# Slide 1

**High School Introduction
To Engineering Systems (HITES)**

**University of Tennessee, Knoxville**

**Travis Griffin**

# Slide 2

**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.

# Slide 3

**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

# Slide 4

**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

# Slide 5

**HITES2014**

* Sponsored by Eastman
* Program Make-up
	+ Applicants: 103
	+ Attended: 36

A graph showing HITES Application Make-up 17% Out of State (FL, GA, KY, MA, MS, NC, PA, SC, and VA), 83% In-State.

A graph showing HITES Gender Make-up at 50% Male and 50% Female.

A graph showing HITES Ethnic Make-up: 39% Black, 36% White, 11% Asian, 8% Hispanic, and 6% Two or More.

# Slide 6

**What to Expect…**

# Slide 7

HITES 2014 Schedule

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

# Slide 8

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*

# Slide 9

HITES 2014 Program Impact

A graph showing HITES Pre-Survey: Planning to Major in Engineering

* 45% Definitely
* 44% Probably
* 11% Not sure

A graph showing HITES Post-Survey: Planning to Major in Engineering

* 67% Definitely
* 25% Probably
* 8% Not sure

# Slide 10

HITES 2014 ACT Math Preparation

A graph showing ACT Pre-Test Math Readiness

* 39% Not Ready
* 14% Math 119
* 25% Math 141
* 22% Math 130

A graph showing Post-Test Math Readiness

* 5% Not Ready
* 25% Math 119
* 42% Math 141
* 28% Math 130

# Slide 11

**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

# Slide 12

HITES11 2015 Schedule

* + Breakfast
	+ Computing 101
	+ Computing Design
	+ Lunch/Break
	+ Computing Design Lab
	+ Computing Discovery
	+ Dinner/Downtime
	+ Project Time
	+ Lights Out

# Slide 13

HITES12 2015 Schedule

* + Breakfast
	+ Engineering Design
	+ Engineering Design Lab
	+ Lunch/Break
	+ Engineering Discovery
	+ College Life 101
	+ Dinner/Downtime
	+ Project Time
	+ Lights Out

# Slide 14

University of Tennessee, Knoxville HITES Progress

A graph showing the progression of the number of participants in HITES from 2010 to 2014. Applications have increased from 50 to 103, participants have increased from 22 to 36 and of those that participated UTK applicants increased from 9 to 14 and those accepted by UTK have increased from 6 to 14.

# Slide 15

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)