FOCUS ON THE
WorkForce

A CNC Rock Star is Born

"It's amazing what these teenagers can do when they're committed to doing it," says David Tuttle. "They're not afraid of technology at all."

Tuttle speaks from experience. He heads the Manufacturing Technology Department at Platt Technical High School (Milford, CT). In June, Jacob Hudson, his star student, won a Silver Medal and a $1500 prize in Computer Numerically Controlled (CNC) Milling at the National SkillsUSA Championships in Kansas City, MO. Hudson beat out top competition from all over the country.

Jacob Hudson (center) won a silver medal and a $1500 prize in the CNC milling at the National Skills USA Championships in Kansas City, MO.

SkillsUSA is a partnership of students, teachers, and industry working together to ensure that America will have a skilled workforce in years to come. The 54 state and territorial associations of SkillsUSA serve more than 300,000 students and instructors through its 13,000 school chapters.

Hudson was one of almost 6000 high school, technical, and college students who competed in Kansas City in more than 100 contests covering 94 different career categories. The Championships bring together men and women who've won state-level competitions in their respective categories. Machining students like Hudson compete against each other and the clock.

Of particular interest to the manufacturing community are the CNC Milling, CNC Turning, and Precision Machining competitions, which were sponsored by Haas Automation Inc. (Oxnard, CA), the National Institute of Metalworking Skills (NIMS; Fairfax, VA) and SME. Contestants used 36 Haas control simulators, a Haas TM-1P Toolroom Mill, and a Haas TL-1 Toolroom Lathe for the competition.

We asked Hudson whether he expected to do so well at the state and national levels in CNC Milling. "I was not surprised," he said. "I know the basics and built on that. I spent my first two years in Platt's four-year program working on manual milling machines, drill press, and lathe, and started with CNC in my junior year." Hudson's deep knowledge of machine tools—what they can and cannot do—helped him win.

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Platt's Manufacturing Technology program is quite demanding. Hudson learned blueprint reading, tech-related

math, measurement, and the science of cutting. He mastered technical terminology and writing so he can communicate clearly about the machining process and his work assignments. At home, he studied the different parts of machine tools and feed mills—and wrote reports and research papers on industrial subjects.

Every month while he was at Platt, Hudson had two weeks of academic classes followed by two weeks of working six hours daily in the machine shop. He also apprenticed part-time in a local machine shop, where he earned academic credit and a wage. In his senior year, Hudson and other students did production work for outside customers using Platt's facilities. As part of his training, Hudson earned machining credentials from the National Institute of Metalworking Skills which tell any prospective employer what skills he has; i.e., what he can do.

Precision Machining Technology contestants face a series of skills challenges, including manual machining.

The annual SkillsUSA competition begins at the state level. To qualify, all machining students in Connecticut took an online examination. Hudson scored No. 1 in the state and eight other runner-ups were invited to compete nationally. Of the nine Connecticut students that went to the national in Kansas City, two were from Platt's Manufacturing Program, which is a tribute to David Tuttle's teaching.

Tuttle says that he did not coach Hudson for the national competition. Platt's Manufacturing Technology program and four years of part-time work experience had taught Hudson what he needed to know. In Kansas City, all 50 competitors—one from each state—made the same part. The judges gave Hudson blueprints, which he read, analyzed, made calculations for, and wrote G code.

Hudson next set up the Haas CNC Machining Center and a judge actually made the part. Hudson deburred and inspected his part before handing it off to the judges who had been observing his work procedures and attention to safety. "It's a very demanding competition," says Tuttle. "You could see the stress on the students' faces."

Success has inspired Jacob Hudson to raise his sights. He graduated from Platt in June of 2012 and is now enrolled at Housatonic Community College (Bridgeport, CT) where he is learning new things like Lean Manufacturing. He's already taken giant steps on the road to success and will surely continue his winning ways.

Tuttle turns out students like Jacob Hudson and other state-wide winners because he's an inspiring, no-nonsense teacher who demands the best—and gets it. Tuttle teaches state-of-the-art technology and gives students plenty of hands-on experience. "We're not a 1970s shop," he says. "My students understand exactly what happens when material is machined. They can make intelligent material choices and troubleshoot machining centers."

There are 96 young men and women in the Manufacturing Technology program and every one of them completes the four-year course, says Tuttle. Once they graduate, roughly 80% are snatched up by eager employers. The others join the military or, like Hudson, enter community college. **ME**

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