

Breckinridge County ATC Joins NASA HUNCH Project

HARNED, Ky. – Machine Tool Technology students at the Breckinridge County Area Technology Center (ATC) are the latest in a growing number of high school Career and Technical Education (CTE) students to become involved in the High School Students United with NASA to Create Hardware (HUNCH).

The school becomes the 67th career and tech center to enter the program.

HUNCH is a collaboration among NASA; the Marshall Space Flight Center in Huntsville, Alabama; the Johnson Space Center in Houston; and high school tech centers in 24 states that use student skills “to study realistic hardware designs and fabricate simulated hardware based on those designs, according to project manager and International Space Station (ISS) Simulation Engineer Bob Zeek.

In exchange, NASA will receive relatively high-fidelity mockups for use in astronaut crew training and engineering design and prototype development, he added.

Zeek recently paid a visit to the Breckinridge County ATC to discuss the mission with students who will be working on the project under the guidance of Dean Monarch, the machine tool technology instructor at the school.

“Ten years ago, we didn’t have any training hardware for our astronaut crew or our ground support personnel, so we came up with the idea to go into the career and tech centers and give those students the opportunity to see what they could do with their skills in machine tool, carpentry, welding and electronics,” said Zeek.

The hardware produced by these students is integrated into NASA’s mockups of the International Space Station (ISS) and used by crews every day in their hands-on environment to train those people who support the ISS.

The HUNCH program has grown considerably over the past few years with more than 1,500 students having come through, some of whom have gone on to work with NASA contractors. There is a postsecondary component to the program, as well.

Zeek noted that the real value of HUNCH, which has been noticed by the educational world, has to do with getting students out of the textbook and into a hands-on environment to create real products.



In April, students who have participated throughout the year will have the opportunity to visit the Marshall Space Flight Center for an awards ceremony and a chance to see their work in use by the NASA organization.



Bob Zeek, HUNCH project manager and International Space Station (ISS) simulation engineer, goes over details of the program with some of the students.

Zeek said that while academic disciplines like science, technology, engineering and mathematics (STEM) are a focus of technical education, HUNCH adds other skills that magnify what participating students are learning.

“STEM is the buzz word now for our tech centers, but all that goes back to the Common Core environment where you have to have the basics to do math and science,” he said. “When you put

the third dimension in there, of building the part and providing the part and taking it from the beginning to the end, it really expands the whole gamut of the education system for these students.”

While the end product is what these students are working toward, Zeek said the experience can also teach students about other aspects of the business, including Quality Assurance (QA) systems, the documentation of the project, including their notes; all the elements of working in industry and getting those students ready to work in industry.

He also pointed out that the HUNCH program isn’t isolating students to come just to NASA, but preparing them to work in a number of industries. However, several students have been hired by NASA contractors and are working on the HUNCH staff helping to mentor other students.

Dale Winkler, associate commissioner with the Kentucky Department of Education (KDE), said the HUNCH program falls into place with the Office of Career and Technical Education’s Reach Higher with CTE initiative.

“As CTE has moved into a more visible, viable role with our educational partners, we began this initiative to encourage our students to think beyond some of the traditional but still much-needed roles associated with these types of programs,” he said. We want our students to imagine using their skills in areas they may not have connected to their tech-ed studies. NASA HUNCH is a perfect example of a high-tech organization recognizing the value in all of our CTE career pathways.”

While Breckinridge County ATC will be the school directly affiliated with NASA, Winkler said he thinks all of the state's CTE students can benefit by knowing such a prestigious organization has stepped to the plate to support technical education in Kentucky.

Monarch said he knows his students will rise to the occasion in creating the machine parts selected for their project and he wants this to be a student-led effort.

"I don't want to be the one who leads this, I want these students to take charge of this project and make it their own," he said.

Monarch's program has long been noted for its excellence in the machining field. In fact, its placement near the top at the national SkillsUSA competition was what got the attention of NASA.

"They discovered us by looking at the SkillsUSA website and taking note that we had finished in the top 10 at the national event," he said.

Monarch added that the HUNCH program supports several CTE program areas, including computer-aided drafting, computer electronics, auto body technology, welding technology, electrical technology, carpentry, HVAC technology, graphic design and sewing technology.

Zeek said the participation by these students is not just about making a component for the ISS simulator. It goes beyond that.

"It's about learning and what it takes to get from the beginning to the end of the project," he said.

NASA has turned its sights toward many projects, including going into deep space, and will utilize prototypes for ships that will go to Mars. Zeek said the HUNCH program will play a role in getting students involved in projects like that.



Breckinridge County ATC becomes the first school in Kentucky to participate in the NASA HUNCH program. Here students gather to discuss what they will be doing as the project gets underway.



Students from the machine tool technology program pose with a sign designating them as being a part of the NASA Hunch program.

"It just makes sense to do this and it gets the students inspired, which is our goal: to inspire the next generation," he said.



