

**INDUSTRY LEADERSHIP DRIVES  
MANUFACTURING  
ADVANCEMENTS IN WISCONSIN.®**



# WHY MANUFACTURERS CHOOSE WISCONSIN

Companies looking to start, relocate or expand their operations in Wisconsin benefit from the state's central location, reliable infrastructure, talented workforce and business-friendly policies—all of which create competitive advantages that help businesses capitalize upon regional, national and global market opportunities.

Wisconsin's long history of innovation continues to fuel new solutions to challenges facing people, companies, nations and our very planet, with some of the most respected companies in the world drawing upon Wisconsin's plentiful natural resources, renowned research capabilities and the can-do spirit of its citizens to grow and succeed.

## BY THE NUMBERS

The numbers speak for themselves. Wisconsin has more than 9,300 manufacturers in the state that employ over 460,000 workers (16 percent of the state's total employees),<sup>1</sup> and these manufacturers produced over \$56 billion worth of output in 2016, accounting for 18 percent of the state's gross domestic product.<sup>2</sup>

**460K+**

EMPLOYED



BY WISCONSIN MANUFACTURING COMPANIES

## WISCONSIN'S MANUFACTURING LEGACY

We make things in Wisconsin. And we're good at it. We established our manufacturing competence in the industrial age, and our leadership continues today. Technological advancements made by Wisconsin manufacturers keep us at the forefront of industry trends in both productivity and sustainability.

Wisconsin manufacturers benefit from an integrated, versatile and responsive supply chain that keeps production lines humming in our state and throughout the world.

## IN GOOD COMPANY

Among the many Wisconsin-based companies contributing to the state's manufacturing leadership are some of the world's most recognized brands:

<b>Bemis Co.</b> (Neenah)	<b>Mercury Marine</b> (Fond du Lac)
<b>Brady Corp.</b> (Milwaukee)	<b>Oshkosh Corp.</b> (Oshkosh)
<b>Briggs &amp; Stratton</b> (Wauwatosa)	<b>Plexus Corp.</b> (Neenah)
<b>Harley Davidson</b> (Milwaukee)	<b>Quad Graphics</b> (Sussex)
<b>Johnson Controls</b> (Milwaukee)	<b>Rockwell Automation</b> (Milwaukee)
<b>Kimberly-Clark</b> (Neenah)	<b>S.C. Johnson</b> (Racine)
<b>Kohler Co.</b> (Kohler)	<b>Schreiber Foods</b> (Green Bay)
<b>Menasha Corp.</b> (Neenah)	<b>Waupaca Foundry</b> (Waupaca)

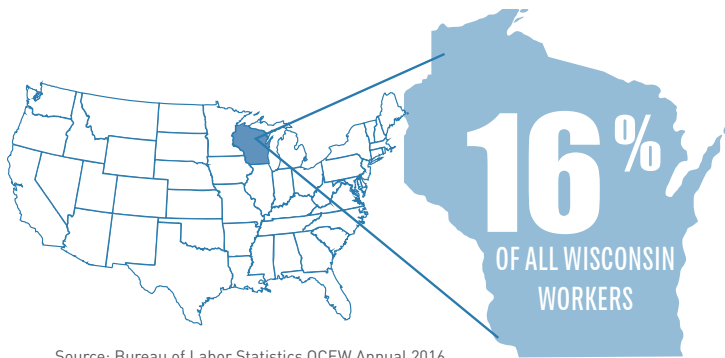
<sup>1</sup> Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Annual 2016 Employment

<sup>2</sup> Bureau of Economic Analysis

Wisconsin ranks #2 nationwide in manufacturing employment concentration. Wisconsin is the only state in the nation with four manufacturing subsectors ranked #1 in employment concentration: electrical equipment, appliance and component manufacturing; fabricated metal product manufacturing; printing and related support activities; and paper manufacturing. Wisconsin has seen continuing growth in many manufacturing subsectors, including commercial and service industry machinery manufacturing, household appliance manufacturing and electric lighting equipment manufacturing, each of which witnessed an employment increase above 20 percent from 2012 to 2016.<sup>3</sup>



# 2<sup>ND</sup> HIGHEST MANUFACTURING CONCENTRATION OF ANY STATE IN THE NATION



Source: Bureau of Labor Statistics QCEW Annual 2016

## TALENT

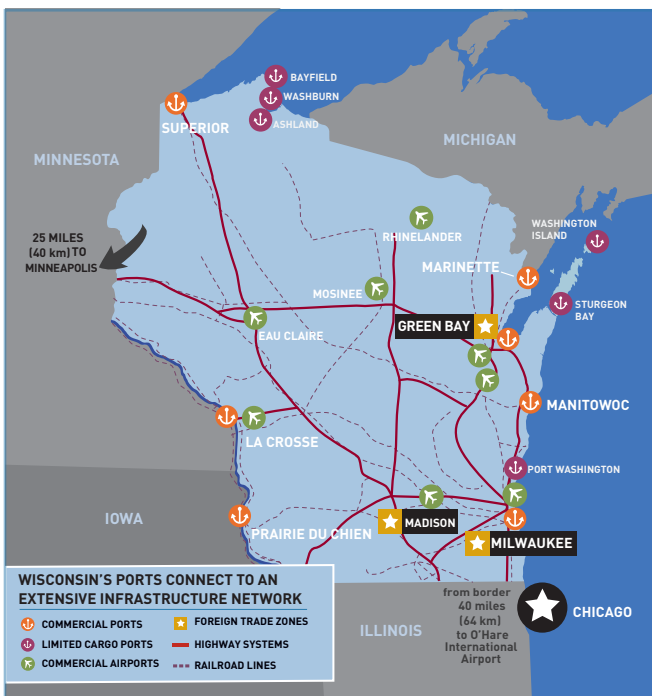
Wisconsin is well known for its industrious, Midwestern work ethic, and its educational system is universally admired. Wisconsin's high school graduation rate is consistently ranked among the top in the nation, and the University of Wisconsin System is regularly cited as a leader in terms of size and quality.

Wisconsin's public and private colleges support the resources, companies and policy makers throughout the state that are working to develop new, innovative products to fulfill market needs. And as the first state in the nation to develop a technical college system, Wisconsin has more than 100 years' experience training its workforce to fulfill ever-changing industry demands.

## INFRASTRUCTURE

Wisconsin's central location and robust infrastructure give companies operating in the state one-day access to major markets throughout the U.S. and beyond. Wisconsin's roads, railways and ports provide seamless, convenient access to the world's busiest multimodal transportation hub, located just 55 miles south of the state's border.

<sup>3</sup> Bureau of Labor Statistics, Quarterly Census of Employment and Wages, Annual Employment



## INFRASTRUCTURE IN WISCONSIN

### 09 HIGHWAY SYSTEMS

State commerce and industry relies on nine major highways covering more than 11,800 miles (18,990 km) to move our goods to market. Our interstate system connects us to major industrial cities across the U.S.

### 13 RAILROAD LINES

Rail traffic throughout the state continues to grow and move more than \$122 billion in freight each year, creating a seamless link in the nationwide intermodal system. Amtrak travels between Chicago and Milwaukee multiple times daily.

### 08 COMMERCIAL AIRPORTS

Eight commercial airport locations serving major industrial and metropolitan areas statewide. These airports are served by all major carriers, linking to every point in the nation within one business day. In addition, these larger airports are within driving distance:

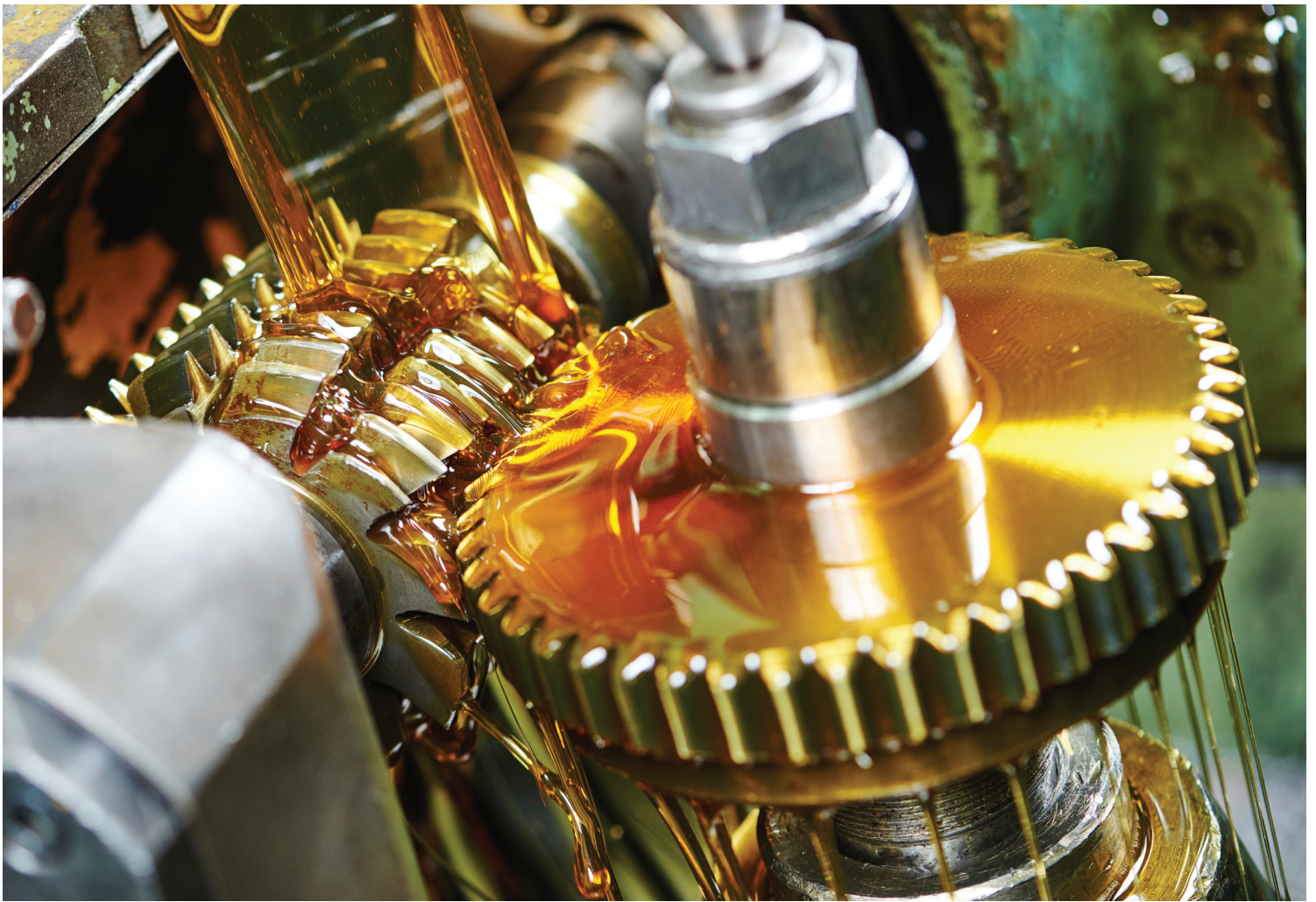
**CHICAGO:** O'Hare is American's second largest hub, with 963 domestic flights daily to 153 U.S. cities and more than 100 direct flights daily to 55 international destinations.  
**MINNEAPOLIS:** 135 nonstop flights including 115 domestic and 20 international markets.

### 13 COMMERCIAL PORTS

Uniquely situated on the nation's greatest waterways, Wisconsin ships 39 million ton of product from commercial cargo ports and 6 limited cargo ports located along Lake Michigan, Lake Superior and the Mississippi River.

### 03 FOREIGN TRADE ZONES (FTZ)

Companies located in one of our three Foreign Trade Zones (FTZs) can import merchandise (by truck, rail, air or boat) without going through formal customs entry procedures or paying import duties. These companies have the option to pay tariffs after their product inventory is sold, improving cash flow and saving money. Other benefits include, but are not limited to: global market competitiveness, minimized bureaucratic regulations, and improved supply chain efficiencies.

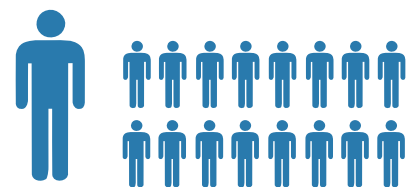


## MANUFACTURING EMPLOYMENT CATEGORIES

	INDUSTRY	JOB	ANNUAL PAY
1	Fabricated metal product manufacturing	72,634	\$51,886
2	Machinery manufacturing	65,422	\$62,117
3	Food manufacturing	65,187	\$47,750
4	Plastics and rubber products manufacturing	32,072	\$48,549
5	Paper manufacturing	30,327	\$65,030
6	Printing and related support activities	29,575	\$48,420
7	Transportation equipment manufacturing	26,562	\$60,398
8	Electrical equipment and appliance mfg.	23,656	\$66,960
9	Computer and electronic product manufacturing	18,582	\$74,085
10	Wood product manufacturing	17,419	\$38,312

**88%**

GREATER EMPLOYMENT CONCENTRATION  
THAN THE NATIONAL AVERAGE



Source: Quarterly Census of Employment and Wages - Bureau of Labor Statistics, Annual 2016 employment

# CUTTING-EDGE ACADEMIC PROGRAMS AND INDUSTRY-ACADEMIC COLLABORATIONS

Beyond traditional economic development resources for manufacturers, Wisconsin companies benefit from an ongoing tradition of collaboration and a commitment to industry advancement that is shared among the private sector, state and local governments and academia.

In partnership with manufacturers across the state, the UW System has achieved Center of Excellence status for more than 100 programs geared toward maximizing the state's manufacturing capabilities—from developing new technologies to improving logistics efficiency and response time. The statewide economic impact of these Centers of Excellence is \$15 billion per year, underscoring the value they add to Wisconsin's manufacturing industry.

Wisconsin's manufacturing ecosystem brings together the public and private sectors, including school administrators, teachers and students, to ensure that the right resources are made available to continue the industry's forward momentum.

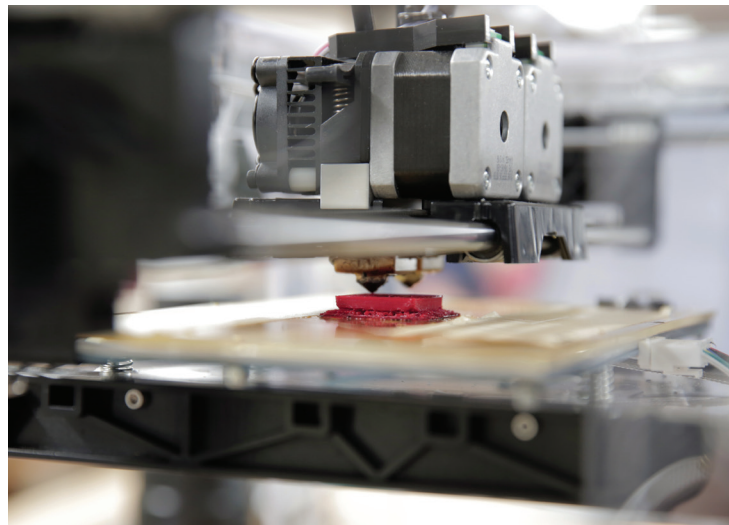


Photo courtesy of UW-Madison College of Engineering



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## UW-MADISON

The **UNIVERSITY OF WISCONSIN-MADISON** is an academic heavyweight, with more than 40,000 students and an annual budget of nearly \$3 billion. Founded in 1848, the university consistently ranks in the top ten nationally for research spending. The university has a wide variety of undergraduate and graduate degree programs, including 15 separate undergraduate majors in the school of engineering. The university's centers and programs serve as resources for industry, incubators for new business ventures, and training grounds for the skilled workforce of the future.

**QUICK RESPONSE MANUFACTURING CENTER** – Not-for-profit consortium of companies, faculty and students at UW-Madison that researches and implements lead-time reduction principles for manufacturers.

**ADVANCED MATERIALS INDUSTRIAL CONSORTIUM** – This group of university- and industry-led initiatives provides businesses with an array of materials research, design and testing options that bring professors, students and scholars together to provide solutions. Member organizations have a presence at other UW sites in the state, including Milwaukee, Eau Claire and Platteville.

**UW E-BUSINESS CONSORTIUM** – A business and university collaboration delivering collaborative solutions and best practices in the areas of marketing, IT, supply chain management, customer service and sales.

**WISCONSIN ELECTRIC MACHINES AND POWER ELECTRONICS CONSORTIUM** – Fosters the growth of advanced electrical-energy conversion technologies and their many applications in Wisconsin industry. Since its founding in 1981, the consortium has drawn sponsorship from such companies as Boeing, Mercury Marine and Chrysler.

**ENGINE RESEARCH CENTER** – World-leading research and educational center performing research on spark ignitions and diesel engines. Work includes groundbreaking low-temperature combustion research.

**WISCONSIN REGIONAL MATERIALS AND MANUFACTURING NETWORK** - A collaborative effort among seven UW campuses, with industry partners, to enhance research, education and industrial development in materials science.

## UW-STEVENS POINT



**Wisconsin Institute for Sustainable Technology**  
University of Wisconsin-Stevens Point

**WISCONSIN INSTITUTE FOR SUSTAINABLE TECHNOLOGY** - Supports business development with applied research and laboratory services

## UW-EXTENSION DIVISION OF ENTREPRENEURSHIP AND ECONOMIC DEVELOPMENT



Fosters, supports and coordinates entrepreneurship and economic development activities occurring at University of Wisconsin campuses and the communities they serve. In order to accomplish this goal, UW-Extension utilizes three major centers:

**SMALL BUSINESS DEVELOPMENT CENTER** - Works with business owners and entrepreneurs throughout the state to facilitate business growth and improvement and to launch successful new companies.

**CENTER FOR TECHNOLOGY COMMERCIALIZATION** - Provides support and resources to bring innovations to market through assistance with funding acquisition efforts.

**CENTER FOR COMMUNITY TECHNOLOGY SOLUTIONS** - Works across all four UW-Extension divisions to bring the potential and economic benefit of broadband (high-speed Internet) to communities across Wisconsin.

## GATEWAY TECHNICAL COLLEGE

**IMET CENTER** - Built in partnership with Johnson Controls, this 61,000-square-foot educational fabrication laboratory and flexible manufacturing training center provides training to enhance the skills of Wisconsin's manufacturing workforce through programs, certifications and apprenticeships.



## UW-STOUT MANUFACTURING OUTREACH CENTER



A partnership between UW-Stout and five technical schools (Chippewa Valley, Nicolet Area, North-Central Western, Wisconsin Indianhead), dedicated to increasing manufacturing efficiency and decreasing waste. The partnership, established in 1994, provides services in the areas of energy management, lean manufacturing, sustainability, export readiness and much more.

**DISCOVERY CENTER** - Fulfilling UW-Stout's polytechnic focus of multidisciplinary research, the Discovery Center provides transformative education, strategic collaboration and results-focused technical assistance to business and industry.



## MARQUETTE UNIVERSITY



**CENTER FOR SUPPLY CHAIN MANAGEMENT** - Nationally recognized supply chain management program that gives students real-world experience while providing businesses access to the latest advances in supply chain management education.

## MILWAUKEE SCHOOL OF ENGINEERING



### RAPID PROTOTYPING CENTER

Works with companies to cut costs in early-stage product development through the use of highly advanced machinery.

IN 2016, **WISCONSIN'S COLLEGES AND UNIVERSITIES AWARDED MORE THAN**

**4,000**  
ACADEMIC DEGREES

IN ENGINEERING AND ENGINEERING TECHNOLOGY FIELDS, INCLUDING CERTIFICATES, ASSOCIATE DEGREES, BACHELOR'S AND ADVANCED DEGREES.

Source: National IPEDS database published by the U.S. Department of Education's NCES

## UW-MILWAUKEE

As a public urban research university, UW-Milwaukee (UWM) has established an international reputation for excellence in research, community engagement, teaching and entrepreneurship. With an annual budget of \$546 million and more than 28,000 students, UWM is a low-cost leader among the nation's 200 research universities. It is home to an eminent academic program in materials engineering. Since the UWM Research Foundation was launched in 2006, issued patents and patent applications have grown to nearly 200.

**ENERGY ADVANCEMENT CENTER** – Provides groundbreaking collaboration between academia and industry in the city of Milwaukee. The University and Johnson Controls partnered to build a state-of-the-art dry lab, which opened in 2012 with technology far surpassing that found on a typical academic campus.

**LUBAR SCHOOL OF BUSINESS SUPPLY CHAIN MANAGEMENT INSTITUTE** – Unique industry-university partnership that examines supply chain challenges and practices within firms and across a variety of industrial sectors. Provides thought leadership and expertise in the broad areas of supply chain management research and education.

**CENTER FOR ADVANCED MATERIALS MANUFACTURING** – Aims to revitalize the materials manufacturing industry in Wisconsin and the U.S., with research under way on high-performance castings, metal matrix micro- and nanocomposites, metal matrix syntactic foams, self-healing materials and self-cleaning materials. Has agreements with related research institutes around the world.

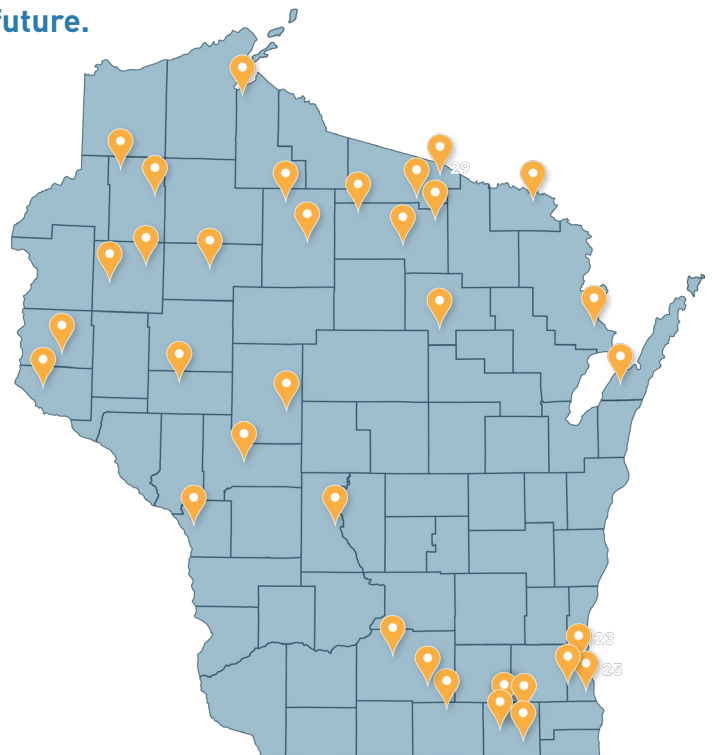
**INDUSTRIAL ASSESSMENT CENTER** – Provides technical assessments to small and midsize manufacturers. Provides on-site assessments aimed at improving energy efficiency, reducing resource consumption and decreasing operating costs.

# FAB LABS TO TRAIN MANUFACTURING WORKERS OF THE FUTURE

Fabrication laboratories (fab labs) are state-of-the-art facilities where academia and industry come together to devise new solutions to market challenges. These labs provide companies with an economical means to conduct product testing and prototyping. They also serve as high-tech business incubation centers. Among the technologies fab labs offer to businesses looking to test new ideas are:

- Computer-controlled laser cutters for press fit-assembly of 3D structures from 2D parts
- Large numerically controlled milling machines for furniture and house-sized parts
- Sign cutters to produce printing masks, flexible circuits and antennas
- Precision (micron resolution) milling machines to make 3D molds and surface mount circuit boards
- Programming tools for low-cost, high-speed embedded processors

**In 2016 and 2017, a total of 34 fab labs in public school districts across Wisconsin received a total of \$1.1 million in grant funding for equipment purchases helping to train the workforce of the future.**



# WORLDWIDE IMPACT



## GLOBAL LEADERSHIP

Wisconsin's global leadership in manufacturing was built, and is sustained, by synergistic relationships between industry participants and the economic and professional development organizations serving them—all of whom share a commitment to continuous improvement.

**NEW MANUFACTURING ALLIANCE** – An association of manufacturers and support services in northeast Wisconsin aligned to strengthen the region's position as a world leader in advanced manufacturing

**NORTH COAST MARINE MANUFACTURERS ALLIANCE** – brings together seven shipbuilding companies and three educational partners to develop and promote the region as a leader in marine design, engineering and production.

# 96%

OF CONSUMERS LIVE OUTSIDE THE U.S.

Source: National Foreign Trade Council

# MANUFACTURED GOODS ACCOUNT FOR 86% OF WISCONSIN EXPORTS

Source: U.S. Census Bureau data as reported by WISERTrade, 2016

Manufactured goods account for 86 percent of all Wisconsin exports, demonstrating a healthy worldwide demand for products and technologies originating in the state. Mature markets as well as developing economies across the globe benefit from the proven expertise Wisconsin companies have developed and successfully applied both domestically and internationally. Consistently ranking among Wisconsin's top export categories are industrial machinery, electrical machinery, and medical and scientific instruments. These three categories accounted for more than 45 percent of Wisconsin's total manufacturing exports in 2016.

### WISCONSIN MANUFACTURING EXTENSION PARTNERSHIP (WMEP) –



Provides a variety of programs designed to help manufacturers achieve key objectives. Offers customized planning and implementation assistance programs that encompass growth, cost and efficiency, certification and compliance, and creating a winning culture. To date, WMEP has provided 6,684 assistances, resulting in more than \$3 billion in direct economic impact. Its programs include:

### WISCONSIN PROFITABLE SUSTAINABILITY INITIATIVE (PSI) –

The only program of its kind in the U.S., PSI helps small and midsize manufacturers develop sustainable practices that save money and improve competitiveness. PSI uses a multidisciplinary approach to sustainability, using partners with specialized expertise to help drive improvements. On average, companies realize annual savings of \$147,783.

**EXPORTECH™** – With 96 percent of consumers residing outside the U.S., this program provides small and midsize manufacturers with training and guidance to develop and expand their exports. This focused three-session program with follow-up helps companies identify export markets and increase speed to market for their products. Within the first year after completion, companies on average increase sales by \$900,000.

**SUPPLY CHAIN ADVANTAGE/ACCELERATE** – Designed to help suppliers increase the speed of production to improve performance and flexibility. Combining a customizable blend of high-level strategic consulting and hands-on assistance, Accelerate helps companies reduce critical path time by 43 percent on average.



MANUFACTURERS PRODUCED

**\$56  
BILLION**



WORTH OF  
ECONOMIC OUTPUT  
IN 2016, ACCOUNTING  
FOR OVER 18% OF  
THE STATE'S GROSS  
DOMESTIC PRODUCT.

Source: Bureau of Economic Analysis

## TOP WISCONSIN PRODUCT EXPORTS 2016

(Product categories are based on 2-digit HS code numbers.)

CATEGORY	EXPORT VALUE	PERCENT OF STATE EXPORTS
Industrial machinery	\$5,203,121,536	24.8
Medical and scientific instruments	\$2,335,923,126	11.1
Electrical machinery	\$1,974,978,660	9.4
Non-rail vehicles and parts	\$1,566,272,721	7.5
Plastic products	\$1,029,598,014	4.9
Paper products	\$854,747,147	4.1
Aircraft/spacecraft	\$586,833,761	2.8
Iron or steel products	\$402,536,126	1.9
Organic chemicals	\$379,449,036	1.8
Miscellaneous chemicals	\$368,584,906	1.8

Source: U.S. Census Bureau data as reported by WISERTrade

# WISCONSIN

## ARIENS CO.

Brillion



The history of Ariens Co. has been intertwined with the transformation of the American landscape for the last eight decades. Established in 1933, the company initially made rotary tillers used by commercial growers to cultivate fields for vegetable production. Today, Ariens Co. operates a diverse set of businesses within the global outdoor power equipment industry, including some of the segment's oldest and most respected brands.

Based in Brillion, Wisconsin, Ariens Co. is a privately owned and operated corporation currently in its fourth generation of family leadership under Dan Ariens. A strong proponent of lean manufacturing principles, Ariens has created a culture of continuous improvement that has resulted in the creation of world-class manufacturing facilities by lean standards with operations in Wisconsin, Nebraska, Indiana, the UK and Norway.

The company's premium international equipment brands include Ariens Sno-Thro®, Sno-Tek® and Ariens® lawn and garden products; Countax® and Westwood® lawn tractors; and Gravelly® commercial equipment. Ariens Co. products are available through multiple channels including a network of independent dealers, The Home Depot®, True Value® stores and select online retailers. The company has also expanded its portfolio of brands to include other outdoor segments. As a distributor of specialty equipment, supplies and gear, Ariens Co. serves niche markets through direct marketing brands Gempler's®, Ben Meadows®, AW Direct®; and aftermarket parts brands Stens®, and J Thomas®.

## ROCKWELL AUTOMATION

Milwaukee



Rockwell Automation (NYSE: ROK) is a leading global provider of industrial automation power, control and information solutions that help manufacturers achieve competitive advantages for their businesses. The company employs more than 22,000 people in 80 countries.

The Internet of Things (IoT) is connecting the physical and virtual worlds. It has brought people, processes and equipment together, from sensors and smart devices to entire systems. Connectivity is deepening our understanding of events and sharpening decision making.

The proliferation of smarter end points, data analytics, scalable computing, mobility and visualization are reshaping the future of industrial automation, and Rockwell Automation is helping to create this future with The Connected Enterprise. Rockwell Automation has long recognized the importance of connecting independent automation systems in manufacturing environments. Today, with the convergence of plant-floor operations technology and business-level information technology, Rockwell's vision of The Connected Enterprise has become a reality, linking production lines, in-the-field assets, utilities and enterprise IT to deliver contextualized information where it is needed. Seamless collaboration and integration enable manufacturers to use the power of real-time data to make better, more profitable business decisions.

# MANUFACTURING COMPANIES

## KOHLER CO.

Kohler



After immigrating to Wisconsin from Austria, businessman and visionary John Michael Kohler acquired a foundry in rural Wisconsin in 1873. The foundry produced a variety of cast-iron and steel products, but it was one particular product that would define the direction of the company: in 1883, Kohler heated one of his products to 1,700°F and sprinkled it with enamel powder. Placing a picture of it in the center of his one-page catalog, he called it “a horse trough/hog scalding” but noted that “when furnished with four legs will serve as a bathtub.”

Today, Kohler has grown from a world-renowned plumbing company into a multifaceted global family of brands focused on the concept of gracious living. Kohler is a global leader in the manufacture of kitchen and bath products, engines and power systems, premier furniture under the brands of Baker and McGuire, and cabinetry and tile. The company also owns and operates hospitality and golf resort destinations.

With 48 manufacturing locations worldwide, Kohler Co. is one of the U.S.’s oldest and largest privately held companies, comprising more than 30,000 associates.

**0.4%** WISCONSIN'S  
MANUFACTURING  
TAX RATE

## SC JOHNSON

Racine



Headquartered in Racine, SC Johnson has been making trusted household brands for more than a century, with a mission of creating a cleaner, healthier, better home for families everywhere.

Founded in 1886 as a parquet flooring company, SC Johnson today is one of the world’s leading makers of household products like Pledge®, OFF®, Windex®, Ziploc® and Glade®. Product lines include cleaning, home fragrance, pest control, food storage, shoe care and auto care.

Employing approximately 13,000 people worldwide and generating \$10 billion in annual sales, SC Johnson has operations in more than 70 countries and sells products in virtually every country around the world. The company’s trusted products can be found in homes around the globe.

WISCONSIN HAS  
**ONE** OF ONLY TWO FULLY  
FUNDED STATE PENSION  
SYSTEMS IN THE U.S.

Source: Center for Retirement Research at Boston College, 2016

The Wisconsin Economic Development Corporation (WEDC) leads economic development efforts for the state by advancing and maximizing opportunities in Wisconsin for businesses, communities and people to thrive in a globally competitive environment. WEDC provides resources, operational support and financial assistance to companies, partners and communities in Wisconsin. WEDC achieves its mission through initiatives driven by five strategic pillars: business development; community and economic opportunity; strategic economic competitiveness; state brand management and promotion; and operational and fiscal excellence. Working with more than 600 regional and local partners, WEDC develops and delivers solutions representative of a highly responsive and coordinated economic development network.

Visit [InWisconsin.com](http://InWisconsin.com) to learn more.

