carolina Manufacturer Partners to Make a Difference in South Carolina COVID-19 Battle

Humimic Medical teamed up with SCBIO and SCMEP to help organizations such as nonprofit community outreach groups, church programs and workforce development groups, among others. Leveraging the broad network of SCBIO and connected distribution channels of SCMEP, Humimic Medical donated thousands of face shields to organizations across South Carolina which desperately needed quality, made-in-the-USA protective equipment. The company does not typically produce PPE. However, as they continued to become more deeply entrenched in the collaborative life science ecosystem network that SCBIO has forged in the Palmetto state (which includes groups like SCMEP), they realized they could join the fight against COVID-19. SCMEP's mission of helping state organizations improve their competitiveness, performance and profitability provided a perfect backdrop for Humimic Medical to connect to organizations around the state who still desperately needed PPE supplies like face shields. To read more about this collaboration, visit <https://scmep.org/scmep-news/>.

South Dakota – South Dakota Manufacturing and Technology Solutions (MTS)

Maximizing Potential at Maximum Promotions

Maximum Promotions is a family-owned business that specializes in custom-made banner production, flags, flag poles and promotional items in South Dakota. Founder and owner Mark Nelsen was introduced to MTS, part of the MEP National Network, in March 2020 – a time where he was “about ready to throw in the towel” on his business of 39 years. MTS found opportunities for improvement through a business assessment and value stream mapping in the areas of employee development and education, culture and communication, and processes formalization in the sales department. What seemed like small improvements compounded and the company began turning a new leaf. “Frankly, MTS saved our company,” Nelsen stated. To read more, see the case study at <https://www.sdmanufacturing.com/>.

Helping South Dakota Manufacturing Rise Above

As the pandemic created waves of uncertainty around the country, South Dakota Manufacturing and Technology Solutions wanted to arm South Dakota manufacturers with access to experts to help them rise above. The Rise Above strategic sessions assisted area manufacturers with access to finance, HR, sales and operations experts through a series of 10 webinars, nine financial and HR planning sessions and eight sales training exercises, both virtually and in person throughout the state. Over 200 South Dakota companies were in attendance throughout the sessions in 2020, helping ease uncertainties in many facets of manufacturing as companies navigated through these ever-changing times.

Tennessee – Tennessee Manufacturing Extension Partnership (TMEP)

PPE Supply Chain Support

During the initial phases of the COVID-19 pandemic, TMEP distributed several resources to support manufacturers that had the capability to pivot to PPE production and support essential workers. In April 2020, TMEP hosted a webinar to provide guidance on retooling to PPE production. The webinar was attended by over 90 manufacturers and Tennessee stakeholders. The goal of the webinar was to provide essential information for creating and distributing critical PPE. The webinar featured the story of how one Tennessee manufacturer was able to immediately transition to producing critical medical supplies, the challenges of a local hospital procurement officer working to get masks to emergency room doctors across the country, relevant information on FDA emergency use approvals and types of products needed, and information from the Tennessee Chamber of Commerce on their efforts to coordinate statewide production and distribution of critical supplies.

TMEP provided resources to help manufacturers tap into national networks by sharing the Foundation for Manufacturing Excellence COVID-19 critical supplies survey. Information from the survey was submitted to the U.S. Department of Commerce and the state of Tennessee COVID-19 Unified Command. TMEP assisted companies in determining their readiness to pivot to PPE production by using the Open Source COVID-19 Medical Supply Chain Guide. Open Source Medical Supplies (OSMS) was formed to research and disseminate open source plans for medical supplies used to treat COVID-19 that can be fabricated locally. Additionally, OSMS supports, mentors and guides local communities as they self-organize hospital systems, essential services, professional fabricators, makerspaces, and local governments into resilient, self-supporting supply units. The OSMS provided guidelines on PPE needs and uses, manufacturing processes and local response groups. Additionally, TMEP provided access to open-source drawings and specifications for critical supplies that were used by manufacturers and makers to create products related to face coverings. TMEP estimates that it responded to approximately 75 requests for assistance in identifying PPE sources, and worked to support the efforts of at least nine Tennessee manufacturers that pivoted to PPE production.

Outreach to Tennessee Manufacturers

As the COVID-19 pandemic grew, TMEP focused exclusively on understanding the impact for Tennessee manufacturers and providing the support needed to help companies remain viable. TMEP's initial activities included directly contacting manufacturers to assess their situations because of the COVID-19 pandemic. The assessment conversations focused on current operating status, demand changes, supply chain disruptions, regulatory changes due to COVID-19, and how TMEP could best assist the company. TMEP coordinated this assessment effort with state and local economic development organizations across Tennessee, including the Tennessee Department of Economic and Community Development, Tennessee Chamber of Commerce and Industry, Tennessee Automotive Manufacturers Association and Tennessee Development District Association. These partners had a shared interest in collecting this information and coordinating the support needed by Tennessee manufacturers. During 2020, TMEP completed over 800 direct contact assessments across 89 of the 95 Tennessee counties. In addition to the direct customer CARES Act assessments, TMEP accomplished over 1,100 additional CARES Act-related contact touches with Tennessee manufacturers. These additional contacts were achieved through working with the University of Tennessee Center for Industrial Services (UTCIS) Economic Development Program and state level ECD partners. Results showed that 50% of companies reported decreased production output because of COVID-19, 38% of companies reported workforce layoffs and 43% reported significant supply chain disruptions. As a direct result of this effort, TMEP generated

technical assistance projects with over 124 Tennessee manufacturing clients. To date, customer reported economic impact exceeds \$19 million.

In addition to direct contact, TMEP, as part of UTCIS, launched a COVID-19 Resource Dashboard on its website. The dashboard provided a one-stop location for access to relevant COVID-19 information and resources. It provided current best practices for communicating with and protecting the workforce, responding to supply chain disruptions, understanding changes to relevant Department of Labor and OSHA requirements, and local state mandates and guidelines. During the initial peak of the pandemic, these online resources were accessed over 200,000 times by Tennessee companies and stakeholders. Working with their internal environmental health and safety resource, TMEP developed and published a Return to Work and Recovery guide for manufacturers returning to work during the pandemic. The guide was based on COVID-19 best practices as recommended by the CDC, OSHA, the Tennessee Department of Health, and other governmental regulations and guidelines. It covers topics such as social distancing, cleaning guidelines, health monitoring of employees and enforcement guidelines. The document also provided tools for COVID-19 risk assessment, responding to and preparing for a supply chain disruption, a reopening checklist, disinfection protocols and processes, workplace monitoring and additional relevant tools. In addition to distribution through monthly email blasts, the Return to Work and Recovery guide has been accessed by over 400 unique site visitors since being published.

Texas – Texas Manufacturing Assistance Center (TMAC)

COVID-19 One Pager

TMAC created a COVID-19 page on their website as a resource for manufacturers and began actively engaging in supplier scouting to match PPE needs with new and existing suppliers. TMAC put together a supplier task force to develop a statewide supplier network. TMAC is interacting with other members of the MEP National Network to share information, best practices, and visions for future engagement and ongoing development. For more information: <https://www.utep.edu/newsfeed/campus/tmac-utep-assists-nationwide-effort-to-identify-medical-equipment-suppliers-to-support-covid-19-response.html>

Making a Big Impact With Hepius Equipment in the Fight Against COVID-19

Local innovators joined forces to form a new company, Hepius Equipment, to create a new device that could make PPE reusable. The device, which is the size of a small office printer, is named N9500 because it is specifically designed to disinfect four N95 masks at once during a timed cycle using ultraviolet germicidal radiation. TMAC worked with the ProSource team to develop their workforce skills by sharing lean best practices and increasing their understanding in the application of lean principles through lean simulations. ProSource Industries, owned by Tim Hissam, a member of the TMAC statewide advisory board, has the capacity to build several hundred units per day. For more information: <https://dallasinnovates.com/a-newly-formed-dfw-company-is-producing-equipment-to-decontaminate-n95-masks/>

Increased Efficiency as Mask Production Increases

Prestige Ameritech is a designer and manufacturer of disposable medical devices and the automated machinery that produces them. The company is the largest domestic surgical mask manufacturer in the United States. Prestige Ameritech sells ProGear® branded surgical masks, N95 respirators and other products. It also manufactures medical products for other medical companies. Prestige Ameritech's headquarters and 220,000 square foot manufacturing facility are located near Fort Worth, Texas. When Gov. Greg Abbott announced a partnership between the Texas Military Department and Prestige Ameritech to increase the production of face masks for health care workers, TMAC business advisors helped support demand schedule planning of the factory, and worked to identify ways to increase machine efficiency to produce even more masks over the three shift operation. Prestige Ameritech's 24-hour operation at their headquarters near Fort Worth was staffed in part by members of the Texas National Guard 36th Infantry Division and produced two million masks per week. For more information: <https://www.prestigeameritech.com/about-us> and <https://gov.texas.gov/news/post/governor-abbott-announces-texas-military-department-prestige-ameritech-partnership-to-increase-mask-production>

Dallas Physician Opens a Manufacturing Company Against COVID-19

Dr. Steffini Stalos created Core Medical Industries LLC as a Made in America initiative with the support of the Southwest Consortium, which includes DesignPlex Biomedical, TECH Fort Worth, and TMAC, along with local, city and state entities. As a pathologist and consultant, Stalos noticed her industry seeing

supply chain gaps and, considering top-speed N95 mask production could only meet 3% of global demand, she got concerned.

Worried about how supply chain gaps would affect health care and laboratory entities during the pandemic, Stalos launched Core Medical Industries LLC in April 2020. Stalos was concerned that not enough testing would be done if lab personnel weren't properly protected and wanted to get involved solving the problem. Core Medical Industries LLC has a U.S. supply chain and is entering the PPE market manufacturing N95 masks. The PPE will be made available first to Texas senior living facilities, urgent care centers, acute care centers, pain and rehabilitation centers, primary care clinics, endoscopy centers, first responders, ambulatory surgery clinics and clinical laboratories. Dr. Stalos also wants to enhance pandemic countermeasures through a concerted manufacturing response network that waxes and wanes in response to public health threats. For more information:

<https://www.dmagazine.com/healthcare-business/2020/07/local-physician-launches-mask-manufacturing-company/> and <https://dallasinnovates.com/dallas-physician-launches-a-manufacturing-company-to-solve-the-ppe-shortage/>

Gulf Coast MEP Bolsters Community by Assisting Texas Small Business During COVID-19 Pandemic

Connect Community was created in 2016. A nonprofit community development organization in the Gulfton/Sharpstown neighborhood in Houston, Texas, its mission is to bring organizations and local residents together to collaborate, align their efforts, and mobilize a broader network of assets to meet needs and strengthen the overall community.

In May 2020, the Houston region reached record high unemployment rates (over 14%) compared to the nationwide 13% for this same period. Due to the pandemic, the robust manufacturing sector came to a screeching halt, while frontline workers were scurrying to secure limited PPE to keep themselves safe. Connect Community launched the Sewn Goods initiative to quickly mobilize small batch manufacturers and train Houston's Gulfton residents to meet the PPE shortage and keep underemployed workers earning supplemental income.

For the Sewn Goods collaborative to blossom, Connect Community joined forces with TMAC to get technical assistance with product cost and pricing, supplier sourcing, hiring practices and operational efficiency. Connect Community provided training to over 100 underserved proprietors (100% low- and moderate-income, 76% Hispanic, 75% immigrants and refugees), supported 10 local manufacturers and produced over 75,000 face masks. In addition to reinvesting over \$150,000 in Houston, this initiative helped stop the spread of COVID-19. For Gulfton residents, where the per capita income is \$17,647, which is 68% less than the area median income (\$51,140) for Houston and 78% less than the national median income (\$71,500), having access to supplemental income enabled families to pay monthly rent and avoid eviction.

The Sewn Goods initiative encouraged residents to create home-based small businesses and empowered existing businesses to scale. These efforts illustrated the need for a hub to upskill residents and provide entrepreneurial support services while also developing a supportive ecosystem for soft goods manufacturers and businesses, and building a more resilient supply chain so that Houston can weather future disasters. While Sewn Goods PPE production continues, Connect Community is establishing the soft goods ecosystem for Houston and is looking forward to receiving strategic and organizational assistance from TMAC. As a result of this project, 211 sewers were upskilled, 105 jobs were supported, 75,000 face masks were produced (6,832 donated), \$150,000 was reinvested in the

community, and more than 100 underserved entities trained. For more information:
<https://www.nist.gov/mep/successstories/2021/gulf-coast-mep-bolsters-community-assisting-texas-small-business-during>

Utah – University of Utah MEP Center (Utah-MEP)

Keeping it Personal

Utah-MEP set out to have a personal human touch for each manufacturer and provide free COVID-19 services. The Center identified over 8,400 potential manufacturers from Dun & Bradstreet (D&B), National Association of Manufacturers (NAM) and MEP data. Utah-MEP contacted all of them through a third party provider and pointed them to the Center's free COVID-19 resource at <https://utah-mep.org/covid-19/>. Resources included strategies to conserve cash and access government funds, an industrial hygienist walk-through event, recovering from COVID-19 through continuous improvement, and combating COVID-19 impacts with automation. Of the 4,352 clients Utah-MEP could reach, over half (2,321) requested the web link and hundreds received some help. This also gave the Center a clear picture of the impact of COVID-19 and the manufacturing landscape in Utah. It showed an actual 17% growth rate since the last four years' previous manufacturing census numbers.

Connex Utah – Utah's Supply Chain Database

The Utah-MEP received funds from the state to stand up the ConneX database and expand its base in Utah. After making some upgrades to the software to ease its acceptance and use, Utah-MEP hired a third party to call a list of 6,973 potential manufacturers from D&B, NAM and MEP data. Overall, just under 1,700 responded favorably and most were included in the database. Hundreds of searches were completed and Utah businesses connected.

Masks for Utahns

The state of Utah contracted with the Utah Manufacturers Association (UMA) to organize the delivery of two million face masks using Utah manufacturers. No overseas masks were included in this effort. They worked with manufacturers all over Utah, including those based in rural areas. The aim was to deliver a top-notch product to Utah residents and get Utahns back to work. After receiving specs, pictures and in many cases, physical samples, the designs were finalized, and warehouse space secured. The masks were delivered as promised from many sources, including Autoliv (which switched production from airbags to masks) to the Price Utah Quilting Guild. As a bonus to many companies, UMA's Center for Business and Continuous Improvement worked with each company during this project to improve product flow in a way that helped some companies witness a 5x increase in throughput and more significant margins on future projects.

Volunteer SBA Representatives Expedite PPP Funding

One of the most impactful efforts funded by the Utah-MEP was the expansion of the Small Business Association (SBA) to process the Paycheck Protection Program (PPP) loans – SBA-backed loans to help businesses keep their workforce employed during the COVID-19 crisis. World Trade Center of Utah, the Center's subrecipient partner, set up call banks and trained over 50 on-call volunteers to expand the capacity of the SBA. As a result of this effort, hundreds of Utah companies received the first and second rounds of PPP funding. Utah ranked number one in the nation for the use of the PPP loans, contributing to the state's fast recovery due to this selfless act of so many.

Vermont – Vermont Manufacturing Extension Center (VMEC)

VMEC Launches a New Cloud-Based Platform, Manufacturing Exchange-Vermont

The primary mission of Manufacturing Exchange-Vermont (MXVT.org) is to connect people and supply chains to deliver solutions. It gives manufacturers and suppliers access to needs and capabilities in a virtual collaboration space that empowers innovative thinking, helps solve problems and can create new business opportunities. Launched during the COVID-19 pandemic, the initial focus of the manufacturing exchange has been on enabling and accelerating connections between urgent health-related equipment and PPE needs, Vermont manufacturers, suppliers and other collaborators who have capabilities to provide products and needed solutions.

VMEC's Health Office Training Teaches Supervisor Skills

Vermont manufacturers were required to have health officers on each shift as they restarted operations following the COVID-19 shutdown of manufacturers deemed nonessential. VMEC developed a multisession online training with support from the Vermont Department of Labor and VOSHA. The training and coaching sessions equipped the designated health officers with the knowledge and skills to solve problems, train employees and address issues that would arise as employers implemented COVID-19 safety protocols in the workplace. VMEC's health officer training was [featured in an Industry Week](#)

Virginia – GENEDGE Alliance

GENEDGE Webinar Series and Self-Assessment Tool Helps Companies Navigate New Requirements

GENEDGE conducted a three-part webinar series with a roundtable discussion panel and prepared a COVID-19 self-assessment to explore Virginia's new COVID-19 management/OSHA requirements. The high-level assessment helps companies understand where they may need to focus to ensure that they remain compliant with the new standards. Participants are also connected with Virginia Department of Labor and Industry templates and other relevant materials, including recordings of the full webinar series. Over 100 participants attended the webinar series and many went on to complete the assessment to better understand the gaps they needed to address to comply with the new standards. (<https://supplychain.genedge.org/doli-templates-and-other-relevant-materials>)

GENEDGE Launches the COVID-19 Virginia Supply Chain Connector

GENEDGE developed and launched a web-based supply chain portal, the COVID-19 Virginia Supply Chain Connector, bringing together manufacturers from across the commonwealth to help build a resilient Virginia-based supply chain for PPE and create great jobs to boost the economy. By connecting those who register, GENEDGE is successfully linking suppliers, buyers and other organizations with each other, and is making connections to resources that help improve process, sustainability, supply chain and technology.

Through the portal and directed outreach efforts, GENEDGE was able to help over two dozen Virginia companies retool or pivot toward PPE production rapidly to respond to immediate needs due to supply chain disruption. These companies were able to fill gaps in supply for critical PPE in the near term. Several have continued to work with GENEDGE to develop long-term business plans for these new products. <https://supplychain.genedge.org/>

Retooling Virginia's Manufacturers for Strategic Industries

GENEDGE developed the first ever GO Virginia – Retooling Virginia Manufacturers for Strategic Industries Program to retool manufacturers for critical industries. The program invests in services for small and medium-sized Virginia manufacturers with the potential to address reducing supply chain risks of PPE and other critical technologies by means of improved capability and capacity.

The program rolled out in two phases: Phase 1 – In 2020, GENEDGE helped retool over 20 companies to become permanent providers of FDA-approved PPE. Phase 2 – In 2021, GENEDGE is helping to pivot over 20 companies in the reshoring support of products and materials for strategic industrial supply chains. GENEDGE teamed with the Virginia Hospital and Healthcare Association, the Virginia Manufacturers Association, the Virginia Economic Development Partnership, and the Virginia Department of Emergency Management to determine relevant products and sectors where the Virginia production capacity would align with commonwealth needs and goals.

<https://genedge.org/go-virginia-retooling-virginia-manufacturers-strategic-industries-program>)

Washington – Impact Washington

Development of No-Cost Business Evaluation to Help SMMs Systematically Identify Their Strengths, Weaknesses and Root Causes of Their Most Pressing Challenges

Historically, Impact Washington had no formal business evaluation tool to help manufacturers assess the general health of their company, helping to place business operation and workforce development programs within the context of their overall business goals. The Center has found that companies often do not take a systematic approach to identifying strengths and weaknesses or take the time to create implementation plans to address them. This notion is especially true for small businesses where employees have multiple responsibilities. Consequently, these businesses are not able to exploit their strengths and take advantage of their opportunities. Even more problematic is that many companies could not shore up their weaknesses during the pandemic, exposing them to even more significant risks. Using CARES Act funding, Impact Washington created a robust and comprehensive evaluation that presents a roadmap and set of recommendations for organizations to align individuals in the company with company goals and objectives. Impact Washington has delivered 70 business evaluations since May of 2020.

Global Health Design Informs Open-Source Face Shield

In March 2020, Impact Washington brought together a set of companies with Design that Matters (DtM), a Redmond nonprofit that typically focuses on medical devices for global health in low-resource settings. DtM convened over 40 other experts, who in just over a week developed a free, turnkey package of design files, instructions for use, labeling, packaging and quality systems advice for use by any high-volume manufacturer. DtM's prototype process involved gathering feedback from nurses, doctors and infectious disease experts from the University of Washington Harborview Medical Center, the UW Medical Center and Massachusetts General Brigham Medical Center, who tested out the various face shield designs in real-life hospital settings. The final design, DtM-v3.0, and instructions for fabrication and assembly were officially released on the National Institute of Health website. Longtime Impact Washington clients Global Tech Plastics and Tool Gauge adapted the [face shield](#) for injection molding, casting, die-cutting and extrusion processes, which allowed the face shields to be produced in higher volumes. Both organizations built this clinician-approved, reusable face shield and fulfilled state-issued purchased orders. [Read the full article here.](#)

Education on Upcoming DOD Cybersecurity Compliance Requirements, Best Practices and Risk Mitigation

COVID-19 significantly changed how Impact Washington fulfilled the requirements of a DOD Office of Local Defense Community Cooperation (OLDCC)/Washington State Department of Commerce Office of Economic Development and Competitiveness cyber-grant. Impact Washington pivoted from in-person, all-day events to developing two courses in a virtual platform as a cost-effective means of training large numbers of individuals remotely. Impact Washington was able to create two Cybersecurity Maturity Model Certification (CMMC) courses that were customized for small and medium-sized businesses with short sound bite segments, accompanied by annotated resources and tips, leading to a clear pathway to certification. CMMC is a unifying standard for the implementation of cybersecurity across the defense industrial base. Participants can revisit the course information and resources as needed. The DOD OLDCC/Commerce grant funded the development of the program. CARES Act funding has allowed Impact Washington to continue to offer much-needed courses at no cost to DOD supply chain manufacturers. In total, just over 250 have registered for or completed one or both readiness courses.

Four out of five (80%) participants are part of the DOD supply chain based in Washington and the remainder of participants are essential ecosystem partners.

Using Continuous Improvement Model to Transform Lean 101 Offering

When the pandemic hit, the team needed an effective and efficient way to deliver lean 101 training to those still seeking this service. The Center needed a program that allowed them to get employees in a single location to discuss and collaborate. CARES Act funding allowed Impact Washington to make a minimal investment into the Mural platform. Mural's zoomable canvas and web whiteboard enabled consultants to deliver the program fully remotely. Impact Washington Account Executive Sarah Stuart said, "I just used Mural for my first live remote implementation project (as opposed to training). It was fantastic. The feedback from the group is they were super skeptical after taking our preparatory training. Still, it was an efficient and valuable process to work through a problem after the live exercise. I asked them to put their thoughts on the current state on sticky notes. Then we placed them into categories to define the current condition. As you can see, we have three conditions we need to change to meet the standard."

Washington's Manufacturing Community Shows Agility in Meeting the Call to Fight COVID-19

Washington manufacturers and other businesses proved they could adapt quickly, with hundreds responding to Gov. Jay Inslee's call to support the state's response to COVID-19. During the pandemic, Washington companies found ways to collaborate and change their production lines to churn out products that were not a part of their core business. As the manufacturing community came forward, Impact Washington loaned manufacturing experts to the effort. Center staff worked alongside the Washington State Department of Commerce to help over 60 manufacturers and businesses adjust their operations to meet the state's growing need for PPE. Impact Washington also guided enterprises to get the proper certification and assist them in navigating the state procurement and testing process to ensure the quality and usability of the PPE. More manufacturers retooled independently and additional manufacturers who already were producing PPE reached out to state purchasers. [Read Impact Washington's full support to the governor's office and Department of Commerce here.](#)

Helping to Flatten the Curve With No-Cost Readiness Assessments to Help Businesses Prepare to Return to Work

In April 2020, Impact Washington began providing no-cost [preventive and preparedness assessments](#) to help businesses prepare to return to work. Using funds authorized by the CARES Act signed by the President in April, NIST issued awards to MEP Centers for COVID-19-related projects. Impact Washington first authorized usage of CARES Act funds went toward prevention and preparedness assessments. The assessment followed the COVID-19 response Operational Guidelines for Manufacturing Facilities posted to the governor of Washington's website on May 12, 2020. The assessment included a virtual site visit with an Impact Washington consultant followed quickly by a thoughtful implementation plan and debrief to ensure a smooth restart of your business as soon as possible. Impact Washington relied heavily on OSHA guidance, sound manufacturing principles and assistance from HR professionals when conducting reviews. In total, Impact Washington conducted 165 individual company assessments. Read stories from [Plumb Signs here](#) and [GLDN here](#).

Rebranding and Reintroducing Workforce Development Solutions

In December 2020, Washington state Gov. Jay Inslee [issued a brief](#) which put forward a plan to strengthen the state's public health system and provide vital relief for businesses and aid for working families. Part of the plan includes getting Washington back to work and building a strong foundation of workforce training resources and expanding customized, short-term and job-specific training for

incumbent workers through the state's Job Skills Program (JSP). During this same time period, Impact Washington rebranded and released its [workforce development solutions](#) to support the governor's plan. The team also focused on using the JSP program to support workforce projects.

West Virginia – West Virginia Manufacturing Extension Partnership (WVMEP)

Distillery Becomes Solution for Providing Hand Sanitizer

Smooth Ambler, based in southern West Virginia, decided to focus their production efforts on hand sanitizer to support the COVID-19 crisis. To transition their process, they needed hydrogen peroxide, but learned the shipment they were expecting would be delayed, which created an issue with their production schedule. The distillery reached out to WVMEP to see if they could assist in locating the needed hydrogen peroxide. Through relationships created with West Virginia clients and local economic development agencies, WVMEP was able to identify a source for the hydrogen peroxide, and within a matter of three hours on a Saturday evening, help establish an agreement between the source and the distillery to provide the needed hydrogen peroxide.

Retrofitting for PPE to Protect First Responders in West Virginia University (WVU) Medical Facilities

Dalb Manufacturing, based in Kearneysville, West Virginia, was identified as an essential business and continued production through the pandemic. Dalb provides a variety of solutions for customers, with designing, developing and producing products in one complex. They are the leader in the manufacture of large format decorative and functional parts for OEM and point of sale applications. Dalb retrofitted processes to produce face shields for donation to support the COVID-19 crisis and contacted the WVMEP to identify the needs in the state. The WVMEP contacted the West Virginia National Guard, which was managing the logistics for PPE distribution in the state with a focus on the WVU medical facilities. Dalb supplied 2,000 face shields to WVU Medicine Berkeley Medical Center, Jefferson Medical Center – WVU Medicine and the Martinsburg VA Medical Center.

Webinars Leading to Transformational Clients

One of the WVMEP's strengths is being on-site with clients for every aspect of a project. Many of the manufacturing operations in West Virginia were classified as essential, and remained open and operational with modifications to work schedules. In order to stay connected and be as visible as possible to clients, webinars were conducted on topics including business continuity and resiliency, remaining safe in manufacturing during distracting times, leading employees, and service offerings related to projects that were placed on hold. In 2020, a total of 43 webinars were hosted with 1,046 people in attendance. The webinars served as more than just education for clients. New service offerings were tested, which resulted in new product development. Untouched clients were in attendance, which resulted in new and creative methods for outreach. Proposals were developed, which are now converting into projects. Maybe more importantly, it was also a way to stay connected to people as friends and allowed time for relationships to build. Those relationships are leading to transformational clients in 2021.

Strengthening Collaboration With Stakeholders and Business Partners

The culture in West Virginia is a personal one. Only a few large interstate highways physically connect communities for a uniquely shaped geographic footprint. Legislators, and economic and business development agencies throughout the state are extremely dedicated to growing the economy and improving the quality of life for everyone who calls West Virginia home. While the relationships with WVMEP stakeholders and business partners was already strong, the urgency of the pandemic and the need to support one another personally and professionally created a new kind of relationship. Previously competitive universities collaborated, large and small manufacturers aligned for the greater

good, and phone calls replaced emails for faster and more personal responses. The new relationships forged in 2020 have resulted in a reenergized interest in WVMEP's business. The visibility of the work done has increased significantly and has provided opportunities to have connections in meetings that were previously more difficult to obtain. Legislators have texted the Center Director during town hall meetings to quickly get manufacturing data to report to constituents. The Center has been asked to present awards on behalf of the manufacturing and energy industry. The Center has increased collaboration with the West Virginia Department of Economic Development, which provides funding to support operations. The Center strengthened the relationship with the West Virginia Manufacturer's Association (WVMA) which is the state affiliate of NAM, and the Executive Director of WVMA has agreed to join the WVMEP advisory committee. While the pandemic limited physical connections, it helped strengthen personal connections that will benefit WVMEP in the future.

Wisconsin – Wisconsin Center for Manufacturing and Productivity (WCMP)

Helping Wisconsin Manufacturers Pivot to Improve Revenue

A series of economic crisis/COVID-19 manufacturer pulse surveys conducted by Wisconsin MEP Network partner WMEP Manufacturing Solutions (WMEP) throughout the pandemic revealed that the pandemic affected manufacturers differently. Although about 10% of WMEP's clients were performing very well, surveys showed others experienced declining sales volumes. This led to the creation of WMEP's Pivot2Revenue offering. The Pivot2Revenue guided assessment helps manufacturers identify sales and revenue opportunities, evaluating each company's growth performance and risk relative to the four dimensions of revenue expansion. These assessments are quick and easy to complete and identify specific actions the manufacturer can take to improve revenue. Manufacturers report the process yielded important insights and opportunities for improvement. To learn more, visit <https://www.wmep.org/>.

Engaging in Dialogue Identifies Focus Areas During the Recovery

Wisconsin MEP Network partner University of Wisconsin-Stout Manufacturing Outreach Center (MOC) used CARES Act support to offer Recovery Discovery, a business discovery process designed to help manufacturers discover key opportunities to recover or grow from the challenges of 2020. This online business diagnostic followed by a discussion with an MOC business advisor engages an entire company – from sales to support – to help set a path forward. Manufacturers have reported that the guidance received through this process helped the leadership team open a dialogue and identify critical areas of focus for strategic planning in 2021 and beyond. Learn more about MOC's work here: <https://www.uwstout.edu/outreach-engagement/business-organizational-resources/manufacturing-outreach-center>.

Wyoming – Manufacturing Works (MW)

Manufacturing Works Remote Delivery: Creating the Same Value, But Miles Away

In a state that relies heavily on personal relationships and in-person meetings to get business done, the Wyoming MEP, Manufacturing Works (MW), had to move vigilantly to bring high value in a remote setting. Over the course of the pandemic, MW effectively created a remote option for each of the Center's core offerings. The highlights consisted of an eight-part webinar series focusing on information relevant to pivoting business and becoming more resilient, online cyber trainings focusing on NIST 800-171, which refers to National Institute of Standards and Technology Special Publication 800-171 governing controlled unclassified information in nonfederal information systems and organizations, gearing up for Cybersecurity Maturity Model Certification (CMMC), and much more small scale, in-person lean trainings focusing on new, pandemic-created workflows.

MW also helped the manufacturers struggling to access the PPP funding to help them continue to progress forward during the pandemic and come out swinging as the restrictions were lifted. This has made manufacturing a very resilient and competitive field for people to be employed in Wyoming.

Wyoming Mobilizes to Fight Pandemic PPE Challenges

During the beginning of the pandemic, about the time when it became difficult to find everyday supplies at the local grocery store, a different problem was beginning to take shape – a nationwide PPE shortage. In response, MW began collaborating with state makerspaces, distillers (Pine Bluffs Distilling), manufacturers (Kennon Products), community colleges, DHS, community sewing groups and other economic development entities to create a program that would enable the makerspaces and compatible manufacturers to begin creating PPE for local municipalities (hospitals, schools, first responders, etc.). This included 3D-printed respirators with cloth inserts, sewn masks, hand sanitizer, ear relief adapters for masks and much more.