

The robots are coming

BY DANIEL FITZSIMMONS



High school robotics programs are growing exponentially and offering a path to careers in science and technology

In the late eighties Dean Kamen had an idea to change the culture of the United States. He was already a successful entrepreneur and inventor, having founded a research and development company and holding over 440 U.S. patents. But his passion for science and technology called for something more. So in 1989, he created what may be his greatest invention yet; an organization called For Inspiration and Recognition of Science and Technology, or FIRST.

According to Kamen, FIRST's vision is to "transform our culture by creating a world where science and technology are celebrated and where young people dream of becoming science and technology leaders."

One of the ultimate goals of the organization is to revive science and technology development in the U.S. by getting students interested in those pursuits from a young age. To do this the organization creates challenges that must be completed with a robot constructed by a team of students.

In 1992, FIRST was only in 28 schools across the country competing in one division. Now, some 20 years later, FIRST has 29,400 teams competing across four divisions in every state and several countries - including Canada, the UK, Mexico, Australia and Brazil. The organization boasts a volunteer network of 63,000 people and its board of directors includes the CEO of Google and Time Warner Cable and the chief technology officer of General Motors.

How it works

In FIRST's most advanced division,



FIRST Robotics Challenge, a new game is handed down each year from the organization's design committee on the first Saturday in January.

Teams have six weeks to build a robot that can best complete the objectives of that year's challenge. For the 2012 season, the challenge had teams maneuvering their robots to shoot balls into basketball hoops that were stationed at various heights.

Every year FIRST supplies each team with a parts kit and software to design and build their robot. Teams are also allowed to use materials not in the part kit and many teams have supplies and materials donated to them by leading technology and manufacturing companies.

After the six-week design and build stage, FRC teams are only allowed to work on their robot at competitions when they are tested and inspected by competition officials. When the competition is over, the robots are immediately sealed away and can't be touched.

Other FIRST divisions include FIRST Tech Challenge, FIRST Lego League, and FIRST Junior Lego League - each geared towards a specific age group.

A different kind of competition

Unlike traditional high school sports, FIRST robotics has a different set of rules every season. At competitions, each team is paired with two other teams to form an alliance. In order to succeed, competing teams must work together using what FIRST has dubbed "coopertition," which is the sharing of resources and the idea

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