# Employer-Driven Workforce Development

JAPANESE-BRAND AUTOMAKERS IN THE U.S. OFFER MODELS OF ENGAGEMENT

By Deanna Ross and Tamar Jacoby





# Authored By

#### PPI

Based in Washington, D.C., with offices in the United Kingdom, the European Union, and Ukraine, PPI's mission is to generate radically pragmatic ideas for governing that can help elected leaders restore confidence in liberal democracy at home and abroad. PPI advocates for economic policies that are pro-worker, pro-business, and pro-innovation; for fiscally responsible public investment and fairer tax burdens; for dramatically expanding apprenticeships, work-study opportunities, and career pathways for non-college Americans.

Deanna Ross is the Director of Workforce Development Policy at the Progressive Policy Institute.

# **OPPORTUNITY AMERICA**

Opportunity America is a Washington think tank and policy shop promoting economic mobility – work, skills, careers, ownership and entrepreneurship for poor and working Americans. The organization's principal activities are research, policy development, dissemination of policy ideas and working to build consensus around policy proposals.

Tamar Jacoby is the President of Opportunity America.

# Supported By

# THE JAPAN AUTOMOBILE MANUFACTURERS ASSOCIATION

The Japan Automobile Manufacturers Association (JAMA) is the nonprofit trade association of the 14 manufacturers of passenger cars, trucks, buses and motorcycles in Japan. JAMA's headquarters are in Tokyo and its branch offices are in Washington, D.C., Brussels, and Beijing. JAMA USA is the principal source of U.S. data for Japanese automakers (investment, production, employment, etc.). Its mission is to educate stakeholders on historical, current and (announced) future U.S. investments and initiatives to improve and advance the U.S. economy, society and auto industry.

# ppi







# **INTRODUCTION**

Rapidly evolving technology – artificial intelligence, robotics and digitization – is transforming the global economy, and with it, employers' labor market needs. Among the employees in highest demand are digitally-savvy, skilled technical workers. Employers worldwide struggle to find this type of talent, and there are simply not enough qualified workers to fill open positions.

The resulting skills gap – the disparity between the skills employers need and the skills new hires bring – is bad for businesses, job seekers, and national competitiveness. Employers in an array of industries cannot find the workers they need to keep their businesses open and growing. Job seekers who lack training struggle to find high-quality jobs and economic opportunities.

According to a 2024 study by the National Association of Manufacturers, "attracting and retaining talent is the primary business challenge" for most employers surveyed, with some 71 percent of employers saying that they are struggling to find the skilled talent they need.<sup>1</sup> The automotive industry is one of the five sectors facing the most severe talent shortages.

The solution to this problem starts with better workforce preparation – education and training that equip workers with the skills they need to succeed in today's changing economy. But there can be no effective workforce preparation without employer input and involvement.

Educators need advice from employers about worker shortages and in-demand skills. They need help identifying industry trends and predicting future labor market demand. They need partners to provide work experience that complements what trainees learn in the classroom, and they need assistance preparing job seekers with industry-appropriate job-search skills.

Together, these activities are what is known as "employer engagement." It is the essential ingredient of 21st-century workforce education.

Employer engagement encompasses a range of activities, both formal and informal. Among the most common: providing advice and input for high schools and community colleges, donating equipment and consumables, partnering with educational institutions to provide training, and creating opportunities for job shadowing, internships, and other forms of work-based learning.

<sup>1</sup> Chad Moutray and Mary Frances Holland, "NAM MANUFACTURER'S OUTLOOK SURVEY FOURTH QUARTER 2023," NAM, January 8, 2024. <u>https://nam.org/wp-content/uploads/2024/01/Outlook-Survey-December-2023-04.pdf</u>.

Some of these activities are high-intensity – they require significant time and resources from the employer. Others are less demanding. All are essential for effective workforce preparation and the only way to ensure training is relevant to the job and that applicants are learning the skills they need to succeed in the workplace.

This paper will use examples from Japanese-brand automotive manufacturers to demonstrate the power and importance of employer engagement.

Japanese-brand automotive manufacturers were among the first in the U.S. to see the imperative of more effective workforce training.<sup>2</sup> Managers at these firms' production facilities were among the first to notice the preparation gap created by 21st-century technological advancements. Technicians at their dealerships were among the first to see the need for more standardized technical skills. Finally, Japanesebrand automotive manufacturers were among the first to collaborate with American educational institutions to provide more effective, in-demand workforce preparation.<sup>3</sup>

Japanese-brand automotive manufacturers were among the first in the U.S. to see the imperative of more effective workforce training.

While today, many employers across the automotive industry see the need to partner with training providers, Japanese-brand automotive companies still stand as models of what employers can achieve when they partner with educational institutions and local organizations to ensure that training prepares workers for high-demand, high-skilled, high-paying positions. Companies in the automotive sector and beyond are taking note of the benefits, which only boosts opportunities for workers and improves U.S. competitiveness.

# **TRAINING AND NEEDS**

The U.S. automotive industry plays a crucial role in the nation's economy, making significant contributions to employment and economic growth. The auto manufacturing sector supports a total of nearly 9.7 million American jobs, or about 5% of private-sector employment and, to date, auto production remains the country's largest manufacturing sector, with 20 different automakers operating 55 light vehicle assembly plants across 15 states.<sup>4</sup> Light-duty motor vehicle manufacturers, including Japanese-brand automobile manufacturers, are responsible for employing nearly 240,000 people directly.<sup>5</sup> With new innovations like AI and augmented reality, as well as connected, automated, and electrified vehicles, the industry is undergoing a rapid change requiring more and better-prepared talent.

<sup>2</sup> Tamar Jacoby, "Employer Engagement in Career Education," *Opportunity America*, May 9, 2018. <u>https://6bc.d7c.myftpupload.com/wp-content/uploads/2018/05/OA-EW-testimony-5-18.pdf</u>.

<sup>3</sup> Tamar Jacoby and Robert Lerman, "Industry-Driven Apprenticership: What Works, What's Needed," Opportunity America, February 2019. <u>https://6bc.d7c.myftpupload.com/wp-content/uploads/2019/02/OA\_ApprenticeshipReport\_2019.pdf</u>.

<sup>4 &</sup>quot;The Industry," Initiatives, Alliance for Automotive Innovation, accessed May 6, 2025, <u>https://www.autosinnovate.org/initiatives/the-industry</u>.

<sup>5</sup> Tyler Harp and K. Venkatesh Prasad, Ph.D, "Economic Contribution of the U.S. Automotive Industry," *Center for Automotive Research*, July 2024. <u>https://www.cargroup.org/wp-content/uploads/2024/08/CAR-LV-Mfg-Econ-Contribution-Analysis-MBS-2024.pdf</u>.

Jobs and job openings are numerous, ranging from mechanical and electrical engineers to auto mechanics and technicians to product supervisors. In the current automotive manufacturing landscape, the five most in-demand entry-level positions are: automotive mechanic/technician, assembly line worker, quality control inspector, parts specialist, and service technician.<sup>6</sup> The requirement of a high school diploma or equivalent is commonplace for these roles, while many employers also encourage the completion of an automotive technician training program with work-based learning. For a worker to succeed in their automotive manufacturing career today, training is necessary to build foundational skills such as technical know-how, problem-solving, analytical thinking, and the ability to adapt to new technologies. There is a growing need for new employees to have a cursory understanding of data science, coding, automotive systems, and quality manufacturing.<sup>7</sup> Additionally, employers are finding that soft skills need to be reinforced, communication and teamwork being paramount.

Depending on their role, a worker may also need additional specialized training that builds upon their existing skills foundation to be able to perform their job. For example, a general automotive technician/ mechanic needs the skills to diagnose and repair vehicles, use specialized tools, and closely adhere to safety protocols. In contrast, a production worker or assembler's skills requirements include diagnosing production challenges, building the flexibility and stamina to work on an assembly line, and maintaining manufacturing quality standards.

From 2023 to 2033, the Bureau of Labor Statistics (BLS) projects that there will be approximately 209,800 openings for automotive manufacturing technicians (including service technicians) each year, largely due to retirement and replacement needs.<sup>8</sup> Other in-demand entry-level jobs more specific to service manufacturing and maintenance include general and diesel mechanics and automotive technicians diesel. According to 2024 job posting analytics from Lightcast, these roles require anywhere between zero and two years of experience, paired with a high school education (and an associate's degree is often preferred).<sup>9</sup> Many of the requirements for all these jobs align with guidelines set by the National Institute for Automotive Service Excellence (ASE), which provides certification and training requirements for individuals seeking to enter the automotive service industry.<sup>10</sup> While ASE certifications are more commonly associated with automotive technicians and service professionals, they also offer foundational knowledge and training useful to entry-level positions in various manufacturing roles and automotive production.

<sup>6 &</sup>quot;5 Entry Level Positions to Pursue After Auto Mechanic Training," *Automotive Training Centers*, accessed May 6, 2025. <u>https://www.autotrainingcentre.com/blog/5-entry-level-positions-pursue-auto-mechanic-training/</u>.

<sup>7 &</sup>quot;Technical Skills to Have a Rewarding Career in the Automotive Sector," *Philadelphia Technician Training Institute*, accessed May 6, 2025. <u>https://ptt.edu/technical-skills-to-have-a-rewarding-career-in-the-automotive-sector/#:~:text=A%20rewarding%20career%20in%20the%20automotive%20sector%20 demands%20technical%20skills,and%20highly%20competitive%20automotive%20sector.</u>

<sup>8 &</sup>quot;Occupational Outlook Handbook: Production Occupations" U.S. Bureau of Labor Statistics, accessed May 6, 2025. https://www.bls.gov/ooh/production/#:~:text=Overall%20employment%20in%20production%20 occupations%20is%20projected,annual%20wage%20for%20all%20occupations%20of%20\$48%2C060.

<sup>9 &</sup>quot;Automotive Services | Lightcast Skills Taxonomy," Lightcast, accessed May 6, 2025. <u>https://lightcast.io/open-skills/skills/KS120TB61QK2V8VD2C35/automotive-services</u>.

<sup>10 &</sup>quot;Tests," National Institute for Automotive Service Excellence, accessed May 6, 2025. <u>https://www.ase.com/</u> tests.

Here, relevant training guidelines and activities for automotive manufacturing jobs are broken down according to education levels: before middle school, middle school, high school, community college, four-year university, and beyond.

# **Before Middle School**

Currently, before middle school, formal automotive manufacturing training is not typical. However, industry actors are increasingly realizing the importance of engaging with students before middle school since foundational skills, e.g., basic motor skills, hand-eye coordination, intentional introduction to technology, can be developed through general education and extracurricular activities. Basic motor skills can be developed through activities such as building models, working with simple hand tools in school projects, or engaging in robotics clubs or camps. Early exposure to simple hand tools and technologies can help lay the foundation for more advanced skills later. By using familiar items such as toy cars or mechanical toys, children can start learning general scientific concepts, sparking interest and curiosity in automotive and advanced manufacturing.

# **Middle School**

Middle school is an ideal time for exploring interests in automotive manufacturing. Though formal vocational training is rare at this stage, some exposure to relevant subjects and activities may be beneficial and is becoming more commonplace. This could involve the introduction to Science, Technology, Engineering, and Mathematics, or STEM, as well as introductory robotics or engineering programs and hands-on learning in basic vocational workshops.

As middle school students take more advanced science and math classes, they begin learning basic concepts that are integral to automotive manufacturing, such as force, motion, simple machines, and basic physics principles. Some middle schools offer introductory robotics or engineering programs designed to help students develop an understanding of how machines work and foster the problem-solving and critical thinking skills necessary in automotive manufacturing. Additionally, some middle schools may offer basic vocational workshops in carpentry, metalworking, or simple machining, which helps develop motor skills and provides a hands-on approach to learning how tools and machinery work.

# **High School**

High school represents a critical time to engage students in automotive manufacturing careers. According to ASE, nearly 67% of automotive service technicians and mechanics in the U.S. enter the workforce with training from high school career and technical education (CTE) programs.<sup>11</sup> Studies show that high school students who participate in CTE programs related to automotive manufacturing are more likely to pursue related postsecondary education or immediately enter the workforce. Many high schools now offer programs that directly support students who wish to enter the automotive industry such as automotive technology courses, STEM courses and engineering pathways, work-based learning opportunities, and offering certifications. In automotive technology courses, students learn the basics of automotive systems, related tools and equipment for diagnostics, maintenance and repair, critical thinking and problem-

<sup>11 &</sup>quot;National Institute for Automotive Excellence," accessed May 6, 2025. <u>https://ase.com/</u>.

solving skills, and more. These courses may also include both classroom instruction and opportunities for students to gain hands-on experiences with automotive technology, engineering principles, and basic manufacturing processes that contribute to important foundational industry knowledge.

High schools may collaborate with community colleges to offer dual enrollment courses, allowing students to earn relevant college credits in automotive manufacturing and advanced manufacturing. They might also develop partnerships with local automotive manufacturers or businesses to provide the student with access to an internship, mentorship, professional development, work-based learning, or earn-and-learn opportunities to give them a competitive edge in the industry. Some high schools may offer programs for practical skills training and industry-recognized certifications, such as those accredited by ASE, further increasing the student's employability. At the high school level, there are also unique opportunities for students to participate in programs like SkillsUSA competitions that encourage students to apply their knowledge in real-world scenarios, teaching them valuable technical and problem-solving skills.

# **Community and Technical College**

Community and technical colleges play a pivotal role in refining skills acquired at the high school level and continuing to build on a student's foundation. Community and technical colleges are integral to bridging the gap between high school and industry readiness. In addition to more foundational education courses that teach students about current technology and equipment, diagnostic tools, computerized systems, vehicle maintenance, and mechanical designing, these institutions provide specialized training programs that are aligned with the demands of automotive manufacturing and technologies such as electric vehicles (EVs), hybrid systems, and alternative fuels.<sup>12</sup> In fact, ASE reports that community and technical college graduates are often well-equipped to handle the complexities of modern automotive technologies, including EV systems, advanced diagnostics, and manufacturing automation.<sup>13</sup> Community and technical colleges are a proven pathway for workers to acquire industry-specific certifications, and more than 50% of automotive technicians and engineers in the U.S. receive their postsecondary education at community and technical colleges.<sup>14</sup> Students are also better prepared for work because these institutions often recruit faculty directly from the industries applicable to the area of learning and their lessons are rooted in the realities of the industry.

Community and technical colleges collaborate closely with industry partners to provide hands-on training and certification opportunities. Programs can be accredited by organizations like ASE, ensuring that the program's training meets industry standards to enhance the employability of the student. Additionally, a community or technical college may form a partnership with a local employer or university to help develop the program curricula so that it best aligns with industry needs. Other initiatives with these partners might include work-based learning opportunities and job shadowing so that students gain practical experience to bridge the gap between theoretical knowledge and real-world applications. In addition to hard skills, students develop crucial soft skills like teamwork, communication, critical thinking, time management, and the ability to adapt. They also learn how to interact with potential employers and search for jobs that fit their skills.

<sup>12 &</sup>quot;Research.com," accessed May 6, 2025. <u>https://research.com/</u>.

<sup>13 &</sup>quot;National Institute for Automotive Excellence," accessed May 6, 2025. https://ase.com/.

<sup>14</sup> Ibid.

#### **Four-Year University**

Four-year universities play a crucial role in advancing automotive manufacturing through research, innovation, and higher-level technical training. ASE recognizes that many of the top engineers and manufacturing specialists in the automotive sector hold degrees from four-year institutions.<sup>15</sup> Four-year universities focus on providing a comprehensive education that combines technical expertise with critical thinking and research skills. Students engage in advanced studies in automotive engineering, materials science, robotics, and manufacturing processes. Some of the core skills and education focus on strong knowledge of physics, mathematics, and engineering science; Computer-Aided Design (CAD) software and design principles; understanding of casting, machining, welding, and assembly; manufacturing principles, vehicle dynamics and powertrains (suspension systems, steering, motors, etc.); electrical and electronic systems; and engine construction and design. Soft skills associated with these degrees include communication and interpersonal skills, attention to detail, critical thinking and problem-solving, innovation, and adaptability. Universities are at the forefront of developing cutting-edge technologies, including alternative fuel systems, automation, and advanced materials. According to the National Science Foundation (NSF), approximately 30% of all engineering graduates are employed in manufacturing industries, with a significant portion of those graduates entering the automotive sector.<sup>16</sup>

Universities often collaborate with industry leaders and businesses to offer research opportunities, coop programs, and internships. These partnerships facilitate the development of cutting-edge solutions to industry challenges. With input from industry leaders, universities can better design the curricula for students in a manner that accurately reflects the skills and needs associated with the current industry landscape and jobs. Through these opportunities, graduates are well-prepared to work in the industry and are more prepared for leadership roles, contributing to advancements in automotive manufacturing. Universities may also partner with community and technical colleges to address the need for workers in advanced automotive manufacturing and technology to help meet industry demands and support the workforce pipeline.

#### Beyond

Formal education and skills training can continue after a student completes their institutional education and certifications. The automotive manufacturing and advanced manufacturing industries are ever-changing, and workers often engage in methods of upskilling and reskilling—to help them adapt to evolving industry standards. Many employers promote ongoing education through advanced ASE certifications, allowing workers to specialize and stay up to date on technological advancements. The student may also participate in workshops or seminars on new and emerging topics or attend leadership training aimed at supervisory roles within the automotive manufacturing sector.

The automotive manufacturing and advanced manufacturing industries are ever-changing, and workers often engage in methods of upskilling and reskilling—to help them adapt to evolving industry standards.

<sup>15</sup> Ibid.

<sup>16 &</sup>quot;Advanced Manufacturing," Focus Areas, U.S. National Science Foundation, accessed May 6, 2025. <u>https://www.nsf.gov/focus-areas/manufacturing</u>.

Throughout the next section of the paper, where we highlight the varieties of engagement and examples from the industry, it is important to note that within each type of engagement the employers are keeping the worker center to the process.

# VARIETIES OF EMPLOYER ENGAGEMENT

This paper describes six varieties of employer engagement: serving on an advisory committee at an educational institution, helping to craft workforce education curriculum, collaborating with educators to upskill incumbent workers, partnering with a training provider to recruit students and offer student support, contributing financially, and providing opportunities for work-based learning at the company. (See figure 1.)

These activities vary in intensity, some light-touch, others more demanding. The more intensive varieties require more effort by the employer, usually time and resources. Importantly, no activity is more significant than any other. Consider an analogy from the world of boxing: weight classes. Bantamweight fighters do not strive to be heavyweights – they try to be the best bantamweights in the league. Helping to craft an up-to-date curriculum may require less time and energy than organizing a work-based learning experience at the company, but it is no less valuable.

The paper illustrates each of the six varieties of employer engagement with one or more examples drawn from Japanese-brand automotive manufacturers.

# **VARIETIES AND EXAMPLES**

# **Advisory Committees**

Representatives from local firms or industry associations often serve as members of formal and informal advisory committees for a community college department, program of study, or grant-funded initiative. Advisory committees may meet regularly, occasionally, or intermittently. They provide an avenue for colleges to share knowledge with employer partners and solicit input on industry trends and program design.

Honda's participation in an advisory committee for Ohio State University through the Honda-Ohio State Partnership demonstrates how an actively engaged employer can successfully contribute to an effective advisory committee. The **Honda-Ohio State Partnership** has been formalized for over 20 years and is recognized by the state of Ohio as an industry partnership.<sup>17</sup> The joint business plan of this program largely focuses on research, talent, and community. In this example, Honda serves as a representative from the automotive industry on a formal advisory committee for Ohio State University activities in the advanced manufacturing field. The partnership between Honda and Ohio State ensures there is a mutual understanding of what skills employers in the industry need potential employees to learn and what industry trends and foundations should be considered when designing programs for students. A recent example of Honda providing an advisory function is the input they provided to Ohio State in consideration of and subsequently establishing an automotive manufacturing certificate program

<sup>17 &</sup>quot;20 Years of Impact," Honda - Ohio State Partnership, accessed May 6, 2025. <u>https://new.express.adobe.</u> <u>com/webpage/iRK8IhtTUAycF?</u>.

# Figure 1. Varieties of Employer Engagement

Advisory committees: Many educational institutions that provide workforce education maintain standing committees of employers who meet regularly to offer advice about changing industry trends and fluctuating labor demand.

**Curriculum development:** Training providers need help identifying in-demand skills and appropriate skill levels – what exactly is needed to be successful in a given job. Employers can help by working with instructors to ensure that the curriculum is apt and up to date.

**Upskilling and reskilling for incumbent workers:** Workers need new skills to keep up with the technology transforming the workplace. Often just a few weeks of retraining – new digital skills, technical skills or problem-solving techniques – can help a worker facing redundancy take on a new role with ample opportunity. Employers can help by partnering with education providers to offer customized upskilling and reskilling, investing in trusted incumbent workers and promoting them within the company.



**Student outreach and support:** Workforce educators are sometimes unsure who would make the best job applicants or how to prepare them for the workplace. Employers can help colleges market workforce education, recruit learners, and provide career counseling and coaching.

**Monetary and in-kind contributions:** Some colleges deliver programs using employers' equipment or facilities. In other cases, employers contribute toward operating costs or cooperate to build new educational facilities. Still other firms offer to pay some or all of students' tuition fees, and many cover the cost of consumables used in workforce education programs.

**Work-based learning:** Work-based learning opportunities include internships, externships, co-ops, clinical placements, and full-time earn-and-learn experiences. The best programs bring learners into the company for on-the-job experience – sometimes paid – coordinated with related classroom instruction.

specifically designed for Ohio State students.<sup>18</sup> The program launched in the spring of 2025 and includes an experiential learning component where there is an option for students to pursue a capstone project. Honda has and continues to support a multitude of Ohio State students' annual capstone projects, with 2024 marking the highest number of Honda-supported capstone projects, in areas such as manufacturing, engineering, and human resource-related implications on automotive manufacturing.<sup>19 20</sup>

# **Curriculum Development**

Curriculum development occurs when colleges may partner with employers to identify competencies that are in demand in the workplace or jointly design or update curricula, assessments, or credentials. Employers and educators alike seek to ensure that students obtain appropriate subject-matter knowledge and leave the college equipped to perform in a workplace setting.

Nissan and Mazda demonstrate the success of curriculum development when deployed as an employer engagement activity. **Nissan's Centers of Excellence** partners with the Tennessee College of Applied Technology (TCAT) in Decherd, Tennessee, to offer college-level classes in high schools.<sup>21</sup> Nissan also provides instructors who teach students advanced manufacturing or industrial maintenance. At Nissan's Centers of Excellence, students receive the opportunity to earn nationally recognized industry certifications in addition to high school credits. Dual enrollment with TCAT college credits, which is offered through the public school system, is free for the student, and students have the opportunity to earn specific certifications such as the four Manufacturing Skill Standards, Council Certified Production Technician certificates, OSHA 10, Lean Six Sigma and Fanuc Robot Operator Level I.

**The Mazda Foundation** has maintained a partnership with the FUSE Studio since 2021, which places and stands up STEM labs across the United States.<sup>22 23</sup> FUSE labs are currently in 250 schools (elementary, middle, and high schools) across 20 states. FUSE designs and facilitates curriculum implementation with the intended goals of exposing students to STEM learning and gaining confidence with associated skills. FUSE also provides teacher training so that instructors can teach these STEM principles in the most effective manner possible. Programming includes teaching STEM principles through individual challenges, which are then incorporated into classroom teaching.<sup>24</sup> In 2022, Mazda designed a FUSE

<sup>18 &</sup>quot;New Certificate Prepares Students for Future of Automotive Manufacturing," The Ohio State University: College of Engineering, March 18, 2025. <u>https://mae.osu.edu/news/2025/03/new-certificate-prepares-students-future-automotive-manufacturing</u>.

<sup>19 &</sup>quot;Capstone Projects," Honda - Ohio State Partnership, accessed May 6, 2025. <u>https://honda.osu.edu/education/capstone-projects</u>.

<sup>20 &</sup>quot;Honda Helps Steer Students on Path to Success Ahead of Graduation," *The Ohio State University: College of Engineering*, April 18, 2025. <u>https://engineering.osu.edu/news/2025/04/honda-helps-steer-students-path-success-ahead-graduation</u>.

<sup>21 &</sup>quot;Nissan Partners With Tennessee Board of Regents, TCAT and Local Schools to Launch Centers of Excellence," *Nissan*, July 31, 2024. <u>https://usa.nissannews.com/en-US/releases/nissan-partners-with-tennessee-board-of-regents-tcat-and-local-schools-to-launch-centers-of-excellence</u>.

<sup>22 &</sup>quot;FUSE," Programs, Mazda Foundation, accessed May 6, 2025. <u>https://www.mazdafoundation.org/programs/</u> <u>fuse/</u>.

<sup>23 &</sup>quot;FUSE Home Page," FUSE Studio, accessed May 6, 2025. https://www.fusestudio.net/.

<sup>24 &</sup>quot;FUSE Challenges & Pathways," *FUSE Studio*, accessed May 6, 2025. <u>https://www.fusestudio.net/how-fuse-works/FUSE%20Challenges%20&%20Pathways.pdf</u>.



Nissan and their local partners celebrate the launch of the Centers of Excellence.

challenge focused on the principles of Mazda's design and engineering by creating a balance toy using auto CAD software and 3D printing. Then, in 2024, Mazda created a challenge related to vehicle crashworthiness that focused on engineering, design, and quality control principles.

# Upskilling and reskilling for incumbent workers

Engaged employers help maintain their incumbent workforce by providing opportunities for upskilling and reskilling. These opportunities allow workers to stay properly up to date with technical skills and build on their extensive training, better preparing them for new challenges. Additionally, community colleges and employers may partner together to provide professional development for college faculty and instructors. Activities may include courses or seminars, certifications, technical assistance, and access to information about in-demand skills and industry trends.

Nissan and Subaru effectively demonstrate the success of professional development when deployed as an employer engagement activity. **Nissan North America**, headquartered in middle Tennessee, conducts its internal training program at the Tennessee College of Applied Technology (TCAT) at Murfreesboro's Smyrna Campus and Nissan Training Center, which is a joint facility created in 2017 out of a public-private partnership between Nissan and the State of Tennessee.<sup>25</sup> An important feature of the joint facility is that Nissan employees receive training alongside TCAT students. This allows Nissan to more readily build upon TCAT students' skills foundation until they reach Nissan standards. The transition of a TCAT graduate into filling a Nissan automotive position is far easier when a student goes through the TCAT

<sup>25 &</sup>quot;Smyrna Campus and Nissan Training Center," Business & Industry, TCAT Murfreesboro, accessed May 6, 2025. <u>https://tcatmurfreesboro.edu/business-industry/smyrna-campus-and-nissan-training-center</u>.

program because Nissan is aware of that potential employee's training thus far. Additionally, Nissan provides significant input into the TCAT curriculum from a technical perspective. This enables Nissan to professionally develop its own employees as well as the next generation of potential employees. Courses offered in the joint facility closely align with the region's workforce needs, including Nissan's, with a focus on in-demand skills in advanced manufacturing, automotive technology, etc.

Another example is the Advanced Manufacturing Maintenance Technician (AMMT) Program by Subaru. Subaru creates opportunities for associates by leveraging Subaru training resources at their disposal. More specifically, the AMMT program takes Subaru production associates who do not have a background in areas like electrical programmable logic controller (PLC) and trains them to obtain the necessary skills to fully transition into maintenance technicians.<sup>26</sup> Previously, Subaru sent AMMT program participants to Indiana's Vincennes University for 16 weeks of classroom instruction. Now, the training is done on-site with university instructors, where associates receive classroom-based instruction that is interspersed with on-the-job training. The training occurs over a longer period of time – 26 weeks – and the schedule is specifically tailored to a working adult. Through the AMMT program and a focus on upskilling and reskilling, Subaru effectively professionally develops existing associates, creating benefits for both the employee and company.

# **Student Outreach and Support**

To accomplish student outreach and support, colleges may collaborate with employers to interact with students or provide student services before, during, or after learners participate in workforce programs. Employers may help colleges market workforce programs. The two parties may work together to recruit learners from high schools, community organizations, or other entities. Employers also provide academic advising and career counseling and coaching. Honda and Subaru effectively demonstrate the success of student outreach and support.

As a founding supporter of **Creators Wanted**, Honda connects with students early in their education journey.<sup>27</sup> Creators Wanted is a joint initiative launched in 2021 by the National Association of Manufacturers (NAM) and the Manufacturing Institute, NAM's workforce development and education partner, to showcase the career opportunities and technologies used in modern manufacturing.<sup>28</sup> In 2023, Honda promoted and hosted an interactive exhibit at the COSI Science Festival in Columbus, Ohio, which is the Midwest's largest STEM event, and at the Honda Heritage Center in Marysville, Ohio. The exhibit featured escape room-like activities involving coding and teamwork exercises as well as quizzes to test users' knowledge of Honda products. Honda also hosted hundreds of students for tours of the Heritage Center and Honda's Technical Development Center to further encourage consideration of advanced and automotive manufacturing careers. A key feature of these activities was interaction with students' parents to help inform them of the advanced nature of modern manufacturing so that parents can be better positioned and more comfortable encouraging students to consider manufacturing careers. Honda's support of Creators Wanted also extends to the development of Creators Connect, the

<sup>26</sup> Rodger Doss, interview by Anita Rajan and Alex Willis, June 21, 2024.

<sup>27 &</sup>quot;Honda Hosts Creators Wanted, Nation's Largest Manufacturing Careers Campaign, in Ohio," *Honda in America*, May 5, 2023. <u>https://hondainamerica.com/our-community/honda-hosts-creators-wanted-nations-largest-manufacturing-careers-campaign-in-ohio/.</u>

<sup>28 &</sup>quot;About," Creators Wanted, accessed May 6, 2025. https://www.creatorswanted.org/about/.



Students learn directly from Honda executives at Creators Wanted.

job portal of Creators Wanted, which is a platform for employers and potential employees across the country to leverage. Most recently, Honda continued its partnership with the Manufacturing Institute through the launch of Innovators Quest, a student engagement tool through the form of an interactive game featuring 3-D printing, robotics, etc., that teaches elementary through middle school students the skills needed in modern manufacturing.<sup>29</sup> The positive experience with this tool helps students envision themselves in innovation-driven, manufacturing careers.

**Subaru University** (Subaru U) is building a vehicle technician talent pipeline through outreach to and support of students interested in becoming new vehicle technicians.<sup>30</sup> Subaru U was established in September 2016 in Cherry Hill, New Jersey, in response to a critical shortage of vehicle technicians. Since 2016, the program has grown to Subaru U having partnerships with 510 secondary and post-secondary schools, with approximately 4,150 students in the program. Subaru U provides training materials that are incorporated into secondary and post-secondary schools' curricula, depending on how the schools' degree programs are designed. Subaru of America (SOA) further engages by actively managing the relationship between the school and the retailers. The automaker works closely with secondary and post-secondary and post-secondary schools by visiting the schools in those markets where the need for technicians is high and helping the schools select the Subaru-provided training modules and/or courses that will be of the most value depending on the degree's curriculum. Subaru also suggests a number of general education

<sup>29 &</sup>quot;The Innovators Quest Gets Students Excited About Manufacturing," NAM News Room, March 7, 2025. <u>https://nam.org/the-innovators-quest-gets-students-excited-about-manufacturing-33453/?stream=workforce</u>.

<sup>30 &</sup>quot;SUBARU UNIVERSITY," Subaru University, accessed May 6, 2025. https://www.subaru-u.com/.

courses, including math, reading, writing, and even etiquette and time management. All schools must be ASE certified either at ASE entry-level or ASE professional status, and Subaru U only works with non-profit schools as part of the Subaru Love Promise, which SOA notes is part of their long-standing community outreach commitment. Subaru's priority to directly work with schools to support students and work with actively engaged Subaru dealers continues to yield positive outcomes – namely, wellprepared students ready to start their careers as vehicle technicians.

# **Monetary and In-Kind Contributions**

Through monetary and in-kind contributions, companies and colleges often collaborate to ensure that workforce education programs are cost-effective. Colleges may deliver programs using employers' equipment or facilities. The two parties may share operating costs or cooperate to build new educational infrastructure. Employers may pay some or all students' tuition and fees. They may also provide instructors, guest lecturers, and other human resources. Companies may also furnish colleges with data on industry trends, graduates' outcomes, and managers' satisfaction with new hires' skills.

Toyota and Mazda demonstrate effective employer engagement in workforce development programs through providing monetary and in-kind contributions. The first program, Driving Possibilities, is a career readiness and community engagement initiative of the Toyota USA Foundation born from Toyota's desire to go "deeper rather than wider" in the communities they serve.<sup>31</sup> The program's goals are to expose students to and engage them in STEM careers, coordinate community-based services, decrease barriers that can impact academic success, and prepare them for the workforce by providing skills training that best helps students to thrive when they leave the program. While Driving Possibilities initially launched in 2018 in Dallas, Texas, it has since expanded into seven other communities in the states of Indiana, Kentucky, North Carolina, Alabama, Arizona, and Michigan, with plans to expand to a total of fourteen planned sites. Across these communities, Toyota has contributed about \$110 million into Driving Possibilities investing in hands-on STEM programming from grades K-12, resources to professionally develop teachers, after school and campus support, and wraparound services like transportation and language/translation services.

Since 2022, the Mazda Foundation has been awarding monetary contributions to **College Track Los Angeles**, in the form of nearly \$225,000 in grants.<sup>32</sup> College Track – an organization established in 1997 – makes a 10-year commitment to each student they sponsor to help them receive education and training.<sup>33</sup> These students receive assistance from ninth grade through post-college graduation. After assistance through four high school years and four college years, the participants of College Track receive assistance for an additional two years as they transition from college to the workforce. While providing monetary sponsorship for students enrolled in the program, College Track provides mentorship and guidance in areas such as time management, resume writing, interview skills, and other professional or soft skills development that these students might normally lack access to in their environment. This program is geared towards helping kids succeed in four-year universities and beyond. The outcomes for these

<sup>31 &</sup>quot;Driving Possibilities," Key Initiatives, The Toyota Effect, accessed May 6, 2025. <u>https://toyotaeffect.com/key-initiatives/driving-possibilities/</u>.

<sup>32 &</sup>quot;College Track," Programs, Mazda Foundation, accessed May 6, 2025. <u>https://www.mazdafoundation.org/</u> programs/college-track/.

<sup>33 &</sup>quot;The 10-Year Promise," College Track, accessed May 6, 2025. https://collegetrack.org/10-year-promise/.

students are positive in that many follow through with the full commitment of college graduation. Even if a student does not finish their full commitment to college graduation, they are certainly more prepared to enter the workforce than they would have been otherwise. In addition to the Mazda Foundation's monetary donations, Mazda hosts an annual Career Day at their Irvine, California, campus, inviting dozens of College Track students to learn about careers in the automotive industry.



Mazda makes a 10 year commitment to students through College Track.

# Work-Based Learning Opportunities

Work-based learning opportunities include earn-and-learn programs, internships, externships, co-ops, and industry placements. Placements in work-based learning opportunities may differ depending on the type of work-based learning, though employers generally afford students an opportunity for on-the-job experience – paid or unpaid – coordinated with related classroom instruction or credentials. In some cases, a work-based learning opportunity may result in a permanent job placement.

The **Isuzu Internship Program** began as an informal co-op program before becoming a more formal program in 2015.<sup>34</sup> The internship program became a priority when Isuzu recognized a growing gap in the need for skilled engineers and made an intentional decision to help develop the talent pipeline. Since starting, the program has recruited from 21 colleges and universities from Michigan, South Carolina, Texas, Tennessee, Pennsylvania, New York, Illinois, Indiana, Ohio, and Wisconsin.<sup>35</sup> Interns have positively evaluated the internship program because of its holistic approach, where interns gain invaluable experience through a mentor-guided program that immerses them in cutting-edge research

<sup>Angela Goudreau and Charlene Govaere, interview by Anita Rajan and Alex Willis, February 13, 2025.
Ibid.</sup> 



Toyota 4T student learns and earns while on the job.

and development projects, including clean energy initiatives, trials for autonomous driving technologies, computer-aided engineering, and vehicle testing in the field and within virtual environments. As a true ringing endorsement, interns have consistently been referred by their friends and colleagues to the internship program, who are often hired as direct or contract employees, thus further expanding Isuzu's talent pipeline. Over 192 interns have gone through the internship program over the course of its history, with 25 percent of those interns ultimately receiving full-time hire offers at Isuzu.<sup>36</sup>

**Toyota's Teach, Team, Together, Toyota, or 4T Academy**, is another example of work-based learning.<sup>37</sup> 4T Academy is a two-year education and manufacturing career path. Originally started in Indiana in 2020, 4T's goal is to better connect with local high schools to provide greater visibility to students about careers in the region. The program administrators broadcast the availability of the program and recruit high-performing freshman and sophomore students. If a student is selected for the program, they will begin to take classes four days during their junior year. These classes are supplemented by career and technical education (CTE) courses, e.g., introduction to manufacturing, robotics, introduction to artificial intelligence, tool training, plant safety, etc. In addition, students spend one day a week on-site at the 4T Academy to learn Toyota curriculum, e.g., the **Toyota Production System (TPS)**, from a Toyota employee, immersing themselves in work-based learning. As their education progresses, students will ultimately shift their schedule to more and more time at 4T Academy, until they enter into a paid

<sup>36</sup> Ibid.

<sup>37 &</sup>quot;4T Academy – Changing Potential into Power," 4T Academy, accessed May 6, 2025. <u>https://4tacademy.com</u>.

internship four days a week. These internships may include training in welding, paint shop, power training, and more. Following a student's graduation and subsequent completion of the program, they are extended a conditional offer to become a Toyota team member.

Japanese-brand automakers invest heavily in creating a talent pipeline for vehicle technicians through workbased learning programs. These programs partner with and leverage the vast network of local community and technical colleges. Most of the programs' students graduate and often accept opportunities to work in automotive dealerships. The Honda Professional Automotive Career Training (PACT) program is an example of the type of work-based training offered through these sorts of programs.<sup>38</sup> Honda PACT was established in 1989 after Honda and Acura dealers had requested American Honda Motors to create a program to provide more high-quality vehicle technicians. Honda PACT students typically complete the program in two years and can earn an associate's degree in automotive technology or a certificate in automotive technology from an Automotive Service Excellence (ASE) Education Foundation certified school. Students also have the opportunity to earn four Honda & Acura specific certifications taught by Honda-certified instructors. During the program, students are paid for on-the-job training through internships at a Honda or Acura dealership. Similar programs offered by other automakers are located around the country, such as the Toyota Technician Training and Education Network (T-TEN), Nissan Technician Training Academy (NTTA), Subaru University (Subaru U), and Mazda Automotive Student Training (MAST).<sup>39 40 41 42</sup> With an ongoing need for highly trained vehicle technicians, Japanese-brand automakers' wide-ranging investments in work-based training programs are critical.

Honda, Mazda-Toyota Manufacturing, and Toyota demonstrate the success of employer engagement in job placement and hiring. All three manufacturers participate in the **Federation for Advanced Manufacturing Education (FAME)**, an intensive work-and-learn initiative that combines a community college education with two years of in-depth on-the-job experience.<sup>43</sup>

Launched in 2010 in central Kentucky by a handful of local manufacturers including Toyota, FAME has grown to be one of the most widely recognized workforce education programs in the U.S. Some 450 manufacturers across 16 states participate in chapters, not unlike the original Kentucky chapter, and the program is administered by the education arm of the National Association of Manufacturers, the Manufacturing Institute. What makes the initiative work: employers are in the driver's seat, determining every aspect of the experience – choosing community college partners, determining curriculum, recruiting students, even working with colleges to redesign the physical space where classroom learning takes place.

Students work at a participating company three days per week and attend classes two days per week.

<sup>38 &</sup>quot;Honda PACT | Professional Automotive Career Training," Honda PACT Program, accessed May 6, 2025. https://www.hondapact.com/.

<sup>39 &</sup>quot;T-TEN Program | Technician Training and Education Network," T-TEN Program, accessed May 6, 2025. <u>https://www.t-ten.com/</u>.

<sup>40 &</sup>quot;Nissan Technician Training Academy," NISSAN, accessed May 6, 2025. <u>https://www.nissantechacademy.</u> <u>com/</u>.

<sup>41 &</sup>quot;SUBARU UNIVERSITY," Subaru University.

<sup>42 &</sup>quot;Mazda Automotive Student Training (MAST)," Mazda USA, accessed May 6, 2025. <u>https://www.mazdausa.</u> <u>com/site/mazda-automotive-student-training</u>.

<sup>43 &</sup>quot;FAME USA: Home," FAME USA, accessed May 6, 2025. https://fame-usa.com/.

They learn core manufacturing and engineering competencies in areas such as mechatronics and robotics and earn associate degrees that they can take with them anywhere. On-the-job learning is pegged to a five-day work week with no summer break, designed to help prepare students for the world of work. Instruction focuses heavily on technical skills but also work habits – what the program calls professional skills, including work ethic and teamwork. After 21 months, most students emerge from the program debt-free with a direct connection to a job. According to a 2020 study by Opportunity America and the Brookings Institution five years after completing the program, FAME graduates earn \$45,000 more per year than similar students with comparable associate degrees.<sup>44</sup>

Alabama in particular has a number of FAME chapters where, specifically, Honda works with the East Alabama and Magic City FAME chapters, MazdaToyota Manufacturing partners with the Huntsville Tech FAME chapter, and Toyota works with the Huntsville Tech and Rocket City FAME chapters.<sup>45464748</sup>

# CONCLUSION

All six varieties of employer engagement described in this paper have proven their value in the workplace, enhancing the quality of training, creating opportunities for workers, and boosting U.S. economic competitiveness. Japanese-brand automotive manufacturers have shown the way, and a growing number of other employers in the automotive industry and other sectors are now adopting similar strategies.

There is no substitute for employer engagement; there can be no effective workforce education without it. The stakes could hardly be higher, and the need will only grow as technological and demographic changes continue to transform the U.S. advanced manufacturing sector and the global economy.

<sup>44</sup> Tamar Jacoby and Ron Haskins, "Kentucky Fame: Fulfilling the Promise of Apprenticeship," *Opportunity America and Brookings Institution*, October 2020. <u>https://opportunityamericaonline.org/wp-content/uploads/2020/10/KY-FAME-final-final.pdf</u>.

<sup>45 &</sup>quot;East Alabama - FAME CHAPTER," Alabama Fame, Program Locations, FAME USA, accessed May 6, 2025. https://fame-usa.com/fame-program-locations-original/alabama-fame/east-chapter-fame/.

<sup>46 &</sup>quot;Magic City - FAME CHAPTER," Alabama Fame, Program Locations, FAME USA, accessed May 6, 2025. https://fame-usa.com/fame-program-locations-original/alabama-fame/magic-city-chapter/.

<sup>47 &</sup>quot;Huntsville Tech Chapter - FAME CHAPTER," Alabama Fame, Program Locations, FAME USA, accessed May 6, 2025. <u>https://fame-usa.com/fame-program-locations-original/alabama-fame/huntsville-tech-chapter/</u>.

<sup>48 &</sup>quot;Rocket City - FAME CHAPTER," Alabama Fame, Program Locations, FAME USA, accessed May 6, 2025. https://fame-usa.com/fame-program-locations-original/alabama-fame/rocket-city-chapter-fame/.



To Download a Digital Copy of this Report Scan this QR Code

