

# PARADE

Kids team up to meet a challenge: Devise a robot that can carry a ball, score goals, block shots—and win!

## They're Competing With Their Minds —And Loving It



The teammates from West Ottawa High School in Holland, Mich., work in the pit with their advisers from the Prince Corporation.

**I**T WAS THE DAY BEFORE the national championship, and Christy Schneider was pumped up. "In our last seeding round, we scored 135 points," said the senior from Aiken High School in Cincinnati. "No one's been able to beat that so far. Next time out, we're going to do even better."

I looked around the holding area and saw members of 47 other high school teams from around the country, all of them psyched up and ready to play. From the stands came the roar of happy fans whenever their team scored—and the groans of disappointment when a good play was blocked. It wasn't the Super Bowl or the Final Four, but the 1995 U.S. First Robotic Competition was filled with all the enthusiasm of a

prestigious national sports event.

You've probably never heard of U.S. First. That's okay; neither had most of the hundreds of passersby at Walt Disney World's Epcot Center in Florida. Many wandered by the stage where the event was taking place and lingered to marvel at the technological wizardry on display. They watched as machines, under remote-control orders, battled for dominance in a game that was part basketball, part football, part king-of-the-hill. The team whose robot maneuvered its ball between the goalposts the most times in two minutes would win. Loud cheers accompanied every goal.

The fifth annual Robotic Competition, held last April 1, exemplified what some visionaries hope will be our nation's future: Young people of various backgrounds working together to design the technologies for the next century.

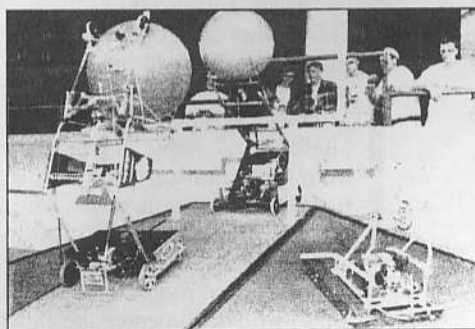
"We act as if kids think that flexing their biceps is inherently more interesting than flexing their minds," said Dean Kamen. "I don't believe that. Just look at the joy any little kid takes in discovering new things, and you'll realize it's not true." In 1989 Kamen founded U.S. First, a national nonprofit organization, to motivate America's youth to learn science and math. Its hallmark program, the U.S. First Robotic Competition, tests the ability of kids to solve difficult engineering problems and pits their ideas against those of other students from around the country.

Kamen, 44, knows that everything he has accomplished in his own life came from his knowledge, and love, of technology—and he wants to communicate that excitement to young people. As a student, Kamen invented a successful insulin pump for diabetics. He

has gone on to invent devices in a variety of other fields and to build up his own manufacturing company.

"It's not true that kids aren't interested in technology," he told me. "They all have portable CD-players and Nintendos. They are the biggest technology consumers in the world. But they don't recognize that somebody had to invent those things. Any kid can give you the name of a famous football player or basketball player. Not one of them could tell you the name of the scientists who invented the Walkman or the compact disc or the air-filled sneaker."

Each year, Kamen and his volunteer advisers—led by the MIT engineering design professor Woodie Flowers—devise a game that will test the skills and imagination of high school students. This year, the competition was called Ramp 'N' Roll. Each team, aided by



Machines operated by remote control compete for goals.

faculty advisers and volunteer engineers from private companies, devised a robot that could pick up a vinyl ball, negotiate a steep ramp to a goalpost and pass the ball through the goal. Machines also had to be designed for defense—to block shots. No robot could exceed 70 pounds, and each could be made only from parts in a kit provided by U.S. First.

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—DEAN KAMEN, FOUNDER, U.S. FIRST

"Our vehicle was disqualified because we had an illegal part—we used a suction cup to pick up the ball," said Tom Karafonda, a junior at the Joseph C. Wilson School in Rochester, N.Y. "In a period of five days, we had to build a brand-new vehicle." With the aid of engineers from Xerox, its corporate sponsor, and many sleepless nights, the Wilson team made it under the wire and into the finals.

All-nighters were commonplace as teams from around the country raced

B Y M I C H A E L R Y A N

to perfect their entries in time for the finals. "I didn't get a lot of sleep," admitted Richard Slagle of the Raychem Corporation, which sponsored the Woodside High School team from California. "I'd be at the school until 11 or 12 most nights, and all day on Saturdays, Sundays and holidays." Slagle and his colleagues not only helped Woodside build an awesome scoring machine but also inspired students simply by their presence.

"I always wanted to see what engi-

*"The whole idea is to get young people excited about science. The competition is the icing on the cake."*

—JEFF VAN HORN, ADVISER  
TO 1995 WINNING TEAM



Victory photo: The Woodside High team and its advisers from Raychem Corporation.

neering was all about," Cesar Valencia, a junior at Woodside, told me. "This has been a great experience. Now I know what engineering is, and I want to be a mechanical or electrical engineer."

The U.S. First Robotic Competition gives young people a chance to engage their imaginations and emotions as much as any team sport. The teams ranged in size from 12 to 100 students and advisers, including designers and tinkerers, electronics experts and video crews who documented the experience.

"We have kids who are going to MIT next year and kids who have been borderline students," said Rick Hendricks, a teacher at the Wilson School. "There's something for every one of them to do in this project, and it develops an incredible level of enthusiasm."

The thing that impressed me most about U.S. First was that it offered recognition of the talent—not the background or social status—of the contestants. Rich suburban schools vied with public schools from the inner cities on an equal footing. Students from every part of the country saw

themselves as equals and saw that they could dream. "The first day I heard about it, I knew that this was something I wanted to do," said Laura Renée Johnson from Detroit's Cass Technical High. "Now I've decided to enter a field like biomechanical engineering."

At the end of the three-day tournament, Woodside High won the first-place trophy. The Wilson School team won for best sportsmanship, and Christy Schneider's group from Aiken High School High won the Team Spirit award. Most of the teams went home without awards, but they didn't leave unhappy.

"All the kids here today are winners," said Jeff Van Horn, who was a Raychem adviser to the Woodside team. "The whole idea is to get young people excited about science. The competition is just the icing on the cake." ■

*Any high school is eligible to enter next year's U.S. First Robotic Competition. Registration is due by Dec. 1. For more information, write: U.S. First, Dept. P, 340 Commercial St., Manchester, N.H. 03101.*