High School Introduction
To Engineering Systems (HITES)

University of Tennessee, Knoxville
Travis Griffin
MISSION STATEMENT

The High School Introduction to Engineering Systems (HITES) Program gives incoming eleventh and twelfth grade students who show an interest in engineering studies, an early exposure to and preparation for scientific study and research. The HITES program incorporates many initiatives that focus on hands-on learning, team-building, and college preparatory to assist in recruitment efforts in engineering.
HITES Structure

- Founded in 2001
- Summer residential experience
- 3 main components:
  - Academic instruction
  - Engineering discovery
  - Campus life experience
- Early exposure to and preparation for scientific study and engineering design
- Interaction with faculty, staff, and current students
Application Process

- Completed Application
- Two Letters of Recommendation
  - Math Teacher
  - Science Teacher
- Taken the ACT Math 25/SAT Math 570
- High School Transcript
  - B average or higher in math and science
- Essay Statement
Sponsored by

**EASTMAN**

- Program Make-up
  - Applicants: 103
  - Attended: 36

**HITES Application Make-up**
- Out State (FL, GA, KY, MA, MS, NC, PA, SC, and VA)
- In State

**HITES Gender Make-up**
- Male: 50%
- Female: 50%

**HITES Ethnic Make-up**
- Asian: 36%
- Black: 39%
- Hispanic: 8%
- Two or more: 11%
What to Expect...
HITES 2014 Schedule

- Breakfast
- Engineering Design
- Engineering Design Lab
- Lunch/Break
- Engineering Discovery
- ACT Math Session
- Dinner/Downtime
- Project Time
- Lights Out
HITES 2014
Engineering Design

- Using Computers to Understand the Immune System
- Sustainable Fuel and Energy Sources of the Future
- Engineering Biology by Design
- Tissue Engineering of Heart Valves
- Surgical Robotics
- The World of Nanoparticles
- Bio-inspired Sensing
- Inferring Users’ Life Behavior with Smartphone Sensing and Computing Technologies
HITES 2014
Program Impact

**HITES Pre-Survey: Planning to Major in Engineering**
- Definitely: 45%
- Possibly: 44%
- Not Sure: 11%

**HITES Post-Survey: Planning to Major in Engineering**
- Definitely: 67%
- Possibly: 25%
- Not Sure: 8%
HITES 2014
ACT Math Preparation

**ACT Pre-Test Math Readiness**
- Not Ready: 25%
- Math 119: 14%
- Math 130: 39%
- Math 141: 22%

**ACT Post-Test Math Readiness**
- Not Ready: 5%
- Math 119: 28%
- Math 130: 25%
- Math 141: 42%
HITES 2014
Assessment

Strengths
- Engineering In-Lab Design Experience
- Networking with Faculty/Graduate Students/Staff
- Company Tours
- Mentoring experience with undergraduate mentors
- Dining and Residential Hall Experience
- UT application increase

Areas of Improvement
- More time for Engineering Discovery
- More experience in computing (C, C++, Python, etc.)
- ACT Development
- Increase Campus Life experience
- Unique development sessions: Juniors and Seniors
- UT Scholarship Offering
HITES²¹ 2015 Schedule

- Breakfast
- Computing 101
- Computing Design
- Lunch/Break
- Computing Design Lab
- Computing Discovery
- Dinner/Downtime
- Project Time
- Lights Out
HITES\textsuperscript{12} 2015 Schedule

- Breakfast
- Engineering Design
- Engineering Design Lab
- Lunch/Break
- Engineering Discovery
- College Life 101
- Dinner/Downtime
- Project Time
- Lights Out
University of Tennessee, Knoxville
HITES Progress

HITES Applications
- 2010: 50
- 2011: 68
- 2012: 90
- 2013: 88
- 2014: 103

HITES Participants
- 2010: 22
- 2011: 25
- 2012: 57
- 2013: 58
- 2014: 36

UTK Applied
- 2010: 9
- 2011: 11
- 2012: 34
- 2013: 35
- 2014: 14

UTK Accepted
- 2010: 6
- 2011: 11
- 2012: 30
- 2013: 34
- 2014: 14
Summer Enrichment Programs 2015

- Middle School Introduction to Engineering Systems (MITES)
  - MITES for 7th Graders: July 26-29, 2015 (Non-Residential)
  - MITES for 8th Graders: June 21-26, 2015 (Residential)

- Engineering Volunteers for Ninth Graders (eVOL9)
  - eVOL9: June 14-19, 2015 (Residential)

- Engineering Volunteers for Tenth Graders (eVOL10)
  - eVOL10: June 7-13, 2015 (Residential)

- High School Introduction to Engineering Systems (HITES)
  - HITES for 11th Graders: July 19-24, 2015 (Residential)
  - HITES for 12th Graders: July 12-17, 2015 (Residential)