

MICHIGAN

MANUFACTURING

TECHNOLOGY

CENTER

MANUFACTURE SMARTER.

## IN THIS ISSUE:

SPRING CLEAN  
WITH LEAN

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FILL YOUR  
TALENT GAP WITH  
MILLENNIALS

*And reshape your corporate  
culture in the process!*

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HOW MARKET  
RESEARCH CAN  
HELP YOU

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CAN'T MISS 2020  
INDUSTRY 4.0  
EVENTS



**COURSE CATALOG**  
APRIL – JULY 2020

WANT TO GET BETTER?  
JUST RAISE YOUR



YOUR JOURNEY TO

MANUFACTURE SMARTER

BEGINS RIGHT HERE

WITH US.





## THE MICHIGAN MANUFACTURING TECHNOLOGY CENTER

has assisted Michigan's small and medium-sized businesses since 1991. Through personalized services to meet the needs of clients, we develop more effective business leaders, drive product and process innovation, promote company-wide operational excellence and foster creative strategies for business growth and greater profitability.

**MICHIGAN**  
**MANUFACTURING**  
**TECHNOLOGY**  
**CENTER**

WANT TO GET BETTER?  
JUST RAISE YOUR



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# ABOUT US

The Michigan Manufacturing Technology Center understands what enables businesses to grow and provides services to implement and track strategies that do so.

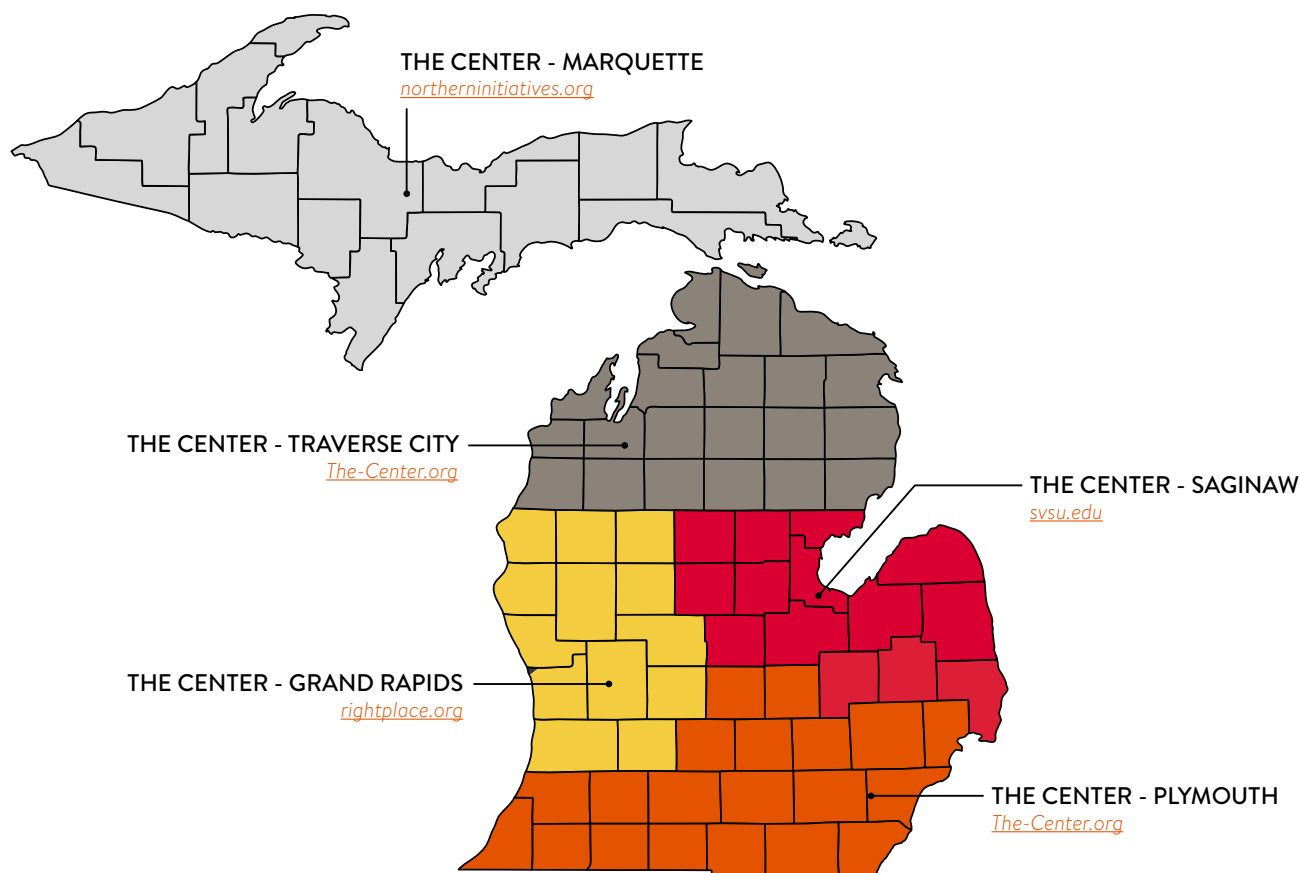
## WHAT WE BELIEVE

Michigan manufacturing. It's what drives us. It's why we exist. To make manufacturers better, to show them how to grow, adapt and add jobs here. We assist by showing best practices. By finding efficiencies. By connecting manufacturers with partners. By coaching. By leading. And by doing the little things that add up to greatness. Our team delivers by lowering costs, reducing waste and more. Manufacture more efficiently. Manufacture more competitively. Manufacture smarter.

*The Michigan Manufacturing Technology Center is accredited by the International Association for Continuing Education and Training (IACET) and is authorized to issue the IACET CEU.*



# LOCATIONS



# CLASSES & EVENTS AT A GLANCE

## APRIL

1	Standard Work
2-3	Manufacturing Skills Development
2-3	Sales Acceleration Workshop
3	5S/Visual Management & Pull Systems
6	8D Problem Solving
8	Core Tools: Measurement Systems Analysis
8	Standard Work
9	Core Tools: Statistical Process Control
13	Improving Information Security Through Risk Management
13-30	Lean Six Sigma Green Belt
14-16	ISO 9001:2015 Internal Auditor
15	Building Better Teams
17	Blueprint Reading
17-5/1	Practical Approach to Project Management Using Smartsheet®
20	Standard Work
21	8D Problem Solving
21-23	Supervisor Skills 2.0 - Sustained Leadership Program
22	A3 Problem Solving
22-23	AIAG-VDA Process FMEA for Practitioners
22	Error Proofing/Poka-Yoke
22-23	Manufacturing Skills Development
23-24	Market Research Tools
24	A3 Problem Solving
24	Error Proofing/Poka-Yoke
27-5/6	Supervisor Skills
28	❖ EXPLORE: The Foundation to Great Leadership
29-30	Core Tools: APQP, PPAP & FMEA

## MAY

4-21	Lean Manufacturing Champion: Continuous Improvement With Technology
5-7	Lean Office Champion
5	Standard Work
5-14	Supervisor Skills
6	Improving Information Security Through Risk Management
7	5S/Visual Management & Pull Systems
8	Food Processing Skills Development
11-14	IATF 16949:2016 Internal Auditor
11-13	Practical Approach to Project Management
12-13	Manufacturing Skills Development
13-14	Core Tools: APQP, PPAP & FMEA
14	❖ EXPLORE: Practical Approach to Project Management Using Smartsheet®
14-15	GD&T Comprehensive
15	❖ WEBINAR: Cybersecurity Resiliency for Defense Contractors
18	Total Productive Maintenance/Quick Changeover
19	A3 Problem Solving
19	Error Proofing/Poka-Yoke
19-21	ISO 9001:2015 Internal Auditor
19-20	Preventive Controls Qualified Individual (PCQI)
19-6/4	Six Sigma Green Belt
28	Core Tools: Statistical Process Control
29	❖ EXPLORE: The Industry 4.0 Experience

## JUNE

1-2	AIAG-VDA Process FMEA for Practitioners
2-11	Supervisor Skills
3-4	Risk Management Using FMEA
5-19	Practical Approach to Project Management Using Smartsheet®
8-11	ISO 13485:2016 Internal Auditor
8-10	ISO 9001:2015 Internal Auditor
9-11	Advanced Problem Solving: Lean Six Sigma Yellow Belt
10	EXPLORE: The Truth About Employee Engagement
15	GD&T Fundamentals
16-18	Lean Office Champion
17-18	Core Tools: APQP, PPAP & FMEA
22	Understanding Lean Principles & Techniques 4.0
23-26	IATF 16949:2016 Internal Auditor
23-25	Supervisor Skills 2.0 - Sustained Leadership Program
24-25	Core Tools: APQP, PPAP & FMEA
29-30	ISO 14001:2015 Internal Auditor

## JULY

6	Risk Management & Total Cost of Ownership for Supply Chain
9-10	Risk Management Using FMEA
13	8D Problem Solving
14-16	Advanced Problem Solving: Lean Six Sigma Yellow Belt
15	❖ WEBINAR: Cybersecurity Resiliency for Defense Contractors
16-17	Market Research Tools
20	Blueprint Reading
21	Standard Work
22	5S/Visual Management & Pull Systems
22-24	ISO 9001:2015 Internal Auditor
23	A3 Problem Solving
23	Error Proofing/Poka-Yoke
28	Core Tools: Statistical Process Control
29	Core Tools: Measurement Systems Analysis
30	Core Tools: Measurement Systems Analysis
30-31	Foreign Supplier Verification Program (FSVP)

❖ Denotes a Special and/or Free Event

## CAN'T FIND A CLASS YOU'RE LOOKING FOR?

For assistance or to discuss available training options at your facility, call 888.414.6682 and speak with a Michigan Manufacturing Technology Center Coordinator or email [inquiry@the-center.org](mailto:inquiry@the-center.org).



# REGISTERING IS QUICK & CONVENIENT

Advance registration is required. Since many courses fill early, we recommend registering at least two weeks before the course begins.

## TRAINING SITE:

**Training is held at 45501 Helm St. in Plymouth, MI unless otherwise noted.**

Customizable courses can be conducted at your facility. Courses cover Operational Excellence, Business Growth, Workforce and Leadership Development, Cybersecurity, Food Processing and Supply Chain Optimization.

## REGISTER ONLINE

Registering online is quick and convenient with our secure registration system using your credit card. To search or register for upcoming events and classes, visit [The-Center.org](https://The-Center.org).

## CALL US

Speak with a Michigan Manufacturing Technology Center Coordinator or register for upcoming classes by calling 888.414.6682 during business hours: Monday through Friday, 8:00 AM to 5:00 PM.

## CANCELLATION/RESCHEDULING POLICY AND FEES

ALL CANCELLATION AND RESCHEDULING CHANGES ARE SUBJECT TO THE FOLLOWING CONDITIONS:

- All cancellations and course rescheduling must be done in writing via email at [events@the-center.org](mailto:events@the-center.org). All online registrations must be paid via credit card/PayPal only.
- Any course registration canceled 15 calendar days or more prior to original course date will receive a full refund less a \$100.00 administrative fee.
- Any course registration canceled less than 15 calendar days prior to original course date, as well as NO SHOWS, will forfeit all fees.
- Any rescheduling requests must be received at least 15 calendar days or more prior to original course date. A \$100.00 administrative fee will be applicable to all date changes.
- Any rescheduling requests occurring in less than 15 calendar days prior to original course date will be subject to an administrative fee of 50% of the course fee.

## NEARBY LODGING

For guests needing overnight accommodations, The Center has partnered with various hotels in the area. We hope you'll take advantage of one of the many choices near our Plymouth, Mich. location. To search hotels near The Center, visit [The-Center.org/Resources/Lodging](https://The-Center.org/Resources/Lodging).



# OUR SUCCESS DEPENDS ON YOURS

After completing a project with The Center, our clients are surveyed by an independent third party to gauge the impact of our services on operational performance. Focus is placed on jobs retained or created, investments made, sales generated or retained and the calculation of cost savings.

## WHAT WE DO

### GROWTH

Strategy to improve business. Marketing that attracts customers.

### OPERATIONAL EXCELLENCE

Proven solutions. Achieve greater success. Quality, Lean, Assessments.

### CYBERSECURITY

Information security assessment. Regulatory compliance.

### LEADERSHIP DEVELOPMENT

Hands-on learning. Thorough business analysis. Management training.

### SKILL DEVELOPMENT

Advance faster. Six Sigma, QMS, supply chain, sales, blueprint reading.

### ACCELERATING TECHNOLOGY

Advanced tools to gain insights. Make effective strategic decisions.

### RESEARCH SERVICES

Get answers. Explore facts. Find the information. Qualitative and quantitative.

### FOOD PROCESSING

Improve efficiencies. Process standardization and prevention-based controls.

### HOW WE ASSISTED 443 MICHIGAN MANUFACTURERS IN THE PAST YEAR:

 | \$83.2M  
IN NEW SALES

 | \$738.2M  
IN RETAINED SALES

 | \$54.9M  
IN COST SAVINGS

 | \$173.7M  
INVESTMENTS MADE

 | 6,764 JOBS  
CREATED OR RETAINED

## CONNECT WITH US

## ANYWHERE, ANYPLACE, 24/7

SOCIAL MEDIA is an essential part of professional development and staying on top of industry trends. Connect with the Michigan Manufacturing Technology Center online to find opportunities for networking, knowledge sharing with peers, upcoming events and the latest in manufacturing news.

### BLOG

From Lean Manufacturing to Six Sigma, our blog delivers the latest manufacturing topics and trends from industry experts. Subscribe at [The-Center.org/blog](http://The-Center.org/blog).

### LINKEDIN

Connect with us in a professional setting, gaining access to up-to-date industry news, training and job opportunities. Don't wait.

### FACEBOOK

From manufacturing tips and news to upcoming courses, events and discounts, The Center's official Facebook page has it all. 'Like Us' and join the conversation!

STAY CONNECTED:



# BUSINESS DEVELOPMENT

## MARKET RESEARCH TOOLS

This hands-on class will teach participants the necessary skills for developing in-house market research initiatives. You will learn about free and low-cost resources for investigating the competitive landscape, industry trends and other key market data, as well as how to collect information on customer perceptions, level of satisfaction, and other key metrics using online surveys. Topics include competitive intelligence, prospect list generation, market analysis and more.

1 1/2 days of classes

SESSION(S) AVAILABLE (8:00 AM - 5:00 PM/8:00 AM - 12:00 PM)

- April 23-24, 2020
- July 16-17, 2020

COST ..... \$795/Person

## SALES ACCELERATION WORKSHOP

Hoping to take your sales strategies to the next level? This course, tailored towards salespeople in the manufacturing industry, offers a comprehensive analysis of your company's sales strategies. The Center will walk you through how to better understand the current market and how effectively your company is competing within it, using a variety of proven tools such as:

- Sales and Marketing Strategy
- Market Research Strategies
- SWOT and PEST Analyses
- Website/Social Media Leverage
- CRM Analysis
- Sales Management Tools

2 days of classes

SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

- April 2-3, 2020

COST ..... \$799/Up to 2 people

# ENVIRONMENTAL

## ISO 14001:2015 INTERNAL AUDITOR

(CEU Credits: 1.4)

The Center's highly engaging ISO 14001:2015 Internal Auditor course will quickly acquaint you with ISO 14001:2015 standards and requirements, and help your company prepare for certification.

2 days of classes

SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

- June 29-30, 2020

COST ..... \$795/Person

# CYBERSECURITY/ INDUSTRY 4.0

## EXPLORE: THE INDUSTRY 4.0 EXPERIENCE

Join us for a free event focused on understanding and employing the tools and technologies of Industry 4.0. Attendees will have an opportunity to interact with advanced manufacturing technologies in a hands-on capacity, gain insight from industry experts about the many benefits and uses of a variety of manufacturing technology, and identify relevant and affordable technologies to support your business goals. Start your journey towards building a factory of the future.

SESSION(S) AVAILABLE (10:00 AM - 2:00 PM)

- May 29, 2020 (Kalamazoo)

COST ..... FREE

## IMPROVING INFORMATION SECURITY THROUGH RISK MANAGEMENT

In the current age of cyber crime, it is important that companies understand and manage the risks to their business information, systems and networks. This class covers how to identify and mitigate information security risks using the NIST Cybersecurity Framework. By utilizing the five primary framework categories (Identify, Protect, Detect, Respond, Recover) participants will learn how to identify information that needs to be protected, improve processes to reduce risk, identify if the information has been compromised and learn how to recover from these compromises.

SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

- April 13, 2020
- May 6, 2020 (Mount Clemens)

COST ..... \$495/Person

## WEBINAR: CYBERSECURITY RESILIENCY FOR DEFENSE CONTRACTORS

To combat the growing threat of cyber-attacks and enhance protection of information throughout the defense supply chain, all Department of Defense (DoD) contractors must comply with the Defense Federal Acquisition Regulation Supplement (DFARS) cybersecurity standards and requirements outlined in NIST SP 800-171. In this webinar, cybersecurity experts from the Michigan Manufacturing Technology Center will provide a review of current DoD requirements including DFARS and DODI 8582.01, upcoming DoD requirements including the DCMA assessment methodology and CMMC, and discuss the overall importance of risk management and cyber resiliency in business.

SESSION(S) AVAILABLE (1:00 PM - 2:30 PM)

- May 15, 2020
- July 15, 2020

COST ..... FREE



# FOOD PROCESSING

## FOOD PROCESSING SKILLS DEVELOPMENT

Food Processing Skills Development training is designed for those who are either new to the food processing environment or who want to strengthen their understanding of food processing. This hands-on class provides a foundation for core food safety skills, understanding of current food safety regulations, process improvement skills and problem-solving techniques.

SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

• May 8, 2020

COST ..... \$395/Person

## FOREIGN SUPPLIER VERIFICATION PROGRAM (FSVP)

Gain the knowledge to implement the requirements of the “Foreign Supplier Verification Programs for Importers of Food for Humans and Animals” regulation of the U.S. Food and Drug Administration. This regulation implements the provisions of the 2011 Food Safety Modernization Act (FSMA).

1 1/2 days of classes

SESSION(S) AVAILABLE (8:00 AM - 5:00 PM/8:00 AM - 12:00 PM)

• July 30-31, 2020

COST ..... \$595/Person

## PREVENTIVE CONTROLS QUALIFIED INDIVIDUAL (PCQI)

The Food Safety Modernization Act (FSMA) gives the Food and Drug Administration (FDA) broad new powers to prevent food safety problems, detect and respond to food safety issues, and improve the safety of imported foods. All food facilities must establish and implement a Food Safety Plan that includes an analysis of hazards and risk-based preventive controls.

A Preventive Controls Qualified Individual (PCQI) is required to prepare and oversee the implementation of the facility's Food Safety Plan in compliance with FSMA requirements.

Key course topics include:

- Developing a Food Safety Plan
- Hazard Analysis and Preventive Controls
- Verification and Validation Procedures
- Corrective Action (Recall Plan)
- Record Keeping Procedures

This course is recognized by the FDA as meeting the requirements to become a PCQI. Individuals successfully completing this training will receive a certificate from the Food Safety Preventive Controls Alliance (FSPCA).

2 days of classes

SESSION(S) AVAILABLE (8:00 AM - 6:00 PM)

• May 19-20, 2020

COST ..... \$895/Person

# LEADERSHIP/CULTURE

## BUILDING BETTER TEAMS

Team building is an activity-based training that will provide participants an understanding of the importance of teamwork. It creates a climate that encourages and values team member contributions towards problem solving and continuous improvement. Through a variety of activities, participants experience challenges teams face while progressing through the four stages of team development. Team members will also learn how to analyze and discuss behavioral characteristics of people. These individual attributes contribute to mutual trust, allowing teams to learn from each other by sharing information, skills and experiences.

SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

• April 15, 2020 (Mount Clemens)

COST ..... \$395/Person

## EXPLORE: THE FOUNDATION TO GREAT LEADERSHIP

No matter the title — boss, cell leader, foreman, or manager — an employee's immediate supervisor plays a crucial role in their career development, satisfaction and engagement. They also are the main reason an employee chooses to stay and thrive in an organization or walk out the door, taking their experience, talent and contacts with them. Join The Center for an overview event that offers a new perspective to the most essential aspects of leadership. Hear how you can inspire and motivate employees, increase engagement and build trust among workers. Space is limited.

SESSION(S) AVAILABLE (8:30 AM - 10:30 AM)

• April 28, 2020

COST ..... FREE

## EXPLORE: PRACTICAL APPROACH TO PROJECT MANAGEMENT

Join The Center for an overview event that will help you navigate the world of project management. Whether you are a manufacturer launching new products, an engineering firm delivering customer-specified products, or a supply chain professional, you can consistently deliver quality products on time and within budget by adopting effective project management practices. Hear about the fundamental project management tools to manage and complete projects.

SESSION(S) AVAILABLE (8:30 AM - 10:30 AM)

• May 14, 2020

COST ..... FREE

## EXPLORE: THE TRUTH ABOUT EMPLOYEE ENGAGEMENT

It is estimated that as many as 66% of American workers are disengaged in their workplace, costing businesses \$450-\$500 billion per year due to productivity, creativity, quality and safety losses. Join The Center for an exploratory event as we focus on driving engagement throughout your organization with better communication, employee involvement and dedicated leadership.

SESSION(S) AVAILABLE (8:30 AM - 10:30 AM)

• June 10, 2020

COST ..... FREE

# LEADERSHIP/CULTURE

## MANUFACTURING SKILLS DEVELOPMENT

(CEU Credits: 1.4)

Designed for students who are new to manufacturing, Manufacturing Skills Development will provide a foundational understanding of the processes, approach and culture needed to run an effective and efficient operation. The course covers:

**Quality Management Systems** – Offers an introduction to the systems and processes necessary to deliver a conforming product on time while controlling variation in the process.

**Problem Solving Skills** – Addresses the various tools and techniques available for problem solving in the manufacturing environment, focusing on the ability to identify the problem, isolate the root cause, and document the entire process.

**Lean Manufacturing** – Gain an understanding of Lean principles and techniques and how they can be applied to maximize customer value, minimize waste and reduce cost. Get to know the eight types of waste that exist in every organization. A hands-on simulation will be used to demonstrate Lean tool application.

**Culture & Motivation** – Learn effective operational communication, motivational techniques and conflict management.

2 days of classes

**SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)**

- April 2-3, 2020 (Troy)
- April 22-23, 2020 (Kalamazoo)
- May 12-13, 2020

**COST** ..... \$995/Person

## PRACTICAL APPROACH TO PROJECT MANAGEMENT USING SMARTSHEET®

(CEU Credits: 2.1)

Gain the fundamental project management tools to effectively manage and complete projects. Whether you are a newly assigned project manager or have been in the field for years but want to strengthen your approach, this course is for you. This course is perfect for general managers, plant managers, project managers, engineers, and quality, supply chain and I.T. personnel. Learn how to utilize Smartsheet® to standardize projects and to facilitate communication between all identified stake holders. Smartsheet® is a valuable tool used to provide document control that is used for project status updates.

3 days of classes

**SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)**

- April 17, 24 & May 1, 2020
- May 11-13, 2020 (Troy)
- June 5, 12, 19, 2020

**COST** ..... \$1,800/Person

## SUPERVISOR SKILLS

(CEU Credits: 2.8)

Do you have an employee with leadership potential or a newly promoted supervisor or foreman and want to give them practical management training? This is the class you need. Get equipped with the knowledge and skills to thrive in today's management environment. Learn how to identify:

- Various leadership styles
- Different behavioral characteristics and determine the best method of relating to each type
- Communication barriers and techniques to enhance communication
- How to manage and maximize available time and decrease non-productive activities

4 days of classes

**SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)**

- April 27, 29 & May 4, 6, 2020 (Troy)
- May 5, 7, 12, 14, 2020
- June 2, 4, 9, 11, 2020

**COST** ..... \$975/Person

## SUPERVISOR SKILLS 2.0 – SUSTAINED LEADERSHIP PROGRAM

(CEU Credits: 1.5)

Good leadership is not just characterized by the ability to motivate a group toward a common goal—it's the ability to cross over from being someone employees must follow to someone they want to follow. The Center's 18-hour Supervisor Skills 2.0 course will further equip participants with the knowledge and skills needed to become effective leaders. Attendees of this interactive course will be acquainted with additional leadership skills necessary to relate to subordinates, peers and their managers in a productive and efficient manner. Topics covered include:

- Power of Influence
- Crucial Accountability
- Knowing Your Social Style
- Exploring Learning Styles

*Prerequisite: The Center's Supervisor Skills (CEU Credits: 2.8) course.*

3 days of classes

**SESSION(S) AVAILABLE (9:00 AM - 4:00 PM)**

- April 21-23, 2020
- June 23-25, 2020 (Kalamazoo)

**COST** ..... \$975/Person

# LEAN PRINCIPLES & TECHNIQUES

## 5S/VISUAL MANAGEMENT & PULL SYSTEMS

Over time, most workplaces become cluttered with outdated information and materials kept “just in case it’s needed.” This course will provide the tools needed to clear the clutter and create a world-class visual workplace where there is a place for everything. Learn how to successfully transform a factory into a well-organized operation where many messages concerning product quality, productivity, schedule and safety are accurately delivered every day.

**SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)**

- April 3, 2020
- May 7, 2020
- July 22, 2020

**COST ..... \$495/Person**

## A3 PROBLEM SOLVING

Participants will use problem solving tools (5-Whys and Fishbone Diagram) to assist in the continual improvement process with special emphasis on creating and implementing a lean business strategy. Attendees gain further knowledge to confidently measure and improve their processes through data-driven decision making. An exercise in understanding and creating an A3 report is included.

**SESSION(S) AVAILABLE (8:00 AM - 12:00 PM)**

- April 22, 2020
- April 24, 2020 (Kalamazoo)
- May 19, 2020
- July 23, 2020

**COST ..... \$295/Person**

## ERROR PROOFING/POKA-YOKE

Error proofing is essential to running a smooth operation, cost-savings and maintaining sanity in the workplace. Understand the benefits of building in quality at the source by implementing methods or devices into the manufacturing process instead of inspection only at the end of the process. Best practice examples are introduced regarding how companies prevent errors or defects. A hands-on exercise in The Center’s simulated factory is included.

**SESSION(S) AVAILABLE (1:00 PM - 5:00 PM)**

- April 22, 2020
- April 24, 2020 (Kalamazoo)
- May 19, 2020
- July 23, 2020

**COST ..... \$295/Person**

## LEAN MANUFACTURING CHAMPION: CONTINUOUS IMPROVEMENT WITH TECHNOLOGY

**(CEU Credits: 5.6)**

Developing internal lean manufacturing champions helps organizations successfully implement proven techniques for eliminating waste. Using competency-based and hands-on approaches, Lean Manufacturing Champion provides team leaders the knowledge and skills to apply lean business solutions within their own operations, resulting in reductions in the time and cost to execute business processes. To enhance classroom instruction, methods are reinforced in The Center’s simulated factory. Participants will transform a traditional batch-process into a lean cellular manufacturing process.

8 days of classes

**SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)**

- May 4-7, 18-21, 2020

**COST ..... \$2,800/Person**

## LEAN OFFICE CHAMPION

**(CEU Credits: 2.1)**

Apply lean principles beyond the manufacturing floor. Typically 70% of labor costs are attributed to above-the-shop floor activities including support operations such as quoting, accounting, sales and engineering. Lean Office Champion training offers a comprehensive hands-on approach to teach team leaders how to identify opportunities for improvement through reduction in time-conducting transactional activities.

3 days of classes

**SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)**

- May 5-7, 2020 (Kalamazoo)
- June 16-18, 2020

**COST ..... \$1,500/Person**

## RISK MANAGEMENT & TOTAL COST OF OWNERSHIP FOR SUPPLY CHAIN

This class provides participants with an overview of the following Risk Management and Total Cost of Ownership (TCO) concepts:

- Awareness of the impact of risk events if there is no Risk Management Plan
- Ability to assess risk impact for identified supply chain risks
- Ability to create risk mitigation strategies and a risk response plan to manage the identified supply chain risks
- Ability to report and monitor ongoing supply chain events
- Ability to estimate the financial impact of a potential supply chain risk event and understand how to include that in the Total Cost of Ownership estimate
- Understand the importance of implementing an effective TCO strategy
- Learn how to identify and measure TCO cost drivers
- Demonstrate the use of the TCO calculator to make strategic sourcing decisions

**SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)**

- July 6, 2020

**COST ..... \$495/Person**



THE CENTER



RESHAPE

YOUR COMPANY CULTURE  
TO ATTRACT MILLENNIALS

BY: MIGUEL GOMEZ

*IT'S NO SECRET...*

that the manufacturing industry is facing a hiring crisis. Employee attraction and retention efforts must be made a priority if manufacturers want to continue operating into the future. And with skilled trades jobs in Michigan expected to grow by more than 6,200 each year through 2022, now is the time to implement real solutions to ensure talent gaps are filled.

One key to filling this employment gap is Millennials. Millennials, those born between 1981 and 1996, became the largest generation in the workforce in 2016 making up 56 million workers. Since then, this number has only continued to grow. However, as many business owners have learned, a simple job offer is not enough to attract and retain these new workers. If leaders have any hope of filling their talent gaps long-term, they must work to align their company values with those of younger generations.



## WHAT DO MILLENNIALS VALUE?

Hiring and retention practices that worked decades and even years ago are no longer sufficient for incoming generations. Workers' top values no longer revolve around aspects such as job security and pay increases. Instead, Millennials and younger workers value:

- **Meaningful work.** *Individuals want to feel passionate about their jobs, as if they are making a meaningful contribution to the organization and to the greater good. Regardless of the position or industry, workers want purpose in their jobs and to feel like they are truly making a meaningful impact.*
- **Collaboration.** *Rather than working in independent, isolated silos, younger generations prefer to work collaboratively. By sharing ideas and working together as a team to identify and enact solutions, each individual feels more involved, all while getting to know fellow workers better.*
- **Staying connected.** *New generations grew up surrounded by advanced technology. These digital natives thrive when given the opportunity to use different types of technology and largely expect employers to rely on digital forms of communication to connect with workers.*
- **Social justice.** *How does your company give back to the local community? What does your company stand for? When Millennials are job searching, these are important questions they need answered before deciding what kind of organization they want to work for.*
- **Diversity.** *Young workers want to know that their organization actively supports diversity of thoughts and experiences. They want to feel as if alternative ideas and processes will be welcomed and respected, rather than ignored in efforts to maintain the status quo.*
- **Education.** *Millennials want to learn. This curiosity is maximized in a job setting, where workers often are interested in upskilling and furthering their knowledge in order to reach their full potential in their roles, all while opening up new opportunities for future growth.*
- **Skepticism.** *Distrust of authority is a common feeling among young people. To ensure workers understand all leaders' intentions and goals, transparency is key.*

## HOW CAN COMPANIES ADAPT TO THIS CHANGING WORKFORCE?

Millennials seek out companies that are passionate, trustworthy and inclusive. To ensure your organization's culture is the right fit, leaders must:

- **Promote respect and trust.** *Workers want to feel valued and that their best interests are in mind. Acknowledge and take the time to get to know individuals on a personal level. Make transparency a priority in the organization, both with larger staff meetings and in day-to-day work to enhance trust.*
- **Decrease opposition and conflict.** *Put an end to the culture of blame and finger pointing in your facility. Unite departments and promote collaboration and company-wide communication to reduce the potential for conflicts and foster a more positive work environment.*
- **Increase buy-in and productivity.** *Encourage new ideas and listen to all contributions to show workers they can and should share any thoughts for improvement. Go out of your way to recognize a job well done, and ensure each worker sees how they are contributing to the company's greater strategic goals. This will help them understand their role in the organization. It also will promote feelings of loyalty and motivation for success.*

Solving the employment gap will not happen overnight. It requires time and dedication to transform your culture in order to make all generations feel welcome and like their values are being noticed and respected. Ask yourself, what do you have to do to change your culture?



**MIGUEL GOMEZ**  
Quality Program Manager

Miguel is a Quality Program Manager at The Center. In his role, Miguel manages and delivers training and implementation assistance for Quality and Environmental Management Systems. In addition to Quality mentoring, Miguel provides consulting in leadership development, helping clients build stronger skills with communication, time management and employee engagement. In previous roles, Miguel has been directly responsible for anywhere between five and 100 employees across multiple countries and facilities, providing him years of supervisory expertise to share with clients.



# LEAN PRINCIPLES & TECHNIQUES

## STANDARD WORK

A key ingredient in the creation of a Lean enterprise, Standard Work is a set of procedures for each operational process that documents the most effective, balanced combination of people, machines, materials and space to meet customer demand. Standard Work begins as an improvement baseline, but as it is used to improve, it further evolves into a reliable method.

### SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

- April 1, 2020 (Kalamazoo)
- April 8, 2020 (Mount Clemens)
- April 20, 2020
- May 5, 2020
- July 21, 2020

COST ..... \$495/Person

## TOTAL PRODUCTIVE MAINTENANCE/ QUICK CHANGEOVER

Total Productive Maintenance (TPM) is a company-wide effort to improve equipment performance, which then leads to higher productivity, better quality and increased profits. Participants learn how to calculate and use Overall Equipment Effectiveness, the key metric for measuring equipment performance. Emphasis is placed on the importance of teamwork and integration between production and maintenance departments. Focus is also placed on reducing set-up times for manufacturers to increase their flexibility, because frequent set-ups are necessary to produce a variety of goods in small lots. Inexpensive but highly effective techniques are shown to achieve quick changeovers.

### SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

- May 18, 2020

COST ..... \$495/Person

## UNDERSTANDING LEAN PRINCIPLES & TECHNIQUES 4.0

Understanding Lean Principles and Techniques with BUZZ demonstrates how lean can be applied to an organization to maximize customer value, minimize waste and reduce costs through workplace organization and visual controls, cellular manufacturing, quality at the source and pull scheduling. Gain a better understanding of how Lean principles, when effectively applied, can positively impact your company. Learn how to transform a traditional manufacturer into a Lean producer by focusing on material and information flow resulting in lead-time reductions.

### SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

- June 22, 2020

COST ..... \$395/Person

## ADVANCED PROBLEM SOLVING: LEAN SIX SIGMA YELLOW BELT (See page 14)

## LEAN SIX SIGMA GREEN BELT (See page 14)

# QUALITY MANAGEMENT

## 8D PROBLEM SOLVING

### (CEU Credits: .7)

Root cause analysis and problem-solving tools are presented and demonstrated in this session. Both internal (yield issues) and external (warranty, field failure and customer complaint) problems are introduced. Teams use these tools to identify, analyze and determine root cause and ultimately solve the issues. Understanding is gained through practical, hands-on exercises using common measurement gauges. Problems are presented to demonstrate the typical formats for reporting the findings, applying solutions and corrections.

### SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

- April 6, 2020
- April 21, 2020 (Kalamazoo)
- July 13, 2020

COST ..... \$395/Person

## AIAG-VDA PROCESS FMEA FOR PRACTITIONERS

Equip yourself with the knowledge and skills needed to complete the new FMEA methodology, which includes the activities surrounding the 7-Step Approach and use of Action Priority Ratings. The steps are covered with exercises designed to ensure maximum understanding. At course completion, participants will have the tools needed to objectively evaluate the effectiveness of their current FMEA process while planning and using the new AIAG-VDA FMEA process.

2 days of classes

### SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

- April 22-23, 2020 (Mount Clemens)
- June 1-2, 2020

COST ..... \$795/Person

## BLUEPRINT READING

### (CEU Credits: .7)

How to interpret a technical drawing is an essential skill to anyone involved in the manufacturing industry, especially prior to learning GD&T. This course is designed for those who need an introduction to drawing interpretation.

### SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

- April 17, 2020
- July 20 2020

COST ..... \$395/Person



# QUALITY MANAGEMENT

## CORE TOOLS: APQP, PPAP & FMEA

(CEU Credits: 1.4)

Gain a better understanding of the planning, launch and validation of new products or processes. It blends the three core tools of APQP, PPAP and FMEA and guides participants through important steps of the launch process. Utilized correctly, the deployment of these core tools leads to continuous improvement, defect prevention and the reduction of variation and waste.

2 days of classes

SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

- April 29-30, 2020
- May 13-14, 2020 (Kalamazoo)
- June 17-18, 2020 (Kalamazoo)
- June 24-25, 2020

COST ..... \$795/Person

## CORE TOOLS: MEASUREMENT SYSTEMS

ANALYSIS (CEU Credits: .7)

We've all heard the expression "garbage in, garbage out." The same can be applied when product acceptance or process control decisions are based on invalid data. Measurement Systems Analysis examines the sources of variation in the measurement process as well as information about measurement characteristics based on accuracy, precision and stability.

SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

- April 8, 2020
- July 29, 2020
- July 30, 2020 (Kalamazoo)

COST ..... \$395/Person

## CORE TOOLS: STATISTICAL PROCESS CONTROL

(CEU Credits: .7)

Participants run a group of sequentially produced parts and then measure them to determine average, range and sigma. Control limits are calculated using these same parts, and additional samples are measured and plotted to determine where the process is going and why. Interpretations of results are part of this course as well as capability study exercises.

SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

- April 9, 2020
- May 28, 2020 (Kalamazoo)
- July 28, 2020

COST ..... \$395/Person

## GD&T COMPREHENSIVE

Participants in this comprehensive seminar will learn to:

- Explain the benefits of GD&T
- Evaluate tolerances for size, form, orientation and location
- Interpret feature control frames for each GD&T symbol
- Determine correct datum usage and how it affects manufacturing and inspection
- Calculate "bonus" tolerance for MMC and LMC
- Apply geometric tolerances to drawings
- Determine the virtual condition to ensure assembly
- Explain "composite" tolerancing for position and profile

2 days of classes

SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

- May 14-15, 2020

COST ..... \$795/Person

## GD&T FUNDAMENTALS

Learn the importance of the GD&T system, proper identification and call out of datum features, and the effect of modifiers, especially MMC. This course will cover how GD&T saves money over traditional tolerances and how to interpret each of the 14 symbols.

SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

- June 15, 2020

COST ..... \$395/Person

## IATF 16949:2016 INTERNAL AUDITOR

(CEU Credits: 2.8)

During instruction, emphasis is placed on effective auditing processes, skills and techniques. Participants will learn how to develop an audit plan and report required for management review. Corrective and preventive actions will be reviewed. Clear definitions of the five clauses of the IATF 16949:2016 requirements are covered. Participants will be introduced to techniques for interfacing with third party registrars, as well as non-intrusive auditing practices.

4 days of classes

SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

- May 11-14, 2020
- June 23-26, 2020 (Troy)

COST ..... \$1,195/Person

## ISO 13485:2016 INTERNAL AUDITOR

(CEU Credits: 2.8)

Gain a solid understanding of the basics of a process-based quality management system and the specifics of the ISO 13485 medical device system, and how to audit it. Learn how the various requirements may, or may not, apply to your type of organization and be better prepared to implement, understand and audit your system. Auditor tips and techniques are studied as well as scheduling, planning and performing audits. You will conduct several mock audits and end with a practical understanding of the ISO 9001 and added ISO 13485 system audit programs.

4 days of classes

SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)

- June 8-11, 2020

COST ..... \$1,195/Person

# QUALITY MANAGEMENT

## ISO 9001:2015 INTERNAL AUDITOR

(CEU Credits: 2.1)

Learn the information necessary for conducting internal quality audits. Emphasis is placed on effective auditing processes, skills and techniques. Participants will be instructed in developing an audit plan and the audit report required for management review. Corrective and preventive action will be reviewed. This includes an overview of the 2015 standards and requirements, as well as hands-on practice exercises for ISO 9001.

3 days of classes

**SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)**

- April 14-16, 2020
- May 19-21, 2020 (Kalamazoo)
- June 8-10, 2020
- July 22-24, 2020 (Troy)

**COST ..... \$995/Person**

## RISK MANAGEMENT USING FMEA

(CEU Credits: 1.4)

This training will orient participants to the steps of Risk Management using the tool of Failure Mode Effects Analysis (FMEA) to define, manage and reduce risks. Processes also used in this training include brainstorming, creating SIPOCs and creating Process Flowcharts to help in the understanding and analysis of the process. The training addresses each step of conducting an FMEA, with exercises designed to ensure maximum understanding of both Design FMEA and Process FMEA.

2 days of classes

**SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)**

- June 3-4, 2020 (Kalamazoo)
- July 9-10, 2020

**COST ..... \$795/Person**

# SIX SIGMA

## ADVANCED PROBLEM SOLVING: LEAN SIX SIGMA YELLOW BELT

(CEU Credits: 2.1)

Lean Six Sigma Yellow Belt (LSSYB) training develops the skills of the professional who participates as a supporting team member in a variety of Six Sigma projects led by certified Six Sigma Green or Black Belts. Become well versed in the foundational elements of the Lean Six Sigma Methodology.

Upon completion of the class (no project required), a LSSYB will understand the broad aspects of Lean Six Sigma Methodology including competence in the subject matters contained within the five phases of the DMAIC process: Define, Measure, Analyze, Improve and Control. Professionals who attend will gain the knowledge to implement, perform, interpret and apply Lean Six Sigma principles in a skilled, yet limited and/or supportive context.

3 days of classes

**SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)**

- June 9-11, 2020 (Kalamazoo)
- July 14-16, 2020

**COST ..... \$1,500/Person**

# SIX SIGMA

## LEAN SIX SIGMA GREEN BELT

(CEU Credits: 5.6)

Lean Six Sigma Green Belt Certification develops the skills of the internal change agent by implementing the proven methods of both Lean and Six Sigma. The training covers the application of established techniques to remove waste, improve operational speed, lower costs and deliver ultimate customer satisfaction. Lean Six Sigma Green Belt Certification focuses on improved quality and accuracy, minimized cost and variation, on-time delivery and optimized operational speed, all of which enable organizations to become more efficient, profitable and flexible producers.

This certification provides the learner with a coordinated approach to rapidly reduce errors, streamline activities in difficult or complex operational transactions and foster company-wide innovation. Lean Six Sigma Green Belt Certification blends the best of lean thinking with the statistical logic of Six Sigma. Deploying Lean Six Sigma Green Belt initiatives can dramatically reduce operational constraints by utilizing proven Lean and Six Sigma methods to optimize critical processes.

Participants receive a Lean Six Sigma Green Belt Certification upon submission and approval of a Lean Six Sigma project report.

8 days of classes

**SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)**

- April 13-16, 27-30, 2020

**COST ..... \$3,450/Person**

## SIX SIGMA GREEN BELT

(CEU Credits: 3.5)

Almost every process within an organization has at least some problems. As a leader, trying to address every problem is impossible. Providing employees with Six Sigma Green Belt training equips them with a logical and objective way to identify, measure and eliminate those problems. Suddenly, employees don't have to just cope with the problems – they begin to recognize and implement solutions to them.

A down-to-earth blend of DMAIC project management methods and practical data analysis techniques provide employees, at any level of the organization, with new ways to contribute to the bottom line. From executive leaders to front-line employees, Six Sigma Green Belt training enhances the way employees approach their day-to-day work. And when Six Sigma Black and Green Belts are strategically positioned to support each other in the workplace, the improvement potential expands.

At the end of the course, each participant will receive a certificate of completion for attending.

5 days of classes

**SESSION(S) AVAILABLE (8:00 AM - 5:00 PM)**

- May 19-21, & June 3-4, 2020

**COST ..... \$2,800/Person**

# SPRING CLEAN

## YOUR OFFICE WITH LEAN & 5S!

BY: MIKE BEELS

*The idea of spring cleaning has been around for many years, when we commit to thoroughly cleaning our homes, room to room, top to bottom, including areas we typically don't clean. But while this notion of spring cleaning is mostly applied to home organization, it also can – and should – be used to tidy workspaces.*

Some might argue their offices don't need to be deep cleaned, or even resist reorganization because they're used to the current system (no matter how cluttered it may be). Ask yourself, how much time is spent each day struggling to find a specific document, folder or file due to the lack of organization in your workspace?

Using a common Lean tool, 5S, a more ideal work environment can be achieved in just five steps:

- **SORT.** Take a look at what is – and is not – needed to complete job responsibilities. Making these decisions can be tough, as we tend to want to hang on to things once we have them. Find opportunities to remove things like old magazines, duplicate copies, dead plants and knick-knacks that are making it more difficult to perform everyday tasks.
- **SET IN ORDER.** Color code using labeling, signage, tape or other means to identify where each object belongs. This makes resources easier to find and return. Consider, for example, someone trying to locate a file that you have told them is “somewhere on my desk.” A good filing system or ‘In’ and ‘Out’ box with labels will greatly reduce the time they need to search through things on your desk.
- **SHINE.** Clean and straighten the area. This includes wiping down the phone, keyboard and monitor, dusting the desk, etc. Continue to purge your desk and drawers of unneeded documents and items to keep clutter at a minimum.
- **STANDARDIZE.** Create rules to keep this system on track. Sometimes, doing something as simple as taking pictures of the desk or office space to capture how it should look can be helpful.
- **SUSTAIN.** While it is relatively easy to organize a workspace once, it is much more difficult to continue doing it regularly. The space must be reviewed frequently, comparing the way it is to the way it should be. Going forward, after you have fully implemented 5S in all of your offices or cubes, you can consider auditing other areas.

Taking the time to spring clean tends to give us a good feeling when we are finished; a feeling of accomplishment and knowing we are in a cleaner, more organized environment. Why not extend that feeling to the office and beyond with 5S?



**MIKE BEELS**  
Lean Program Manager

Mike Beels has served in the role of Lean Program Manager for the Lean Business Solutions Team at The Center for more than 12 years. His areas of expertise include change leadership, workforce engagement and succession planning, as well as the entire portfolio of Lean strategies and methodologies. As a professional trainer, Mike can command an audience and deliver course material clearly, leaving trainees energized and ready to transfer their new skills to the shop floor or office.





# NEED HELP WITH BUSINESS PLANNING? USE MARKET RESEARCH!

BY: REBEKAH McCARTER



AS MANUFACTURERS BEGIN TO FOCUS ON STRATEGIC PLANNING FOR 2020 AND BEYOND, MANY ASK THEMSELVES: **WHAT ARE MY COMPETITORS DOING? INTO WHICH INDUSTRIES SHOULD WE DIVERSIFY? WHAT NEW ADVANCEMENTS ARE IN THE PIPELINE FOR MY INDUSTRY?**

All of these questions and more can be answered using **market research**. Market research is a systematic approach to collect information about business environments, customers and competitors for decision-making. Using external data, companies can analyze industry aspects such as competitor growth, financial outlooks and technology disruptions. Combined with company data, the management team can make more informed business decisions.

## HOW CAN MARKET RESEARCH HELP YOU?

The Research Services Team at The Center has assisted a wide variety of manufacturers in using market research to answer their most important questions – and many have grown their businesses as a result. Below are a few examples of how market research has supported manufacturers around Michigan:

- An automotive aftermarket supplier was interested in exporting products to different countries. To identify the best areas to target, researchers looked at which countries were the highest importers of their product type, which countries were easiest to access and had strong distribution networks, and how tariffs were impacting the market. The team identified two countries that were the most viable options. After finding a grant to fund business trips, the client traveled to each country to attend trade shows and connect with prospective clients, enabling them to gain several additional contracts.
- A client that specializes in engineering services wanted to diversify outside of the oil and gas industry and identified a geographic region it wanted to serve. Research was conducted to identify which industries were thriving in the area, which invested capital expenditures on equipment and structures and which had the strongest financial outlook. Metal stamping and pharmaceutical were found to be promising. The client joined several relevant industry associations, which led to new contracts within both industries.
- A manufacturer of powertrain components was experiencing declines in sales and had no idea why. Using an online survey of customers, they learned competitors responded better

to the changing nature of vehicles by developing products that were more flexible and relevant. Customers were drawn to these options with more variability in use, leading to the client's reduction in sales. This realization inspired the manufacturer to pay closer attention to the market to retain and gain customers as demand evolves.

- A coffee co-packer was threatened by more environmentally-friendly alternatives. When studying trends and potential alternative uses for their product, researchers identified an opportunity in the pharmaceutical industry with powdered medicine. The company then entered the market and gained new customers for existing products.

Much like in these cases, your company's critical strategic questions can be answered with market research. Whether you are looking to enter a new industry, increase sales or grow into a new geographic market, relevant and useful data can guide your company in the right direction.



**REBEKAH McCARTER**  
Lead Supplier Scout

Rebekah is the Lead Supplier Scout for Michigan, part of a national program that effectively identifies domestic suppliers that meet the specifications of OEMs and other U.S. manufacturers, with a special focus on connecting Michigan companies with other Michigan companies. If you are looking to mitigate risk in your supply chain, transition to more local sourcing or augment your minority suppliers, The Center can help.

# COMPLETE SERVICE OFFERINGS

Don't see a topic you are looking for, need more information, or want to schedule customized training at your company? Call 888.414.6682 or email [inquiry@the-center.org](mailto:inquiry@the-center.org).

## COSTING

- Activity-Based Costing Application & Implementation
- Cost Identification & Management
- Finance for the Non-Financial Manager

## CYBERSECURITY

- Information Security Assessment
- NIST 800-171 Compliance

## ENVIRONMENTAL

- Building a Successful ISO 14001:2015 Program
- ISO 14001:2015 Employee Overview
- ISO 14001:2015 Internal Auditor
- ISO 14001:2015 Management & Organizational Transition

## FOOD

- 5S/Visual Management
- BRC/SQF QMS Mentoring
- FMEA for Food Processors
- Food Producer Website
- Foreign Supplier Verification Program (FSVP)
- Fundamentals of Food Processing
- GMP Mentoring
- Improvement Planning & Process Mapping
- Mentoring/Problem Solving
- Preventive Controls Qualified Individual (PCQI) Food Safety
- Process Improvement
- Risk Management for Food
- Total Productive Maintenance/Quick Changeover

## GROWTH SERVICES

- Business Development Mentoring
- CRM Development
- Customer Cultivation
- Innovation Engineering
- More Effective Messaging
- Sales Acceleration
- Sales Assessment & Strategic Growth Roadmap
- Website Development/Design/Optimization/Maintenance

## INDUSTRY 4.0

- Industry 4.0 Technology Demonstrations
- Project Management of Manufacturing Technology Installation
- Technology Opportunity Assessment

## LEADERSHIP/CULTURE

- Building Better Teams
- Business Metrics & SMART Goals
- Business Operations Planning
- Business Succession Planning
- Leadership Mentoring
- Manufacturing Skills Development
- Practical Approach to Project Management Using Smartsheet®
- Supervisor Skills
  - Communicating & Making Meetings Work
  - Effective Delegation & Time Management
  - Leading People Through Change
  - Successfully Handling Conflict & Problem People
- Workforce Engagement

## LEAN MANUFACTURING

- 5S Training & Application
- A3 Problem Solving
- Advanced Problem Solving: Lean Six Sigma Yellow Belt
- Cellular Manufacturing & Plant Floor Layout
- Error Proofing/Poka-Yoke
- Lean Manufacturing Champion: Continuous Improvement With Technology
- Lean Manufacturing Kaizen Event
- Lean Mentoring
- Lean Office Champion
- Lean Office Kaizen
- Lean Overview
- Lean Six Sigma Green Belt
- Production Preparation Process
- Setup Time Reduction/Quick Changeover/Single Minute Exchange of Dies
- Standard Work
- TimeWise 102: Lean for a Low Volume/Mixed Model Job Shop
- Total Productive Maintenance Kaizen
- Total Productive Maintenance Workshop
- Understanding Lean Principles & Techniques (BUZZ)
- Value Stream Mapping & Deployment Plan

## MARKET INTELLIGENCE

- Assess Market(s) for New Product
- List, Prioritize & Pre-Qualify Prospects
- Market Intelligence Mentoring
- Narrow 10 Markets to 3 Based on Criteria
- What the Market Thinks of Me, My Competition or Issues

## QUALITY MANAGEMENT

- AIAG-VDA Process FMEA for Practitioners
- AS 9100D Internal Auditor
- Blueprint Reading
- Core Tools: APQP, PPAP & FMEA
- Core Tools: Measurement Systems Analysis (MSA)
- Core Tools: Statistical Process Control (SPC)
- GD&T
- IATF 16949:2016 Internal Auditor
- ISO 13485:2016 Internal Auditor
- ISO 9001:2015 Internal Auditor
- Layered Process Audit
- MedAccred Assistance Program
- 8D Problem Solving, Root Cause Analysis & Reporting
- Risk Management Using FMEA

## SIX SIGMA

- Advanced Problem Solving: Lean Six Sigma Yellow Belt
- Design of Experiment
- Lean Six Sigma Green Belt
- MINITAB Training
- Six Sigma Black Belt
- Six Sigma Green Belt
- Six Sigma Mentoring

**MICHIGAN**  
**MANUFACTURING**  
**TECHNOLOGY**  
**CENTER**

MANUFACTURE SMARTER

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## UPCOMING

## INDUSTRY 4.0

## EVENTS

With industry-wide challenges ranging from employee engagement to efficiencies to quality, manufacturers who seek to advance and thrive in the coming years can find comprehensive support with Industry 4.0 technologies. To help small to mid-sized manufacturers understand how specific technologies can aid in their business growth, the Michigan Manufacturing Technology Center will host and support the following events to demonstrate how companies can strategically adopt technologies based on their greatest needs to realize maximum returns.

### EXPLORE: THE INDUSTRY 4.0 EXPERIENCE

May 29, 2020 – Kalamazoo

Interact with the tools and technologies of Industry 4.0 in a hands-on capacity. Learn about the technologies driving the fourth industrial revolution and how they can benefit your company.

[The-Center.org](http://The-Center.org)

### ADVANCED MANUFACTURING EXPO

August 11, 2020 – Novi

August 13, 2020 – Grand Rapids

A gathering of manufacturing innovators and automation experts to network, learn, invigorate and advance Michigan's Manufacturing industry.

[advancedmanufacturingexpo.com](http://advancedmanufacturingexpo.com)

### INTEGR8

November 10, 2020 – Detroit

Explore Industry 4.0 technologies shaping the manufacturing industry, including: Additive Manufacturing, Artificial Intelligence, Big Data, Cloud Computing, Cybersecurity, Simulation, Robotics, Industrial Internet of Things, and more.

[integr8conference.com](http://integr8conference.com)