

**HV
MFG**

THE COUNCIL OF INDUSTRY
MAGAZINE

FALL 2019



COMPANY PROFILE
ELNA MAGNETICS

EMERGING LEADERS
ENGINEERING TEAM
PRATT & WHITNEY ENGINEERING

LEADER PROFILE
JENNIFER CLARK

DIRECTOR OF MANUFACTURING OPERATIONS
GLOBALFOUNDRIES

THE EVOLVING WORKFORCE

RESOURCE GUIDE INSIDE

How can I finance new equipment and maximize cash flow?

STOP

GO

KNOW

Talk to bankers
who understand
the Hudson Valley,
its streets, and its
business climate.

**We'll help
you know.**

ORANGE
Bank&Trust
COMPANY



Where the brightest bankers live.

845-341-5000

orangebanktrust.com

Member
FDIC 

CONTENTS

HV MFG • FALL 2019

COUNCILOFINDUSTRY.ORG

FEATURES

- 11 EMBRACING NEW IDEAS
Jennifer Clark at GlobalFoundries.
- 22 EMERGING LEADERS - GOING BEYOND
Engineering Team - Pratt & Whitney.
- 30 CHANGING THE MAGNETIC FIELD
Elna Magnetics provides the power.
- 38 MANUFACTURING TRENDS
Augmented Reality has a role in everything.

EMERGING LEADERS



Peter Hemme and Tim Quinn are members of the engineering team at Pratt & Whitney Advanced Coating Technologies in Middletown, NY.

IN THIS ISSUE

- 5 LETTER FROM THE PRESIDENT
Gearing Up for Growth.
- 6 MANUFACTURING NEWS BRIEFS
Policy Priorities for Manufacturers.
- 17 LEAN SIX SIGMA FROM RIT
Driving Effective Change.
- 26 MIAP: MANUFACTURING APPRENTICESHIPS
Accessible and Expanding.
- 35 WOMEN IN MANUFACTURING
An Empowered Workforce.
- 42 MANUFACTURING RESOURCE GUIDE
A Guide to Elected Officials, Government
Agencies, Educational Institutions and More.
- 50 ADVERTISERS INDEX

ON THE COVER

HV Mfg sits down with Jennifer Clark to discuss her role as Director of Manufacturing Operations for Global Foundries.

Cover photo by Tom LeBarbera
Picture This Studios



MANUFACTURING IS VITAL AND THE COUNCIL OF INDUSTRY IS VITAL TO MANUFACTURING

Chairman of the Board: George Quigley, Ertel Alsop
First Vice Chair: Richard Croce, Viking Industries
Second Vice Chair: Joseph Saltarelli, eMagin Corporation
Treasurer: Michael Flynn, M&T Bank
President: Harold King
Editor: Alison Butler
Assistant Editors: Serena Cascarano, David King
and Johnnieanne Hansen
Creative Director: Linda Engler, Ad Essentials

HV Mfg is designed for
The Council of Industry by:
Ad Essentials
845-255-4281 adessentialsonline.com



The Council of Industry

HV Mfg is published bi-annually by the
Council of Industry of Southeastern New York

www.councilofindustry.org
845-565-1355
6 Albany Post Road, Newburgh, NY 12550

Connect With Us On:
Facebook, Twitter, LinkedIn,
Instagram and YouTube

HV Mfg is printed by:
Maar Printing Services
Poughkeepsie, NY
845-545-6860 maarprinting.com

Contents of this magazine © Council of Industry 2019. Reproduction in whole or in part is strictly prohibited without the prior express written permission of Council of Industry.

· RISK & LOSS ·

SAVE THE DAY
WITH BELFOR



DISASTER RECOVERY & PROPERTY RESTORATION
FIRE • WATER • STORM
Commercial and Residential

- Soot & Smoke Removal
- Water Extraction
- Structural Dehumidification
- Structural Cleaning & Decontamination
- Reconstruction & General Contracting
- Mold Remediation
- Air Duct Cleaning
- Contents Restoration
- Electronics Restoration
- Document & Media Recovery
- Machinery Decontamination, Rebuild and Repair
- Environmental Services

24-HOUR EMERGENCY HOTLINE

877.881.3030

BELFOR 

PROPERTY RESTORATION

RESTORING MORE THAN PROPERTY

75 Virginia Road, North White Plains, NY 10603
914.798.1440 | www.belforusa.com



HAROLD KING
PRESIDENT
COUNCIL OF INDUSTRY



THE EVOLVING WORKFORCE

DEAR READER

Welcome to the Fall 2019 Edition of HV Mfg.

Let me first take this opportunity to thank the dozens of organizations supporting this publication – and through it the Council of Industry and Hudson Valley manufacturing - with their advertising dollars. Without that support we would not be able to share with you the great things happening in this vital sector of the Hudson Valley economy. As you read through the magazine please take note of these generous supporters, a full index of which appears on page 50.

Manufacturing is always evolving and innovating. This edition looks at some of the people and companies leading that evolution in our region. In our Company Profile Alison Butler introduces us to Saugerties based Elna Magnetics. Elna is providing ferrite components that are essential parts of emerging technologies such driverless cars, medical implants and automation. Jennifer Clark is the subject of our leader profile. Jennifer began her career as a summer intern at IBM's Semiconductor Fab in Burlington Vermont and has risen through the ranks to become Director of Manufacturing Operations at Global Foundries Fab 10 in East Fishkill. She talks about that pathway, her leadership style and what it means to be a woman in this once male dominated industry. Alison Butler also profiles a team of young engineers at Pratt & Whitney in Middletown, each with their own unique background and education, who are working together to redesign their entire production process.

In other articles Serena Cascarano talks with a group of women about their careers in manufacturing to find out what drew them to the sector and what they like about working in manufacturing. Vincent Buonomo, Senior Program Manager and Instructor at RIT's Center for Quality & Applied Statistics (CQAS), writes that Lean Six Sigma training can help firms reduce waste, increase quality and build efficiency. With the Council of Industry's MIAP Apprenticeship Program gaining traction, Johnnieanne Hansen provides an update on the apprentices, companies and organizations working together to make it a success. And, we learn that Augmented Reality has become a key technology to bridge the gap between 2 dimensional data and the 3 dimensional world of the manufacturing sector.

This edition also contains a list of key resources for Hudson Valley manufacturers. From state and federal elected officials and agencies to economic development and educational organizations the resource guide provides key contacts that offer support to Hudson Valley manufacturers.

Thank you for your interest in Hudson Valley Manufacturing. I hope you enjoy this edition of HV Mfg.

BRIEFS

ECONOMY AND JOBS

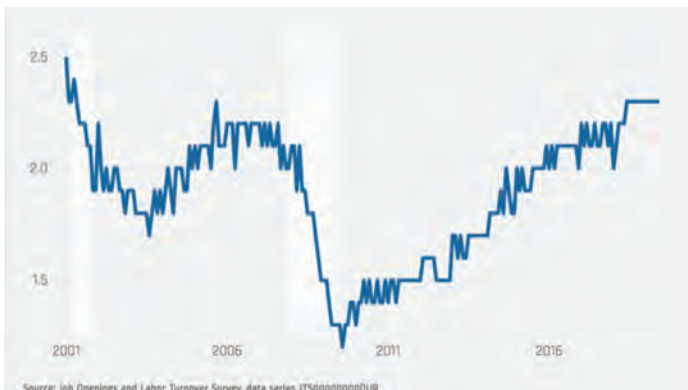
Labor Department: Job Openings in Manufacturing at All-Time High

The manufacturing sector had a record number of job openings in July, though non-farm job openings overall dropped somewhat from June, according to the Labor Department's monthly Job Openings and Labor Turnover Survey. NAM Chief Economist Chad Moutray reports that "Job openings in the manufacturing sector jumped to another all-time high, rising from 515,000 in June to 522,000 in July." He added that "this was led by strength in postings from durable goods manufacturers, with openings also increasing to a new record level, up from 322,000 [in June to] 331,000 [in July]. Job openings for nondurable goods firms edged down from 193,000 to 191,000."

As Moutray notes, these numbers will reinforce manufacturers' concern about the lack of skilled workers, which they consistently cite as their most pressing worry in the NAM's quarterly Manufacturers' Outlook Survey.

Moutray also noted that "The number of workers voluntarily quitting their jobs increased 130,000 to an all-time high of 3.6 million in July. The quits rate increased to 2.4%, the highest level since April 2001, from 2.3% in June."

The quits rate is viewed by policymakers and economists as a measure of job market confidence.



ISM: The U.S. Manufacturing Sector Contracted In August for the First Time Since 2016

The Institute for Supply Management U.S. Manufacturing Purchasing Managers' Index fell to 49.1% in August, the lowest reading in more than three years. Any reading below 50% signals a contraction. The report raises fears of a recession.

Trade troubles influenced these numbers, including tensions between the U.S. and China. NAM President and CEO Jay Timmons responded to the news of the contraction, "These numbers, though disappointing, are not entirely surprising. We've started feeling the effects of a slowing global economy. 10 of the top 20 countries that

manufacturers sell to have contracting economies." Manufacturers have also warned that trade uncertainty would affect our industry. Timmons said that passage of the USMCA, a trade deal with China and reauthorization of the Export-Import Bank will end the uncertainty and restore growth.

Global Manufacturing Activity Contracted for the Fourth Straight Month

The J.P. Morgan Global Manufacturing PMI contracted for the fourth straight month, albeit up from 49.3 in July, the lowest reading since October 2012, to 49.5 in August. There continued to be some



optimism that future output would rebound over the coming months.

Eleven of the top 20 markets for U.S.-manufactured goods experienced a contraction in manufacturing activity in their economies in August. This contraction affected six of the top seven export markets, with only China seeing a very slight expansion from that list, surprisingly rebounding from a contraction in the June and July data.

NY Fed's Factory Index Declines

The NY Fed's measure of manufacturing activity declined more than expected in September. The Empire State index, a survey of factories [in] the state, fell to 2 from 4.8 as readings for new orders and shipments deteriorated, according to New York Fed data released Monday. The measure of capital spending expected six months ahead plunged the most in three years, to 4.6 from 23.2.

NAM Chief Economist Chad Moutray looked into the numbers further, finding some evidence of optimism: "Respondents to the Empire State Manufacturing Survey remain positive in their outlook for the next six months, albeit with continued easing in many measures. More than 40 percent of respondents continue to anticipate higher sales and shipments over the coming months, and 25.9 percent and 24.2 percent predict more hiring and capital expenditures, respectively."



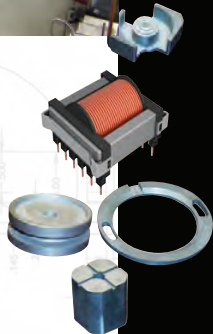
POWERFUL PRODUCTS FOR A POWERFUL MARKET

Transforming your Ferrite needs one shape at a time



Machining
Gapping
Complex CNC Projects

We provide your power and EMI solutions.



Engineering Support for Design and Material Selection

800-553-2870
www.elnamagnetics.com
info@elnamagnetics.com

ISO 2001:2015 & AS9100 Certified
203 Malden Turnpike
Saugerties, NY

CohnReznick is an independent member of Nexia International



OPTIMIZE PERFORMANCE

CohnReznick's advisory, assurance, and tax professionals serve manufacturing and distribution companies in the Hudson Valley and throughout the country, helping them enhance operations and meet compliance requirements.

From supply chain and business process improvement to lease accounting implementation, our goal is to deliver value that helps your business move forward.

Are you ready to achieve your vision?
Let's get going.

cohnreznick.com/mandd

CohnReznick
ADVISORY • ASSURANCE • TAX

OVER 120 YEARS OF PRINT SOLUTIONS AND KNOW HOW



WHAT MAKES US DIFFERENT?

OUR OBSESSION.
OUR TEAM.
OUR CONSISTENT SERVICE.

MAAR Printing Service
sales@maarprinting.com
845.454.6860
49 Oakley St | Poughkeepsie NY

TRADE

Congress to Take Up USMCA This Fall

The administration is pushing for swift approval of the United States-Mexico-Canada Agreement.

While President Trump has pushed for swift approval of his replacement for the North American Free Trade Agreement,



Democrats have shown little urgency in moving to ratify the new United States-Mexico-Canada Agreement as signed by the three countries last year.

Much hinges on American trading relationships with its neighbors, which expanded after NAFTA went into effect in 1994. The U.S. sent about \$300 billion in goods to Canada last year, more than any other country. It exported about \$265 billion in products to Mexico, its second-largest market.

Democrats and Republican Trump alike have lamented that NAFTA helped to sap American manufacturing jobs in favor of cheaper Mexican labor. During remarks pushing for USMCA's passage last month, the president called NAFTA "one of the world's worst trade deals ever" and a "disaster for the country."

The U.S., Canada and Mexico made a few key changes to NAFTA last year. USMCA puts stricter rules on the country of origin for auto parts and requires almost half of those products to be made by workers earning \$16 an hour or more. It also expands American access to the Canadian dairy market and aims to modernize copyright and digital trade rules.

Of the three countries, only Mexico's legislature has ratified the deal.

Economic Activity in China Cooled Further in August Sparking Renewed Talk of a Deal

The Wall Street Journal Reported that "Softness was visible last month in nearly every aspect of the Chinese economy, with industrial output and retail sales data pointing to sluggish demand and low confidence among businesses and consumers." Value-added industrial output in China rose 4.4% in August from a year earlier, far below economists' expectations of 5.2% growth and slower than the 4.8% increase in July, the National Bureau of Statistics said Monday.

China is looking to narrow the scope of its negotiations with the U.S. to only trade matters, seeking to put thornier national-security issues on a separate track in a bid to break deadlocked talks with the U.S.

The move is the latest in a series of steps officials in Washington and Beijing are taking to ease trade tensions ahead of high-level negotiations in October. It comes as President Trump moved to postpone until Oct. 15 a tariff increase on about \$250 billion in imports that had been set to hit on Oct. 1. Chinese negotiators, meanwhile, are making plans to boost purchases of U.S. agricultural products, give U.S. companies greater access to China's market and bolster intellectual-property protections, people familiar with their plans said. China also made public this week a series of exemptions to its tariffs on U.S. imports.

LABOR AND EMPLOYMENT

UAW Goes On Strike Against General Motors

Workers say GM strike aims 'to get back what we've lost'.

Nearly 50,000 GM UAW employees walked off the job at 55 plants around the U.S. at midnight September 16 to demand a better contract. It costs the Detroit automaker more than \$1 million for every hour those plants aren't making anything.

The strike is the first against GM since a two-day walkout in 2007. General Motors posted a \$11.8 billion dollar profit last year, according to its most recent earnings report. GM has announced



closing four factories and the union has been fighting those decisions. GM says the average hourly employee makes about \$90,000 a year. The UAW's Ted Krumm said the union will not make concessions. "This strike is about us. It's about standing up for fair wages, for affordable, quality health care, for our share of profits and for our job security,"

Toyota Transitions National Apprentice Program to The Manufacturing Institute

The Manufacturing Institute, the workforce and education partner of the NAM, and Toyota Motor North America announced a partnership this week to transition operation and stewardship of the Federation for Advanced Manufacturing Education program—created by Toyota to develop skilled workers—to the MI.



The FAME apprenticeship program focuses on teaching technical qualifications in advanced manufacturing, as well as helping students develop professional skills and a deeper understanding of the manufacturing industry. The program will serve as a model for apprenticeship education in manufacturing and bolster the NAM and MI's newly announced Creators Wanted Fund, an industry-driven campaign to inspire and drive more Americans to pursue careers in modern manufacturing.

ENERGY & THE ENVIRONMENT

New York Approves One of the World's Most Ambitious Climate Plans

New York lawmakers passed a sweeping climate plan that calls for the state to all but eliminate its greenhouse gas emissions by 2050. The Climate Leadership and Community Protection Act requires the state to slash its planet-warming pollution 85 percent below 1990 levels by 2050, and offset the remaining 15 percent, possibly through measures to remove carbon dioxide from the atmosphere.

If the state manages to hit those targets, it would effectively create a so-called net-zero economy, the ultimate goal of environmentalists and others seeking to slow the pace of global warming.

The New York Times reports “The challenges of reaching such goals are daunting. New York has so far only managed to reduce its emissions 8 percent between 1990 and 2015, according to the most recent state inventory. “New Yorkers are going to pay a lot for their electricity because of this bill,” said Gavin Donohue, the president of the Independent Power Producers of New York, whose members produce about three-quarters of the state’s electricity. “There’s no doubt about that.”



EPA Rolls Back Water Rule

EPA Administrator Andrew Wheeler announced the rollback of the 2015 “Waters of the United States” rule yesterday at an event in Washington, DC. The business advocacy community has been pushing for this repeal, winning a unanimous verdict on a procedural issue in the U.S. Supreme Court, among other legal actions arguing that the rule was both too broad and too vague, in some cases applying even to dry land, and thus placed an undue burden on manufacturers.

Administrator Wheeler said of the repeal, “Today, EPA and the Department of the Army finalized a rule to repeal the previous administration’s overreach in the federal regulation of U.S. waters and recodify the long-standing and familiar regulatory text that previously existed.”

Trump Administration to Relax Restrictions on Methane

The Environmental Protection Agency announced in August plans to loosen federal rules on methane by allowing oil and gas operators to largely police themselves when it comes to preventing the powerful greenhouse gas from leaking out of new wells, pipelines and other infrastructure.

It also challenges the notion, championed under the Obama administration, that the federal government has the authority to regulate methane without first making a detailed determination that it qualifies as a pollutant under the Clean Air Act. If successful, that change could hamper future administrations from enacting tougher restrictions on methane. Already, the Trump administration has taken several steps to limit the government’s ability to regulate other greenhouse gases in the future, including in a recently finalized rule on carbon dioxide emissions from power plants.

TRAINING TODAY'S WORKFORCE FOR TOMORROW'S JOBS

NEW! Pre-Apprentice and Related Instruction for Apprentices
Safety Training | 3D Printing
Electrical Theory | AutoCAD | Mastercam
CNC | Leadership | Project Management



SUNY Ulster
Start Here. Go Far.

Visit collegecentral.com/sunylulster to post local jobs.

Training available at your site or ours.
For more information contact reerb@sunylulster.edu
(845) 339-2025 or visit us at sunylulster.edu

selux



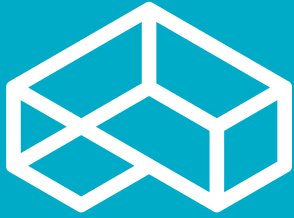
Premier Hudson Valley Employer

Selux Corporation, located in Highland, New York, has a successful track record of tremendous growth and sustainability as a worldwide manufacturer of architecturally-designed luminaires. We offer a great variety of interesting work in both manufacturing and office environments, allowing our employees to grow in their careers.

Please submit your resume to selux.hr@selux.com to be considered for employment

Engineering
Manufacturing
Marketing
Customer Support

5 Lumen Lane • Highland, NY 12528 • 845.854.1400 • www.selux.us



ARCONIC

Innovation, engineered.



Innovation
Durability
Exacting Standards
Flawless Performance



Arconic Inc. (NYSE: ARNC) creates breakthrough products that shape industries. Working in close partnership with our customers, we solve complex engineering challenges to transform the way we fly, drive, build and power.

Arconic Fastening Systems, 1 Corporate Drive, Kingston, NY 12401

LEADER PROFILE

Jennifer Clark, Director of Manufacturing Operations Global Foundries | WITH HAROLD KING

EMBRACING NEW IDEAS

"BY ALWAYS
LOOKING TO
DO THINGS
BETTER, YOU
CREATE A
CULTURE THAT
EMBRACES
NEW IDEAS
AND REMAINS
FOCUSED."



Jennifer Clark at Global Foundries holding a silicon wafer.

JENNIFER CLARK really liked math and science in high school and found herself to be good at both but never thought about what that meant in terms of a career. HV Mfg sits down with Jennifer to discuss her rising career path after a degree in Chemical Engineering and about her role as Director of Manufacturing Operations for Global Foundries.

HV MFG: Thank you for agreeing to talk with us this morning. How did you come to work in the manufacturing sector?

JC: When I was 17 years old, in high school in Northeast Ohio—the Canton area—I really liked math and science. I was also pretty good at both but never really thought about what that meant in terms of a career. One day in my junior year some people from The Timken Company visited the school to talk about careers in the steel industry, specifically engineering careers. I learned a lot from that visit because, really, I had no idea what manufacturing was at all. It all sounded great. There was a special co-op program at our school and I actually got a co-op/internship with Timken. I spent Thursday afternoons during my junior year in High School working for Timken in their quality department. I ended up working there that summer too. It was because of that experience that I decided to pursue Chemical engineering.

HV MFG: Is that what your degree is in, Chemical Engineering? Where did you go to school?

JC: I went to Case Western Reserve in Cleveland Ohio and yes, Chemical Engineering.

HV MFG: Case has an excellent reputation—did you enjoy your experience there?

JC: Yes, I did—it was great. I especially liked, and got a lot out of, their co-op requirement, and the study abroad option that were part of the program. Engineering students have the option take 2 semesters off from school to work in the industry. The first co-op I did with Timken was in the fall. The following year I spent the spring semester on co-op with IBM in Burlington. Then I spent 6 weeks that summer taking classes in London before returning to Cleveland for my senior year.

The co-ops were great. At Timken I worked at their bearing plant and got to focus on plant safety. For co-op the second half of the year Timken was a little slow confirming that I could work there again. While I was waiting for them IBM called and offered me the co-op at their semiconductor plant in Burlington. I hesitated because it was not what I was used to and it seemed so far away. But the manager called me and laid out all the reasons why I should accept it. He was very convincing and I said yes and went to Burlington. That was great experience. I liked it and did well enough that they offered me a full time job there after graduation.

HV MFG: That's how you came to work for IBM. How did you get from Burlington to East Fishkill?

JC: So that was in 2001 when I started working full time and I was working in Lithography in Burlington.

HV MFG: Let me interrupt you for a minute, can you explain what “lithography” is in the semiconductor process?

JC: Sure, in the manufacture of semiconductors we take the silicon wafers and we use a light-sensitive photoresist process to write patterns on them. This is a huge simplification, but the patterns are then etched and eventually filled in with metals or other materials.

It was about this time—actually around 2003 that IBM was planning to invest in 300mm wafers. This was a huge step forward and would mean much greater throughput and efficiency. Burlington had a pretty stable, older workforce—especially in Lithography so my chances to advance there were pretty limited. IBM was building the 300mm plant here in East Fishkill. New plant, new technology—it seemed like good timing and a good opportunity for me to move.

An operator responding to a Lithography tool.



HV MFG: That IBM 300mm plant is the building we are in now?

JC: Yes, with a few additions and modifications through the years. IBM sold to GLOBALFOUNDRIES in 2015. We are now GLOBALFOUNDRIES Fab 10, though that will eventually change with the transition to ON Semiconductor's ownership—they already have another plant with a Fab 10 designation.

HV MFG: That's something we definitely want to hear about but first, how did you get from Lithography Engineer to Director of Manufacturing Operations?

JC: My first move was from Lithography to Integration sometime around 2006. I liked lithography but integration was a little more interesting. Basically you got to work with all the different



A recent "Take Our Children to Work Day" event allowed guests an up close look at tool components.

manufacturing processes and technologies within the process. I remember one time when I developed a litho process improvement. The idea was sent to integration and they were able to implement it. The integration team got a lot of the credit for the improvement and I thought to myself it might be better for my career, and more interesting to work in that field. From there, in 2010, I took my first management role in the CFM team (Contamination Free Manufacturing). I was in charge of about 15 people.

HV MFG: IBM is well known for its leadership training, did you receive any at this point?

JC: Yes, I attended a 3 day session in Armonk. IBM calls it "Basic Blue." It was very valuable and gave me some insights and skills

THE
Chazen
COMPANIES®
Proud to be Employee Owned

Civil Engineers • Land Surveyors
Environmental & Safety Professionals
Planners • Landscape Architects
Transportation Planners & Engineers



chazencompanies.com • 888.539.9073



The Hudson Valley's Most Complete Employment Service

Ethan Allen Recruitment Direct Hire Placement
Ethan Allen Staffing Temporary Staffing
Ethan Allen RPO Recruitment Process Outsourcing
Ethan Allen HR Services Professional Employer Organization (PEO)

THE COUNCIL OF INDUSTRY'S PREFERRED PROVIDER

COI MEMBERS: CALL NOW TO HEAR ABOUT OUR DISCOUNTS AND OFFERS!

www.eaworkforce.com

53 & 59 Academy St. Poughkeepsie, NY 12601 845.471.9667
21 Old Main St. Fishkill, NY 12524 845.896.7766
594 East Main St. Middletown, NY 10940 845.220.1102
660 Aaron Ct. Kingston, NY 12401 845.943.2945



I use all the time. In 2012, I was promoted into operations and worked on an important project for our production Control Center. I had FOUP responsibility.

HV MFG: “FOUP” Responsibility?

JC: Right, FOUP stands for Front Opening Unified Pod. They are basically plastic crates on an automated conveyor system. Semiconductors are made in a highly controlled, clean environment. FOUPs are the way we move the wafers from one operation, or process, to the next without contaminating them. It's all highly automated. Programming the movements of the FOUPs is a vital part of the efficiency of the entire operation.

In 2015, GF (GLOBALFOUNDRIES) bought the 300mm site from IBM. Basically we all just became GF employees overnight on July 1st 2015. I became the Etch Module Manager with 90 people reporting to me. Around that time, we were growing our internal maintenance skills and my team grew quickly. In 2018, I was made Director of Manufacturing Operations with 185 people reporting to me.

HV MFG: You obviously are getting things accomplished to move into these leadership roles so quickly. What are some of the things you think make a good leader? What advice do you give young people looking to get into leadership roles?

JC: Ask questions—lots of questions and help people clarify their answers. Focus on facts, not opinions or guesses. Problems are solved—whether they're technical, or personal—when we focus on the facts and deal with their root causes, not the symptoms. Also “Go and See.” Be on the floor. See what is going on and be available to everyone. Identify and implement best practices.

FOUPs travelling automatically for product delivery along a conveyor system.



By always looking to do things better, you create a culture that embraces new ideas and remains focused.

HV MFG: Do you have any favorite leaders from industry, or history? Anyone you try to emulate?

JC: I can't think of any historical leaders, not off the top of my head, but I have been inspired by Sally Helgesen. She is an author, speaker and coach and I have read a few of her books including “How Women Rise.” That book talks about the habits that hold women back as they seek to advance to leadership positions in their organizations. It is interesting because the very traits and habits that work for women early in their careers might actually be sabotaging their future success. One thing, for example, is being good at details. That helps you tremendously in your few jobs, but in order to rise to a leadership role you will need to delegate the details and focus on the bigger picture. It makes a lot of sense to me.

HV MFG: That's a nice segue to the next question. What is it like being a woman in this field? What were the challenges to getting to where you are now?

JC: There were challenges and there are challenges. Until that visit to my High School from Timken Steel I thought I would get into psychology. Even though I was one of the best math and science students in my class nobody was encouraging me to pursue engineering. As a 17 year old I didn't know what all the opportunities were for me. When I did decide to go into engineering I chose Chemical Engineering, in part because that is the field that had the most women in it. Even today all of my peers are men so there is bit of isolation, and also a pressure to do well. I feel a responsibility to set a good example and encourage girls to pursue these STEM careers.

In 2016, I was selected to attend a women's professional development conference at Smith College in Northampton Massachusetts. It was a program for senior leaders in science, technology, and engineering organizations and it was a fantastic experience. I learned so much and met so many great women who have become part of a great support network for me. It was there that I learned about how common “Imposter Syndrome” is with women, where we doubt our accomplishments and fear being exposed as a “fraud” even though the accomplishments are real and the recognition sincere. I also learned to find my own brand and to “own” my career and to be honest about what I am after. It was truly a transformative experience and I believe I am more comfortable and confident as a woman who is a leader in tech.

So I try to be a good example—as a leader, as a wife (my husband also works here for GF), and as a mother to my 8 year old daughter as well. I work hard, and pretty long hours, but when I'm home I'm home and don't have the email up all the time. Of course emergencies happen and you have to handle them. Being responsible is also a good example. Striking that balance is an important example to everyone on our team.

HV MFG: You mentioned ON Semiconductor's purchase of this facility. Is that a good or bad thing? What is that timeline?

JC: I think it will be a very good thing for us—and the community. We will be ON's only 300mm fab. They own dozens of fabs and we will be a key resource for them. ON provides technologies for things like energy efficiency, power management, sensors, logic, connectivity, 5G and so much more. They help their customer solve unique design challenges in automotive, communications, computing, consumer, industrial, medical, aerospace and defense applications. East Fishkill will become a part of those solutions.

We are transitioning from GF to ON and those transitions should be completed at the end of 2022.

HV MFG: What's next for the semiconductor industry? Is Moore's Law still driving what you do?

Making chips that are half the size and twice as fast every 2 years, is not what is driving the sector anymore. Now its differentiation and customization.



Co-workers Olivia Smith-Walters (L) and Kelliann Holtz (R) along with Jennifer Clark are part of the GLOBALWOMEN network in Fab 10.

JC: Moore' Law—making chips that are half the size and twice as fast every 2 years, is not what is driving the sector anymore. Now its differentiation and customization. Chips need to be designed for things like the internet of things, 5G, power management, mobility, automation and autonomous cars that is where the future lies.

HV MFG: What do you think are your biggest challenges in the next few years?

JC: Well, the one that looms large is workforce. As I just mentioned the future of the industry lies in design and customization. That requires talented people to design chips and talented people to manufacture them. We have talented people here now but we need more. Bringing talented, skilled people on board is going to be the biggest challenge.

HV MFG: GLOBALFOUNDRIES has been a Council of Industry member since 2015 and you joined our Board of Directors in 2017. What have you found to be the most valuable part of your membership with the Council of Industry?

JC: I really like being a part of the Board and that networking opportunity. I also really like the tours of member facilities. The tour we did a few months ago of Bell (Flavors and Fragrances) was great and it is so interesting to see how other organizations do things like quality and Lean.

I also like the work the Council is doing on workforce. The apprentice program is great and your help connecting manufacturing companies with schools is tremendously important. Remember, it was a visit by a manufacturer to my high school that started me on this journey!

HV MFG: Thank you so much for your time—this was very interesting.

JC: Thank you—it was fun!



BUILD YOUR SKILLED WORKFORCE.

The new \$14.5 million Gene Haas Center for Advanced Manufacturing Skills is one of the leading training centers for the manufacturing industry in the United States.

We encourage you to proactively find job candidates within your community and help fund their training at Hudson Valley Community College.

WHY?

You'll gain dedicated, highly skilled employees who can serve your company for the long term.

**FIND OUT HOW HUDSON VALLEY COMMUNITY COLLEGE
CAN HELP YOU BUILD YOUR BEST WORKFORCE.**

Professor Dave Larkin | (518) 629-7381 | d.larkin@hvcc.edu

www.hvcc.edu



The State University
of New York

LEAN SIX SIGMA PRINCIPLES

DELIVERING EFFECTIVE CHANGE TO COMPANIES IN THE HUDSON VALLEY

LEAN SIX SIGMA

“We were able to reduce patient cycle time, free up physician time and increase throughput, aka revenue!” states Amelia Gifford, graduate of the Lean Six Sigma (LSS) Green Belt program offered by the Rochester Institute of Technology (RIT) at Dutchess Community College (DCC) when she worked at Adirondack Oral and Maxillofacial Surgery in Albany.

Lean Six Sigma, the result of merging two continuous improvement approaches, has become a significant force within organizations in all sectors to optimize processes and drive out waste. By combining Lean with Six Sigma, organizations are achieving both speed and accuracy.

LSS utilizes the **DMAIC** (Define-Measure-Analyze-Improve-Control) structured method (see Figure 1) to improve processes with a focus on reducing waste and using data driven decisions to drive customer satisfaction and bottom-line results. While LSS may have started in the manufacturing sector, it is just as effective in the transactional or administrative segments of any business. It is being applied to services, healthcare, education, not-for-profit, and government sectors. Traditionally, individuals and organizations immediately start brainstorming solutions when a

problem emerges, resulting in short-term gains and the need to revisit the issue in the future. Instead, DMAIC seeks to implement a breakthrough improvement that is more lasting.

DMAIC starts by defining the project in terms of the objectives and the resources that will be required. The “**Define**” stage focuses on identifying a clear problem statement and project objectives, and culminates with the signing of a Project Charter, signifying the approval of management to move forward. In the “**Measure**” stage, data and information are gathered that will help to characterize the current process capability and better identify problems. In the “**Analyze**” stage, data and

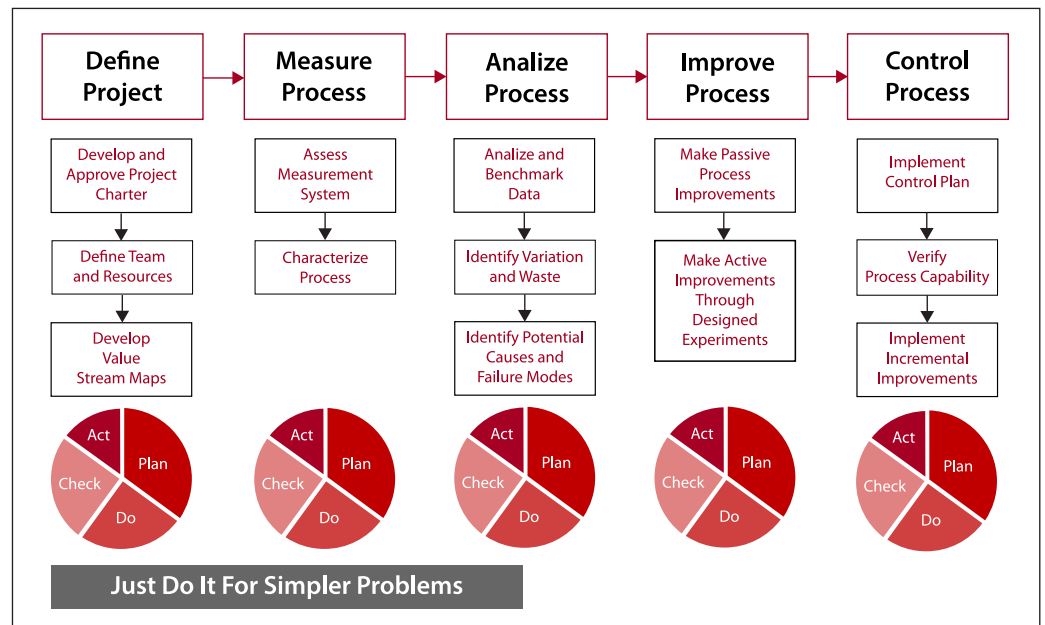


Figure 1: DMAIC Process

information are used to identify variation, waste and ultimately the root causes of the problem. Once the root causes are understood, the team can move to the “**Improve**” stage where improvement strategies and plans for implementation are developed and the necessary changes are implemented. Finally, the “**Control**” stage is critical to ensure that the improvements are sustained. This might include updating work instructions and documents, providing training, and having a method to monitor the process performance. Through the DMAIC process teams likely will identify simpler problems or opportunities which often result in ‘quick wins’ for the organization.

Individuals leading teams as well as some team members require training in LSS principles, skills, and tools. In order to designate the different levels of training available, the convention of awarding Yellow, Green and Black Belts has been developed. Two of the most popular are Yellow Belt and Green Belt certifications. Note however, that there is significant variation in the certification programs among training providers. The programs offered by RIT are highlighted in Figure 2.

YELLOW BELT

The Yellow Belt (YB) program is an introduction to basic problem solving tools as well as the DMAIC process. YB training lasts three days and has been popular with a wide array of organizations. During the training participants work in teams on specific process improvement problems using the DMAIC process and the tools presented in the training. The program outcome will be a set of recommendations from each team on steps toward an improvement strategy for consideration by management. The team is not required to implement a solution in order to be certified, but many organizations choose to follow through either with the YB team or with others.

One organization that has a good support system for Yellow Belts is the Hudson Valley Federal Credit Union. At the Credit Union participants are nominated by their direct managers. During the program, staff members begin a project that they will complete upon returning to work, presenting their results to an internal Process Council. The standardized method for project execution begins with buy-in from senior management and ensures that teams celebrate their accomplishments and successes. This structure and management support

is critical. The Organizational Excellence team also delivers half-day White Belt overview training to all employees within 180 days of hire date. In the past two years the Credit Union has seen a 35% increase in staff suggestions for process improvements.

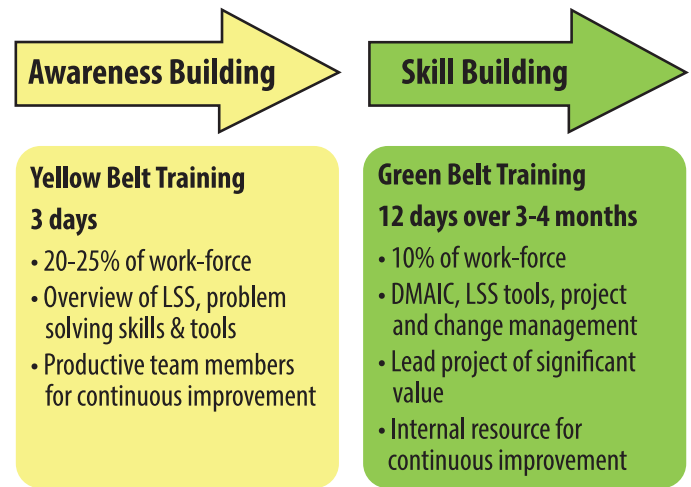


Figure 2: RIT Yellow Belt and Green Belt

Tim Cunningham, Vice President of Manufacturing, at Bell Flavors & Fragrances, has sent 15 employees to RIT’s YB training at SUNY Rockland, SUNY Dutchess and SUNY Orange over the past several years. Tim says “the value of the training is that it provides folks with a common language when it comes to improvement and finally, people understand that change is ok. The goal here is to develop the structure to take full advantage of the training, develop folks who can be drivers of change, and also begin to change the mindset of the organization.” Tim is establishing a steering committee to discuss possible projects and develop a structure for how the projects will be managed. He is planning to have more employees attend the YB program and at least one achieve Green Belt certification to help continue and support the upward direction of the organization.

GREEN BELT

RIT offers a comprehensive Green Belt (GB) program where students receive the equivalent of 12 days of training plus completion of a project. GB training provides individuals with the tools necessary to clearly define a problem, gather and analyze data and information, and implement improvements that can be sustained. The results have been outstanding, with many organizations reporting significant financial benefits, enhanced

customer satisfaction, and reduced costs. The sessions are highly interactive and include both classroom assignments and structured exercises. In addition, participants are required to utilize the tools learned on a project specific to their organization. The benefits of these projects typically more than cover the cost of training.

Given the duration and time commitment of the GB program, participants need to be selected wisely. Ideally, they should have a good understanding and knowledge of the organization, its' systems and products/services, and be a respected member of the organization with leadership potential. They should be team players and possess good communication, analytical and project management skills. They do not need to be Lean Six Sigma Yellow Belt certified. Many organizations often

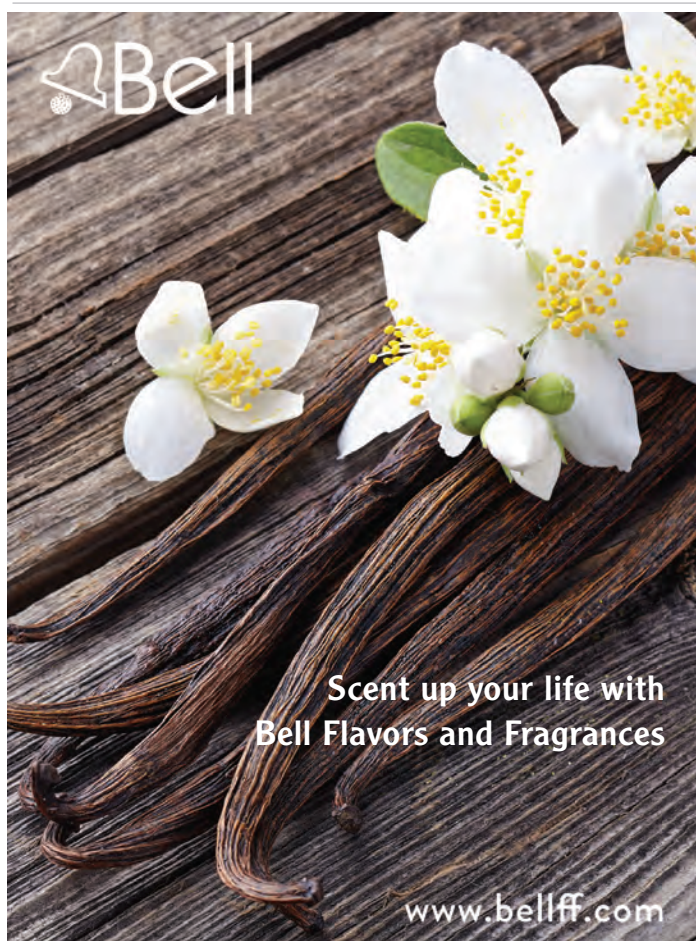
Ratings of Importance for Filters		9	8	7	7	7	6	Total Score
Projects	Filters	Financial Impact (Profit or Cost Savings)	Decrease Reworks / Errors	Improve Information and Data Management	Increase Customer Value (Willing to Pay For It)	Increase Employee Value (Retention & Morale) for Top Performers	Time & Resources to Complete Project	
	Reduce time from needs analysis to proposal	9	6	9	1	6	6	277
	Increase field tech load capacity	6	6	6	6	6	6	264
	Ineffective product installation and customer support policy	6	9	1	3	6	9	250
	Reduce administrative rework (paperwork, data entry)	3	9	9	1	9	3	250
	Customer satisfaction measure	9	1	1	9	6	6	237
	New employee orientation program (improve employee up to speed)	1	9	6	1	9	6	229
	Improve internal communication	1	6	9	1	9	6	226
	Improve recruiting	3	6	1	6	6	9	220
	Reduce technical rework (billing trouble, tickets, work orders, and contracts)	3	9	6	1	6	1	196
	Product portfolio offerings	6	1	1	6	6	6	189

Figure 3: Prioritization Matrix

target emerging leaders as appropriate candidates for LSS GB certification.

Jenniferr Witmer, Quality Assurance Coordinator at Metallized Carbon Corporation, also was a LSS GB student at DCC. For her, “the most valuable part of the training was the different Lean Six Sigma tools that can be used to find the root cause of the problem and upgrading your knowledge to different environments, no matter the industry.” The certification process is comprised of hands-on work on business projects and experience with implementation of principles to real life situations. Benefits have included improvement to business processes, sustained quality improvement and cost reduction in different areas of the business.” After certification, she became the team leader for the audit process within her organization. LSS tools that she has continued using to reduce waste, defects, and customer complaints, include brainstorming, the cause & effect matrix, control plans, cost of quality, 5S, 5 whys, setup reduction, measurement system analysis, FMEA and flowcharts.

An important element of LSS is project selection. Encouraging all employees to identify processes with waste as well as reviewing data on process performance can elicit a large number of potential projects. Given the limited resources available to work on process improvement, these project ideas need to be reviewed and assessed based on strategic goals and other organizational priorities. This is where a prioritization matrix with filters and a rating scale can be helpful to rank potential projects and arrive at a consensus (see figure 3 for an example from one organization). This can



Green Belt/BlackBelt		Organization/Division/Unit				
Business Unit Leader		Financial Reviewer				
Sponsor		Sponsor Phone and Email				
		Target and Completion Dates				
Management Approvals		Date Approved				
Element	Description	Team Charter				
1. Process:	Describe the process in which the opportunity exists. Attach a SIPOC model to show relationship to suppliers, inputs, outputs, and customers.					
2. Problem Statement:	Describe the project's purpose, scope, and linkage to strategic objectives.					
3. Objectives:	What improvement is targeted and what will be the impact on the key indicators. Examples of key improvement indicators are: <ul style="list-style-type: none"> • RTY - Roll Throughout Yield using % or Defect Per Unit • COPQ - Cost of Poor Quality in \$ 	Improvement Indicators	Baseline	Goal	Entitlement	Units

Figure 4: Project Charter

greatly reduce the likelihood of spending time on low-impact projects.

Note that LSS projects should not include those where a solution has already been determined and is ready to be implemented. This also applies to a very general situation such as implementing software. Instead, a good LSS project is one that will benefit from the DMAIC process and will allow the team to uncover a potentially creative, breakthrough solution.

GB's typically pair up in teams of two and spend approximately 6–8 hours each week working on a project. Aligning project work with an employee's job responsibilities can help to minimize the impact of this time commitment. Formal tollgate reviews with the project sponsor are held at the completion of each phase of the DMAIC process. Project sponsors have managerial responsibility and can assist by removing barriers and providing support as needed, by mentoring and coaching the GB.

Once a project has been selected and assigned to the GB, a team is formed and tasked with further detailing the process under review, determining a problem statement, and identifying the project objectives including potential financial returns. This information is summarized in a one-page project charter document (see Figure 4).

In addition to a description of the process, the

problem statement, objectives and potential business results, the charter also identifies the unit within the organization where the project resides, key stakeholders, team members, potential benefits for customers, and additional resources and special requirements that may be needed. Once the project charter is reviewed and approved by the sponsor, it is essentially a contract between the GB and the project sponsor.

The project component of the LSS Green Belt program is one of the major factors in its success. Organizations are encouraged to pursue major projects that can have significant benefits. The value of the projects will vary depending on the type and size of the organization. In the past 5 years, RIT's CQAS organization has trained 400 GB

students from approximately 100 organizations. About 50% have been from manufacturing organizations, 30% from service organizations, and 20% from healthcare and education. As reported by those organizations, typical projects have realized financial benefits between \$25,000 - \$40,000. The teams working on these projects are usually cross-functional, which ensures that different viewpoints are considered. Projects frequently take several months to complete after training has ended. With leadership support, significant impact can be achieved, not only by increasing profitability but also by enhancing customer satisfaction and ultimately changing the mindset of individuals and the culture of an organization.

Amelia Gifford states, "The most rewarding and valuable aspect of the LSS green belt training was that I was able to implement the tools & techniques I learned in the classroom at my organization. I saw firsthand the power of LSS! I find myself continuously evaluating waste around all processes in my personal and professional life."

Vincenzo Buonomo is a senior program manager and instructor at Rochester Institute of Technology's Center for Quality and Applied Statistics. He can be reached at vxbasp@rit.edu or 585-475-7207.





Why US?

CONVENIENCE. We offer a broad range of products and services to help make your business life easier.

EXPERIENCE. Benefit from our expertise and personal attention, local decision making, and flexibility in considering your unique situation.

COMMUNITY. We care about the communities we work and live in. We support over 265 Hudson Valley non-profit organizations year after year.

- ✓ Business Banking
- ✓ Business Loans
- ✓ Payroll Services
- ✓ Insurance Services
- ✓ Tax Services
- ✓ Bank at Work Program
- ✓ Remote Deposit Services
- ✓ Merchant Services
- ✓ Mortgage Lending
- ✓ Personal Banking
- ✓ Mobile Banking Services

Because your business matters to US.

Ulster Savings

866.440.0391 / ulstersavings.com / Locations throughout the Hudson Valley

🏠 EQUAL HOUSING LENDER / MEMBER FDIC

Investment, Tax, Payroll and Insurance products and services available through Ulster Insurance Services, Inc. and Ulster Financial Group, Inc., subsidiaries of Ulster Savings Bank, are NOT FDIC INSURED.



EMERGING LEADERS

Engineering Team, Pratt & Whitney | BY ALISON BUTLER

BUILDING A TEAM TO GO BEYOND



A team of young engineers at Pratt & Whitney's Advanced Coatings Technologies (ACT) facility in Middletown, New York is finding creative and innovative solutions to produce critical jet engine components more effectively and efficiently.

Worldwide, Pratt & Whitney is a leader in the design, manufacture and service of aircraft engines and auxiliary power units. They produce large commercial engines that power nearly 30 percent of the world's mainline passenger aircraft fleet. Their military engines are used by 34 armed forces throughout the world. At the company's ACT facility, many critical components are covered with a specialized coating that increases the life span of the part and enables it to function in the extremely harsh and hot conditions that are inside a jet engine. These parts, which are produced at other sites, vary greatly in size and function, and once coated move on to be assembled at yet another location.

ACT is a critical contributor to Pratt & Whitney's jet engine production supply chain; to ensure that components are of the highest quality and produced in the most effective manner, the company employs a team of engineers to continuously monitor, review and improve the process. The team is made up of five individuals who work in coordination with product teams, at other Pratt & Whitney locations, to support the design of parts and coordinate the manufacturing process including the coating treatment which will eventually be applied to the engine piece. This process includes a manufacturing readiness review, which evaluates a part's performance - how can this portion be designed to be more "manufacturable," what is the capacity, capability, and yield quality standard for this part, and what is the engine function standard for this item? Tens of thousands of parts go through the Middletown facility each month. This team of engineers needs to understand what each process requires, and if there are options in the materials

that can be used which is the best choice for the coating.

Members of the team come from a variety of backgrounds and bring different experiences and skill sets.

Scott Elliott is the Engineering Manager who put together the team that tackles these challenges. He has been with Pratt & Whitney for 21 years and oversees not only this team, but five other engineers and six engineering technicians. ACT was started in 1992 as a joint venture with another local aerospace company. In 2013, ACT became a wholly owned subsidiary of Pratt & Whitney, and its second expansion in 10 years began. The organization has grown from 75 employees to over 230. Elliott was brought in from a facility in Connecticut to lead the engineering team during this period of rapid growth.

Chelsea Travers, Staff Manufacturing Engineer, has been with Pratt & Whitney for eight years, and at the ACT facility in Middletown for five of them. She received her undergraduate degree from Worcester Polytechnic Institute in Massachusetts and worked at Pratt & Whitney's East Hartford, Connecticut, facility before coming to ACT.

Peter Hemme, Senior Manufacturing Engineer, has been with Pratt & Whitney for three years and previously worked for another local aerospace company. Hemme received his Bachelor of Engineering degree from Bucknell University in Pennsylvania. A family friend told him about the opening at Pratt & Whitney right before their expansion.

Tim Quinn, Senior Manufacturing Engineer, has been there three years but has many more years of experience working at other area manufacturers including hands-on experience with machine



Manufacturing industry attorneys at Bond provide coordinated, comprehensive legal counsel on all business matters affecting manufacturers such as:

- environmental matters
- OSHA and other workplace regulations
- product safety
- trade secrets and other intellectual property issues
- labor and employment



ALBANY BUFFALO GARDEN CITY NEW YORK CITY ROCHESTER SARATOGA SPRINGS SYRACUSE UTICA
22 Corporate Woods Boulevard, Albany, NY 12211 • 518.533.3000

maintenance, and Health & Safety. Quinn did his undergraduate degree at Rochester Institute of Technology (RIT) in western New York and his graduate degree at Clarkson University's Beacon Institute. A friend from RIT told him about the opening at Pratt & Whitney.

Monal Amin, Senior Manufacturing Engineer, specializes in ACT's latest generation plasma coating and comes from Kenya where she worked with fiberglass manufacturing. Amin completed her undergraduate degree at Boston University and has been with the company over three years now.

"I like working at Pratt & Whitney as they place a strong emphasis on innovation because 'going beyond' is not only about furthering the aviation industry,

it's about allowing each employee to feel empowered to make decisions in order to solve complex problems."

In putting the team together Elliott looked for a variety of things. He wanted a diversity of experiences and expertise, and he wanted people who had strong individual engineering skills but who also could work well in a group. "I think this group is definitely greater

than the sum of its parts," Elliott said. "And that's saying a lot because it is made up of some strong and talented parts." He adds that he looks for creativity when scouting engineers because dealing with coatings is complicated and nuanced. "Unlike machining processes, you can't directly measure the output. There is a lot of problem solving that happens to understand root causes. When interviewing I would say, "Tell me about



From left to right: Chelsea Travers, Peter Hemme, Tim Quinn, Scott Elliott, and Monal Amin

All Recycling. It's All about Innovation and Saving

We specialize in creative solutions for wire and scrap metal recycling to cut waste stream and maximize your returns.



Call **845-562-7530**

so we can help you start saving today.

www.AllRecyclingNY.com

Recyclers of all scrap metals and e-waste.
Equipment and vehicle salvage.
Roll-off container and flat bed service available.

All Recycling Inc. • 279 S. William Street • Newburgh, N.Y. 12550

a time you had to solve a problem you didn't know the answer to." Much of what they are working on here hasn't been taught in schools because it is being developed right here, right now. This is the leading edge technology.

Since the facility is still expanding the team is able to actively participate in how the production line is set up. "We were able to

"I think this group is definitely greater than the sum of its parts," Elliott said. "And that's saying a lot because it is made up of some strong and talented parts."

set up and layout the building we are in," said Travers. "We use Pratt & Whitney's Achieving Competitive Excellence, or ACE for short, system of process certification which adds an efficiency to the process with quality control and product control."

"We have to be ready for the next generation of machines, what that process will look like, while still looking at the machines we have now and reassessing the processes to see if we can get more out of them. We try to maximize utility with tooling designing to get the most out of the machines we have," explains Quinn.

ACT has recently added another building for additional capacity and the latest technologies. Because the team is growing so rapidly it is important that the team members are self-motivated and that they are able to get their hands on the equipment to figure out what works and what doesn't. Elliott explains, "People have assignments here where they can actually work on the machines themselves which speeds up the process. It's a longer learning curve when you can't touch a machine that you are designing a process for."

Amin's specialty is the latest plasma spray process which is just taking off. "Technological advancement is part of our culture." Monal explained, "I joined the company when this new equipment had just been installed, it has been a satisfying journey from getting the equipment and cell up and running to coating production hardware today."

Each team member has or is pursuing an advanced degree, some are in engineering, but some are MBA's. Pratt & Whitney encourages this with their Employee Scholar program that contributes towards graduate school with paid time off for homework and tests, something appreciated by all the team members. The company is also open to new ideas that this advanced learning leads to. Quinn explains, "Pratt & Whitney provides me with the time and capital to learn and drive change, as well as the support to implement the new ideas."



Alison Butler is the Director of Member Engagement, The Council of Industry.



GLOBALFOUNDRIES®

A trusted source for semiconductor technology today... and the Connected Intelligence of tomorrow



GLOBALFOUNDRIES
Changing the World
From Dutchess County

GLOBALFOUNDRIES is...

- A 'new' neighbor with a 50+ year history in the mid-Hudson Valley
- Home to 1,700 employees
- An innovation hub for state-of-the-art technology
- A trusted source for U.S. national security & defense
- Dedicated to our community through contributions and passionate volunteers



Compressed Air Isn't Free

Our process includes a walkthrough analysis of your current system

- Discuss the opportunities that exist
- Perform a datalogged air audit to document the current system (You Can't Manage what you don't Measure)
- Provide multiple solutions for improving or upgrading your current system
- We work closely with your local utility to obtain rebates for you when applicable.

The cost of air



Where does the air go?



Comairco Compressed Air Specialists, takes the mystery out of compressed air

Air Audits | Service & Parts for all makes & models | Electric Rentals | New Energy Efficient Equipment

Buffalo | Albany | Rochester | New Jersey | Long Island | Hudson Valley | Syracuse

845-224-3027 | www.comairco.com

Manufacturing Intermediary Apprenticeship Program (MIAP)

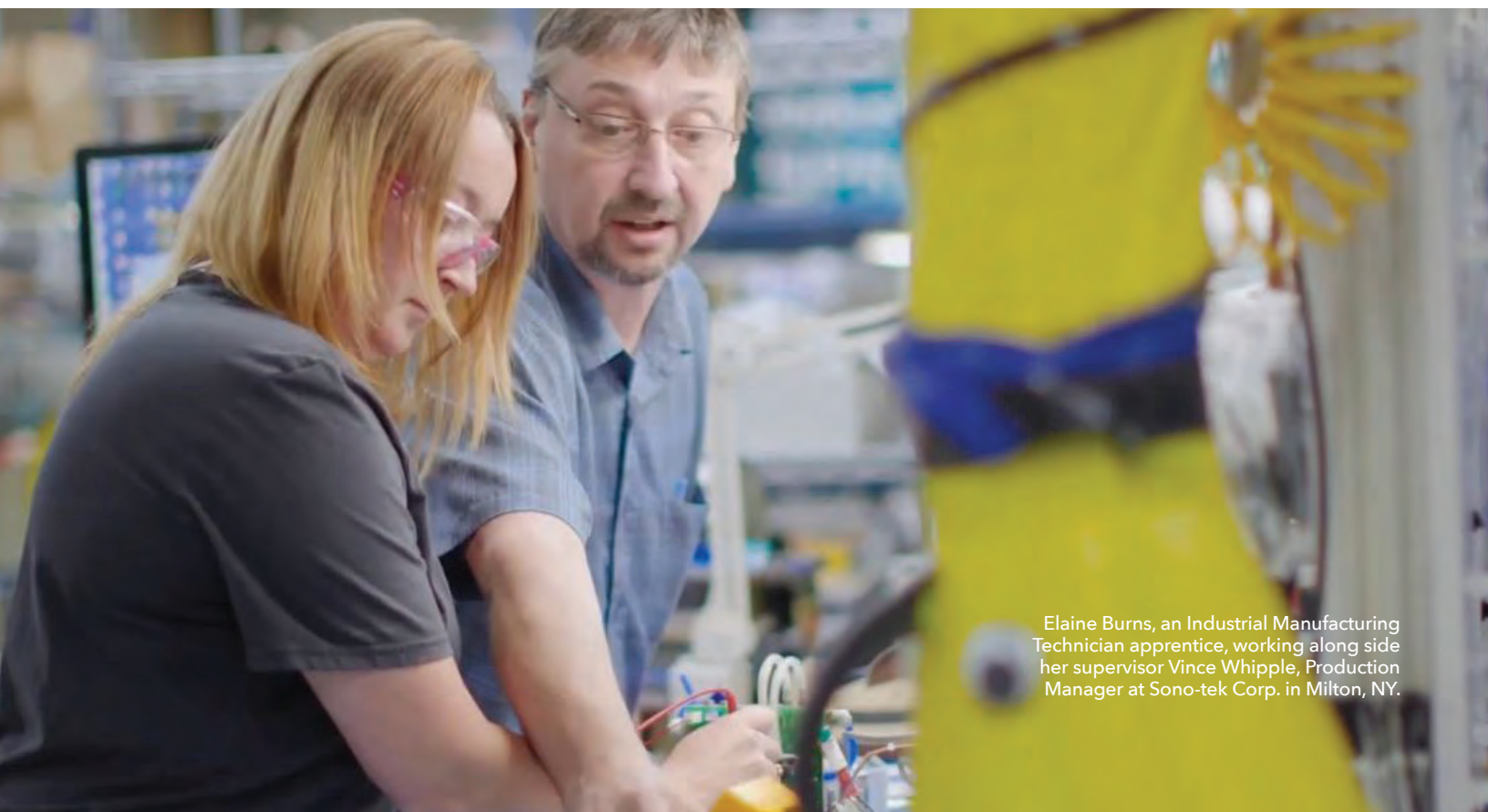
In 2016, the NYS Manufacturing Alliance in collaboration with the New York State Department of Labor created the Manufacturing Intermediary Apprenticeship Program (MIAP), a public private partnership where associations like the Council of Industry bring apprenticeships to its small manufacturing members. Prior to this innovative solution, apprenticeship programs in New York State were primarily limited to larger organizations with the resources to register, manage and support the somewhat onerous state requirements.

In September of 2018 the Council of Industry, after about eleven months of ramping up

and securing state approval, registered its first cohort of apprentices. Some of those apprentices received previous credit for their time on the job and will complete their accelerated apprenticeship this November. Since then the program has added 60 apprentices from nearly 20 companies.

MAKING APPRENTICESHIPS ACCESSIBLE

As a registered Department of Labor apprenticeship sponsor, the Council of Industry supports six manufacturing trades (CNC Machinist, Toolmaker, Maintenance Mechanic, Electro-Mechanical Technician, Quality Assurance Auditor and an entry level trade called Industrial Manufacturing Technician).



Elaine Burns, an Industrial Manufacturing Technician apprentice, working along side her supervisor Vince Whipple, Production Manager at Sono-tek Corp. in Milton, NY.

There is an outline of standardized work processes and coursework for each trade that apprentices must master, in addition to the required number of on the job training hours, which can range from 16 months (2,700 hours) to four years (8,000 hours).

“The biggest misconception about the program is that it is an administrative time hog.” Said Vince Whipple, Production Manager at Sono-Tek and mentor to apprentice, Elaine Burns. “It’s not, Serena Cascarano (Administrative Marketing Assistant at the Council of Industry) coordinates the paperwork and logistics and The Council of Industry makes it easy; the initial paperwork took less than 10 minutes.”

In September 2020, the program is eligible to expand and will likely add additional trades based on-demand. Some trades being considered are Information Technology Technician, Plastic Injection Molder and Welder.

Steven Lucy, Maintenance Supervisor at Viking Industries, is literally training the next generation, his son Greg. Greg has been with Viking Industries for nine years and is currently enrolled as a Maintenance Mechanic apprentice expecting to earn his Department of Labor Journey Worker credential later this year. “Greg was already working as a Maintenance Mechanic; he was already learning on the job, but it was informal, and his training could be pushed aside. We needed to do something now to fill gaps that we know are coming because of future retirements. As a family run business, we want to embrace the next generation while recognizing the family relationships can add a layer of complication. The apprenticeship gives us a formal, structured program that will allow us to build our bench and prepare our employees to succeed and make their own mark.” Rich Croce, President CEO, Viking Industries.

Elaine Burns works as an Electrical Assembler at Sono-Tek in Milton, NY. With no prior manufacturing experience, Sono-Tek registered Elaine as an Industrial Manufacturing Technician earlier this year. She spends much of her time building cables, assembling generators and circuit boards. Whipple added “the apprenticeship outline gave us the direction to get the most from her time on the job and expose her to various aspects of the trade. It’s our

hope she continues into another trade after she completes the requirements for the Industrial Manufacturing Technician. We are also optimistic that Elaine will earn her Associates Degree at SUNY Ulster while completing her related instruction requirements.”

Each apprentice has their own unique story. Some come into the program with previous experience hoping to prepare for a leadership role or promotion while others are moving up from unskilled positions. One apprentice was working as a temp employee, literally sweeping floors when he stumbled upon the apprenticeship job posting. Now he is learning a trade, increasing his income and working his way towards a transferrable credential.

ADDING CONTEXT - RELATED INSTRUCTION

Participation in the apprenticeship program requires the apprentice to commit to completing 144 hours of related instruction yearly. This is typically done on their own time and is the apprentices’ investment toward the credential. The purpose of mandatory related instruction is to ensure the program is educating individuals to understand the foundations of the trade; it is important for these apprentices to learn about the technology, science and theory behind the work they’re doing. This is how employees evolve and adapt as innovation and technology continues to elevate their positions.

Related instruction can be taken online through a manufacturing specific learning management system called ToolingU. ToolingU offers thousands of courses supplementing the on-the-job training required to earn the credential. MIAP has partnered with Tooling U, providing free licenses to registered apprentices (a \$500 value per apprentice). Online learning helps even the playing field for some apprentices, there’s no travel and they can take classes whenever its convenient. It has proven to be an excellent resource to companies who are seeking to offer a more robust training program but cannot justify a significant investment into online learning licenses.

INCENTIVES

ONLINE LEARNING LICENSE WITH TOOLING U
\$500 Per Apprentice

SUNY RELATED INSTRUCTION GRANT
\$5,000 Toward Courses at
Community Colleges

WDI SUPPORT
\$2,000 Per Apprentice
To offset the cost of training

APPRENTICE TAX CREDIT

1st Year	\$2,000
2nd Year	\$3,000
3rd Year	\$4,000
4th Year	\$5,000
5th Year	\$6,000

DISADVANTAGED YOUTH TAX CREDIT

1st Year	\$5,000
2nd Year	\$6,000
3rd Year	\$7,000
4th Year	\$7,000
5th Year	\$7,000

It Adds Up!
You + Us = Success!

RBT
LIMITED LIABILITY PARTNERSHIP
CERTIFIED PUBLIC ACCOUNTANTS BUSINESS DEVELOPMENT CONSULTANTS

2019 Times Herald-Record Readers' Choice 1st PLACE
2019 Times Herald-Record Readers' Choice 1st PLACE
2019 Times Herald-Record Readers' Choice 1st PLACE

Find us on: **facebook**

At RBT CPAs, it is our responsibility to understand your business from the ground up, and to gain insight into your changing needs. We forge long-term relationships built on integrity, quality, teamwork, harmony, commitment and innovation. Our goal is to deliver solutions that fully prepare you to meet the challenges unique

Call 845-567-9000 . www.rbtcpas.com
Offices in Newburgh, Wurtsboro & Poughkeepsie

Over 50 Years of Personal Attention & Solutions for Your Professional Financial Needs!

MORE THAN ONLINE TRAINING - COMMUNITY COLLEGE COMMITMENT

Online learning is convenient and helps apprentices launch into their program, but most would agree that it is not enough. For the Related Instruction to have the fullest impact, hands on experiences and classroom training are critical.

The State University of New York is supporting apprenticeships by offering trade related courses to all registered apprentices at no cost to the apprentice or the company. Through the SUNY Apprenticeship Grant, community colleges throughout the Hudson Valley can offer up to \$5,000 in tuition assistance to each MIAP apprentice. “This is a game changer,” said Alethea Shuman, VP of Sales and Engineering at USHECO, and SUNY Ulster Alum. “As a small company, it is difficult to provide our staff the resources that larger companies offer including courses at the community college, LEAN certifications or online learning. Through programs like MIAP and other workforce grants, we are now training high potential employees in preparation for future growth.” USHECO currently has three apprentices registered and enrolled at SUNY Ulster.

SUNY Ulster was an early partner of the MIAP apprenticeship program hosting a standing room only industry round table last fall. Since then they’ve been awarded the SUNY Apprenticeship grant, added a pre-apprentice package and \$5,000 of free courses to participating apprentices. Since hosting the roundtable, SUNY Ulster has recognized the breadth of the needs of local manufacturers and is developing new programs in response. This fall they added a MasterCam 2019 Associate Level Certification Prep course to which four local companies are sending employees.

Barbara Reer, Director Professional Technology Programs at SUNY Ulster explains, “For employers to have access to local training is essential. Moving employees up the career ladder is healthy for both the employee and the employer. SUNY Ulster will continue to develop programs in response to our local manufacturer’s needs. The College will be unveiling a series of Advanced Manufacturing micro credentials for spring 2020 and is excited about invigorating the community to embrace the vast array of good jobs the manufacturing community brings to the region.”

In 2019, Westchester Community College, SUNY Orange, SUNY Rockland and Dutchess Community College have all committed to supporting apprentices as well. As we approach the new year, it is encouraging to see community college engagement; soon companies in each county will have the opportunity to utilize the

Westchester Community College
State University of New York

**GROW YOUR PEOPLE.
GROW YOUR BUSINESS.
GROW YOUR BOTTOM LINE.**

Advanced Manufacturing workforce programs leading to industry recognized certifications.

- Introduction to Manufacturing / CNC Milling Operations / CNC Turning Operations
- NIMS Certifications (National Institute for Metalworking Skills)
- CAD / REVIT / SOLIDWORKS / AUTOCAD / CAD-3D

Customized, Quality Workforce Development Programs available to optimize employee performance and productivity

**VISIT OUR WEBSITE AT SUNYWCC.EDU/PDC
CALL 914-606-6658 | EMAIL james.irvine@sunywcc.edu**



Korey, a CNC machinist apprentice at kdc/one Kolmar, in Port Jervis, NY.

resources available and offer their apprentices free trade related classes. “We are excited by the support for MIAP by our Community Colleges.” said Harold King, President of the Council of Industry. “It’s all coming together so nicely – first DOL empowering the Council to act as an intermediary, then the Company’s hopping onboard, and now the region’s community colleges coming onboard and providing tuition assistance for related instruction. We are making strides toward closing the skills gap.”

PROGRAM COSTS AND INCENTIVES

The cost to enroll an apprentice into the MIAP program is a one-time \$750 enrollment fee, however, this fee is offset by numerous government and not-for-profit incentives designed to encourage firms to hire apprentices.

EMPIRE STATE APPRENTICESHIP TAX CREDIT PROGRAM

(ESATC) provides tax credits to certified New York State (NYS) Registered Apprenticeship (RA) program sponsors for hiring new qualified apprentices on or after January 1, 2018. The tax credit is available through 2022. A certified employer will be entitled to tax credits against income or franchise tax for each qualified apprentice. Enhanced credits are available to employers that hire disadvantaged youth as apprentices. Additional credits are available to employers that provide apprentices with the support of a mentor.

VETERAN GI BILL FOR APPRENTICESHIP & ON-THE-JOB (OJT)

Both apprenticeship and on-the-job training (OJT) programs are available for veterans using their U.S. Department of Veterans Affairs (VA) education benefits, including the GI Bill. These programs allow veterans to learn a trade or skill through training on the job rather than attending formal classroom instruction. The program offers benefits to business well as veterans. Businesses generally pay a reduced OJT/apprenticeship wage in addition, veterans in an approved program can use their GI Bill benefit to receive a tax-free stipend.

In addition to the state incentives, the Workforce Development Institute (WDI), a statewide not-for profit dedicated to growing and keeping good jobs in New York State, is also generously supporting our program. Manufacturers in our region have received grant funding from WDI to offset required related instruction, acquire OSHA certifications and attend mandatory safety trainings. In 2018, WDI created a simple ‘common app’ for companies with registered apprentices. This application was frictionless and offered companies \$2,000 per apprentice to support the cost of launching an apprenticeship program.

“The incentives are overwhelming, said Mark Harris, Director of Manufacturing at LoDolce Machine. LoDolce was the first company to sign on with the Council of Industry and we did so primarily because we needed supplemental training and the apprenticeship program came with standardized outlines and a free subscription to Tooling U. Since then they have added money towards SUNY classes, tax credits and administrative support; the incentives continue to get better and the administrative burden is getting easier.”

MIAP is an industry led public-private partnership that is putting talented, ambitious people on the path to great careers in manufacturing and filling the skilled positions firms need to keep their companies growing and prospering. In 2 short years the program has gone from a concept to more than 60 apprentices. And, with the continued support and commitment of all the partners, will continue to grow larger and stronger in the years to come.



Johnnieanne Hansen,
Vice President of Operations
& Workforce Development,
The Council of Industry

COMPANY PROFILE

Elna Magnetics | BY ALISON BUTLER

CHANGING THE MAGNETIC FIELD

From artificial hearts, to driverless cars, solar arrays and wind turbines, Elna Magnetics' products can be found in a wide variety of the world's most advanced technology. Elna Magnetics produces and distributes magnetic cores that are used in power applications. But what does that mean? When current flows through a coil of copper wire it creates a magnetic field. It was discovered many years ago that when an iron rod was inserted in the "hole of the wire donut" the magnetic field changed.



Jacob Montalbano loading parts for gapping.

The magnetic core is essentially the iron rod and it can change the properties of the electrical field surrounding it. This technology is the reason you don't get shocked when you ring a doorbell, the direct current (DC) powering the doorbell is converted from alternating current (AC) which is what is used to power our homes. The same is true for plug-in electric cars, and your cell phone, and just about anything else using DC current. Elna uses ferrite and other materials to produce ceramic cores that have electrical properties that can modify the characteristics of the magnetic field created by an electrical current. Elna's products are often a custom design and are used in applications that build products to modify a magnetic field for the medical, aerospace, semiconductor, industrial, and military industries.

These magnetic cores, which can vary in size, from something that would fit in the palm of your hand to ones that are 2 feet in diameter, are also very fragile since they are made of ferrite. Ferrite is a ceramic material made up of iron oxide, and blends of nickel, manganese and zinc. After firing the ferrite is like glass and quite delicate. In fact, when on-boarding new machinists, Joe Ferraro, President of Elna Magnetics, will have them pack or unpack the parts for several days before actually trying to machine it so they learn to respect the material's fragility. While a certain amount of chipping is allowed by industry standards, the tolerance is very low and a crack would compromise the part. Magnetic cores used for space and the medical industry have the highest quality standards.

When Elna got its start in 1955, Ulster County and the Hudson Valley were a center for ferrite manufacturing. Companies like Ferroxcube and National Micronetics were humming along employing hundreds of workers and setting industry standards. Elna was founded as a custom machine shop by an employee of Ferroxcube's Saugerties plant, who did the machining in his spare time.

The company has grown and evolved over the years. The original facility was a one-room schoolhouse in Woodstock, NY. By the mid-1960's the company had grown and moved into an old bowling alley, also in Woodstock, and its focus was the custom machining of parts. In the mid-1980's the company changed its marketing strategies and Ferroxcube chose Elna to be its partner, establishing a long-term relationship that continues to this day even after Ferroxcube closed its Saugerties operations in 1999. In 1995 Elna became a distributor of Fair-Rite Products as well. Fair-Rite Products is located in Wallkill, NY and is a member of the Council of Industry. Elna also distributes the products from other ferrite producers and approximately 60% of their business today is distribution with the other 40% custom machining and gapping.

"There are many applications you can't just order out of a catalog and Elna could not survive without the custom business. It's that niche market that drives the high value-added production. Elna has always been a custom machine shop, we just folded in distribution lines," explains Joe Ferraro. He came to Elna in the mid-2000's after working at National Micronetics, another local ferrite manufacturer that was located in Kingston at the time. By now there were more competitors machining ferrite and the convenience of "one stop shopping" became important to many customers. So

"We heavily invest in our employees and equipment."



Three of the owners of Elna. Jimmy Ferraro, Stephanie Melick and Joe Ferraro.

Elna made the strategic decision to grow its distribution lines while at the same time developing a more sophisticated and efficient machining processes to differentiate themselves from the competition.

That requires investments in machinery and in skilled people. "We heavily invest in our employees and equipment. There is only one other company in the U.S. that does custom ferrite machining," said Joe Ferraro. As the company expanded in the early 2000's it out grew the bowling alley, which was 18,000 sf, and made plans to relocate to its current facility in Saugerties, N.Y., which is 32,000 sf and has room for expansion.

Stephanie Melick, Executive VP, explains that the move was not simply about having more space, but that it was essential to implementing the company's plan for strategic growth. "The success we've had in recent years wouldn't have been possible if we stayed in the smaller facility. When designing the building, the architect asked about the flow of business and really wanted to understand the movement of people and materials. The new facility was laid out to improve this efficiency and allow for expansion by doubling the size." Originally when the company moved to Saugerties in 2009, there

were only 2 CNC machines, now there are 7, employees have increased from 38 to 57, and there is still room for growth. Elna also has an office in California that employs 3 people.

Precision machining has been very important since the company's start and Elna has invested in a Starrett Coordinate Measuring Machine to test their products and ensure they are meeting the standards

required by their customers. The military has extremely tight tolerances for their projects. More often customers are requiring reports, measurements and best practices efficiencies.

Elna's largest area of growth is with the defense sector. Joe Ferraro explains, "The military is all custom design. We have made components that are used onboard ships for anti-missile systems. We partner with them to make the designs and they come up with work." In fact, custom designs are Elna's niche. "We love customers that want to work together with our engineering expertise and machine 'know how' to develop the best core possible."

Other applications include the solar energy industry. Elna cores are used in inverters which turn solar power into usable electric energy for homes. Elna's products are also used in commercial aircraft guidance systems and their products have been used in driverless cars in the system that senses other vehicles and surroundings. Medical applications include artificial hearts and implantable defibrillators. In addition, magnetic cores are used in equipment that manufactures semiconductor chips.

"Nothing is simple anymore," says Joe Ferraro. "Most of our customers have at least one certification, ISO, AS, etc. and therefore have an ever-increasing list of requirements." Elna is now ISO 9001 and AS 9100 certified along with ITAR and NY State SHARP certification for safety. "All of this is important to remain competitive in the market as well being able to provide a safe and clean work environment for our employees."

As Elna bought new equipment they have had to develop their own technology to machine the glasslike ferrite. As Stephanie Melick puts it, "if you look at it cross eyed it will chip." Machinists are frequently reminded that they are using machines made to work on metal to machine a ceramic and

that means they have had to modify and refine their techniques. There is a continual learning process involving the use of tools, coolant application and other trade secrets, to become more efficient in both the machining and gapping processes as well. Joe Ferraro says, "You have to keep moving, evolving all the time."

A big part of Elna's business is "Gapping." When dealing with a magnetic core, the gap between the two pieces of ferrite influences the amount of current it is able to withstand before becoming saturated. Once reaching the saturation point the magnetic core stops working. Increasing the gap between the center posts allows the product to become more powerful.

"Twenty years ago, Elna did a small volume of gapping, maybe 100 cores, but now we have the equipment and capabilities to do large volume orders for gapping," explains James (Jim) Ferraro, Vice President, Joe's son who joined the company in 2010. "Tolerance wise we can hold gaps to one half of 1/1,000th of an inch. On the manufacturing side there is no one that does all that we do. There are several companies that do gapping, and one or two that provide custom core manufacturing, but we are the only company within NAFTA that does both."

On the operation side of the business Jim explains, "We have upgraded our ERP system which has opened up a world of opportunities to make our lives inside the building simpler. We have more custom reports to better analyze data and are 95% of the way to implementing barcoding throughout our warehouse."

"When I came to Elna it was just after the telecom market crashed and 9/11, in this business you could sell anything for any price you wanted. Elna offered excellent products and excellent customer service," says Joe Ferraro. "Now there are customers that require price reductions and we have requests

Elna is committed to improving not only their company but the reputation and image of manufacturing as a viable career.



Inside Elna's manufacturing facility.

to lower our prices on a daily basis.”

“At a certain point we just can’t compete because we can’t go any lower. That is the point you have to realize this product line is no longer profitable and we need to cut it and look for the next one,” explains Joe Ferraro.

Cost control is just one of the two big problems Elna is facing these days, the other is like many other manufacturers they need to recruit and train new employees to replace an aging workforce. There are several decades of combined knowledge in the brain trust that runs the machines at Elna and that is expertise that the company doesn’t want to lose as the machinists retire. With a number of employees in their late 50’s and early 60’s, Joe Ferraro is aware he is going to have to replace them at some point.



Chris Cottrill selecting a test setup for gapping.

“We do our best to stay active on both these fronts,” explains Joe. “We are willing to provide as much on the job training as required to build our workforce and to this end we recently got involved in the New York State apprenticeship program through the Council of Industry.” Elna has a few apprentices currently enrolled in the program and hope more new hires will take advantage of this opportunity to make every day on the job count towards their education and receive the certification after four years. “We very much believe in this program and like it a lot.”

In an effort to recruit those new hires Elna has also taken advantage of the Council’s Collaborative Recruiting Initiative. Jana Blazicek, Human Resources Administrator, says “The software is very user friendly and is structured in a very organized way. The Council has been helpful in posting jobs fast and it helps that the ads appear on multiple portals.” Elna has made working at the company a better place for employees by offering good benefits, increasing salaries and offering flexible time, including ‘Summer Fridays’ (a half day on Friday) and Thank you Lunch/ Breakfast days. They have Sonos-speakers in work areas and have cleaned and reorganized the building with a 5S implementation.

“Elna is committed to staying in the Hudson Valley and supports the local schools, including both high school and community colleges, in their efforts to encourage and develop kids that want to pursue a future in manufacturing and engineering,” explains Jim Ferraro. “We want to expose students to what’s available especially in those programs like the Pathways Academy and Youth Build that offer options beyond the traditional education path. “There are kids that want to work with their hands and explore education that isn’t confined to a classroom, they are the ones we want to try and get on board.”

Your vision our energy

Together we create opportunities

O&R’s Economic Development team is ready to assist your new or expanding business with our incentive programs. Let us put our energy and business expertise to work for you.

Deborah Patterson

Economic Development Director
845 577 2498 | pattersonde@oru.com



MANUFACTURER SOLUTIONS

NEW YORK
Manufacturing
Extension Partnership

The New York Manufacturing Extension Partnership (NY MEP), a network of organizations that provide growth and innovation services to small and mid-sized manufacturers in every corner of the state, helps hundreds of companies a year create and retain jobs, increase profits, and save time and money.




- INDUSTRY 4.0
- MANUFACTURING SCALE UP
- CYBERSECURITY GRANTS
- TECHNOLOGY INNOVATION

WWW.NEWYORKMEP.ORG

“Elna has been a sponsor of the SUNY New Paltz Engineering Expo for the past few years and every year I go to the expo and see the projects the students present, I am amazed,” says Joe Ferraro. “We have got engineers that are retiring soon and we have got to find somebody to fill those shoes. We are willing to take someone fresh out of school or even from a different job background and invest in training them. If we can get young people in the door, they can see manufacturing isn’t what it used to be.”

Elna is committed to improving not only their company but the reputation and image of manufacturing as a viable career. “If you are going to complain you have got to be willing to do something to fix it,” says Joe Ferraro. Elna is doing just that.

In many ways Elna is representative of manufacturing in the Hudson Valley: small, innovative, high tech, family owned and focused on the success of their customers. They are a company that is continually evolving and innovating to improve their products and exceed customer expectations.



Alison Butler is the Director of Member Engagement, The Council of Industry.

ACCESS: **BUSINESS SOLUTIONS**

YOUR PPE RESOURCE IN THE HUDSON VALLEY

CONTACT:
ERICH FULMER
EFULMER@ASFL.ORG
845-673-7050
845-239-8415



Authorized Distributor
Personal Safety










WOMEN IN MANUFACTURING

Council of Industry | BY SERENA CASCARANO

HUDSON VALLEY MANUFACTURING WORKFORCE CENTER STRIVES TO

INCREASE VISIBILITY OF WOMEN IN MANUFACTURING



Jennine Arasim,
Industrial Manufacturing
Technician (IMT)
Apprentice at Fair-Rite
Products in Wallkill, NY.

EARLIER THIS YEAR THE ROWLEY FAMILY FOUNDATION BEGAN WORKING WITH THE COMMUNITY FOUNDATION OF ORANGE AND SULLIVAN TO AWARD 15 GRANTS IN SUPPORT OF EMPOWERING WOMEN AND CHILDREN.

The Hudson Valley Manufacturing Workforce Center, Inc. (HVMWC) was awarded \$16,000 to create videos targeting the young women of the tri-county region.

These videos will spotlight women and showcase the many possibilities for success available throughout the region. They will encourage young women to visualize themselves in rewarding careers, allowing them to earn a living wage, raise their families and thrive in the Hudson Valley community.

“This grant will go a long way in helping increase the visibility of the career opportunities available in manufacturing right now and hopefully encourage more women to consider this as an option. From middle school girls learning to code or design on computers, to women re-entering the workforce and those interested in a STEM career, manufacturing is an excellent path to pursue,” explains Johnnieanne Hansen, Executive Director, Hudson Valley Manufacturing Workforce Center, Inc.

The manufacturing industry has long been dominated by males, but demographics are changing and there continues to be more diversity within the manufacturing workforce. The challenge now is reaching girls at a younger age and making them aware of the opportunities that are available. Our hope is that these videos will help start the conversation and continue to spread awareness about the reality of modern manufacturing and the high-quality jobs available.

We reached out to a handful of women who work in manufacturing and asked them exactly what motivated them to join the industry. For those who are familiar with the sector their

answers weren't surprising as they highlighted many of the features that make these jobs so appealing. We captured their responses to share their first-hand perspectives with our readers.

We first spoke with Jennifer Clark, Director of Manufacturing Operations at Global Foundries, (see her Leader Profile on page 11) who told us that her interest in the manufacturing industry was first sparked as a junior in high school. Growing up with a passion for math and science she naturally transitioned into studying Chemical Engineering in college, a major that she chose for three reasons: her love for chemistry, her discovery that the field had more diversity and female representation than similar options and the flexibility it would provide her to go into a variety of different fields. With the freedom to explore many industries with her degree we asked Clark why she chose manufacturing: “What got me so interested in manufacturing specifically was the fact that you're actually creating something tangible. Manufacturing allows you to work with your hands and physically see the progress and products you're creating.”

Jennine (Jen) Arasim offered a unique viewpoint as a woman who just recently joined the manufacturing industry after several years in retail. She now works as an apprentice at Fair-Rite Products Corporation and told us that she's enjoying the change and the flexibility it's provided her. “I went from hectic and crazy to steady and stable.” Said Arasim. “And because it's something new and there's so much to learn it's much more stimulating than going in and doing the same five tasks every day. At Fair-Rite every day is different.” These are quality positions that offer additional benefits to women that many other industries don't or

...women are helping to change the long-held belief that manufacturing is dirty and overly laborious and shining a light on the great opportunities available.



METCAR[®]
Engineered Carbon/Graphite Solutions
for Severe Service Lubrication

In hot water? Metcar goes to extremes.

Metcar's engineered carbon graphite materials are chemically inert, dimensionally stable, self-lubricating, and can resist temperatures up to 1,000°F.

metcar.com | (914) 941-3738 | sales@metcar.com
19 S. Water Street, Ossining, NY 10562

can't provide, including flexible work hours and good healthcare.

Benefits were also a major factor for Alicia Zito, Inventory Technician at Bell Flavors and Fragrances, when she was ready to enter the workforce again after several years as a stay at home mother. Zito has three children and she recognized the importance of finding a position that would allow a healthy work-life balance. "Bell offers great benefits for parents." Said Zito. "We're able to take up to 8 hours per-month for when our children have events like concerts, field days or graduations without having to dip into our paid time off." Finding a career with that type of freedom is a necessity for many women and Zito told us she feels fortunate to have that convenience.

The manufacturing industry has also opened the door for many women to advance their careers. Phylliss Masselli, Controller and Office Manager at Orange Packaging, shared with us that not only has her career grown and developed within this industry, but she's also been fortunate enough to watch and help others advance as well. Starting out as the bookkeeper she's covered many departments throughout her time at Orange Packaging including customer service, ordering and anything else that was needed to get the product out the door. In her role today she's able to help identify those top performing employees and do her part in promoting them. "We have two women from Honduras, Brenda Benavides and Brenda Maldonado, who started out on the assembly line and later moved on to becoming line leaders, when I recognized their talent and abilities I brought them up to the front office." Said Masselli. "Today Benavides is a Senior Project Manager and Maldonado is her assistant. They both know the business inside and out."

This type of promotion is not uncommon at Orange Packaging.

People. Power. Possibilities.

Central Hudson
A FORTIS COMPANY



Powering the Path to a Cleaner Future

Central Hudson is committed to making investments in infrastructure and technology that cost effectively reduce carbon emissions while continuing to provide reliable, resilient and affordable power by:



Upgrading electric transmission and distribution lines



Pursuing the lowest cost approach to emission reduction



Integrating natural gas benefits



Expanding energy efficiency programs



Advancing environmentally beneficial electrification

Learn more at www.CentralHudson.com/PoweringthePath

Masselli also mentioned Abigail Sanoja, a woman who also started out on the assembly line and today serves as the Production Manager overseeing the entire plant. Many manufacturers provide internal training and strive to promote current employees before looking for outside hires. “I think there is a lot of opportunity in manufacturing.” Said Masselli. “No matter where you start if you show an interest in the business, and you want to learn, any manufacturer should recognize your potential to move forward and grow within the company.” With the Council of Industry as a resource many manufacturers in the Hudson Valley take advantage of the leadership training and apprentice program available to continue developing their workforce from within.

By speaking out and sharing their stories these women are helping to change the long-held belief that manufacturing is dirty and overly laborious and shining a light on the great opportunities available. Arasim summarized this point perfectly when she told us, “When people think of manufacturing they usually think of a dirty guy in overalls but the reality of today is that the overall atmosphere is focused on cleanliness and safety.” Modern manufacturing is no longer the dark and dirty career that its perceived to be, there are promising careers that require skill and precision. We hope to capture more stories like these in our videos and encourage women throughout our community to consider manufacturing as a viable career option.



*Serena Cascarano,
Administrative Marketing Assistant,
The Council of Industry.*

IF YOU OR SOMEONE YOU KNOW IS INTERESTED
IN A CAREER IN MANUFACTURING
VISIT HVMFGJOBS.COM
TO VIEW ALL OF THE CURRENTLY AVAILABLE
MANUFACTURING POSITIONS THROUGHOUT THE
HUDSON VALLEY. LOCAL MANUFACTURERS HAVE
GREAT JOBS FOR INDIVIDUALS AT ALL SKILL LEVELS.
HVMFGJOBS.COM IS A MANUFACTURING SPECIFIC
JOB BOARD THAT INCLUDES EVERYTHING FROM
APPRENTICESHIPS TO ENGINEERING POSITIONS
AND EVERYTHING IN BETWEEN.
APPLY TODAY.



From left to right: Brenda Benavides, Senior Project Manager; Phylliss Masselli, Controller and Office Manager; Brenda Maldonado, Assistant Project Manager at Orange Packaging in Newburgh, NY.

Commercial - Industrial Pharmaceutical - Healthcare

- Process Piping
- Pipe Prefabrication
- Plumbing
- Heating/Ventilation/Air-Conditioning
- High Purity Orbital Welding
- Clean Room Pipe Prefabrication
- Institutional Lab Plumbing
- Data Center HVAC
- Engineering/Design Build
- BIM/Drafting
- QA/QC
- Service/Repair/Maintenance
- Building Automation & Controls



800-587-5267
www.armisteadmechanical.com



MANUFACTURING TRENDS

WITH COUNCIL OF INDUSTRY STAFF

FROM PRODUCT DESIGN TO
PRODUCTION TO SALES AND
CUSTOMER SERVICE

AUGMENTED REALITY

(AR) IS IMPACTING ALL
ASPECTS OF MANUFACTURING

The Industrial Internet of Things (IIOT) is already dramatically changing the economic landscape, however, we have barely scratched the surface of its potential. The amount and quality of the data collected by connected devices is far outpacing our ability to interpret and utilize it.

The cause of this bottleneck keeping us from taking full advantage of the almost limitless information contained within the data is the inability of humans to assimilate that data, and act upon it in meaningful ways. One tool to remove that bottleneck may be augmented reality.

In "A Manager's Guide to Augmented Reality" which appeared earlier this year in *The Harvard Business Review*, Michael Porter, a Harvard University professor, and James Heppelmann, chief executive of PTC Inc., an industrial consulting company write: "There is a fundamental disconnect between the wealth of digital data available to us and the physical world in which we apply it. While reality is three-dimensional, the rich data we now have to inform our decisions and actions remains trapped on two-dimensional pages and screens."

WHAT IS AR?

Augmented Reality (AR) is interactively experiencing a real-world environment where the objects are enhanced by computer-generated perceptual information. This is most often a visual experience, however, other modalities are sometimes employed, such as auditory, somatosensory, and olfactory. Unlike Virtual Reality (VR), which makes you submerge yourself in a virtual

environment, AR is all about augmenting the present reality with technology.

The technology is in its early stages. Today, most AR applications are focused on entertainment and delivered through smartphone and tablet apps. Perhaps the most commonly recognized example was the Pokémon Go craze a few years back. That game uses location tracking and mapping technology to create an augmented reality where players catch and train Pokémon characters in real locations. But, AR technology is increasingly being used in commercial and industrial applications. And, in addition to smartphones and tablets, it is delivered through hands-free devices such as AR smart glasses, head-mounted displays, and displays in cars.

From big corporations like Council Member IBM, who is using AR to help customers visualize complex data, to Apple, who is investing not only in their own AR framework but also navigation tech, to Google, who announced earlier this year that is rolling out an AR version of Google Maps, the potential of AR is attracting big interest and big money.

"By superimposing digital information directly on real objects or environments, AR allows people to process the physical and digital simultaneously, eliminating the need to mentally bridge the two," Porter and Heppelmann write. "That improves our ability to rapidly and accurately absorb information, make decisions, and execute required tasks quickly and efficiently."

APPLICATIONS OF AR IN INDUSTRY

Manufacturers can look to AR to help them access, interpret, and use data and information in various ways including to visualize, to instruct and guide, and to interact.

VISUALIZATION

According to Porter and Heppelmann “AR applications provide a sort of X-ray vision, revealing internal features that would be difficult to see otherwise.” Medical device manufacturer AccuVein, for example, uses AR technology that converts the heat signature of a patient's veins into an image superimposed by a device onto the skin, improving the success rates of blood draws and other vascular procedures.

INSTRUCT AND GUIDE

For industry this is one of the most important applications of AR. It can provide real-time, step-by-step visual guidance on product assembly, both for consumer and industrial applications. Installing electrical wiring on an aircraft is a complex task that leaves zero room for error. Boeing is using augmented reality to give technicians real-time, hands-free, interactive 3D wiring diagrams - right before their eyes.

“A person working in an industrial setting has a lot of distractions in that environment and a lot of data to think about and process. Traditionally technicians had to look at and interpret a two-dimensional twenty-foot-long drawing and construct that image in their mind and attempt to wire based on this mental model,” said Brian Laughlin, IT Tech Fellow at Boeing. “By using augmented reality technology, technicians can easily see where the electrical wiring goes in the aircraft fuselage. They can roam around the airplane and see the wiring renderings in full depth within their surroundings and access instructions hands-free.”

INTERACT

“AR takes the user interface to a whole new level. A virtual control panel can be superimposed directly on the product and operated using an AR headset, hand gestures, and voice commands it,” write Porter and Heppelmann.

One key area where this hybrid-tech can be applied within the manufacturing industry is in the field of robotics and automation. New York University engineers have created a platform to control robot arms through augmented reality. Another platform that has emerged from NYU overlays different environments with virtual robots - except these robots actually exist in the real world, in the very environment that is being examined. The goal is to effectively allow operators to monitor and control a swarm, or a large number of robots as a single system. Unlike conventional systems that require hefty infrastructure and investment, this system can run on an iPad.

Such innovations will take swarm robotics from being a feature of giants like Amazon to being a technology accessible to the “manufacturing masses.”

AR is having an impact on just about all aspects of a product's value chain.

In product development, AR allows realistic 3-D models to be superimposed on the physical world as holograms, helping engineers evaluate and improve designs. Radius Innovation & Development, product design consultants, have already seen tangible examples of what AR brings to their creative process. Rapid visualization, accelerating time-to-market and adding new dimensions to the way they collaborate with clients.

“With emerging technologies like additive manufacturing, a part can undergo 19 design iterations in the time it would take for one iteration using traditional development methods. Adding AR as a tool in the prototyping mix can seize even more potential.” Writes Jim Holtorf, Radius Innovation & Development's Managing Director.

In manufacturing, where processes are often complex and mistakes are costly, AR can deliver just the right information to factory workers



VALUE YOU CAN COUNT ON

Business is unpredictable. Markets shift. Competitors evolve. Customer expectations change.

Today most organizations have come to expect the unexpected, but our clients know there's one thing they can always count on. Us.

PKF O'Connor Davies is a new breed of accounting and advisory firm that holds itself to a higher standard – going beyond passive value calculation to active value creation for leading business owners, organizations and individuals in the US and abroad.

While others may falter amid constant change; we consistently deliver. Advice you can count on. Service you can count on. **Value You Can Count On.**



Alan Marks, Partner
845.565.5400
amarks@pkfod.com

Wayne L. Martin, Partner
845.670.7151
wlmartin@pkfod.com

www.pkfod.com



the moment it is needed, while making visible important data about each machine, thus reducing errors, improving productivity and preventing downtime.

The area of quality assurance (QA), for example, offers numerous potential applications for AR. Last year, SlashGear reported on a pilot program running at a Porsche assembly plant in Leipzig, Germany. Porsche technicians are using augmented reality as a tool in the quality assurance process. Quality professionals can take photos of parts or assemblies on vehicles under inspection, and then compare those images to ones provided by the company's suppliers via an augmented reality overlay. Features that are out of specification can be highlighted by the overlay, enabling the Porsche technicians to identify the issue quickly and intuitively.

The gap between someone's expectations and reality is a persistent problem in sales and marketing. AR can show customers how products will look in their homes or other settings before they buy. Far too often, customers have a very different belief about what the product should be and what they receive. This unfortunate process leads to disappointment, inaccuracy, and painful revisions. In other words, what the customer wants and what the company can do are often two incredibly different things. Buyers love endless customizable

products and options. Not every manufacturer can keep up with uniquely tailored goods for each customer. That's why augmented reality and 3D visualization should play a vital role in the sales process.

Atlatl Software, a cloud-based sales platform, says that visual configuration helps increase sales efficiency by 24%. "Manufacturing is ripe for disruption from 3D and AR technology in the sale process because it allows customers to be immersed in a complex product without the time and expense that is tied to a physical product in brick and mortar environments," said Atlatl Software CEO, Marc Murphy.

Murphy believes that sales play an integral role in the IIOT and it forces manufacturers to ask themselves how their investments are effectively changing the purchaser's buying experience.

"While the advances in artificial intelligence and robotics are impressive, we believe that combining the capabilities of machines with humans' distinctive strengths will lead to far greater productivity and more value creation than either could generate alone," Porter and Heppelmann conclude. "What's needed to realize this opportunity is a powerful human interface that bridges the gap between the digital and physical worlds."

Augmented Reality is the historic innovation that might provide that breakthrough.



Fair-Rite Products Corp.

Your Signal Solution®



WE ARE GROWING

- Are you...
- Ambitious
 - Confident
 - Reliable
 - Positive
 - Committed

Does this describe you? Please visit our website for opportunities or stop in and fill out an application.



We Want You to Join the Fair-Rite Team

Our Mission...

We, a team of dedicated professionals, create the finest ferrite products and innovative solutions for the global electronics industry, with the commitment to improve the future for our customers, our company, our families, our community and ourselves. WE ARE COMMITTED!

Phone 845.895.2055 | Fax 845.895.2629 | www.fair-rite.com | 1 Commercial Row, Wallkill NY 12589



Our corporate attorneys structure, negotiate and implement a variety of business transactions involving public and private institutions, including:

- Mergers, acquisitions, purchases and sales of stock and assets
- Corporate finance
- Commercial transactions
- Partnership matters
- Franchise activities
- Joint ventures and leasing agreements
- Stockholder agreements and other ownership contractual arrangements
- Venture capital
- Executive employment and severance arrangements



WWW.BPSLAW.COM
ATTORNEY ADVERTISING

NEW YORK • 1 NORTH LEXINGTON AVENUE | WHITE PLAINS, NY 10601 • PHONE: 914-949-2700
CONNECTICUT • 25 FIELD POINT ROAD | GREENWICH, CT 06830 • PHONE: 203-422-5050

RESOURCE GUIDE

FEDERAL ELECTED OFFICIALS

PRESIDENT

DONALD J. TRUMP (R)

Capitol address:

1600 Pennsylvania Avenue
Washington, D.C. 20500
Phone: (202) 456-1414
www.whitehouse.gov

U.S. SENATE

CHARLES SCHUMER (D)

Capitol address:

322 Hart Senate Office Bldg.
Washington, D.C. 20510
Phone: (202) 224-6542

District address:

One Park Place, Suite 100
Peekskill, NY 10566
Phone: (914) 734-1532
www.schumer.senate.gov

KIRSTEN GILLIBRAND (D)

Capitol address:

478 Russell Senate Office Bldg.
Washington, D.C. 20510
Phone: (202) 224-4451

District address:

P.O. Box 749, Yonkers, NY 10710
Phone: (845) 875-4585
www.gillibrand.senate.gov

U.S. HOUSE OF REPRESENTATIVES

NITA M. LOWEY (D) (17)

Capitol address:

2365 Rayburn HOB
Washington, D.C. 20515
Phone: (202) 225-6506

District address:

222 Mamaroneck Avenue, Suite 312
White Plains, NY 10605
Phone: (914) 428-1707
Rockland: (845) 639-3485
<https://lowey.house.gov/>

SEAN PATRICK MALONEY (D) (18)

Capitol address:

2331 Rayburn HOB
Washington, D.C. 20515
Phone: (202) 225-5441

District address:

123 Grand Street, 2nd Fl.
Newburgh, NY 12550
Phone: (845) 561-1259
www.seanmaloney.house.gov

ANTONIO DELGADO (D) (19)

Capitol address:

1007 Longworth HOB
Washington, D.C. 20515
Phone: (202) 225-5614

District address:

256 Clinton Ave
Kingston, NY 12401
Phone: (845) 443-2930
<https://delgado.house.gov/>

STATE ELECTED OFFICIALS

*LOB indicates: Legislative Office Building
188 State Street, Albany, NY 12247*

GOVERNOR

ANDREW M. CUOMO (D)

State Capitol Building
Albany, NY 12224
Phone: (518) 474-8390
www.governor.ny.gov

COMPTROLLER

THOMAS P. DINAPOLI (D)

Albany Office
110 State Street, Albany, NY 12236
Phone: (518) 474-4044
contactus@osc.state.ny.us

STATE SENATE

SHELLEY B. MAYER (D, WF) (37)

District address:

222 Grace Church Street, Suite 300
Port Chester, NY 10573
Phone: (914) 934-5250

Capitol address:

LOB: Room 509
Phone: (518) 455-2031
www.nysenate.gov/senators/shelley-b-mayer
smayer@nysenate.gov

DAVID CARLUCCI (D) (38)

District address:

20 South Main Street
New City, NY 10956
Phone: (845) 708-7701

Capitol address:

LOB: Room 514
Phone: (518) 455-2991
www.nysenate.gov/senators/david-carlucci
carlucci@nysenate.gov

JAMES SKOUFIS (D) (39)

District address:

47 Grand Street
Newburgh, NY 12550
Phone: (845) 567-1270
Fax: (845) 567-1276

Capitol address:

LOB: Room 815
Phone: (518) 455-3290
www.nysenate.gov/senators/james-skoufis
skoufis@nysenate.gov

PETER HARCKHAM (D, WF) (40)

District address:

1 Park Place, Suite 302
Peekskill, NY 10566
Phone: (914) 241-4600

Capitol address:

LOB: Room 812
Phone: (518) 455-2340
www.nysenate.gov/senators/pete-harckham
harckham@nysenate.gov

SUE SERINO (R) (41)

District address:

4254 Albany Post Road
Hyde Park, NY 12534
Phone: (845) 229-0106

Capitol address:

LOB: Room 613
Phone: (518) 455-2945
www.nysenate.gov/senators/sue-serino
Serino@nysenate.gov

JEN METZGER (D, WF) (42)

District address:

201 Dolson Avenue, Suite F
Middletown, NY 10940-6576
Phone: (845) 344-3311

Capitol address:

LOB: Room 817
Phone: (518) 455-2400
www.nysenate.gov/senators/jen-metzger
metzger@nysenate.gov

DAPHNE JORDAN (R) (43)

District address:

1580 Columbia Turnpike
Building 2, Suite 1
Castle-On-The-Hudson, NY 12033
Phone: (518) 371-2751

Capitol address:

LOB: Room 508
Phone: (518) 455-2381
www.nysenate.gov/senators/daphne-jordan
jordan@nysenate.gov

GEORGE AMEDORE (R) (46)

District address:

3770 Carman Rd, Store 3
Schenectady, NY 12303
Phone: (518) 913-7001

Capitol address:

LOB: Room 408
Phone: (518) 455-2350
www.nysenate.gov/senators/george-amedore-jr/contact

JAMES L. SEWARD (R) (51)

District address:

41 South Main Street
Oneonta, NY 13820-2516
Phone: (607) 432-5524

Capitol address:

LOB: Room 414
Phone: (518) 455-3131
www.nysenate.gov/senator/james-l-seward
seward@nysenate.gov

STATE ASSEMBLY

DAVID BUCHWALD (D) (93)

District address:

100 S.Bedford Road, Suite 150
Mount Kisco, NY 10549
Phone: (914) 244-4450

Capitol address:

LOB: Room 331
Phone: (518) 455-5397
www.assembly.state.ny.us/mem/David-Buchwald
BuchwaldD@assembly.state.ny.us

KEVIN M. BRYNE (R) (94)

District address:

3 Starr Ridge Road, Suite 204
Brewster, NY 10509
Phone: (845) 278-2923

Capitol address:

LOB: Room 318
Phone: (518) 455-5783
www.nyassembly.gov/mem/Kevin-M-Byrne
Kevin-Byrne@assembly.state.ny.us

SANDRA GALEF (D) (95)

District address:

2 Church Street
Ossining, NY 10562
Phone: (914) 941-1111

Capitol address:

LOB: Room 641
Phone: (518) 455-5348
www.assembly.state.ny.us/mem/Sandy-Galef
GalefS@assembly.state.ny.us

KENNETH ZEBROWSKI (D) (96)

District address:

67 North Main Street
New City, NY 10956-3700
Phone: (845) 634-9791

Capitol address:

LOB: Room 424
Phone: (518) 455-5735
www.nyassembly.gov/mem/kenneth-zebrowski/
ZebrowskiK@assembly.state.ny.us

ELLEN JAFFEE (D) (97)

District address:

One Blue Hill Plaza, Suite 1116
POB 1549, Pearl River NY 10965-3100
Phone: (845) 624-4601

Capitol address:

LOB: Room 626
Phone: (518) 455-5118
www.assembly.state.ny.us/mem/Ellen-Jaffee
JaffeeE@assembly.state.ny.us

KARL BRABENEC (R) (98)

District address:

28 North Main Street, Suite 2
Florida, NY 10921
Phone: (845) 544-7551

Capitol address:

LOB: Room 329
Phone: (518) 455-5991
www.assembly.state.ny.us/mem/Karl-Brabeneck
Brabeneck@assembly.state.ny.us

ARNOFF

GLOBAL LOGISTICS

Anything. Anywhere.

Providing Rigging and
Transportation Solutions
for Manufacturers



cnc tools • presses • lathes • boilers • heaters • air handling units • generators • printing presses • machine shops
sculptures • safes • semi conductor equipment • manufacturing equipment • production line relocations

800-633-6683

arnoff.com/logistic-solutions

Contact us for a free consultation

COLIN SCHMITT (D) (99)

District address:

6 Depot Street, Suite 103
Washingtonville, NY 10992
Phone: (845) 469-6929

Capitol address:

LOB: Room 433
Phone: (518) 455-5441
www.nyassembly.gov/mem/Colin-Schmitt
schmittc@nyassembly.gov

AILEEN GUNTHER (D) (100)

District address:

18 Anawana Lake Road
Monticello NY 12701-3200
Phone: (845) 794-5807
Middletown City Hall, 3rd floor
16 James Street, Middletown, NY 10940
Phone: (845) 342-9304

Capitol address:

LOB: Room 826
Phone: (518) 455-5355
www.assembly.state.ny.us/mem/Aileen-M-Gunther
GuntheA@assembly.state.ny.us

BRIAN D. MILLER (R) (101)

District address:

4747 Middle Settlement Road
New Hartford, NY 13413
Phone: 315-736-3879
14 Central Ave, Suite 101
PO Box 247
Wallkill, NY 12589

Phone: (845) 895-1080

Capitol address:

LOB: Room 544
Phone: (518) 455-5334
www.nyassembly.gov/mem/Brian-D-Miller
millerb@nyassembly.gov

CHRIS TAGUE (R) (102)

District address:

45 Five Mile Woods Road, Bldg 2, Suite 2
Catskill, NY 12414
Phone: (518) 943-1371

Capitol address:

LOB: Room 937
Phone: (518) 455-5363
www.assembly.state.ny.us/mem/Chris-Tague
taguec@nyassembly.gov

KEVIN CAHILL (D) (103)

District address:

Governor Clinton Building
One Albany Avenue, Suite G-4,
Kingston NY 12401-2946
Phone: (845) 338-9610

Capitol address:

LOB: Room 716
Phone: (518) 455-4436
www.assembly.state.ny.us/mem/Kevin-A-Cahill
CahillK@assembly.state.ny.us

JONATHAN JACOBSON (104)

District address:

47 Grand Street
Newburgh, NY 12550
(845) 562-0888

Capitol address:

LOB: Room 628
Albany, NY 12248
Phone: (518) 455-5762
www.nyassembly.gov/mem/Jonathan-G-Jacobson
jacobsonj@nyassembly.gov

KIERAN LALOR JR. (R) (105)

District address:

North Hopewell Plaza, Suite #1
1075 Rt. 82, Hopewell Junction, NY 12533
Phone: (845) 221-2202

Capitol address:

LOB: Room 531
Phone: (845) 221-2202
www.assembly.state.ny.us/mem/kieran-michael-lalor
LalorK@assembly.state.ny.us

DIDI BARRETT (D) (106)

District address:

12 Raymond Avenue, Suite 105
Poughkeepsie, NY 12603
Phone: (845) 454-1703

Capitol address:

LOB: Room 841
Phone: (518) 455-5177
www.assembly.state.ny.us/mem/didi-barrett
BarrettD@assembly.state.ny.us

**All we do is work.
Workplace law.**

Affirmative Action Compliance and OFCCP Defense • Class Actions and Complex Litigation • Collegiate and Professional Sports • Corporate Diversity Counseling • Corporate Governance and Internal Investigations • Disability, Leave and Health Management • Employee Benefits • General Employment Litigation • Government Relations • Health Law and Transactions • Immigration • International Employment Issues • Labor and Preventive Practices • Non-Competes and Protection Against Unfair Competition • Privacy, e-Communication and Data Security • Wage and Hour • White Collar and Government Enforcement • Workplace Safety and Health • Workplace Training

jacksonlewis

With 800 attorneys in major locations throughout the U.S. and Puerto Rico, Jackson Lewis provides the resources to address every aspect of the employer-employee relationship.



Thomas McDonough
44 South Broadway • 14th Floor
White Plains, NY 10601
(914) 872-8060
Thomas.McDonough@jacksonlewis.com
www.jacksonlewis.com

BUSINESS ASSOCIATIONS

NATIONAL ASSOCIATION OF MANUFACTURERS

1331 Pennsylvania Avenue
Washington, DC 20001
Phone: (202) 637-3182
www.nam.org
manufacturing@nam.org

MANUFACTURERS ALLIANCE OF NEW YORK (MANY)

5788 Widewaters Parkway
Syracuse, New York 13214
Phone: (315) 474-4201
www.macny.org

NEW YORK STATE BUSINESS COUNCIL

152 Washington Avenue, Suite 400
Albany, NY 12210
Phone: (518) 465-7511
www.bcnys.org

MANUFACTURING & TECHNOLOGY ENTERPRISE CENTER (MTEC)

180 South Street, Bldg 1, Suite 1
Highland, NY 12528
Phone: (845) 391-8214
www.mfgtec.org

UPSTATE VENTURE ASSOCIATION OF NEW YORK (UVANY)

1971 Western Avenue, Suite 1110
Pittsford, New York 14534
Phone: (518) 320-2746
www.uvc.org

ROCKLAND BUSINESS ASSOCIATION, INC.

One Blue Hill Plaza, P.O. Box 1567
Pearl River, NY 10965
Phone: (845) 735-2100
www.rocklandbusiness.org

THE BUSINESS COUNCIL OF WESTCHESTER

800 Westchester Avenue, Suite S-310
Rye Brook, NY 10573
Phone: (914) 948-2110
www.thebcw.org

DUTCHESS COUNTY REGIONAL CHAMBER OF COMMERCE

One Civic Center Plaza, Suite 400
Poughkeepsie, NY 12601
Phone: (845) 454-1700
www.dccoc.org

ORANGE COUNTY CHAMBER OF COMMERCE

40 Matthews Street, Suite 104
Goshen, NY 10924
Phone: (845) 457-9700
www.orangenyc.com

NEW PALTZ REGIONAL CHAMBER OF COMMERCE

257 Main Street
New Paltz, NY 12561
Phone: (845) 255-0243
www.newpaltzchamber.org

ULSTER COUNTY CHAMBER OF COMMERCE

214 Fair Street
Kingston, NY 12401
Phone: (845) 338-5100
www.ulsterchamber.org

EDUCATION & TRAINING

BEACON INSTITUTE CLARKSON UNIVERSITY

199 Dennings Avenue
Beacon, NY 12508
Phone: (845) 838-1600
www.bire.org

MARIST COLLEGE

3399 North Road
Poughkeepsie, NY 12601
Phone: (845) 575-3000
www.marist.edu

MOUNT ST. MARY COLLEGE

330 Powell Avenue
Newburgh, NY 12550
Phone: (845) 561-0800
www.msmc.edu

SUNY NEW PALTZ

1 Hawk Drive
New Paltz, NY 12561
Phone: (845) 257-7869
www.newpaltz.edu

DUTCHESS COUNTY COMMUNITY COLLEGE

53 Pendell Road
Poughkeepsie, NY 12601
Phone: (845) 431-8000
www.sunydutchess.edu

ORANGE COUNTY COMMUNITY COLLEGE

115 South Street
Middletown, NY 10940
Phone: (845) 344-6222
www.sunyorange.edu

ROCKLAND COMMUNITY COLLEGE

145 College Road
Suffern, NY 10901
Phone: (845) 574-4000
www.sunyrockland.edu

SUNY SULLIVAN

112 College Road
Loch Sheldrake, NY 12759
Phone: (845) 434-5750
www.sunysullivan.edu

SUNY ULSTER

491 Cottekill Road
Stone Ridge, NY 12484
Phone: (845) 687-5000
www.sunyulster.edu

WESTCHESTER COMMUNITY COLLEGE

75 Grasslands Road
Valhalla, NY 10595
Phone: (914) 606-6600
www.sunywcc.edu/pdc

DUTCHESS COUNTY BOCES

5 Boces Road
Poughkeepsie, NY 12601
Phone: (845) 486-4800
www.dcboces.org

ORANGE/ULSTER BOCES

53 Gibson Road
Goshen, NY 10924
Phone: (845) 291-0100
www.ouboces.org

PUTNAM/ NORTHERN WESTCHESTER BOCES

200 Boces Drive
Yorktown Heights, NY 10598-4399
Phone: (914) 245-2700
www.pnwbooces.org

ROCKLAND BOCES

65 Parrott Road
West Nyack, NY 10994
Phone: (845) 627-4700
www.rocklandbooces.org

ULSTER BOCES

Rt. 9W, PO Box 601
Port Ewen, NY 12466
Phone: (845) 331-5050
www.ulsterbooces.org

SOUTHERN WESTCHESTER BOCES

17 Berkley Drive
Rye Brook, NY 10573
Phone: (914) 937-3820
www.swbooces.org

ECONOMIC DEVELOPMENT

NEW YORK STATE ECONOMIC DEVELOPMENT COUNCIL

111 Washington Avenue, 6th Floor
Albany, NY 12210
Phone: (518) 426-4058
www.nysedc.org

HUDSON VALLEY ECONOMIC DEVELOPMENT CORPORATION

10 Matthews St.
Goshen, NY 10924
Phone: (845) 220-2244
www.hvedc.org

THINK DUTCHESS ALLIANCE FOR BUSINESS

3 Neptune Road, Suite 821
Poughkeepsie, NY 12601
Phone: (845) 463-5400
www.thinkdutchess.com

THE ORANGE COUNTY PARTNERSHIP

40 Matthew Street, Suite 108
Goshen, NY 10924
Phone: (845) 294-2323
www.ocpartnership.org

PUTNAM COUNTY ECONOMIC DEVELOPMENT CORPORATION

40 Gleneida Avenue
Carmel, NY 10512
Phone: (845) 808-1021
www.putnamedc.org

ROCKLAND ECONOMIC DEVELOPMENT CORP.

Two Blue Hill Plaza, PO Box 1575
Pearl River, NY 10965
Phone: (845) 735-7040
www.redc.org

ULSTER COUNTY ECONOMIC DEVELOPMENT ALLIANCE

PO Box 1800
244 Fair Street
Kingston, NY 12402-1800
Phone: (845) 340-3000
www.ulstercountyny.gov

WESTCHESTER COUNTY OFFICE OF ECONOMIC DEVELOPMENT

148 Martine Avenue
White Plains, NY 10601
Phone: (914) 995-2000
www.westchestergov.com/public_html/index.php

WORKFORCE DEVELOPMENT INSTITUTE

15 Stone Castle Road, Rock Tavern, NY 12575
Phone: (845) 567-1213
120 Saw Mill Road, Hastings, NY 10706
Phone: (914) 231-9670
wdiny.org

WORKFORCE INVESTMENT BOARDS

DUTCHESS ONE STOP CAREER CENTER

191 Main Street
Poughkeepsie, NY 12601
Phone: (845) 473-9000
www.dutchessonestop.org

ORANGE WORKS CAREER CENTER

3 Washington Center, 4th Floor
Newburgh, NY 12550
Phone: (845) 568-5090
33 Fulton Street 2nd Floor
Middletown, NY 10940
www.orangecountygov.com/352/Employment-Training

WESTCHESTER /PUTNAM CAREER CENTER NETWORK

120 Bloomingdale Rd.
White Plains, NY 10605
Phone: (914) 995-3910
www.westchesterputnamonestop.com

ULSTER WORKS

521 Boces Lane
Kingston, NY 12401
Phone: (845) 443-8066
www.ulsterworks.com

SULLIVAN COUNTY ONE STOP

100 North Street
Monticello, NY 12701
Phone: (845) 794-3340
sullivanny.us/Departments/Workforcedevelopment

FEDERAL AGENCIES

ENVIRONMENTAL PROTECTION AGENCY

290 Broadway
New York, NY 10007-1866
Phone: (212) 637-5000
www.epa.gov

U.S. DEPARTMENT OF LABOR

200 Constitution Ave NW
Washington, DC 20210
Phone: 1 (866) 487-2365
www.dol.gov

OCCUPATIONAL SAFETY & HEALTH ADMINISTRATION (OSHA)

401 New Karner Road, Suite 300
Albany, NY 12205-3809
Phone: (518) 464-4338
www.osha.gov

U.S. DEPARTMENT OF COMMERCE

707 Westchester Avenue, # 209
White Plains, NY 10601
Phone: (914) 682-6712
www.export.gov/newyork/westchester

US SMALL BUSINESS ADMINISTRATION

26 Federal Plaza Suite 3108
New York, NY 10278
Phone: (212) 264-1450
www.sba.gov/offices/regional/ii

STATE AGENCIES

EMPIRE STATE DEVELOPMENT

625 Broadway
Albany, New York 12207
Phone: (518) 292-5100
www.empire.state.ny.us
regional office
33 Airport Center Drive, Suite 201
New Windsor, NY 12553
Phone: (845) 567-4882
www.empire.state.ny.us/MidHudson.html

ENVIRONMENTAL CONSERVATION

625 Broadway
Albany, NY 12233
Phone: : (518) 402-8044
www.dec.ny.gov
regional office
21 South Putt Corners Road
New Paltz, NY 12561
Phone: (845) 256-3000
Fax: (845) 255-0714
www.dec.ny.gov/about/558.html#region3

LABOR

Building 12 W.A. Harriman Campus
Albany, NY 12240
Phone: (518) 457-9000
www.labor.ny.gov

TRANSPORTATION

50 Wolf Road
Albany, NY 12232
Phone: (518) 457-6195
regional office
4 Burnett Blvd.
Poughkeepsie, NY 12603
Phone: (845) 431-5700
www.dot.ny.gov/regional-offices/region8/contacts

COUNTY EXECUTIVES

DUTCHESS COUNTY
MARCUS J. MOLINARO (R)
County Executive's Office
22 Market Street
Poughkeepsie, NY 12601
Phone: (845) 486-2000
countyexec@dutchessny.gov

ORANGE COUNTY
STEVEN M. NEUHAUS (R)
Orange County Government Center
255 Main St.
Goshen, NY 10924
Phone: (845) 291-2700
ceoffice@orangecountygov.com

PUTNAM COUNTY
MARYELLEN ODELL (R)
Putnam County Office Building
40 Gleneida Avenue, 3rd Floor
Carmel, New York 10512
Phone: (845) 808-1001
PutnamCountyExecutive@putnamcountyny.gov

ROCKLAND COUNTY
EDWIN J. DAY (R)
Office of County Executive
11 New Hempstead Road
New City, NY 10956
Phone: (845) 638-5122
CountyExec@co.rockland.ny.us

SULLIVAN COUNTY
MANAGER
JOSHUA POTOSEK
Sullivan County Government Cntr
100 North Street, PO Box 5012
Monticello, NY 12701-5012
Phone: (845) 807-0450

ULSTER COUNTY
PATRICK RYAN (D)
244 Fair Street
Kingston, NY 12401
Phone: (845) 340-3800
exec@co.ulster.ny.us

WESTCHESTER COUNTY
GEORGE LATIMER (R)
900 Michaelian Building
148 Martine Avenue, Suite 408
White Plains, NY 10601
Phone: (914) 995-2900
ce@westchestergov.com

Hand Hygiene Where You Need it

Healthy skin and productivity go hand in hand.



PRO-LINK® Skin Care Products

- From mild cleansers
to heavy duty scrubs



PURELL ES™ Everywhere System

- Designed to fit your world



Distributed by:
E.A. Morse & Co., Inc.
Middletown, NY 800-800-1730
Castleton, NY 800-800-1730


©2015. GOJO Industries, Inc. All rights reserved.



ROTRON MILITARY & AEROSPACE PRODUCTS

Ametek Rotron is the industry leader in the design, development, manufacture and through life support of high performance, high reliability AC and brushless DC Fans, Blowers and Cooling Systems. With over 25 product active families, we offer the widest available military and aerospace cooling product range in the world, along with a capability to use our field-proven core product baselines to create unique configurations – addressing system specific space, weight noise, power and system interface requirements.

WE'RE HIRING:
Currently seeking qualified candidates to join our team.
Call us at 845-679-1990 or visit us on our website.

55 Hasbrouck Lane Woodstock, NY 12498 | 845-679-2401
www.rotron.com | www.ametekms.com





Our People Are Your Best Insurance

- ◆ Insurance for Business, Auto, Home, Life & Health
- ◆ Group Benefits
- ◆ Bonds & Specialty Risks
- ◆ Wealth Management & Financial Planning

Marshall & Sterling
INSURANCE
845-331-2255

marshallsterling.com/kingston
facebook.com/MarshallSterlingKingston

Founded in 1864. A 100% Employee-Owned Company.



Here's Help
STAFFING || RECRUITING

Trusted by Hudson Valley Businesses.
Chosen by Hudson Valley Talent.
Since 1986



Here's Help is a staffing and recruiting leader in the Hudson Valley.

****DISCOUNT OFFERED TO COI MEMBERS**

**371 EAST MAIN STREET
MIDDLETOWN, NY 10940**

**WWW.HERESHLP.COM
(845) 344-3434**

TECHNICAL SOCIETIES

ACM	Association for Computing Machinery pok.acm.org
APICSTZ	APICS Tappan Zee www.apicstz.org
ASQ	ASQ Mid-Hudson Section 302 www.asqmidhudson.org
ASSE	American Society of Safety Engineers Hudson River Valley Chapter hudsonrivervalley.asse.org
HVOPEN	HV Open (previously MHVLUG) Open Technologies www.hvopen.org
HVP	Hudson Valley Programmers www.meetup.com/hvprogrammers/
IEEE	Mid-Hudson Section of the IEEE webinabox.vtools.ieee.org/wibp_home/index/R10019
MHCUG	Mid-Hudson Computer User Group, Inc. www.mhcug.org

MHHRA	Mid-Hudson Human Resource Association www.midhudsonhr.org
MHVSHRM	Mid-Hudson Valley Society for Human Resource Management www.mhvshrm.org
PMA	Precision Metalforming Association of NY and NJ www.pma.org/districts/NY/
PMI	Project Management Institute www.pmi.org
SME	Society of Manufacturing Engineers www.sme.org
SWE	Society of Women Engineers www.swe.org
WiM	Women in Manufacturing www.womeninmanufacturing.org



CONGRATULATIONS
**Hudson Valley
 Community College**
 on the opening of the
**GENE HAAS CENTER
 FOR ADVANCED
 MANUFACTURING
 SKILLS**



The Gene Haas Center for Advanced Manufacturing Skills (CAMS) will allow the college to double enrollment in the Advanced Manufacturing Technology (A.O.S.) degree program and meet an urgent workforce demand for skilled employees in the region. CAMS is envisioned as a one-stop hub to support employee training and recruitment. The facilities will be available for corporate demonstrations, shared training activities, meetings and events that connect the college to its workforce partners.



201.327.5215 | hfoallendale.com



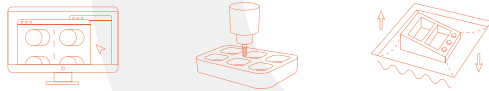
**A 4TH GENERATION
NEWBURGH COMPANY
IS TURNING...**



Now offering **GREEN compostable and food-grade packaging for high volume packaging, food and herb suppliers.**

We design and engineer POP displays for a variety of industries—from high-end beauty brands and pharma companies to local produce growers right here in the Hudson Valley.

**And we do it under
ONE ROOF!**



Contact michael@orangepkg.com and let's unbox some magic.

ORANGE PACKAGING
1 Favoriti Avenue
Newburgh NY 12550
Phone: (845) 562-0900x328
Fax: (845) 562-1020
michael@orangepkg.com
www.OrangePkg.com



Advertisers Index

- 34 Access: Business Solutions
- 49 Allendale Machinery Systems
- 24 All Recycling
- 47 AMETEK Rotron
- 37 AMI Services, Inc.
- 10 Arconic Fastening Systems
- 43 Arnoff Moving and Storage
- 4 Belfor Property Restoration
- 19 Bell Flavors
- 41 Bleakley Platt & Schmidt, LLP
- 23 Bond, Schoeneck & King, PLLC
- 36 Central Hudson
- 13 Chazen Companies, The
- BC CI Collaborative Recruiting Program
- 7 CohnReznick
- 25 Comairco
- IBC Direct Energy Business
- 47 E.A. Morse & Co., Inc.
- 7 Elna Magnetics
- 13 Ethan Allen Workforce Solutions
- 40 Fair-Rite Products Corp.
- 34 Fuzehub
- 25 GlobalFoundries
- 48 Here's Help
- 16 Hudson Valley Community College
- 44 Jackson Lewis
- 7 Maar Printing Service
- 48 Marshall & Sterling Insurance
- 36 Metallized Carbon Corporation
- 33 Orange & Rockland Utilities
- IFC Orange Bank & Trust
- 50 Orange PKG
- 39 PKF O'Connor Davies, LLC
- 28 RBT CPAs
- 9 Selux Corporation
- 9 SUNY Ulster
- 21 Ulster Savings
- 28 Westchester Community College

You want to assemble
smarter energy purchases.

Our energy strategies
help you get there.

Manufacturing operations have unique energy challenges. From large energy-intensive equipment to unpredictable energy costs, you need smarter solutions. At Direct Energy Business, we can customize an energy strategy based on actionable insights to help manage costs, reduce energy consumption and minimize disruptions to your operation to improve efficiency.

Our end-to-end solutions include:

- ✔ Electricity
- ✔ Gas
- ✔ Demand Response
- ✔ Peak Load Management
- ✔ On-site Solar

Ron Aberizk

Sales Manager

860.302.4631

Ronald.Aberizk@directenergy.com





The Council of Industry
6 Albany Post Road
Newburgh, NY 12550



HV Mfg Jobs.com

POST YOUR JOBS TO THE BEST SOURCE FOR HUDSON VALLEY MANUFACTURING JOBS!

Job posting packages starting at \$250

Join the Council of Industry's Collaborative Recruiting Initiative and help us promote modern manufacturing throughout the Hudson Valley!

Participating companies attract the qualified candidates they need by posting jobs directly on the Council of Industry's Job Board, which pushes those listing out to over 100 job boards including Indeed, Glassdoor, Zip Recruiter and LinkedIn.

Visit
councilofindustryjobs.com
to learn more

30 + COMPANIES

100 'S OF JOBS FILLED

1,000 'S OF APPLICANTS

5,000 + SEARCHABLE RESUMES



845.565.1355
jhansen@councilofindustry.org