

National Strategy for Advanced Manufacturing

written by Lauri Moon | January 11, 2023

The National Strategy for Advanced Manufacturing released by the White House in October 2022 presents a vision for U.S. leadership in advanced manufacturing that will grow the economy, create jobs, enhance environmental sustainability, address climate change, strengthen supply chains, ensure national security and improve health care. Three interrelated goals are set to achieve the vision:



1. Develop and implement advanced manufacturing technologies
2. Grow the advanced manufacturing workforce
3. Build resilience into manufacturing supply chains and ecosystems

To achieve these goals, 11 strategic objectives and 37 technical and program recommendations are identified for the next four years. This Congressionally mandated strategy seeks to improve U.S. government coordination and provide long-term guidance for federal programs and activities in support of U.S. manufacturing competitiveness, including advanced manufacturing R&D.

[Read the report \[opens PDF\]](#)

[Read the one pager and brochure](#)

Success Story: Nittany Paper Invests in Training Ahead of New Equipment Investment

written by Lauri Moon | January 11, 2023

Marcal Paper aka Nittany Paper Mills, LLC, is owned by Atlas Holdings, LLC. Atlas was founded in 2002 and is headquartered in Greenwich, Connecticut. Atlas and its affiliates own 16 companies employing nearly

20,000 associates. With more than 100 facilities across the globe, Atlas generates an estimated \$4 billion in annual revenue. Nittany Paper Mills in Lewistown, PA manufactures and provides recycled tissue and towels for use in homes, schools, restaurants, hotels and hospitals.



Nittany Paper Mills is investing in new equipment and technologies to become even more competitive. These include new production lines, new packing lines, robotics and more. Such new technologies are disruptive as they change how work is done. In an effort to ensure the successful implementation of these investments, Marcal sought training for its managers to prepare them to manage change. Specifically, training to help managers understand the psychology of change and how to accelerate change. In other words, they wanted to help their managers to further develop their skills to be more effective at leading change. Without these skills, investments on this level may not have the desired impacts.

After the training, with these skills now developed in their managers, Nittany Paper Mills was confident that the implementation of the new equipment and technologies would be successful, driving confidence to make the investment of more than \$500 million.

“We make investments where and when our workforce is skilled and ready. The training was a solid foundation for supervisor development”

Steve Prentiss, Vice President of Human Resources, Marcal Paper

IMC's Latest e-News

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Open Supplier Scouting Opportunities

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As of Nov. 10, these are the open supplier scouting opportunities from manufacturers across the United States seeking domestic suppliers for various items. Additional scouting opportunities are from federal agencies seeking to maximize the purchase



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and production of goods and services in accordance with Executive Order (EO) 14005. If you are interested in learning more about any of these opportunities, contact IMC Business Advisor, Dana Gordon at danag@imcpa.com or 570-329-3200x8084.

CHIPS Act Supplier Scouting Opportunities

- Opportunity: 2022-121 Analytical Transmission Electron Microscopes closes Nov. 21
- Opportunity: 2022-122 Focused Ion Beam & Scanning Electron Microscopes closes Nov. 21
- Opportunity: 2022-123 Atom Probe Tomography System closes Nov. 21
- Opportunity: 2022-125 Semiconductor Furnaces closes Nov. 28
- Opportunity: 2022-126 Inductively Coupled Plasma Reactive Ion Etcher closes Nov. 28
- Opportunity: 2022-127 Wafer Binder and Lithography Aligner System closes Nov. 28
- Opportunity: 2022-128 Field Emission Scanning Electron Microscope closes Nov. 28
- Opportunity: 2022-129 X-Ray Diffractometer closes Nov. 28
- Opportunity: 2022-130 Focused Ion Beam Scanning Electron Microscope closes Nov. 28
- Opportunity: 2022-131 High Resolution 110keV Electron Microscope closes Nov. 28
- Opportunity: 2022-132 High Resolution Mask Writer closes Nov. 28
- Opportunity: 2022-133 Reactive Ion Etcher for Silicon and Dielectrics closes Nov. 28
- Opportunity: 2022-134 ICP Cryo REI for Silicon and Dielectrics closes Nov. 28
- Opportunity: 2022-135 Electrical Static Chuck Based Wafer Deep Silicon Etcher closes Nov. 28
- Opportunity: 2022-136 ICP RIE for Etching Silicon with Hydrogen, Bromide and Chloride closes Nov. 28
- Opportunity: 2022-137 Mechanical Clamp Based Single Wafer Deep Silicon Etcher closes Nov. 28

- Opportunity: 2022-138 Automated Single Substrate Resist Develop and Chrome Etch System closes Nov. 28

MEP National Network and EO 14005 Supplier Scouting Opportunities

- Opportunity: 2022-097 Pantiless Liner Fabrics closes Nov. 28
 - Opportunity: 2022-100 Razor Knife with Hook Blade closes Nov. 29
 - Opportunity: 2022-107 Inconel Pipe/Tubing closes Dec. 5
 - Opportunity: 2022-109 Glass Bottles closes Dec. 12
 - Opportunity: 2022-110 Ice Packs closes Dec. 12
 - Opportunity: 2022-111 D5 Bells closes Dec. 12
 - Opportunity: 2022-112 Plastic Bell Handles closes Dec. 12
 - Opportunity: 2022-115 Cerium Nitrate Hexahydrate closes Nov. 21
 - Opportunity: 2022-116 Tergitol L-64 closes Nov. 21
 - Opportunity: 2022-117 Silver Nitrate closes Nov. 21
 - Opportunity: 2022-118 Hydrogen Peroxide closes Nov. 21
 - Opportunity: 2022-119 Ethanol closes Nov. 21
 - Opportunity: 2022-120 Poly (2-ethyl-2-oxazoline) closes Nov. 21
 - Opportunity: 2022-140 Custom Printed Manilla Folders closes Dec. 28
 - Opportunity: 2022-141 Furniture Acquisitions closes Jan. 9
 - Opportunity: 2022-142 Ink and Printing Materials closes Jan. 9
 - Opportunity: 2022-143 IT Equipment closes Jan. 9
 - Opportunity: 2022-144 Various Spare Parts closes Jan. 9
 - Opportunity: 2022-145 Injection Molding for Plastic Housing closes Dec. 12
 - Opportunity: 2022-146 Custom PCB Manufacture and Assembly closes Dec. 12
 - Opportunity: 2022-147 Technical Fabric for Sports Model Shoes closes Dec. 12
 - Opportunity: 2022-148 Vison Vapor Pressure Tester closes Nov. 28
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Request for Information: Manufacturing USA Semiconductor Institutes

written by Lauri Moon | January 11, 2023

NIST is seeking public input on the development of up to three new Manufacturing USA institutes focused on semiconductor manufacturing. The institutes, authorized by the recently passed Creating Helpful Incentives to Produce Semiconductors (CHIPS) for America Act, will enhance U.S. leadership in semiconductor manufacturing through advanced research, education and workforce development.

NIST requests the public's input into:

- Design of, and requirements for, potential Manufacturing USA institutes to strengthen the semiconductor and microelectronics innovation ecosystem, which could include design, fabrication, advanced test, assembly, and packaging capability.
- How these Manufacturing USA institute(s) would support R&D efforts, infrastructure investments including the establishment of a National Semiconductor Technology Center, investments in advanced packaging, expansion of NIST's metrology R&D in support of semiconductor and microelectronics R&D, as well as education and workforce development.

Responses are requested by 11:59 p.m. Eastern time on Nov. 28, 2022, and should be submitted online [here](#). More information, including registration for public webinars, can be found [here](#).

For questions about this request for information, visit the NIST Office of Advanced Manufacturing FAQ page or send an email to MfgRFI@nist.gov (cite "Manufacturing USA Semiconductor Institutes – Questions" in all correspondence).

For media inquiries contact NIST's Office of Public Affairs at 301-975-2762.

Cyber Attacks: A Growing Threat to the Small Business & U.S. Economy

written by Lauri Moon | January 11, 2023



**FROM THE DESK OF THE REGIONAL
ADMINISTRATOR**

CYBERATTACKS: A GROWING THREAT TO SMALL BUSINESS & U.S. ECONOMY

BY: Regional Administrator John Fleming - U.S. Small Business Administration

Last year, cybercrimes targeting small businesses reached a record high of \$2.4 billion. With online sales expected to surpass \$1 trillion, retailers must evaluate their vulnerabilities to cyberattack and protect their systems. Small businesses are especially attractive targets because they typically lack the security infrastructure of large corporations.

Administrator Isabella Casillas Guzman, head of the U.S. Small Business Administration (SBA) and the voice for America's 33 million small businesses in President Biden's Cabinet, earlier this year announced millions in new funding for states to help small businesses develop cybersecurity infrastructure as part of the SBA's Cybersecurity for Small Business Pilot Program. I encourage you to check out our in-person and virtual events as well as the National Cybersecurity Alliance, a public-private partnership providing virtual and in-person cybersecurity events.

There are simple steps business owners can take to mitigate risk. Here are five easy actions business owners can take:

1. **Update your software:** Check regularly for updates or patches to guard

against the latest cyber threats, it's the cheapest and easiest way to prevent online attacks.

2. **Review security protocols:** Ensure your website is protected with a Secure Sockets Layer (SSL) certificate, which authenticates a website's identity and enables an encrypted connection. Also, do not store credit card data on your systems.
3. **Create effective passwords:** Weak passwords are a major reason small retailers are prone to cyberattacks. Unique passwords with at least 12 characters that are a mix of numbers, letters, capital letters, and punctuation are proven most effective. Multi-Factor Authentication provides additional security.
4. **Be aware of social engineering threats:** Hackers bait or trick employees through phishing, baiting, scareware, and incentives that appear to be coming from someone familiar but contain malicious code allowing them access to sensitive information.
5. **Set strict rules on computer use:** Training and guidelines for employees who access your computer systems ensure only activities and data deemed necessary keeps hackers at bay.

Small retailers owe it to themselves, their customers and their employees to ensure online systems are safe. To learn more about SBA's programs and services related to cybersecurity, visit www.sba.gov/cybersecurity.

DEP Funding Opportunities

written by Lauri Moon | January 11, 2023

Below is a list of DEP funding opportunities compliments of our friends at the DEP North Central Regional Office.

DEP 2023 Environmental Education Grant Program Open. Fundable projects include hands-on programs for students, teacher training workshops, and community conservation projects for adults that

will occur between July 1, 2023 and June 30, 2024. Application deadline December 9th. Details at Environmental Education Grants (pa.gov)

DEP Agriculture Energy Efficiency Rebate Program Now Open: Fundable projects include LED lighting, efficient ventilation equipment, and efficient dairy equipment for PA ag producers. Rebates up to \$5,000 are available on a first come, first served basis. Guidelines and a link to the online application can be found at www.dep.pa.gov/agricultureenergy

DEP's Small Business Advantage Grant now open. Small Business Advantage Grant (pa.gov) Funding energy efficiency and pollution prevention projects.

DEP's Alternative Fuel Incentive Grant is Open—next deadline is December 16th. Funding alternative fuel vehicles for both non-profits and for-profit businesses (i.e. electric, propane, natural gas vehicles). Alternative Fuels Incentive Grant (pa.gov)

DEP's Level 2 EV Charging Rebate Program is open—first come, first served. Funding EV Chargers for both non-profits and for-profit businesses for public charging, employee charging, & tenant charging. Driving PA Forward (arcgis.com)

USDA's REAP program provides guaranteed loan financing and grant funding to agricultural producers and rural small businesses for renewable energy systems or to make energy efficiency improvements. Rural Energy for America Program Renewable Energy Systems & Energy Efficiency Improvement Guaranteed Loans & Grants | Rural Development (usda.gov)

For support or additional information contact:

Michelle Ferguson | Energy Program Specialist
Department of Environmental Protection | Energy Programs Office
North Central Regional Office
Phone: 570.327.3783
miferguson@pa.gov

IMC Welcomes Tim Davis to the Team

written by Lauri Moon | January 11, 2023



The Innovative Manufacturers' Center (IMC), Inc. is excited to welcome Tim Davis to its team of Central PA resources as an IMC Business Advisor. As an IMC Business Advisor, Tim will work closely with Central PA manufacturers to provide objective, expert advice and actionable solutions to drive economic success and profitable growth. More specifically, Tim will be concentrating his time supporting manufacturers in Bedford, Blair and Huntingdon counties.

“The IMC team is excited to have Tim join us to better serve the Southernmost counties in our region. Tim’s expertise spans many business disciplines and his approaches to solving business challenges make him a perfect match to help our clients advance their manufacturing operations.” Dennis Gilbert, IMC President.

Tim has over 35 years of management and operational experience in manufacturing businesses in Central and Southwestern PA. Various career roles include Operations Manager, Safety Manager, HR Manager, Sales Manager, Sales Rep, Service Manager, executive/business coach and trainer. His areas of expertise include employee development, strategic planning, people skills, effective communication, leadership, safety, time management, sales and customer service.

“I’ve been in manufacturing my whole career. I’ve experienced the challenges and the successes, and the personal growth provided by participating fully in creating, building, marketing, selling and supporting Pennsylvania made products. I’ve lived the manufacturing life on the frontlines with customers and coworkers, and I am very excited to join the IMC team and use my experience and knowledge to help with

the challenges manufacturers face. IMC brings a wealth of resources in training, teaching, connecting and support to help manufacturers meet those challenges. Our goal is to serve as a catalyst to help manufacturers innovate, grow and prosper.”
Tim Davis, IMC Business Advisor.

Tim has a B. S. in Occupational Health & Safety Management from Slippery Rock University. He is a graduate of the Avraham Y. Goldratt Institute’s Jonah Marketing Program where he also completed certifications in Management Skills, Theory of Constraints and Drum/Buffer/Rope Implementation. Tim has also completed extensive management and leadership training through Penn State University.

Success Story: IMC Helps Metal Integrity Implement Advanced Robotics & Automation Technology

written by Lauri Moon | January 11, 2023



Metal Integrity, a sheet metal fabricator and machine shop in State College PA, was having continued workforce issues, leading to challenges to meet customer orders. Through a national

Advanced Manufacturing Technology Solutions grant, IMC helped the company implement advanced robotics & automation technology. They quickly realized production improvements with the first job run on the automated system of 200-250%, seeing an increase in production from 180 parts per week to 475 parts per week.

After attending an AMTS sales training program in Fall 2022, knowing of Metal Integrity's interest in automation, IMC's Dana Gordon reached out to Metal Integrity directly to discuss. The sheet metal fabricator and machine shop was having continued workforce issues, leading to challenges to meet customer orders.

Support provided; tools utilized

Upon meeting with Metal Integrity, IMC helped them refine their automation strategy, which consisted not only of robotic machine tending, but also an investment in a new lathe with a bar feeder along with sheet metal quoting automation software. As the client was already progressing down the path toward machine tending, there was no need to complete a full assessment; IMC and the AMTS lead for Pennsylvania instead met with client to validate their robotic machine tending approach.



Lessons Learned

Overall, the project was a success, however the timeline was longer than anticipated. The project hit various challenges during the implementation phase, leading to a longer than desired learning curve. These challenges were primarily related to the inexperience of both the integrator and the robot manufacturer.

The first challenge dealt with the performance of the Productive Robotics OB7 robot once a dual gripper was added. The robot motion became very erratic and was unable to perform the programmed tasks. It was later discovered that the robot programming interface was inadequate for making the needed adjustments for the higher weight of the end effector and the extended tool center point (TCP). It took weeks of troubleshooting by both the integrator, Exact Machine Tool, and the manufacturer, Productive Robotics to make this discovery, further delaying production implementation.

The next major challenge involved the workholding setup. As is common in mill machine tending systems, Exact Machine Tool installed a Airvise AV-T-4 pneumatic vice that was integrated into the robot controller. However, the pneumatic vice was unable to hold the tight tolerances required of the target part. In the end, Metal Integrity found a solution that allowed them to automate their standard Kurt workholding system that already held needed tolerances with a Rapid Design Solutions CNC vise actuator.

An ROI of 4 months was expected prior to launching the project and that will be exceeded, depending on upcoming parts volumes. Metal Integrity has already realized production improvements on the first job run on the automated system of 200-250%, seeing an increase in production rate from 180 parts/week to 475 parts per week. For this part, based on reallocated labor alone, they will see an ROI of 6 months. When the increase in production for parts run off-shift with a conservative value applied to machine runtime is considered, it surpasses a 3-month ROI.

In hindsight, going with an experienced system integrator may have reduced the implementation difficulties experienced in working with an equipment distributor. However, the low price point of the system and the fact that they are now in operation, makes it challenging to determine if that would have been advantageous. Even considering the delays and additional time required of Metal Integrity personnel, the ROI is in an acceptable range.

This project made possible through MEP AMTS grant funds.



2022 Small Business Advantage Grant is Now Accepting Applications for \$1 million in Available Funds

written by Lauri Moon | January 11, 2023

The 2022 Small Business Advantage Grant is now accepting applications for \$1 million in available funds. This grant is offered through the Pennsylvania Department of Environmental Protection. The purpose of this grant is to provide small businesses in Pennsylvania with grant funds for projects that increase energy efficiency, reduce pollution, or protect our waterways. Many different types of small businesses, from manufacturing to retail to agriculture, may be eligible for funding under this program. Funding is awarded first-come, first served so interested applicants should act fast!

All program documents are available on the Small Business Advantage Grant Website; these documents include details about applicant and project eligibility and an overview of the application process. There is also a link on the website to the online application system used to apply for the grant. Additionally, there are tutorial videos available for everything from an overview of the program to using the Grant Calculator for specific project types.

Maximum grant awards will vary based on the attributes of a project as shown in the

chart below. Projects will be eligible for more funding if they are located in Environmental Justice areas or reduce CO2e by at least 20 tons (as calculated by the Grant Calculator).

2022-2023 Funding Levels			
Project Attributes	Whichever is less, up to:		
All Eligible Projects	50%	or	\$5,000
Eligible and located in Environmental Justice Area	65%	or	\$6,500
Eligible and significant environmental savings	65%	or	\$6,500
Eligible, located in Environmental Justice Area, and significant environmental savings	80%	or	\$8,000

For questions, contact:

Samantha Harmon | Small Business Ombudsman

Small Business Ombudsman Office

Department of Environmental Protection

Rachel Carson State Office Building

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