



# The University of Georgia

## Bridges for Engineering Education

Summer Engineering Institute

June 2-13, 2003



**Funded and Supported by the  
National Science Foundation**

# UGA Summer Engineering Institute

## June 2-13, 2003

<b>MONDAY, 6/2</b>		
<b>TIME</b>	<b>EDUCATORS</b>	<b>HIGH SCHOOL STUDENTS</b>
9:00	Welcome to the Summer Engineering Institute Overview of Institute, Design Project, Integration Planning, Guest Speakers, Industry Tours, & More Dr. Robert Wicklein, Project Director	
10:00	What Engineers Do Overview of Design Principles, Discussion of the Changes in the Design Process Over Time Drs. Tim Foutz & Sidney Thompson	
11:00	Introducing the Design Challenge Discussion of Goals and Final Presentation Drs. Tim Foutz & Sidney Thompson	
<b>12:00</b>	<b>LUNCH – Oglethorpe Dining Commons</b>	
1:00	Introducing the Design Challenge Discussion of Goals and Final Presentation Steps to Design Step 1: Identifying a Need Step 2: Problem Definition Drs. Tim Foutz & Sidney Thompson	
2:30 – 4:00	Review of Integration Resources Criteria for Integration Plans Drs. Robert Wicklein & Roger Hill	Steps to Design Step 3: Benchmarking / Literature Review Step 4: Design Constraints

# UGA Summer Engineering Institute

## June 2-13, 2003

<b>TUESDAY, 6/3</b>		
<b>TIME</b>	<b>EDUCATORS</b>	<b>HIGH SCHOOL STUDENTS</b>
9:00	Engineering Tour Engineered Products Systems, Inc. (EPSI) Michael Van Drunen, President	
11:00	Step 5: Brainstorming Drs. Tim Foutz & Sidney Thompson	
<b>12:00</b>	<b>LUNCH – Oglethorpe Dining Commons</b>	
1:00	Engineering Sciences Principles of Statics, Force Systems, and Equilibrium Dr. Ronald McClendon	
2:00	Laboratory Exercise Statics, Force Systems, and Equilibrium Dr. Ronald McClendon	
3:00 – 4:00	Integrating Statics into the School Curriculum Dr. Ronald McClendon	Design – Brainstorming Solutions to Design Project Drs. Tim Foutz & Sidney Thompson

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## June 2-13, 2003

### WEDNESDAY, 6/4

TIME	EDUCATORS	HIGH SCHOOL STUDENTS
9:00	What it Take's to Be an Engineer Educator's Perspective – Dr. Ronald McClendon Student's Perspective – Kristina West & Edward Lane	
10:00	The Design Process in Industry Dr. Mark Evans John Deere Corp.	
11:00	Communication Skills in Engineering Dr. Donald Rubin	
<b>12:00</b>	<b>LUNCH – Oglethorpe Dining Commons</b>	
1:00	Engineering Sciences Principles of Kinematics, Dynamics, Energy, Impulse, and Momentum Dr. Tim Foutz	
2:00	Laboratory Exercise Kinematics, Dynamics, Energy, Impulse, and Momentum Dr. Tim Foutz	
3:00 – 4:00	Integrating Dynamics into the School Curriculum Dr. Tim Foutz	Design – Continue Work on Design Project Drs. Tim Foutz & Sidney Thompson

# UGA Summer Engineering Institute

## June 2-13, 2003

### THURSDAY, 6/5

TIME	EDUCATORS	HIGH SCHOOL STUDENTS
9:00	Engineering Sciences – Mechanical Engineering Industrial Experiences of a Mechanical Engineer Mr. John Schramski	
10:00	Laboratory Exercise Gears, Mechanisms, and Machines Dr. William Tollner	
<b>12:00</b>	<b>LUNCH – Oglethorpe Dining Commons</b>	
1:00	Integrating Mechanical Engineering into the School Curriculum Drs. Roger Hill & Ron Mc Clendon	Design – Continue Work on Design Project Drs. Tim Foutz & Sidney Thompson
2:00	Women in Engineering Dr. Takoi Hamrita	
3:00 – 4:00	Decision Making and Engineering Analysis in the Design Process Drs. Tim Foutz & Sidney Thompson	

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## June 2-13, 2003

<b>FRIDAY, 6/6</b>		
<b>TIME</b>	<b>EDUCATORS</b>	<b>HIGH SCHOOL STUDENTS</b>
9:00	Engineering Sciences – Electrical Engineering Electronics and the Utilization of Sensors in Engineering Mr. Scott Legg	
10:00	Laboratory Exercise Circuits, Electronics, and Sensors Dr. Brad Findell and Serkan Hekimoglu	
<b>12:00</b>	<b>LUNCH – Oglethorpe Dining Commons</b>	
1:00	Laboratory Exercise Circuits, Electronics, and Sensors Dr. Brad Findell and Mr. Serkan Hekimoglu	
2:30 – 4:00	Integrating Electrical Engineering into the School Curriculum Dr. Brad Findell	Design – Continue Work on Design Project Drs. Tim Foutz & Sidney Thompson

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## June 2-13, 2003

<b>MONDAY, 6/9</b>		
<b>TIME</b>	<b>EDUCATORS</b>	<b>HIGH SCHOOL STUDENTS</b>
9:00 – 12:00	Design & Development of Engineering Integration Plans Drs. Robert Wicklein & Roger Hill	Testing & Modifications of Design Project Drs. Tim Foutz & Sidney Thompson
<b>12:00</b>	<b>LUNCH – On the Road</b>	
1:00 – 4:00	Engineering Tour Makita Tool Corporation Tour of Plant and Discussion of What Engineers Do for Makita Discussion of the Design Process in Industry	

# UGA Summer Engineering Institute

## June 2-13, 2003

### TUESDAY, 6/10

TIME	EDUCATORS	HIGH SCHOOL STUDENTS
9:00	How Engineers Affect Daily Life Mr. Brian Brooks	
10:00	Engineering Sciences – Civil Engineering Strength of Materials and Structures, Stresses, Strains, and Deflections Dr. Sidney Thompson	
<b>12:00</b>	<b>LUNCH - Snelling Hall</b>	
1:15	Laboratory Exercise Strength of Materials and Structures Dr. Sidney Thompson	
2:45 – 4:00	Integrating Civil Engineering into the School Curriculum Dr. Sidney Thompson	Construction and Assembly of Design Project Drs. Robert Wicklein & Roger Hill

# UGA Summer Engineering Institute

## June 2-13, 2003

### WEDNESDAY, 6/11

TIME	EDUCATORS	HIGH SCHOOL STUDENTS
9:00	Engineering Sciences – Biological Engineering Biotechnology and Biomechanics in Engineering Dr. Dan Hindman Engineering Sciences – Chemical Engineering Ms. Carol Sikes	
10:00	Integrating Biological Engineering and Chemical Engineering into the School Curriculum Dr. Dan Hindman & Carol Sikes	Construction and Assembly of Design Project Drs. Robert Wicklein & Roger Hill
<b>12:00</b>	<b>LUNCH - Snelling Hall</b>	
1:15	Preparing for College Entrance Kristina West and Edward Lane	
2:00	Designing With Sustainable Considerations Dr. Robert Wicklein	
3:00 – 4:00	Engineering Design and the Environment Dr. David Gattie	

# UGA Summer Engineering Institute

## June 2-13, 2003

### THURSDAY, 6/12

TIME	EDUCATORS	HIGH SCHOOL STUDENTS
9:00 – 12:00	Design & Development of Engineering Integration Plans Drs. Robert Wicklein & Roger Hill	Complete Testing & Modifications of Design Project Drs. Tim Foutz & Sidney Thompson
<b>12:00</b>	<b>LUNCH – Snelling Hall</b>	
1:15 – 3:15	Presentation of Student Design Projects Drs. Tim Foutz & Sidney Thompson	
3:15 – 4:00	Mini-Design Projects Drs. Robert Wicklein, Roger Hill, Sidney Thompson, & Tim Foutz	

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## June 2-13, 2003

<b>FRIDAY, 6/13</b>		
<b>TIME</b>	<b>EDUCATORS</b>	<b>HIGH SCHOOL STUDENTS</b>
9:00 – 11:00	Presentation of Teacher Engineering Integration Plans Drs. Robert Wicklein, Roger Hill, Thomas Koballa, & Brad Findell	
11:00 – 12:30	Closing Ceremonies The Engineer in You Mel Coker, Professional Engineer – BellSouth Senior Director of Corporate Strategy and Planning Student Evaluations – Students Dismissed	
<b>12:30</b>	<b>LUNCH – Snelling Hall</b>	
1:45 – 3:00	Where Do We Go From Here? Final Discussions Continuing the Plans for Curriculum Integration Fall Semester Follow-Up Educator Evaluations Drs. Robert Wicklein, Roger Hill, Thomas Koballa, Brad Findell, Tim Foutz, Sid Thompson, William Kisaalita, & Ron McClendon	