



Metalworking

MSC Introduces Tomorrow's Workers to High-Tech Modern Manufacturing

James Langford | Sep 27, 2024

With gleaming equipment, touchscreen controls and robots handling production-line tasks, many modern manufacturing facilities bear a stronger resemblance to sci-fi movie sets than to the dingy factories depicted in history lessons.

There's a good chance that the workforce of tomorrow doesn't realize that, however, which is compounding a labor shortage already threatening to leave manufacturers with 2.1 million fewer workers than they need by 2030.

The shrinking labor pool, a skills gap created as veteran workers from the baby boom generation retire with fewer trained professionals available to replace them and workforce development "are challenges across the industry, from small shops to larger organizations," says Dr. Michael Gomez, principal research and development engineer at MSC Industrial Supply Co. "It's a problem that was unfortunately ignored for a long time but now everyone is realizing the importance of reinvigorating the labor pipeline and rebuilding the workforce."

MSC and its supplier partners, along with industry leaders nationwide, are tackling the problem, in part, through **Manufacturing Day**, coordinated nationwide events that offer high school and college students hands-on experience with high-tech production tools, equipment demonstrations and opportunities to talk with professionals about the wealth of career opportunities.

High-Tech Future

Held annually on the first Friday in October with follow-up events throughout the month, Manufacturing Day is designed to "help show the reality and future of modern manufacturing careers," according to the **Manufacturing Institute**, the nonprofit workforce development arm of the National Association of Manufacturers.

Companies and schools leverage the events to build excitement not only among students laying the groundwork for their careers but also influencers such as parents, educators and community leaders.

“Modern manufacturing today looks wildly different than it did 100 years ago, when jobs in factories were viewed as dark, dirty and dangerous,” says MSC’s Gomez.

His company is teaming with the University of Tennessee-Knoxville to host a Manufacturing Day event at the Tennessee Manufacturing and Design Enterprise, referred to as TN-MADE, a state-of-the-art facility that houses advanced manufacturing technology and equipment.

The center is home to a variety of machine tool research and workforce development programs and located near Knoxville’s growing technology innovation district as well as the U.S. Department of Energy’s Manufacturing Demonstration Facility at Oak Ridge National Laboratory.

MSC suppliers including Kennametal, Mitutoyo, SECO, Milwaukee Tool and OSG are co-sponsoring the Oct. 4 event and will staff booths where participants can talk about career development and see manufacturing equipment in use.

“They’ll have a chance to watch machining tools at work, 3D-printing, automated tasks performed by a robotic arm and an array of different, unique manufacturing operations,” all of which show them how a modern manufacturing shop floor looks and feels, Gomez says.

Many of the students participating in Manufacturing Day go to schools with coding camps, robotics programs and 3D-printing clubs, he adds, so what they encounter at the event won’t be completely unfamiliar.

More Than Machine Tools and Robots

“All of that technology is the same technology that feeds the manufacturing industry,” he says. “Whether they realize it or not, they’ve been exposed to manufacturing through middle and high school and what we hope to do is connect the dots for them, show them how their robotics club experience, for instance, might lead to a manufacturing job.”

While some of the companies hosting demonstrations at Manufacturing Day events focus on the products they make, others include information about alternative career fields their businesses require, from engineering to sales, marketing and finance.

Ultimately, the goal is to help students choose the field that’s right for them, “whether they want to be on the shop floor making things or an engineer or a marketing professional,” Gomez explains. “A manufacturing career can look like many different things. It’s not only operating a machine tool or a robotic arm.”

For UT-Knoxville, the partnership with MSC is a vital part of initiatives to develop the next generation of workers and help build a more resilient supply chain after the 2020 pandemic highlighted the vulnerabilities of sprawling international networks that relied on unhindered global shipping channels.

In addition to collaborating with MSC on Manufacturing Day, the university hosts the company’s ***Machining Research Laboratory*** at its TN-MADE facility.

As UT-Knoxville teams with manufacturers, it’s also collaborating more closely with community colleges and skilled training programs, says Marc Gibson, associate vice chancellor for innovation and economic development.

Combining Degrees with Practical Skills

Ensuring that tomorrow's workforce has both practical skills and the conceptual and theoretical knowledge acquired through engineering degrees supports Tennessee's industrial development programs—which have attracted manufacturers including automakers Nissan, Volkswagen and Ford—and addresses a common concern from employers.

"What I'm hearing from industry is that we're supplying them with some really good students, but they want those students to have applied experience coming on the back end of that," Gibson says. "There's a renewed discussion on our campus about applied engineering opportunities and what they might look like as we work with our manufacturers across the state."

In many ways, the collaboration between MSC and the university on Manufacturing Day and broader workforce development efforts is an extension of manufacturing's core mission: Companies build products that solve customer problems while finding solutions for problems that hinder production of goods.

"I'm a problem solver, and I get new challenges all the time," Gomez says. "If you're curious, this is a fantastic field to be in, because there are so many problems left to be solved."

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