

NEWS OF NOTE



Interns hold national title in manufacturing design

By Stephanie Esposito

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Teamwork, skill and a little bit of luck helped three San Joaquin Delta College students win a gold medal for the 37th annual SkillsUSA-VICA National Leadership and Skills Conference held this past June at the Kemper Arena in Kansas City, Mo.

Lab summer interns Robert Berry and Scott Fisher from the New Technologies Engineering Division, along with Steven Arguello from the Laser Science Engineering Division, worked together as a team against 20 other competing schools from across the nation.

In order to participate in the competition, contestants had to be members of VICA (Vocational Industrial Clubs of America), a national organization for high school and college students interested in or training for technical, skilled and service occupations. This conference included 72 different contests that focused on skill and leadership, in which Berry, Fisher and Arguello entered as a team in the Automated Manufacturing Technology Competition.

In this particular contest, teams were evaluated as though they were a small company being hired to construct a product for a customer. The judges decide the problem or product that the team must design, thus acting as the mock customer. Each team is first given a booklet of instructions that they must follow and complete in order to qualify for a medal.

After receiving their booklet of instructions, Fisher remembered feeling a little overwhelmed. "We just sat there and read the booklet for 45 minutes," he said.

"Then Steve just started to draw the dimensions of what we thought (the judges) wanted," Berry said. "First you try to figure out, what do they want us to do? What do they want us to draw? Do they want a mold or a physical part?"

Once the instructions were distributed, each team had eight hours to complete the project. Each team member had to be able to perform specific technical tasks during the competition while also being judged on accuracy, speed, price quote and the amount of parts within the project.

"Teams had to break down the project into basic steps," Arguello said. "There's prototyping, cost analysis and then producing a final product."



MICHAEL ANTHONY/TID

Robert Berry (left) and Scott Fisher display their national medals from the Skills USA-VICA automated manufacturing technology competition. Team member Steven Arguello not pictured.

Each member had a specific job within the group. Arguello was the computer-aided design (CAD) operator, constructing and designing the product using math and drafting. Berry was the computer-aided manufacturing (CAM) operator, generating the tool paths for the product using a coding system. Fisher operated the computer numerical controls (CNC), setting up and machining the part. Fisher

was also the member most responsible for documenting all the product design steps.

When asked how they prepared for a competition with no idea of what the judges would want, Fisher said, "You practice on everything you can."

The only aspects of the competition that all teams know of ahead of time is that some sort of mechanical part must be designed and produced at the end of the eight-hour contest.

"It was hard not to feel intimidated, each state has at least four teams each (represented at the contest), and they all had to beat a lot of teams in regional and state competitions, so we knew they would be hard to beat," Berry said.

Yet, only three other teams were able to complete enough of the project to qualify for a medal. According to the team members, the judges used a program for the product's dimensions that most of the contestants were not prepared to use.

"We were basically done with the part," Fisher said. "There was just one little thing left that would've taken 15 seconds to finish, but we were out of time."

The final result was a bracket about five inches by four inches, designed and cut, although the judges were also seeking a mold for the part.

"They seemed to be packing as many challenges as possible into one part," Berry said.

Besides the employment experience gained at the Skills Conference, the team members are also focusing their studies at San Joaquin Delta College to their fields of interest. Berry and Fisher are both studying mechanical engineering while Arguello has a year left at Delta with a technical drafting major. Fisher is hoping to stay at the Lab as a part-time worker while still going to school.

The three were recruited as summer interns through an outreach contact at their college.

Berry's supervisor for the summer, Carl Bruns of New Technologies Engineering, reports that the award-winning intern's summer project of designing an electron spectrometer will be of use to the department long after the student returns to school in the fall.

"The work we did in the competition carries over perfectly into our jobs here," Berry said.

SkillsUSA-VICA's goal for the competitions is to prepare students with an interest in a technical field for future employment in manufacturing technology fields.