



Full STEAM Ahead!

Investing in FIRST is Investing in the Future

by Theresa Willingham, Regional Director, FIRST, Central FL

There's no denying sports and entertainment are a big industry, and that a lot of youth would love to become media celebrities, and sports stars. Public high schools put a lot of money into their sports programs, spending, on average, around \$50,000-\$75,000 per year, per school, on football alone, not counting coach salaries, security for games and other related costs. (In Texas, those costs can exceed \$400,000 per year at some high schools!)

But while it's great to be athletically capable and it's always nice to have some theatrical talent, the fact is that very few people ever have successful careers in sports and entertainment, and both fields are highly dependent on a very specific set of skills that exclude the majority of students. Despite the huge investment of tax dollars in school sports, hardly anyone will ever turn "pro."

Consider these statistics:

- There are over 1,000,000 high school football players across the U.S.
- But less than 6% of them will make it the NCAA level, and of those that do make it to the college level, less than 2% will turn pro.
- And less than 1% of those million students have a chance of going pro right out of high school.
- The percentages for success are similar, as well, for both men and women's basketball, for baseball, soccer and hockey. (NCAA)

"We have a country that celebrates almost to obsession the world of sports and entertainment. They're all great things, but I said if we could create—using sports and entertainment—an environment in which kids, particularly women and minorities, could see the world of science and technology is every bit as fun, rewarding and exciting as bouncing a ball, and through that passion they can become superstars in science, technology and innovation, they would give this country the opportunity to remain a leader in the world and establish a quality of life and a standard of living that would continue to be a model for the world." – Dean Kamen

The Bureau of Labor Statistics doesn't provide a much cheerier picture for the entertainment industry, with projected employment growth of under 4% and only about 80,000 available jobs in the industry (compared to about 16,000 for sports) by 2022, with low median pay and unsteady work.

On the other hand, science and technology is a booming field in 21st century America. The outlook for electrical engineering alone, is robust and growing. It's among the highest fields in job growth, with over 174,000 jobs, with a mean annual wage of over \$96,000 a year. Other related fields include:

The assumption that drove the creation of FIRST was you get what you celebrate in a free culture, and the reason America was slipping compared to a lot of its peers around the world—particularly in kids getting involved with and mastering science and technology—was not bad teachers or bad schools, it wasn't what we don't have. It was the fact that as a rich country we have so many distractions that have created for kids role models that prevent them from working hard at things that matter. – Dean Kamen

- Manufacturing
- Mechanical Engineering
- Control Systems
- Avionics
- Aerospace Engineering
- Energy

and many others. Check out the Bureau of Labor Statistics website at bls.gov to learn more about the myriad of opportunities available in science and technology fields.

What's more, science and technology necessarily involve a lot of complementary fields of knowledge, skills and expertise that cross over into the 2- and 3-dimensional arts, communications, multimedia production, and

more. Those who are well rounded across multiple fields, are technically literate, adaptable and have strong communications skills will do well in the future economy.

Investing school dollars and student time in more STEM related programming will provides a far higher return on the investment for schools, students and the community. Spending \$5000 to \$20,000 a year in a *FIRST* high school robotics program opens a world of opportunity to students of all abilities and interests, with the potential for every involved student to "turn pro." A 2011 Brandeis University study of *FIRST* participants found that involvement in the program:

- Improved school engagement by almost 90%
- Increased interest in college by 90%
- Doubled the likelihood of majoring in science or engineering for participating students
- Inspired 33% of participating girls to pursue a major in engineering
- Improved 21st century work-life skills in communications by over 75% and problem solving, time management and conflict resolution skills on average by 95%

The future is here, now, and exploring – and supporting at all levels - the amazing opportunities in science and technology fields is good for students, good for our communities and good for our nation.