



KANSAS STATE UNIVERSITY  
Where a lifelong journey begins

# DRIVEN BY TEAMWORK



BY SARAH HOYT

**Y**ou've just started your engineering degree, and you are assigned to a team with three other Intro to Mechanical Engineering students. Your objective? Design and build a working vehicle that one person can drive and ride.

One last thing: **It must be powered solely by a cordless drill.**

Sound intimidating?

Greg Spaulding, assistant professor of mechanical engineering, has given this assignment to nearly 1,800 students over the past six years, and he has been blown away by the results.

But a lot has to happen between the day the students receive their assignment and the end of the semester when they present their final project in an Olympic-style competition. The groups meet over and over again, fueled by a common goal and the power of teamwork.

That's where the Libraries come in.

Introduction to Mechanical Engineering is just one of hundreds of courses on campus that features a group project. In order to meet outside of class, students need an atmosphere where they can focus; they need somewhere that's safe and accessible; and they need access to technology.

Groups of students loudly hashing out a project in the middle of the library? That might not sound like the environment some readers remember.



Group study space is a vital part of today's library.

Spaulding acknowledges that students use libraries differently than when he was working on his bachelor's in mechanical engineering more than three decades ago. "I'm old-fashioned; I miss the days when libraries were about having a quiet space to read a book," he said. "But today's students need a place to work together. It warms my heart to see a group at a big table, all on their laptops editing a Google document. They're talking, sharing, working individually and together at the same time."

It's a process that Spaulding says replicates real-world engineering.

"Nobody in the industry works on their own anymore," he said. "Projects are too big; they have too many moving pieces."

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— GREG SPAULDING,  
ASSISTANT PROFESSOR  
OF MECHANICAL ENGINEERING

Spaulding started his career at aerospace company General Dynamics before returning to K-State to earn a master's degree. After nearly a decade as a research engineer at Houston Instruments, he cofounded ScriptPro, where he received a patent for his design of an automation system for pharmacies. Spaulding sold ScriptPro in 1996.

He taught at K-State Polytechnic in the mechanical engineering technology department before moving to Manhattan in 2007.

That earlier life experience led Spaulding to see the value of his creative group assignment. "Students have to coalesce into a group and get to know each other," he said. "Together, they work on planning and creating big project milestones that they have to present on."

For some, Hale Library is an integral part of the team, a place to gather and create a plan of attack.

After weeks of meeting to brainstorm, design and build, on May 2, 2017, all



A student balances on his team's vehicle as their cordless drill powers him through the sled pull challenge.

of the groups gathered outside of Rathbone Hall for The Mechanical & Nuclear Engineering Game Days, a semester-end event showcasing the results of their labor.

Students clustered around the Frankenstein-like vehicles that they had welded, nailed and zip-tied together. Many were repurposed bicycles, others were original constructions, but all were powered by a cordless drill.

As the groups ran their vehicles through a series of challenges, Spaulding and his course assistants logged performance results.

Of course, the measure of their progress as a team was harder to calculate, but if the final products were any indicator, the assignment was a powerful success.