stelar
STEM Learning and Research Center

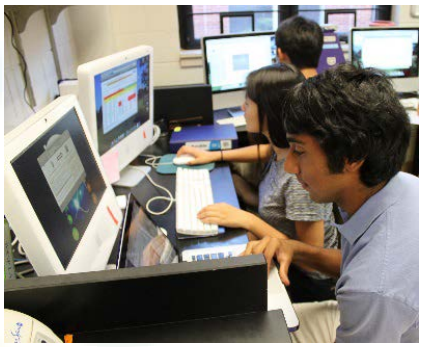
AN OVERVIEW OF NSF's ITEST PROGRAM

Helping prepare a diverse, skilled, and innovative STEM workforce.

Established in 2003 by the **National Science Foundation (NSF)** to address the looming shortage of technology workers in the United States, the I**NNOVATIVE TECHNOLOGY EXPERIENCES FOR STUDENTS AND TEACHERS (ITEST)** program:

- Includes **297** current and past projects across **46** states and the District of Columbia
- Helps students and teachers build the skills needed to succeed in a science and technology driven world

ITEST PROJECTS PROVIDE DIRECT EXPERIENCE WITH INNOVATIVE TECHNOLOGY APPLICATIONS



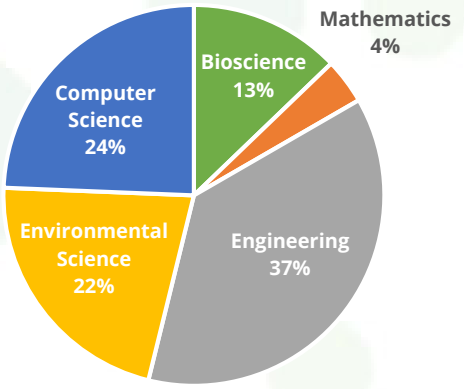
- **Flight Simulation Environments** provide dynamic, engaging and realistic hands-on activities to teach physics and mathematics concepts and their inter-relationship and application in real life in Macon County, Alabama.
- **Wearable Technology** serves as a medium to introduce engineering design processes that merge electricity, circuitry, and computer programing with fashion and aesthetics with underrepresented urban and rural youth in Nebraska.
- **Computer Game Research and Design** is teaching computer programming and computational skills to youth as they create socially and culturally relevant games in design clubs in New York City.
- **Geospatial Technology** allows two neighboring American Indian Reservations to engage in STEM learning via virtual examination of the tribes' shared watershed area.

Opportunities to learn STEM effectively - for people of all ages, from all corners of the Nation, and in many venues (e.g., classrooms and living rooms; science centers and virtual centers) - are the foundation for a scientifically literate society and strong scientific workforce.

(NSF ITEST 2014 Solicitation)

ACROSS THE ITEST PORTFOLIO TEACHERS AND YOUTH PARTICIPATE IN DIVERSE STEM EXPERIENCES

- **Computer Science**: gaming & simulations, multimedia, programming, web development
- **Bioscience**: bioinformatics, biomedicine, biotechnology, DNA sequencing, neuroscience
- **Environmental Science**: climate modeling, geospatial technology
- **Engineering:** aerospace, astronomy, design, robotics, nanotechnology
- **Mathematics:** scientific algebra, geometry



PROJECT EXPERIENCES LEAD TO CHANGES IN YOUTH INTEREST IN AND KNOWLEDGE OF STEM

In a 2011-2012 survey of ITEST projects, respondents reported that **youth** had gained:

- Increased STEM content knowledge and skills
- Increased interest and engagement in STEM
- Increased interest in preparation for STEM careers

And found that **educators** experienced:

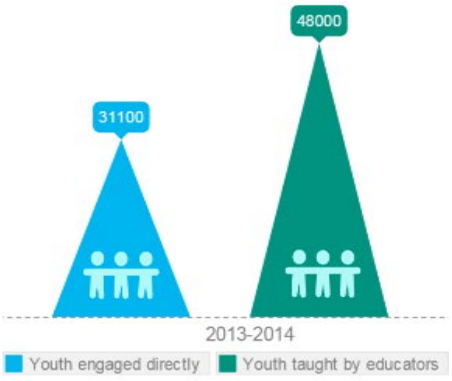
- Improved pedagogical skills, including enhanced integration of technology and teaching STEM content
- Improved STEM content knowledge and skills

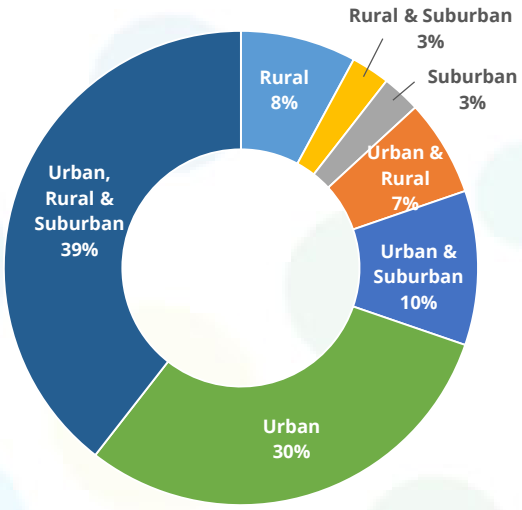
ITEST PROJECTS REACH YOUTH, EDUCATORS AND FAMILIES

Since its inception, ITEST programs have served nearly 320,000 individuals:

- **Youth:** 304,900
- **Educators:** 10,500
- **Parents and caregivers:** 4,100

In 2014, 79,100 youth were engaged in ITEST projects either directly, or through educators who participated in an ITEST program





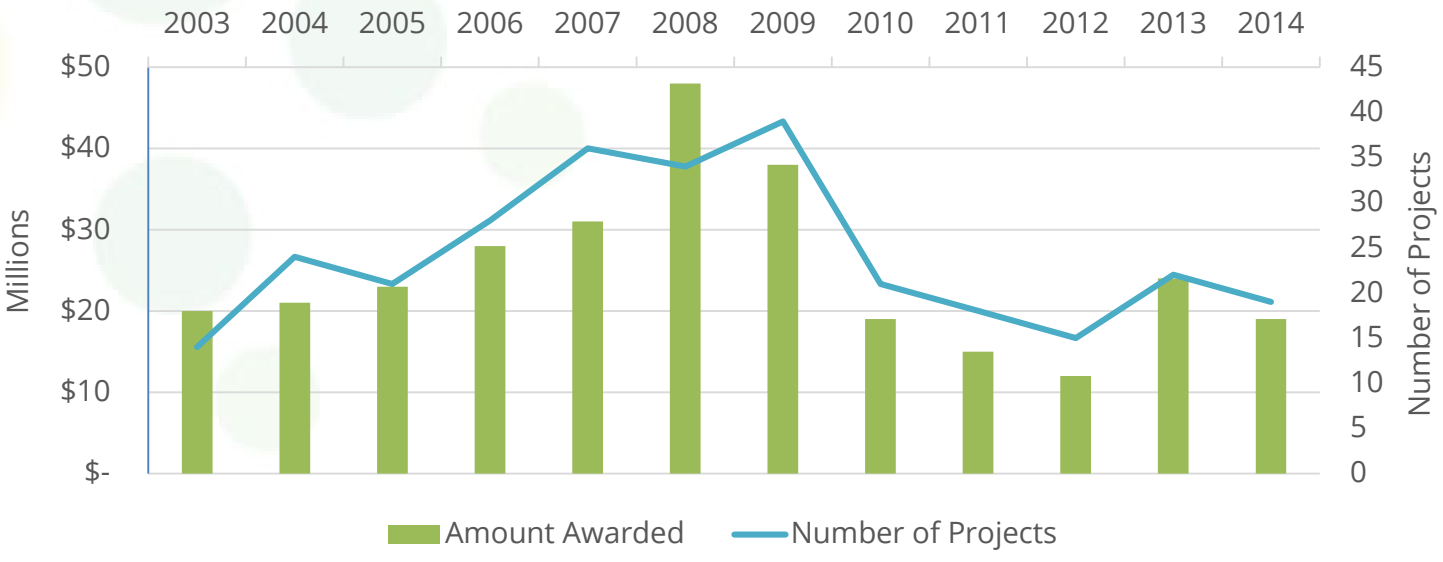
ITEST PROJECTS ARE ACTIVE IN RURAL, SUBURBAN, AND URBAN SETTINGS

While ITEST projects work across many different geographic settings, **86%** of them do at least some of their work in urban areas.

GRADES SERVED - 99% of ITEST projects have worked with middle and high school youth

SINCE 2003, NSF HAS INVESTED OVER $304 MILLION IN ITEST PROJECTS, PROVIDING FUNDING TO AN AVERAGE OF 24 PROJECTS PER YEAR

ITEST is funded by H-1B visa revenues in direct response to current concerns about effectively responding to extant and emerging areas requiring specialists at all levels and in all fields of science, technology, engineering, and mathematics (STEM), including cognate domains. (NSF ITEST Solicitation)



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