



STATE OF THE SECTOR

ADVANCED MANUFACTURING
2017



GREATER NEW ORLEANS

INC
REGIONAL ECONOMIC DEVELOPMENT



Greater New Orleans is experiencing sustained growth in the advanced manufacturing sector, which means well-paying jobs for our region's citizens. However, lack of an available skilled workforce is a persistent challenge facing these companies, which is proving to be a fundamental challenge facing our region.

Advanced manufacturing encompasses a wide variety of companies in this region, from food production companies to petrochemical companies to companies working with NASA to build space vehicles. Often times, the skills required to obtain jobs at these different companies are transferrable and offer significant opportunity for advancement.

A transferrable skill set is invaluable to citizens as different businesses experience ups and downs.

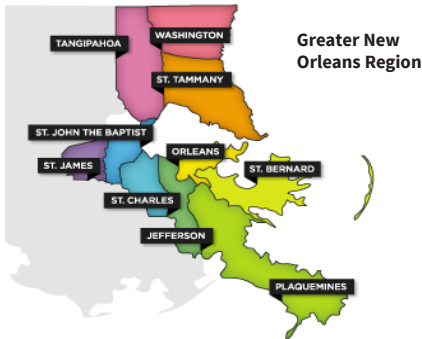
With nearly 2,000 middle-skills jobs opening over the next decade in Greater New Orleans, this sector is well positioned to provide good jobs for residents of our region if we can appropriately train and match people with these jobs.

As a region, we must do a better job of educating our citizens about the value of a career in advanced manufacturing – jobs like welders, machinists, and supervisors. Our region's economy is dependent on it.

To ensure this industry's vitality over time and to maximize the various opportunities

associated with its growth, a robust pipeline of trained workers, who are local, skilled, and knowledgeable of advanced manufacturing opportunities, first and foremost, in and throughout the region, is required. Diverse education partners from K-12 to higher education have already begun to lead the way with demand driven curriculum and innovative programs contributing to the industry's growth.

This report is the third in a series of State of the Sector workforce reports illuminating the scope and context of labor demand from our region's key industries. I would like to give a special thank you to JPMorgan Chase for providing the support that made it possible to do this work.



Michael Hecht
President and CEO



EXECUTIVE SUMMARY

WELL-PAYING HIGH SKILL JOBS



The average median salary for a high-skill worker in the advanced manufacturing industry is \$84,198 a year, \$25,000 more than the average earnings in the Greater New Orleans region.

69% MIDDLE SKILL JOBS



69% of all advanced manufacturing jobs require middle-skills and are often overlooked as opportunities that offer advancement.

MULTIPLE CAREER LADDERS



There are multiple high-wage, high-demand career paths an entry level worker can access within the advanced manufacturing industry.

PATH FORWARD



Opportunities must be made available to students, education partners, and community stakeholders through regional and scalable initiatives to ensure that the workforce is able to adequately fill middle and high skill jobs in the advanced manufacturing industry

Source: EMSI

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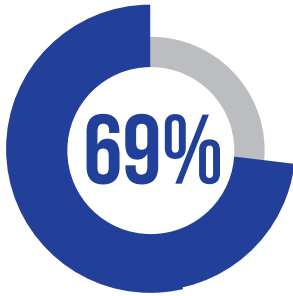
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ADVANCED MANUFACTURING AT A GLANCE

EMPLOYS 9,585 IN THE GREATER NEW ORLEANS REGION



OF MANUFACTURING
JOBS REQUIRE
MIDDLE-SKILLS

405 HIGH-SKILL JOBS OVER THE NEXT 10 YEARS

2.6%
ANNUAL
TURNOVER RATE

1,894 MIDDLE-SKILL JOB OPENINGS
OVER THE NEXT DECADE, WITH AN
AVERAGE MEDIAN
ANNUAL SALARY OF **\$41,808**

\$84,198 AVERAGE MEDIAN HIGH-SKILL SALARY IN THIS INDUSTRY

SKILLS & JOBS



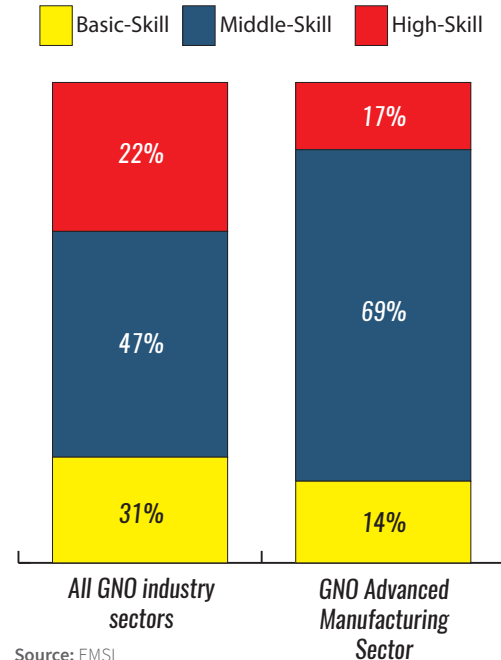
APPROXIMATELY 9 OUT OF 10 ADVANCED MANUFACTURING WORKERS ARE MIDDLE- OR HIGH-SKILLED

DISTRIBUTION OF SKILLS

The advanced manufacturing sector, which includes technical skilled professionals (such as welding and carpentry) alongside analytical expertise (such as engineering and drafting) as a whole requires more middle- and high-skilled workers than other sectors in the overall GNO economy.

What are middle- and high-skill jobs?

We define middle-skill jobs as those that generally require some education and training beyond high school but less than a bachelor's degree. These postsecondary education and training requirements can include associate's degrees, vocational certificates, on-the-job training, previous work experience, or generally "some college" but less than a bachelor's degree. High-skill jobs require a bachelor's degree or higher.



Source: EMSI

SKILLS & JOBS

TOP MIDDLE-SKILL JOBS

Middle-Skill Occupation	% of Total Jobs in Industry Group (2016)	Employed in Industry Group (2016)	Job Openings to 2026	Median Hourly Earnings	Typical Entry Level Education	Typical On-The-Job Training Needed to Attain Competency
Welders, Cutters, Solderers, and Brazers	6.7%	646	239	\$21.97	High school diploma or equivalent	Moderate-term
Inspectors, Testers, Sorters, Samplers, and Weighers	3.7%	356	93	\$21.34	High school diploma or equivalent	Moderate-term
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	3.2%	309	88	\$24.65	High school diploma or equivalent	Moderate-term
First-Line Supervisors of Production and Operating Workers	4.9%	470	87	\$30.20	High school diploma or equivalent	None
Machinists	2.3%	220	72	\$21.93	High school diploma or equivalent	Long-term
Packaging and Filling Machine Operators and Tenders	1.6%	156	71	\$11.17	High school diploma or equivalent	Moderate-term
Heavy and Tractor-Trailer Truck Drivers	2.8%	264	70	\$18.51	Postsecondary nondegree award	Short-term
Team Assemblers	3.3%	316	67	\$13.77	High school diploma or equivalent	Moderate-term
Maintenance and Repair Workers, General	2.4%	234	60	\$16.83	High school diploma or equivalent	Long-term
Tool and Die Makers	0.2%	19	53	\$21.76	High school diploma or equivalent	Long-term

Source: EMSI

\$20.10

AVERAGE MEDIAN HOURLY SALARY FOR MIDDLE-SKILL ADVANCED MANUFACTURING PROFESSIONS IN THE GREATER NEW ORLEANS REGION



TOP HIGH-SKILL JOBS

High-Skill Occupation	% of Total Jobs in Industry Group (2016)	Employed in Industry Group (2016)	Job Openings to 2026	Median Hourly Earnings	Typical Entry Level Education	Typical On-The-Job Training Needed to Attain Competency
General and Operations Managers	2.3%	218	58	\$42.50	Bachelor's degree	None
Industrial Engineers	1.9%	178	57	\$49.04	Bachelor's degree	None
Mechanical Engineers	1.5%	146	43	\$43.70	Bachelor's degree	None
Industrial Production Managers	1.1%	105	32	\$52.77	Bachelor's degree	None
Engineers, All Other	1.1%	102	20	\$42.50	Bachelor's degree	None
Purchasing Agents, Except Wholesale, Retail, and Farm Products	0.7%	67	18	\$26.00	Bachelor's degree	Long-term
Accountants and Auditors	0.7%	66	17	\$28.34	Bachelor's degree	None
Architectural and Engineering Managers	0.6%	56	16	\$63.90	Bachelor's degree	None
Electrical Engineers	0.6%	61	14	\$45.39	Bachelor's degree	None
Graphic Designers	0.4%	37	12	\$20.30	Bachelor's degree	None

Source: EMSI



\$40.48

AVERAGE MEDIAN HOURLY SALARY FOR HIGH-SKILL ADVANCED MANUFACTURING PROFESSIONS IN THE GREATER NEW ORLEANS REGION

TOP ADVANCED MANUFACTURING EMPLOYERS IN THE GNO REGION

There are over 4,500 manufacturing companies in Louisiana, many of which provide direct support to the energy and chemical industries. The Advanced Manufacturing industry of the Greater New Orleans region is focused primarily on the

design, manufacturing, and assembly of military ground transportation vehicles, civilian and military aircraft, space vehicles, and both naval and commercial ships and boats.

Home to premier NASA facilities, major high-tech manufacturers, a talented workforce, and a world-class incentive package, the region is uniquely equipped to manufacture such advanced products.



LAITRAM CORPORATION
1,200 Employees



BOLLINGER SHOPYARDS, LLC
700 Employees



MONSANTO COMPANY
684 Employees



TEXTRON
600-800 Employees



FOLGERS COFFEE COMPANY
500 Employees



NASA & BOEING
330 Employees



NUCOR
170 Employees

KEY ADVANCED MANUFACTURING ASSETS IN THE GNO REGION

The advanced manufacturing industry in the Greater New Orleans region benefits from one of the nation's most integrated transportation infrastructure, providing easy access to the rest of the world. The region's multimodal transportation system and the availability of land with deepwater access make Greater New Orleans competitive on the global marketplace.



PORTS IN THE REGION

The Greater New Orleans region is part of the largest port system in the world as measured by tonnage.

Top commodities at the ports in the Greater New Orleans region range from iron & steel to petrochemicals, to rubber, to fertilizers.

The region's four major ports are: Port of South Louisiana, Port of New Orleans, Port of St. Bernard, Port of Plaquemines



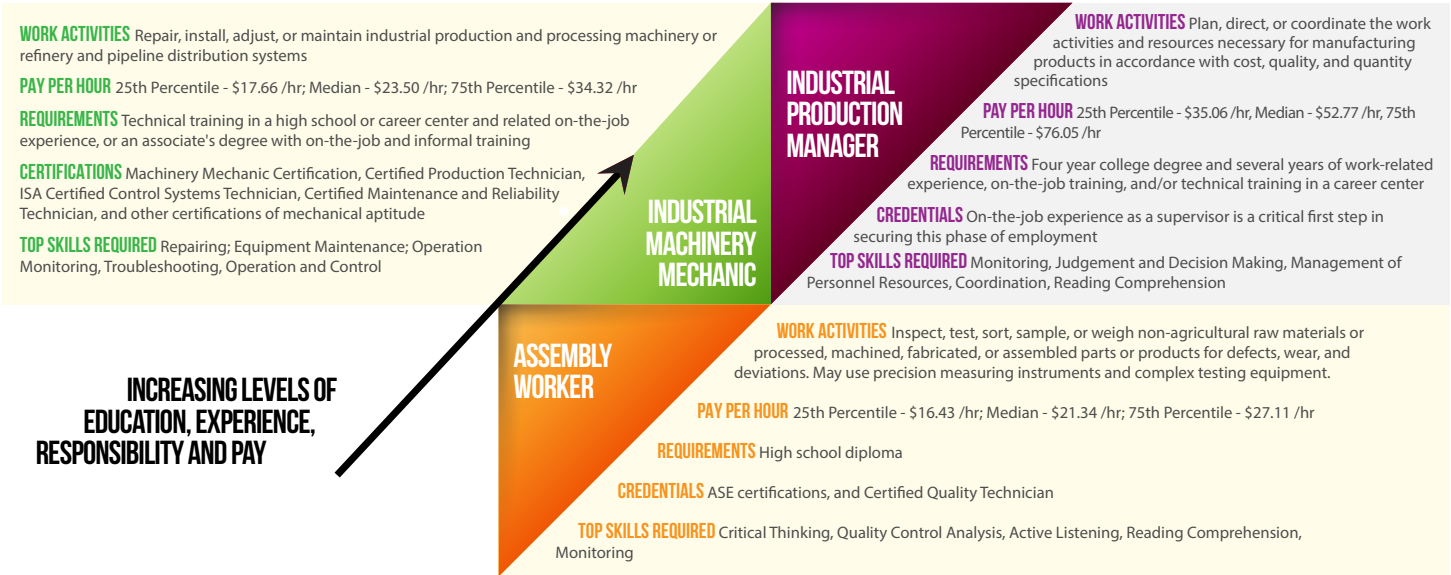
RAILWAYS IN THE REGION

The advanced manufacturing industry in the Greater New Orleans region benefits from easy access to six of the seven Class-I railroads in America. This allows for access to a 133,000 mile rail network.

The New Orleans Public Belt Railroad, a 26 mile Class-III switching railroad connects the six Class-I railroads with the Port of New Orleans.

As a result, the Port of New Orleans is the only seaport in the United States to be served by six Class-I railroads.

CAREER LADDER: INDUSTRIAL PRODUCTION



CAREER LADDER: ENGINEERING



Source: EMSI

TRAINING INSTITUTIONS IN THE GNO REGION



DELGADO COMMUNITY COLLEGE

Automotive Gas Metal Arc Welding
Civil and Construction Applied Engineering
Computer Aided Design and Drafting
Electrical-Electronics Engineering Technology
Industrial Maintenance Technology
Logistics Technology
Precision Machining
Sheet Metal Apprentice
Pipe Welder/Pipefitter Apprentice Welding
Advanced Manufacturing Center of Workforce Excellence



DILLARD UNIVERSITY

Physics (with options for 3-2 dual Engineering degree)



NORTHSHORE TECHNICAL COMMUNITY COLLEGE

Diesel Powered Equipment Technology
Electrician Journeyman
Industrial Electrician
Journeyman
Industrial Pipe Trades
Machine Tool Technology
Welding



NUNEZ COMMUNITY COLLEGE

Electrical Construction
Industrial Maintenance and Industrial Technology
Welding



TULANE UNIVERSITY

Chemical Engineering, Engineering Physics



UNIVERSITY OF NEW ORLEANS

Advanced Material Research Institute
Electrical Engineering
Mechanical Engineering
Engineering Management
Naval Architecture and Marine Engineering



XAVIER UNIVERSITY

Dual Degree Engineering Program

PATH FORWARD

EARLY AWARENESS

GNO World of Work (GNO WOW) is an initiative which encompasses three key activities that raise awareness of regional career pathways by connecting employers to students. The three main activities are:

- **Future Building Fridays** seeks to educate counselors, and STEM (Science, Technology, Engineering, and Math) and CTE (Career and Technical Education) teachers about regional workforce trends, aligned with the Louisiana Department of Education's Jump Start pathways.
- **Nepris** is an online tool that virtually connects teachers and students with industry experts from around the world. Learn more at <https://gnoinc.nepris.com>
- **Technical Skills Expo** showcases seven programs offered by Delgado Community College to high school students through their dual enrollment program. These programs are centered on developing the tools necessary for students to excel in a career in advanced manufacturing.

EXPLORATION

Makerspaces - The maker movement is the platform for today's creators, crafters, thinkers, and tinkerers. In a community rich with local culture and history, the growth of fab labs such as **FAB LAB NOLA** at Delgado Community College, made possible through funding with Chevron, as well as micro-manufacturers such as those displayed at regional markets and festivals, speak to the return of economies from the grand and global, to the small and local.

This hyper-local manufacturing environment holds potential not only for individual hobbyists – but for economic development efforts as well. Community wide advances in local entrepreneurship and job creation are growing due to the rise of makerspaces, locally, nationwide and globally.

WORK-BASED LEARNING

Laitram, one of the region's largest advanced manufacturing employers, offers both full-time and part-time internships throughout the varying divisions of the company. The work-based learning program at Laitram allows students to improve their skills and work experience, while learning from trained professionals. In order to accurately target students who are interested in pursuing a career in advanced manufacturing, Laitram partners with four universities in the region, in addition to five nationally-renowned universities. The program at Laitram offers students a first-hand look at a career in advanced manufacturing, while obtaining the skills that are vital towards obtaining high demand high skill jobs in advanced manufacturing.

YouthForce NOLA is an initiative driven by a collaborative group of educational, civic and philanthropic organizations fueled by a vision of an increasing percentage of New Orleans public school graduates gaining employment in regional high-wage, high-demand industries. YouthForce NOLA focuses its efforts on helping schools redesign programming to include regional industry-aligned training pathways such as advanced manufacturing. Additionally, YouthForce NOLA engages employers to host work-based learning activities, aligns training providers to offer rigorous technical coursework, and supports family engagement. GNO, Inc., is a proud member of the YouthForce NOLA Steering Committee. Learn more at <http://educatenow.net/youthforce-nola/>

Digital copy available at www.gnoinc.org/stateofthesector



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Photos by Chris Granger