

# MECHATRONICS

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**by James D. Davis Jr.**

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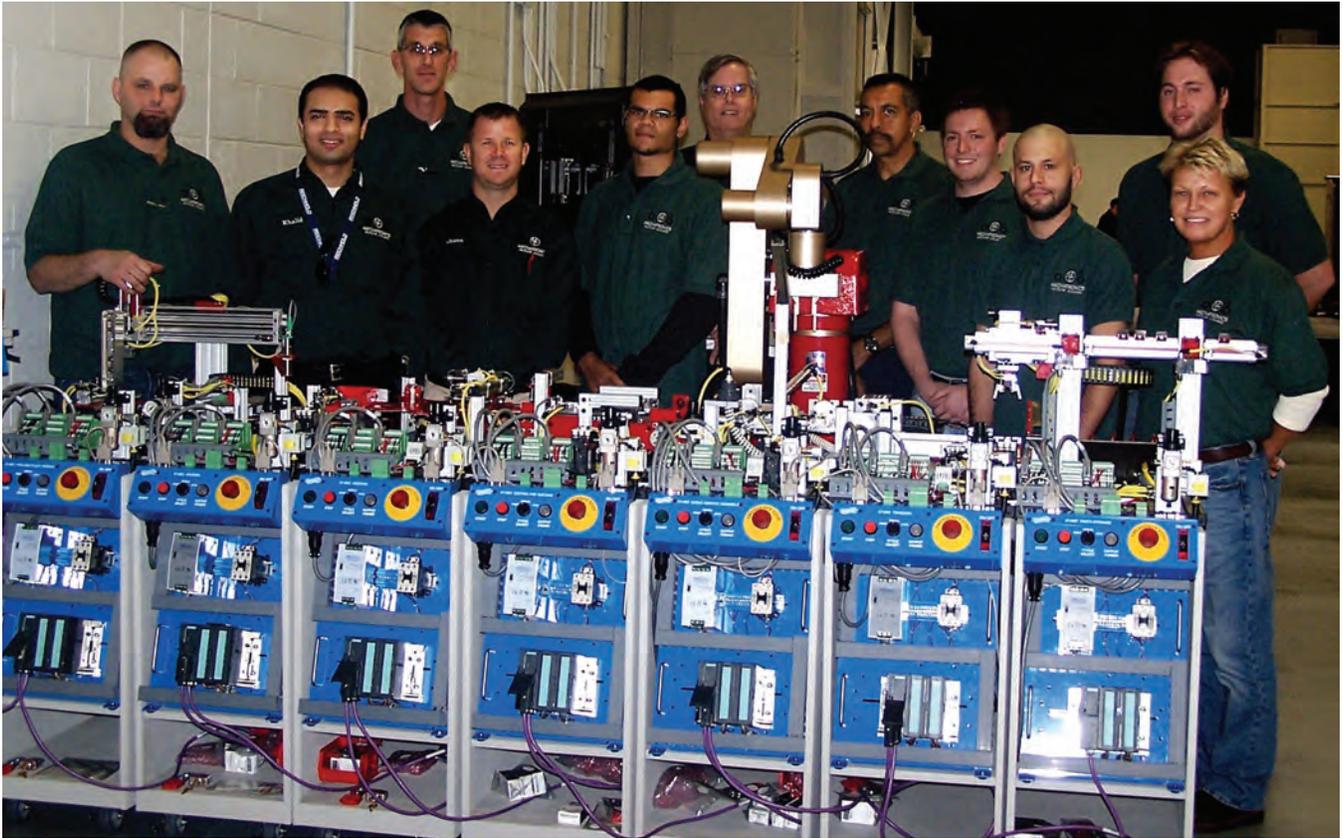
**T**here are literally thousands of jobs available in the manufacturing and industrial sector in Tennessee and hundreds of thousands across the United States. This is also a global problem, because there are not enough people with the proper skill sets to fill the positions. The current situation will only get worse due to the fact these skill sets are not currently taught within the traditional school system and also natural forces such as demographics (retirements). This is an excellent career opportunity for everyone.

Currently, jobs skills required for these jobs are available through many avenues, but we have centered our efforts on a program called mechatronics. Mechatronics combines the industrial fields of elec-

tronics, fluid power (hydraulic and pneumatic), mechanics, and computer processing (programmable logic controller, or PLC, and microprocessors).

These jobs are medium to high wage jobs, typically in excellent work environments with great benefits. Manufacturing is coming back to the United States; actually, it never really left.

Rutherford County is strongly positioned for tremendous growth and economic development in this area. We have a great K-12 education system, a Tennessee Technology Center (TTC) that not nearly enough people know about or utilize, a two-year community college (Mottlow State), and of course the larg-



*Mechatronics students and instructors at an open house for the mechatronics lab at Bridgestone in LaVergne: from left, Bryan Powell, instructor Khalid Tantawi, Jamie Thompson, instructor Shane Buchanan, Terrance Payne, director Fred Rascoe, Anastacio Hernandez, Adam Boyce, Joseph Gasser, Tyler Barton, and Jody Griffin.*

est undergraduate university in the state, Middle Tennessee State University (MTSU). This has given us the foundation required to develop a truly world-class program.

Parents must become engaged and understand what is available for their

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children as well as discuss critical issues with them such as benefits, taxes, income, and available opportunities. We need to get the word out that these are good jobs. Traditional thinking is that manufacturing and industrial jobs are dirty, low-paying, low-skilled jobs, and nothing is further from the truth. These great jobs require the mechatronics discipline knowledge base plus soft skills such as promptness, good communication skills, a strong work ethic, and the ability to work within a team environment.

Businesses, community resources, legislators, and educators are beginning to work together in Tennessee and in Rutherford County to develop pathways for K-12 students to participate in a curriculum that may continue into postsecondary environments such as TTC, Motlow State, and MTSU. Internally, we call this the I-RC, or Interstate Rutherford County.

Together we are all developing an “interstate” starting potentially as early as fourth grade for students to enter STEM-based (science, technology, engineering, math) education and eventually pick this mechatronics program as a career path in order to graduate from high school with specific career skills. They can

then continue by going to TTC, Motlow State, or even eventually MTSU with the ability to exit the interstate at any time or drive until the end and have a globally recognized four-year engineering degree.

In many cases, employers will pay for progress down this interstate. Employers that are helping to develop this program in middle Tennessee include Bridgestone, Nissan, Southeastern Technology, O-Flex, and Yates.

It is not too late. Anyone can apply for tuition assistance to begin this career path, and the Tennessee Student Assistance Award (TSAA) program is an underutilized funding source. The interstate is available for access at any time by anyone. People currently out of work can get on the interstate by going to the TTC or Motlow State to begin the mechatronics program and build a career path that can last a lifetime.

Our vision is for this program to serve as a model for the entire state and potentially a program mirrored throughout the United States. ■

*For more information, contact one of the educational providers listed or Sandy Ponder, Vice President, Workforce Development, Rutherford County Chamber of Commerce, at [sponder@rutherfordchamber.org](mailto:sponder@rutherfordchamber.org).*