"Over 80% of the fastest-growing occupations and two-thirds of the occupations with the largest job growth are dependent upon a knowledge base in science and mathematics." Coble and Allen (2005).

"More than 50% of the current science and engineering workforce is approaching retirement." Tapping America’s Potential (2005).

"U.S. universities will graduate qualified candidates to fill only 50% of the 1,500,000 computer and information related jobs expected by 2012." Women and Information Technology by the Numbers (2005).

"Women and minorities remain under-represented in science, technology, engineering, and mathematics (STEM) occupations: Women constitute just 26% of the STEM workforce, compared to 47% of the overall workforce. African Americans make up only 6% (compare to 11% of the overall workforce), and Hispanics account for a little more than 5% (less than half their share of the overall workforce)." Babco and Ellis (2005).
An opportunity for teachers and students
TO BUILD SKILLS AND KNOWLEDGE FOR THE 21ST CENTURY

The Fi3T project will engage high-school teachers and students, undergraduate/graduate student assistants (U/GSAs), and STEM content area faculty experts to create high-quality learning projects, strategies and curriculum models for use in after-school, weekend, and summer settings through hands-on, inquiry-based activities with a strong emphasis on non-traditional approaches to learning and understanding.

Fi3T will create four project-based design teams to address topics in science, engineering, technology, and mathematics. Each team will include 10 high school students, 1 teacher, 1 undergraduate/graduate student, and 1 STEM content area faculty expert. The project participants will have year-round, two-year IT enrichment experiences learning to use IT within the context of STEM.

21st century career & educational pathways

IT IN SCIENCE
The science design team will concentrate on three different but related applications of IT in the sciences; measurement, modeling, and mapping.

IT IN ENGINEERING
The engineering design team will focus on the basics of robotics and its applications as related to IT, including modeling and programming robots and integrating robots into manufacturing systems or medical applications.

IT IN TECHNOLOGY
The technology design team will focus on technological tools and languages for designing and developing Web applications such as Web-based games and chat-rooms.

IT IN MATHEMATICS
The mathematics design team will focus on statistical science with applications in public health, environmental issues, and manufacturing reliability and safety.