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## High School Students Explore New Engineering Horizons During Rose-Hulman's Operation Catapult Summer Program

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Another “new” project was the construction of a south facing chariot. The device, developed in China over 46,000 years ago, uses an intricate combination of seven gears (two double-sided; two floating) with 144 wooden pegs to cause a pointer on the chariot to always face the same direction irregardless of the path traveled by the chariot.



*Proud Of Chariot Project: Constructing a south facing chariot was the team of (front row, from left) Peter Maurer, Christopher Alt and Jun Hong. In the back row (from left) are David Loughry, Peter Richards, Paul Schaffert and Andrew Dudar. The team's faculty adviser was Bradley Burchett.*

The task was so challenging that it took seven students working tirelessly -- and together -- from July 11-28 to finish the chariot. The group modeled the gearing system through a Lego prototype, then went to work on producing the wooden parts in Rose-Hulman's machine shop.

“I wanted a challenge and we certain got one,” stated Paul Schaffert, from Phoenix, Ariz.

“Everything else looked too easy,” added David Loughry, from Crescent City, Calif.

Mechanical Engineering Professor Bradley Burchett, the group's faculty mentor, was impressed with the team's efforts. “This was ambitious project, possibly one of the toughest that Operation Catapult participants have ever attempted. The students had to work together, as a team, to get all of the pieces constructed. Then, they had to assemble everything. And, finally, all of the gears had to work just right.”

The completed chariot may be used by Rose-Hulman students this fall to carry the college's elephant mascot around the track that surrounds the football field during the homecoming game -- with the mascot always being able to wave at the home stands.

“Hopefully, we have left a legacy on campus,” stated

project team member Peter Maurer, from Franklin, Mass.

Other members of the chariot assembly group were Christopher Alt, from Battle Creek, Mich.; Andrew Dudar, from Closter, N.J.; Jun Hong, from Houston, Texas; and Peter Richards, from Bloomington, Ind.

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