MICHIGAN IS AUTOMOBILITY

MICH

auto
### Michigan’s Automobility Ecosystem: Assets

<table>
<thead>
<tr>
<th>The mobility industry contributes</th>
<th>$304 Billion to Michigan’s economy annually</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michigan ranks</td>
<td>6th in the nation for number of inventors, with 6,806 issued patents in 2020</td>
</tr>
<tr>
<td>$15 Billion</td>
<td>6th in the nation, or 68% of the nation’s share</td>
</tr>
<tr>
<td>#1</td>
<td>for operational U.S. Department of Transportation-funded connected vehicle deployments with 16 projects</td>
</tr>
<tr>
<td>Over 500 miles</td>
<td>Of roadway equipped for connected and automated vehicles</td>
</tr>
<tr>
<td>1.1 Million</td>
<td>Automotive or mobility jobs representing 20% of Michigan’s employment</td>
</tr>
<tr>
<td>9 Facilities</td>
<td>Producing and developing electric vehicle batteries in Michigan</td>
</tr>
<tr>
<td>16 Universities</td>
<td>Offer nationally ranked undergraduate engineering programs and 4 offer nationally ranked graduate programs</td>
</tr>
<tr>
<td>Ranked #1</td>
<td>in the nation for automotive manufacturing jobs</td>
</tr>
</tbody>
</table>
16 VEHICLE MODELS
assembled in 11
Michigan plants in 2021

26 OEMs IN MICHIGAN
presence of headquarters,
R&D facility, or technical center

18% of all U.S. vehicle production
and 12% of North American
vehicle production occurred
in Michigan in 2020

$10 BILLION
invested in EV and AV firms
in Michigan, 2010-2020

OEMs IN MICHIGAN
PRESENCE OF HEADQUARTERS, R&D FACILITY, OR TECHNICAL CENTER

LEADING THE ELECTRIC FUTURE

ELECTRIC VEHICLE PRODUCTION IN MICHIGAN

Michigan is paving the way for greater EV advancement through investments in new facilities that will produce all-electric vehicles and their components.

**Akasol, Battery Integration Center**
$40 million for a 400-person battery technology integration center in Hazel Park.

**Ford Motor Company: Electric Vehicle Center**
$700 million for new EV center at the historic Rouge Complex in Dearborn, which will house production for the all-electric Ford F-150 pickup truck.

**General Motors Co.: Factory Zero**
$2.2 billion for Factory ZERO at the Detroit-Hamtramck Assembly Center, GM’s first fully dedicated EV assembly plant.

**Magna International: Electric Vehicle Structures**
$70.1 million to construct a new St. Clair facility that will produce battery enclosures for GM’s 2022 GMC Hummer EV.

**Stellantis: Hybrid Electric Vehicles**
$4.5 billion to build new assembly plant in Detroit and add production at five existing Michigan facilities to expand capacity to grow core brands and electrify Jeep vehicles.

**Waymo: Vehicle Integration Center**
$13.6 million of investment for vehicle integration operations in Hamtramck where it will integrate self-driving systems into its OEM partners’ vehicle platforms.

Investment for EV and AV firms in Michigan, 2010-2020

Registered EV in 2020 in Michigan

$10.6 BILLION

10,620

20 LAWS and incentives in Michigan related to alternative fuels and advanced vehicles

3.2 MILLION increase in light vehicle EV production is projected by 2030 with 19.6% of production in North America

1/3 of U.S. battery production and development is in Michigan

EV CHARGING INFRASTRUCTURE

720+ publicly accessible charging stations
1,580+ publicly accessible charging ports
32nd ranking in public EV charging stations per capita

EV CHARGING STATIONS BY REGION

Upper Peninsula: 10+
Traverse City Region: 40+
Grand Rapids Region: 80+
Lansing Region: 45+
Detroit Region: 300+

Source: U.S. Department of Energy
Note: Data accessed 08/20/2021. Includes only public DC Fast and Level 2 chargers. Not a comprehensive list.

EV CHARGING PROGRAMS

Charge Up Michigan: EV charger placement project to build infrastructure for direct-current fast charging stations in the state through the creation of grants to fund installation. The program’s goal is to complete the statewide charging network by 2030.

DTE Charging Forward: Two-phase EV pilot program to encourage and facilitate EV adoption through rebates and incentives to develop a statewide charging network as well as maintenance of the existing network and education and outreach on the benefits of electrification.

PowerMIFleet: Consumers Energy program offering rebates of up to $50,000 to companies that install EV charging stations.

At the 2020 MICHauto Summit, Gov. Gretchen Whitmer signed Executive Directive 2020-01 and Executive Order 2020-02 to create the Office of Future Mobility and Electrification and the Council on Future Mobility and Electrification respectively to:

- Increase mobility investment in Michigan.
- Engage more mobility startups.
- Accelerate EV adoption in Michigan.
- Expand Michigan’s smart infrastructure.
- Further enable Michigan’s mobility workforce.
- Bolster Michigan’s mobility manufacturing core.

Cavnue, a spin-off of Alphabet’s Sidewalk Labs, is developing the 40-mile connected corridor between Detroit and Ann Arbor dedicated to autonomous vehicles. First phase of the project will include a feasibility and design study with the OFME and MDOT.

**FUEL TRANSFORMATION PROGRAM**

The Michigan Department of Environment, Great Lakes, and Energy announced in 2021 a $30 million funding opportunity for the replacement of commercial, mass transit, and transportation support vehicles that move products with new models, including electric, alternative fuel, and diesel vehicles.

**TALENT PROGRAMS**

Provides awards to employers to assist in training, developing, and retaining current and newly hired employees. $39.5 million awarded in FY2021 to 1,021 employers. Helped provide new skills to 11,751 new hires and upskilled 18,430 incumbent workers.

Program affiliated with the Detroit Regional Chamber’s Detroit Drives Degrees adult education initiative supporting adults ages 25-64 interested in furthering their education. In collaboration with postsecondary institutions, it provides adults with free institution-neutral college and career navigation and wrap-around supports to create a personalized pathway to and through college.

Last-dollar state scholarship program that provides Michigan’s adult learners with the opportunity to pursue an associate degree or skill certificate at any of Michigan’s public community colleges and receive free in-district tuition, mandatory fees, and contact hours.

$24 million investment funded by the Governor’s Education Emergency Relief Fund, part of the CARES Act, that provides Michigan’s frontline workers who worked in essential industries during the state’s COVID-19 shutdown in spring 2020 with the opportunity to pursue an associate degree or skill certificate at any of Michigan’s public community colleges and receive free in-district tuition, mandatory fees, and contact hours.
Michigan’s position with a shared international border with Canada allows the state to have one of the largest export markets and remain one of the most globally connected regions.

$44 BILLION
exported in goods in 2020, down 21.1% year-over-year

8th state in the nation for exports in 2020

$4 BILLION automotive and mobility foreign direct investments

#2 exporter to Canada and #3 exporter to Mexico with a combined $26.4 billion in goods

15,000 JOBS in the Detroit region from 2017-2020

#1 exporter of transportation equipment in the U.S.

44.6% of Michigan’s exports in 2020 were transportation equipment worth $19.8 billion in value

CROSS-BORDER TESTBED WITH STATE OF MICHIGAN AND ONTARIO, CANADA

In 2021, MDOT, the Office of Future Mobility and Electrification (OFME) and Ontario’s Autonomous Vehicle Innovation Network created a partnership to explore implementation of a cross-border multimodal testbed for advanced automotive and mobility solutions.
Michigan ranks #1 in number and concentration of:

40,340 Mechanical Engineers
600 Model Makers (metal and plastics)

Ranks #2 in number of:

25,380 Industrial Engineers
5,060 Commercial and Industrial Designers
3,980 Mechanical Engineering Technologists and Technicians

Ranked #3 in the number of engineers in the nation:

104,870 Engineers in Michigan

Skilled trades workers comprise 1.2 million people across the state. Michigan’s national competitive advantage includes high concentrations of numerous skilled trade occupations, including:

600 Model Makers 6.2x national average
9,910 Tool and Die Makers 5.7x national average

18,740 Machine Setters, Operators, and Tenders 3.7x national average

93,000+ Highly Skilled Assemblers and Fabricators produce the world’s most complex and highly technical mobility products.

Michigan is Automobility

2,102
average monthly hires in engineering in Michigan

8,194
unique engineering job postings were available in the first six months of 2021 in Michigan, 1.5x more than six months prior

MICHIGAN IS RANKED 5TH
for active engineering job postings after California, Texas, New York, and Massachusetts

Top Counties Postings
Automotive Engineering Jobs
Macomb, Oakland, Wayne

Top Cities Posting Automotive Engineering Jobs
Auburn Hills, Detroit, Warren

Top High-Tech Job Postings in Michigan
• Software Engineers 1,679
• Controls Engineers 1,088
• Manufacturing Engineers 824
• Software Developers 809
• Quality Engineers 761

Source: EMSI, January-June 2021

DIVERSITY IN THE AUTOMOTIVE MANUFACTURING INDUSTRY IN MICHIGAN

Industry Gender Breakdown

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive Manufacturing</td>
<td>75%</td>
<td>28%</td>
</tr>
<tr>
<td>All Industries</td>
<td>51%</td>
<td>49%</td>
</tr>
</tbody>
</table>

Source: EMSI, Michigan, NAICS: 3361-3, 2020

Industry Race/Ethnicity Breakdown

<table>
<thead>
<tr>
<th></th>
<th>White</th>
<th>Black or African American</th>
<th>Asian</th>
<th>Hispanic or Latino</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automotive Manufacturing</td>
<td>68%</td>
<td>5%</td>
<td>6%</td>
<td>5%</td>
</tr>
<tr>
<td>All Industries</td>
<td>78%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
</tr>
</tbody>
</table>

WOMEN MAKE UP

28%
of automotive manufacturing jobs, compared to 49% of all industries

32%
of automotive manufacturing jobs in Michigan are fulfilled by racially diverse workers, compared to 22% of jobs across all industries

Source: EMSI, MICHauto analysis

The Center for Automotive Diversity, Inclusion, and Advancement is a nonprofit organization focused on promoting diversity and inclusion in the automotive industry by providing DEI tools, networks, insights, and practical advice to companies in the automotive and mobility space.

A group of automotive CEOs, formed by MICHauto and CADIA in 2020, committed to taking action to make meaningful strides in diversity, equity, and inclusion in order to become a more inclusive industry, leverage diverse talent, and better engage the workforce.

Source: EMSI, MICHauto analysis
The automotive and mobility industry depends on top engineering graduates to power Michigan’s workforce. This highly skilled talent pipeline is propelling the industry forward into the next generation and growing the state’s economy.

TOTAL DEGREES

133,579

were awarded by state educational institutions in 2020

ENGINEERING DEGREES

8,500+

were awarded by Michigan educational institutions in 2020, with 34% masters degree or higher

RANKED ENGINEERING PROGRAMS

16

universities and colleges nationally ranked undergraduate engineering programs and 4 have nationally ranked graduate programs

Source: EMSI, U.S. News and World Report, and University Research Corridor

TOP 10 ENGINEERING GRADUATES

<table>
<thead>
<tr>
<th>Institution</th>
<th>City</th>
<th>Degrees Conferred (2020)</th>
<th>IPEDS Tuition and Fees (2020)</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Michigan</td>
<td>Ann Arbor</td>
<td>2,567</td>
<td>$16,948</td>
</tr>
<tr>
<td>Michigan State University</td>
<td>East Lansing</td>
<td>1,066</td>
<td>$15,555</td>
</tr>
<tr>
<td>Michigan Technological University</td>
<td>Houghton</td>
<td>998</td>
<td>$17,645</td>
</tr>
<tr>
<td>University of Michigan</td>
<td>Dearborn</td>
<td>604</td>
<td>$13,552</td>
</tr>
<tr>
<td>Wayne State University</td>
<td>Detroit</td>
<td>575</td>
<td>$14,629</td>
</tr>
<tr>
<td>Oakland University</td>
<td>Rochester</td>
<td>552</td>
<td>$14,520</td>
</tr>
<tr>
<td>Western Michigan University</td>
<td>Kalamazoo</td>
<td>473</td>
<td>$13,017</td>
</tr>
<tr>
<td>Kettering University</td>
<td>Flint</td>
<td>453</td>
<td>$42,906</td>
</tr>
<tr>
<td>Lawrence Technological University</td>
<td>Southfield</td>
<td>274</td>
<td>$36,630</td>
</tr>
<tr>
<td>Grand Valley State University</td>
<td>Allendale</td>
<td>169</td>
<td>$13,576</td>
</tr>
</tbody>
</table>

URC UNIVERSITY RESEARCH CORRIDOR

$19 BILLION net economic impact with 141,235 enrolled students and $2.56 billion in R&D spending

1.3 MILLION URC alumni worldwide with 690,000 graduates residing in Michigan

Community College Mobility Centers

Washtenaw Community College
Advanced Transportation Center

Macomb Community College
Center for Advanced Automotive Technology

Source: EMSI, U.S. News and World Report, and University Research Corridor
Talent attraction program led by MICHauto, in partnership with Square One Education Network and Project Lead the Way, to connect Michigan high school students with automotive and mobility companies to learn from industry experts about the diverse job opportunities in the field. 750+ students have been engaged in the program since 2018.

Michigan ranks 1st in the number of high school and elementary school teams in the country.

Provides STEM learning opportunities for the teachers and students of the “Square One Nation” and builds the high-tech talent supply chain for postsecondary and industry partners, boasting 85 schools involved and 743 completed challenges.

At the CyberTruck Challenge, students from 20 universities, government, industry, and security researchers from all over the world join annually to address challenges in heavy vehicle cybersecurity and talent development.

At the Formula SAE Michigan Competition at Michigan International Speedway, university students construct a single-seat race car with the best overall design, construction, performance, and cost.

The annual competition at Oakland University between students encompasses the latest technologies, from electrical engineering and computer science to intelligent vehicle systems. Lawrence Technology University Placed 1st in the self-drive challenge.

Focused on boosting the mobility talent pipeline and closing the mobility education and skill gap by offering upskilling programs, postsecondary degrees, and certificates. The Michigan Mobility Institute, together with select universities, will offer the first-of-its-kind Master of Mobility starting in 2021.

Launched in collaboration with Michigan State University, Apple Developer Academy expects to reach close to 1,000 students each year with a curriculum that covers coding, design, marketing, and professional skills and is open to all learners.

The university is offering six-week online certification courses in AV technologies in partnership with Armesite Inc., a Detroit-based software company. Course subjects include autonomous vehicle technologies, data science, electric vehicle technologies, mobility as a service, and programming for autonomous systems.

This autonomous vehicle certification program offers credentials, certification, and continuing education courses specializing in intelligent transportation, autonomous technologies, and new mobility systems.

Through this certificate in current and emerging technologies (CCET) in partnership with Nexus, University of Michigan offers non-credit, remote, and online certification programs in current and emerging technologies and trends including electric vehicles, connected and automated vehicles, and smart manufacturing.

Let’s Detroit is a Detroit Regional Chamber program that connects young talent with resources to learn about living, playing, and working in the Detroit region through ambassadors who share their real and unique insights and perspectives.

MICHauto’s first-of-its-kind industrywide talent attraction campaign was created to raise awareness about and improve the perception of careers in the automotive and mobility industry among emerging talent through authentic testimonials from young professionals.
Through its vast network of accelerators and venture capital firms, Michigan’s well-developed startup community ensures the technologies solving the world’s mobility-related challenges are being created and developed in the state.

- **22** venture capital firms funded mobility technology startups
- **73** organizations provided entrepreneurial support
- **6%** of angel investments funded mobility startups in the state
- **$558 million** in venture capital investments in 2020, up 46% from 2018
- **7%** of venture capital investments were dedicated to the mobility sector in 2020
- **8** angel investors helped fund mobility startups

Source: Michigan Venture Capital Association and PitchBook Data, Inc.
Automation Alley Industry 4.0 Accelerator
Led by Automation Alley, with Lean Rocket Lab and Lawrence Technological University’s Centrepolis Accelerator, this program helps early-stage and established companies with digitization to grow innovation and commercialization.

Detroit Center for Innovation
In partnership with the University of Michigan, the innovation center is designed to stimulate entrepreneurial activity and enable further diversification of the regional economy. Initial academic areas are likely to include artificial intelligence, mobility, sustainability, data science, cybersecurity, entrepreneurship, and financial technology.

Detroit Mobility Coalition powered by MICHauto
A collaborative effort between stakeholders to provide plans and updates on the mobility ecosystem. The group, which was initially formed in December 2016, meets to share plans, events, and actions to advance technology and solutions in the mobility space. It includes 150 members from 68 companies and organizations.

Ford’s Corktown Campus
Ford Motor Company’s Mobility Innovation District in downtown Detroit is a hub for innovators, startups, entrepreneurs, and other partners from around the world to develop, test, and launch new mobility solutions that will shape the future of the mobility industry.

Plug and Play Detroit powered by AmplifyD
In partnership with Stellantis, the Michigan Minority Supplier Development Council, Michigan Economic Development Corp., and BorgWarner, the innovation hub involves business units directly with startup technologies, ultimately achieving more pilot projects, proofs of concept, and strategic partnerships to advance automotive mobility.
DEPARTMENT OF TRANSPORTATION

1. Auburn Hills Test Bed Deployment
2. I-275 Curve Speed Warning Deployment
3. I-69 Truck Platooning Test Support - TARDEC and MDOT
4. I-75 Modernization Test Bed Deployment - MDOT and 3M
5. I-94 Truck Parking Information and Management System (TPIMS)
6. Lansing M-43 Project, Ingham County
7. M-53 SPaT/Transit Signal Priority Deployment - MDOT and SMART
8. Macomb County Department of Roads 300+ Miles Deployment
9. MDOT Intelligent Woodward Corridor Project
10. Semi-Autonomous Vehicle International Border Crossing - MDOT, Province of Ontario, Continental, and Magna International
11. Southeast Michigan Test Bed
12. US-12 Test Bed Deployment
13. US-23 Flex Route - Active Traffic Management

PROVING GROUNDS

14. Chelsea Proving Grounds - Stellantis
15. Continental Brimley Development Center
16. Ford Automatic Transmission New Product Center
17. Ford Dearborn Development Center
18. Ford Michigan Proving Grounds
19. FT Techno of America, Fowlerville Proving Ground
20. General Motors Co. Proving Grounds
21. Robert Bosch LLC - Automotive Proving Ground
22. Toyota Research Institute Automated Vehicle Test Facility

PUBLIC/PRIVATE DEPLOYMENT PARTNERSHIPS

23. Advance Power System Research, Houghton
25. American Center for Mobility
26. Ann Arbor Connected Vehicle Test Environment 50+ miles
27. Aveopt’s MUASC Testing, Traverse City
28. Binational Autonomous Drive - Detroit Windsor Tunnel
29. CAVNUE: Detroit-Ann Arbor Corridor
30. City: One Challenge Corktown, Detroit
31. City: One Challenge, Grand Rapids
32. Detroit Smart Parking Lab
33. Grand Rapids Autonomous Vehicle Initiative
34. Great Lakes Research Center, Houghton
35. Kettering University General Motors Mobility Research Center
36. Keweenaw Research Center, Houghton
37. Liftango: On-Demand Microtransit Service, Calhoun County
38. May Mobility Ann Arbor AV Shuttle Deployment
39. Mcity Test Bed at University of Michigan’s Mobility Transformation Center
40. Michigan Unmanned Aerial Systems Consortium, Alpena
41. Michigan State University’s Spartan Mobility Village
42. Mobileye and MDOT Deployment in Southeast Michigan
43. MUVE: WAVE MaaS Pilot
44. NAVYA and University of Michigan Campus Shuttles

Full MICHauto Automobility Asset Map can be viewed at MICHAUTO.ORG
$8 Million Michigan Mobility Challenge
Grant initiative seeded with legislative appropriation to address core mobility gaps for seniors, people with disabilities, and veterans. An MDOT-led collaborative effort, the Challenge has funded a total of 13 projects in communities of varying sizes throughout Michigan.

City Collaborations
Public-private partnerships include Project Kinetic and the Grand Rapids Autonomous Vehicle Initiative (AVGR). Project Kinetic was a collaboration between the City of Detroit and partnering organizations, which yielded more than 120 innovative mobility pilots and solutions. AVGR is a collaboration between May Mobility and the City of Grand Rapids to launch an on-demand autonomous route to help connect local businesses, entertainment, and education institutions.

City: One Challenge, Corktown and Grand Rapids
Collaboration between the state, Ford Motor Company, and local partners to modernize and streamline access to transportation as well as solve mobility problems to help improve the quality of life for communities.

Michigan Mobility Funding Platform
Building upon the success of the PlanetM Mobility Grants, the Office of Future Mobility and Electrification (OFME) and MDOT launched the Michigan Mobility Funding Platform to provide grants to mobility and electrification companies looking to deploy their technology solutions in the state of Michigan. The platform is designed to accelerate investment in solutions that create safer, more equitable and environmentally conscious transportation for all Michigan residents and companies who anticipate long-term growth in Michigan.
**TECHNOLOGY ASSETS**

**INDUSTRY 4.0**

13,600 workers employed in industries related to Industry 4.0 and automation in Michigan, the most in the nation

28,000+ industrial robots in use in Michigan, the most out of any U.S. state, and a 12% share of the U.S. total

**FIRST-IN-THE-NATION**

Industry 4.0 accelerator program, launched by Automation Alley, Lean Rocket Lab, and Lawrence Technological University’s Centrepolis Accelerator

50% of all Michigan manufacturers — 6,200 businesses — will be prepared for adoption of Industry 4.0 technologies by 2025 through partnerships with Automation Alley and Michigan Manufacturing Technology Center

Source: Automation Alley, Brookings Institution, EMSI, Michigan Economic Development Corp.

**MAJOR PUBLIC RESEARCH UNIVERSITIES**

MSU Mobility focuses on a multimodal approach to R&D, studying the interaction between people and mobility with the campus transformed into a live, connected ecosystem. Research from multiple disciplines creates integrated systems of communication and controls for autonomous and connected vehicles, as well as human engagement with autonomous technology.

The Connected and Autonomous Networked Vehicles for Active Safety (CANVAS) initiative and Spartan Mobility Village, include mobility labs and a live, connected ecosystem to drive mobility R&D to advance smart-vehicle technology and better understand the human element.

Mcity, the advanced mobility research center, has the goal to realize the potential of mobility technologies. Mcity includes Mcity Labs, a wide range of CAV research, and a commitment to education and outreach.

- 25 industry partners
- 25 active funded research projects
- $28.2 million invested in R&D and deployment projects
- 9,000 hours of testing and engagement since 2017

Battery Lab is a space developed in cooperation with Michigan Economic Development Corp. and Ford Motor Company to work with industrial and academic energy storage user communities to prototype, test, and analyze batteries.

Transportation Research Institute (UMTRI), in existence for 55 years, has become the world’s foremost organization focusing on multidisciplinary transportation safety and mobility.

Wayne Mobility Initiative formed in 2020 with the goal of addressing mobility challenges at all levels. The Mobility for All Competition, a three-phase event, focuses on challenges related to public transit, walkability, CAVs, and access to food, health care, and education.

Along with extensive labs, the university’s Connected and Autonomous Driving Lab (CAR Lab) aims to design and implement enabling technologies, including edge computing, communication systems, data analytics and applications, secure trusted execution environment, privacy preserving models, and tools to realize the vision of connected and autonomous driving.

**RESEARCH AND TECHNOLOGY CENTERS**

![American Center for Mobility](image1)

![EPA](image2)

![Lift](image3)
DEFENSE AND AEROSPACE

U.S. Army’s Ground Vehicle Systems Center (GVSC)
Located at the Detroit Arsenal in Warren, it is home to 1,000 researchers and engineers developing and maintaining vehicles for all U.S. Army Forces. GVSC engages with industry and academic institutions to develop, integrate, and sustain technology solutions for all manned and unmanned DoD ground vehicle systems and combat service support equipment.

Next-Generation Combat Vehicle Cross Functional Team
Located in Michigan, it leads in the development and modernization of next-generation combat vehicles, military equipment, and communications.

Michigan Launch Initiative
Public-private entity providing a platform for academia, industry and governmental agencies to provide low earth orbit and hypersonic launch technology for commercial and defense applications. Plans include organizing industry partners to establish and operate satellite launch facilities and a command center in Northern Michigan.

CYBERSECURITY

Metro Detroit Regional Vehicle Cybersecurity Institute
A $1.1 million U.S. Department of Defense grant established a regional cybersecurity consortium with a focus on enhancing cybersecurity for Michigan’s engineering workforce through applied curriculum. Led by University of Detroit Mercy, along with Macomb Community College, Oakland Community College, University of Arizona, and Washtenaw Community College, the consortium supports upskilling and reskilling for vehicle cybersecurity by prioritizing underrepresented populations, military personnel, and veterans.

Michigan Cyber Range
Through 4,000 miles of fiber optic infrastructure, the Michigan Cyber Range, powered by Merit Network, is the nation’s largest unclassified network-accessible cybersecurity training platform. Through teaching, testing, and training, the network assists higher education, K-12, and government sectors in strengthening Michigan’s cyber defense by mitigating the growing number of cyber threats and providing a more secure environment that promotes economic development.

Michigan Cyber Range Sites

Michigan Ranks #11 for net tech employment
Source: CompTIA’s 2021 CyberState report

7,129 cybersecurity job openings in Michigan
Source: Cyberseek U.S., April 2020 - March 2021

Michigan is Automobility
MICHIGAN RESPONDS AND LEADS IN 2020

2020 proved to be a significant year that challenged society, including the automotive manufacturing industry in Michigan, which decreased by 92,000 jobs in one month. While the automotive manufacturing sector was heavily impacted by pandemic-related layoffs, the industry quickly responded by pivoting production to Personal Protective Equipment for essential workers.

During times of crisis Michigan’s automotive industry has continued to prove its relevance and commitment to innovation. It served the nation’s engineering and manufacturing operations — for the Arsenal of Democracy in WWII to the Great Recession, and most recently, the COVID-19 pandemic. As the manufacturing industry reopened in mid-2020, the automotive industry set the standard for reopening through leading safety protocols, processes, and equipment.

MICHIGAN’S CENTURY OF AUTOMOTIVE CULTURE

Michigan has a long history of creation, innovation, and celebration of automotive culture. While the industry has changed over the past century, the state continues to lead in reflecting on the past and revolutionizing the future of mobility.
**ECOSYSTEM: INNOVATION**

**EDUCATION PIPELINE**
- 8,500+ engineering degrees conferred annually
- 16 undergraduate and 4 graduate nationally ranked engineering programs

**TALENT ADVANTAGE**
- 104,800+ engineers in Michigan, ranking 3rd in the nation

**ENTREPRENEUR COMMITMENT**
- 22 venture capital firms and 8 angel investors in the mobility space with 73 organizations providing entrepreneurial support

**DEPLOYMENTS, TESTING, AND VALIDATION CENTERS**
- 89 technology activations across the state since 2019, through deployments, pilots, or testing grants
- 14 Proving Grounds
- #1 for U.S. DOT-funded operational connected vehicle deployments with 16 projects

**Ranking nationally:**
- #1 Mechanical Engineers (40,340)
- #2 Industrial Engineers (25,380)
- #2 Commercial and Industrial Designers (5,060)

**TECHNOLOGY ADVANTAGE**
- $5 BILLION defense contracts, 155,000+ employed, and 4,000 defense suppliers in Michigan
- 13,600+ workers employed in industries related to Industry 4.0 and automation, the most in the nation
- 28,000+ industrial robots, more than any other state

**TRANSPORTATION, DISTRIBUTION, AND LOGISTICS LEADER**
- #1 Northern international border crossing

**RANKED #1**
- Michigan State University undergraduate and graduate programs in Supply Chain Management
As Michigan’s only automotive and mobility cluster association, MICHauto provides a platform for industry leaders and stakeholders to engage in advocacy, build awareness, increase access to talent, and foster next-generation mobility.

The artwork featured on the cover of this publication was created by student illustrator, Lena Soulas, in partnership with Northern Michigan University.