Registered Apprenticeship: Building Better Lives

From Kentucky to the stars

Bob Zeek holds a highly-specialized fluid hose in his hand. It's grey and silver, and about half as big as his hand. It looks like a cross between a screw and a doorknob, but it appears finely-crafted with intricate grooves and details.

Bob knows what he's holding. He knows it's special. He's a NASA engineer from the Marshall Space Flight Center in Huntsville, Alabama, and he turns the object over in his hand and looks at it carefully.

"This is a $10,000 fluid hose," he says. "It would normally cost about $10,000 for manufacturing and the certifications that go along with it. This will go up and be used on the International Space Station."

Building better lives

Bob sits in a classroom in Breckinridge County, Kentucky. He's at the Breckinridge County Area Technology Center, where high school students are learning about machining, computer aided design, and 3-D printing. They are learning skills that will allow them to become registered apprentices, where typically companies will pay 100 percent of their training costs and eventually allow them to develop careers that will pay big salaries.

"Here in Breckinridge County, there's not a lot of industry," says Dean Monarch, the man who decided more than 15 years ago to leave the private sector, take a 68 percent cut in pay, and start teaching students about machining. He hasn't looked back since. "It's mostly agriculture around here. But these students, after four years in an apprenticeship program, they will start out their jobs making up to $45,000 to $60,000 a year."

The high school students at this school aren't just building better lives for themselves, they are turning heads across the country. The school's front hallway has cases lined with trophies, not for basketball and track, but for skills like machining, welding and carpentry, which will turn into high-paying jobs. The school finished in the top 10 in the country for machining with SkillsUSA, which has more than 10,000 chapters across the county and holds a national competition each year.

"This school is top-notch," says Bob Zeek. "It's not just NASA that needs students like these, it's our contract companies like Boeing and others."

The students will build 12 of the fluid hoses like the one Bob Zeek brought them from NASA. After school, they're getting good jobs, too, working at quality companies like Atlas Machine and Supply in Louisville, Whitworth Tool in Hardinsburg, or Metalsa in Elizabethtown and Hopkinsville. At Metalsa, which is an automotive supplier, machinists and tool and die makers are earning $24 an hour, or $48,000, with just two or three years' experience.

"You'll see a long line of traffic heading out of Breckinridge County heading to start the next shift at a company in Louisville," says Mr. Monarch. "And these kids aren't just saying look at the new truck I bought, they are saying look at my new farm."

On the right track

Mason Clemmons is a high school senior who is part of the TRACK program, which stands for Tech Ready Apprentices for Careers in Kentucky. TRACK is a partnership between the Office of Career and Technical Education and the Kentucky Labor Cabinet to provide pre-apprenticeship opportunities to secondary students. It's an industry-driven program to create a pipeline for students to enter post-secondary apprenticeship training.

"With this I'm able to do something that others don't have the skills to do," he says. "I can use machining to make everything from a refrigerator to a jet engine."

Stephanie Hammons is a senior who wants to design diesel engines in her career. First, though, she plans to go into the Navy. She knows her skills will take her far. "I knew since my sophomore year when I took this class that I liked it," she says. "It's hands-on and not book work."

"There's been a lack of opportunity for young men and women who didn't plan on going to college," says Mr. Monarch. "But these students will go on to get a grade and a paycheck."

Guaranteed a job

Registered apprenticeship blends classroom instruction with practical on-the-job training, which can range from one to five years. Apprentices are paid on a progressive pay scale that increases as skills improve.

Careers in construction, advanced manufacturing, transportation, energy, health care and utilities are available for apprentices. The U.S. Dept. of Labor recognizes more than 1,200 apprenticeable occupations. The industries utilize concepts in electronics, computers, software, automation and work methods to improve production and enhance global competitiveness.

"Machining is not getting your hands dirty," says Bob Zeek. "It's engineering, it's math, it's the business model of how you get your materials and make it all work."

"It's fun," says senior Nathan French. "I just want to keep machining."

"I want to design and engineer cars," says sophomore Michael Flaugher. "I like building stuff."

"You're pretty much guaranteed a job if you work at it," says senior Dylan Hoskins.

Mission accomplished

Bob Zeek closes the lid on his NASA laptop and looks out past the classroom's rows of desks and computers, through the large windows into the adjacent workshop, where students are sweeping up fragments of metal and cleaning large milling machines with shiny knobs and various handles, cranks, levers and buttons. He lets his glasses dangle from the string around his neck and he smiles. He will get back in his blue minivan and drive to Alabama, back to the Marshal Space Flight Center, back to NASA, and he knows he is bringing back something special.

He’s bringing back a new generation of engineers and machinists. He’s found a goldmine of skilled, talented and dedicated workers -- workers who will be a perfect fit for employers who have big dreams and deep pockets.

Mr. Monarch and the students at the Breckinridge County Area Technology Center have more than the attention of NASA. They have companies lining up to invest in registered apprenticeship, and they know they are building better futures -- not only for themselves, but for a better Kentucky and, ultimately, a better world.

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