

Local students perform mock surgery with robot



Keefe Koenig, 16, from Hockinson High School, gets a chance to perform a mock surgery with instruction from Dr. Todd Borus at Legacy Salmon Creek Hospital on Wednesday.

By **Marissa Harshman**

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By **Zachary Kaufman**

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Romney Kellogg, 13, member of a Camas-based robotics team, performs a mock partial-knee replacement Wednesday using the surgical MAKOpasty robot, with instruction from orthopedic surgeon Todd Borus, in scrubs. Kellogg and other members of the robotics team, Team Mean Machine, visited Legacy Salmon Creek Medical Center for the demonstration.

The students on Team Mean Machine are used to building robots that can roll across gym floors and place inflatable rings on pegs.

But a few evenings ago, the local teens got a chance to see how more advanced robots are changing the medical world.

More than a dozen students from the Camas-based robotics team — which includes students from Camas, Washougal and Hockinson school districts — visited Legacy Salmon Creek Medical Center to see a surgical robot in action.

Orthopedic surgeon Todd Borus demonstrated a mock partial-knee replacement with the assistance of a surgical robot, MAKOpasty. The 'bot allows Borus to remove portions of the bone to be replaced with metal caps, as opposed to replacing the entire joint.

Computer software creates a 3-D model of the patient's knee that the surgeon uses as a map. Borus uses a drill-like tool to cut into the bone and remove the pieces of the joint worn from arthritis.

The high-schoolers — and the two middle school students on the team — watched intently as Borus explained how the surgical robot operates. Then the students had a chance to experience the robot first hand.

One-by-one the students put on safety glasses and stepped up to the operating table. The tool made a buzzing sound similar to a dentists' drill as they took turns carving bone out of the artificial knee.

Romney Kellogg, an eighth-grader at Canyon Creek Middle School in Washougal, watched the computer monitor for direction as she used the tool to grind the bone.

"I think it's really cool," the 13-year-old said. "I'm interested in robotics and the medical field, and it's cool they're now combining them."

Robots aren't only combining with the medical field, but helping to improve it, Borus said. Without the aid of the robot, surgeons wouldn't have the precision to only remove portions of the joint. That's why full-knee replacements had been common practice for people with severe arthritis pain, he said.

But the MAKOpasty procedure is less invasive than full-knee replacement and shortens the recovery period for patients, Borus said. Legacy is the only medical system in the region to use the MAKOpasty robot, he said.

For Hockinson sophomore Keefe Koenig, the demonstration of the surgical robot served as an opportunity to learn how Team Mean Machine can improve its 'bots. The surgical robot uses innovative encoders and infrared tracking, tools he hopes his team can utilize next year.

Photo by **Zachary Kaufman**

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Romney Kellogg, a Canyon Creek Middle School eighth-grader, uses the MAKOplasty surgical robot to perform mock knee surgery Wednesday at Legacy Salmon Creek Medical Center.

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"It was just really interesting," the 16-year-old said. "To see something that's actually in production and in use in the medical field is really exciting."

The students weren't the only ones impressed with what they saw.

Borus and MAKOplasty specialist Bill Babby questioned the students about their robot's construction, software use and capabilities. They also congratulated the team for claiming two regional wins in Portland and Seattle and earning a spot in the world championships last month in St. Louis.

"You guys are really cutting edge because I think this is definitely where things are going," Borus said, "not only in medicine but across society."

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