2014

STRIDE | Southeastern Transportation Research, Innovation, Development and Education Center

Final Report

K-12 Workforce Development Activities, The University of Alabama at Birmingham (Year1)

(UF-EIES-1200009-UAB- 006)

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U.S. DOT DISCLAIMER

ACKNOWLEDGMENT OF SPONSORSHIP

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ABSTRACT

Transportation engineering supports safe and efficient movement of people and goods through planning, design, operation and management of transportation systems. As needs for transportation continue to grow, the future needs for qualified transportation engineers is expected to grow as well. Moreover, retirements of the baby boomers will create a new need to recruit more students in the transportation engineering field in order to address existing and future workforce needs.

Despite the career development opportunities in transportation engineering and related fields, many young students lack a clear understanding of the opportunities that lie within the science and engineering fields. Thus a need exists to expose young students to the engineering field at an early age and foster interest in transportation engineering profession as a potential career choice in the future.

The 2013 Kids in Engineering Day (KIED) field day event hosted at UAB introduced various engineering activities to elementary school students from the Birmingham-Hoover surrounding areas as a solution to overcome the unfamiliarity with the engineering field. Student participants learned about engineering disciplines and participated in fun hands-on activities. While children worked on experiments, UAB faculty and other engineering professionals offered presentations to educate parents about engineering career options, including careers in transportation.

EXECUTIVE SUMMARY

There is an increasing demand for a more efficient and safe transportation system in the US and abroad. Serving current and future needs of the transportation sector requires a skilled transportation workforce that is ready to address challenges and propose effective solutions. The National Highway Institute (NIH) estimated that 50% of the workforce responsible for planning, developing and managing the transportation system will be eligible to retire in the next five years. This creates an urgency to build a new transportation workforce that will bring excitement, experience, knowledge and skills to the work place. Taking the necessary steps to promote transportation engineering careers is a priority for the US DOT, state DOTs, and the public.

Recognizing this need, The University of Alabama at Birmingham held the Kids in Engineering event at UAB on March 30, 2013 in collaboration with the Society of Women Engineers (SWE). Over 35 children from the 4th and 5th grades from the Birmingham school districts attended. The purpose of the event was to spark interest of elementary school children in Alabama in engineering in general, and transportation engineering careers in particular. Student participants learned about engineering disciplines and participated in fun hands-on activities. Transportation-related activities included the "Five points traffic jam" and "Straw tower and paper bridge building".

The workshops were coordinated by UAB ITE and SWE student chapter volunteers. While children worked on experiments, UAB faculty and other engineering professionals offered presentations to educate parents about engineering career options. Dr. Virginia Sisiopiku (UAB) spoke about the transportation engineering discipline and careers in transportation. The event was very well received and reinforced UAB's and STRIDE's commitment for engineering workforce development. The planned activities focused on delivery of educational programs that actively engage elementary-aged children in engineering activities relating to transportation. By exploring engineering concepts and engaging in hands-on activities participating children and their parents and caregivers were exposed to the world of engineering, in general, and transportation engineering in particular, which in turn can help them positive attitudes about transportation engineering as a possible career in the future.

Exposing young students and parents to transportation will help to recruit more and brighter students to the transportation field. The activities undertaken in this project can serve as a model that other Universities can replicate to empower young students in becoming engineers and pursuing transportation engineering as a career choice.

CHAPTER 1: INTRODUCTION

Background

In a recent report, the National Research Council states that the United States' position in the global economy is declining, in part because U.S. workers lack fundamental knowledge in the science, engineering, and technology fields [National Research Council, 2012]. According to the U.S. Department of Commerce, Economics and Statistics Administration only 24% of the science, technology, engineering and mathematics workforce is comprised of women [Beede et al., 2011]. To address the critical issues of U.S. competitiveness and better prepare the future workforce, National Research Council proposes K-12 science and engineering education that will capture students' interest and provide them with the necessary foundational knowledge in the field [National Research Council, 2012].

In fact, engineering education for K-12 students is a small but growing phenomenon that may improve student learning and achievement in science and mathematics, increase awareness of engineering and the work of engineers, boost youth interest in pursuing engineering as a career, and increase the technological literacy of all students [National Academy of Engineering and National Research Council, 2009].

The demand for transportation engineers is growing steadily; however, enrollment of students in many engineering fields, including transporation related disciplines is flat or declining. Action is needed to ensure that the U.S. does not fall short of a highly competitive transportation engineering workforce in the years to come. This can be achieved through exposing students and parents to transportation engineering in K-12 and addressing any reservations, fears, and misconceptions they may have about the engineering profession. As students become familiar with technology and engineering principles early on and built an understanding of the important connections between engineering and everyday life, they would be more likely to consider engineering as a career path and choose to pursue training in related fields in the future.

Objectives

The objective of this project was to engaging families with elementary age children in hands-on science, math, and engineering-related activities and problem solving. Specifically, the project involved planning and delivery of activities as part of UAB’s Kids in Engineering, a half day event hosted at UAB, including activities related to transportation engineering and traffic safety. The goal was to spark interest of elementary school children in Alabama in engineering in general, and transportation engineering careers in particular.

Project Scope

Modeled after the Family Engineering events hosted by STRIDE partner universities and taking advantage of resources available at www.familyengineering.org, we developed and delivered a workshop focusing on transportation engineering and traffic safety. The activity followed the engineering design process depictured in Figure 1. The workshop was titled "Five Points Traffic Jam" and was one of the six hands-on activities delivered at the Kids in Engineering event. The event took place at UAB on March 30, 2013 and targeted 8-11 year olds from the greater Birmingham, Alabama region. Student members of the UAB ITE student chapter and other engineering student volunteers helped to run the activity stations under the supervision of UAB faculty members. Moreover, we delivered a presentation of transportation engineering as career to exposure parents on the various aspects of transportion as a career field.

The project involved planning, coordination, implementation, and technology transfer activities, details on which are available in the Methodology and Implementation chapters of this report.

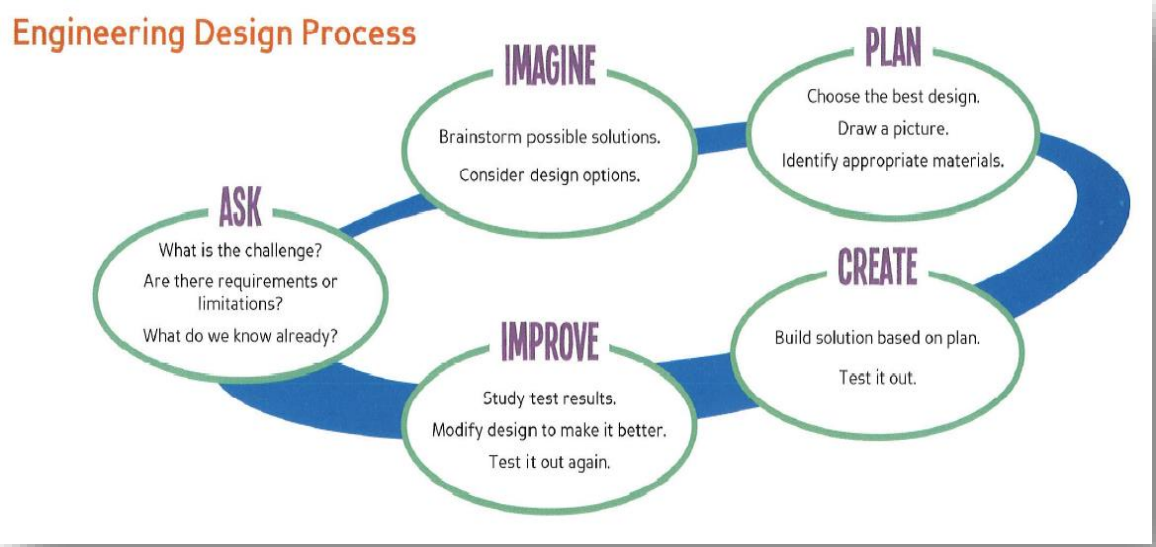

Figure 1 Engineering Design Process [Jackson et al., 2011]

The project expanded K-12 engineering workforce development and outreach efforts at the University of Alabama at Birmingham (UAB) that introduce transportation engineering as a career to students and parents.

CHAPTER 2: PROJECT APPROACH

Overview

This STRIDE project enabled collaboration between various groups within the UAB campus and other organizations in an effort to support K-12 engineering workforce development and outreach. Members of the UAB SWE and ITE student chapter were instrumental in handling the logistics of the event and UAB undergrad students, graduate students, and faculty from across campus volunteered their time to make the 2013 Kids in Engineering Day a successful event.

A number of activities were undertaken as part of this project in order to:

a. coordinate activities and prepare for the event (Pre-event);
b. facilitate the Kids in Engineering program activities (Event delivery); and
c. follow-up (Post-event)

A systematic approach was developed for handling the logists of the event that can be easily replicated in future event offerings at UAB or transferred to different settings. The major focus of the 2013 Kids in Engineering event was on exposing elementary school children to engineering through presentations and age appropriate hands-on activities that enabled experimentation and discovery of science and engineering facts and applications. A secondary goal was to expose parents and caregivers to the various engineering disciplines and engage them in a conversation about engineering careers and training in traditional and cutting-edge engineering fields such as Civil Engineering and Transportation.

ProjectTasks

The project goals and objectives were accomplished via the following three tasks:

Task 1: Event Preparation (Pre-event)

This task focused on handling pre-event logistics such as contacting local student groups and professional organizations and obtaining commitment for participation, meeting with professional organizations and student chapter representatives to plan activities, setting event date and reserving space, developing materials for event advertisement and management of logistics, event advertising and participant registration, obtaining necessary materials for the hands-on workshops, and signing up volunteers (speakers and helpers).

Task 2: Event Exceccution (Event Delivery)

This task involved setting up for the event, training volunteers on their expected roles and responsibilities, welcoming participants, completing scheduled activities, dismissing participants and cleaning up.

Task 3: Technology Transfer (Post-Event)

This task focused on sharing the experience from the planned event with other through poster presentations and newsletters and documenting activities undertaken in the project in a report according to STRIDE requirements.

Table 1 summarizes project tasks and deliverables.

Table 1 List of Deliverables

Task #	Description	Original Due Date	Date Delivered
1	Prepare for Kids in Engineering Event	Feb 28, 2013	Mar 25, 2013
	1.1 Contact groups; obtain commitments	Nov 15, 2012	Jan 15, 2013
	1.2 Review Family Engineering book; select activities	Oct 31, 2012	Oct 31, 2012
	1.3 Develop promotional naterials, advertise event	Feb 28, 2013	Feb 28, 2013
	1.4 Recruit volunteers; develop forms; handle logistics including space and supplies	Mar 25, 2013	Mar 25, 2013
2	Conduct Kids in Engineering Event	April 30, 2013	Mar 30, 2013
	2.1 Train volunteers for event activities	Mar 30, 2013	Mar 30, 2013
	2.2 Deliver presentations for students and parents	Mar 30, 2013	Mar 30, 2013
	2.3 Set up and conduct hands on experiment	Mar 30, 2013	Mar 30, 2013
3	Share the Experience through Technology Transfer Activities	Mar 31, 2014	Mar 31, 2014
	3.1 Deliver presentations on UAB workforce development initiatives	Mar 31, 2014	Mar 25, 2014
	3.2 Prepare and submit final report	Mar 31, 2014	Mar 31, 2014

CHAPTER 3: IMPLEMENTATION

Event Preparation

A number of pre-event activities took place that contributed to the success of the event. First, we reviewed literature materials related to K-12 engineering workforce development activities, in general, and Family Engineering, in particular. We considered activities available in the "Family Engineering: An Activity and Event Planning Guide" and selected an age appropriate activity that focused on transportation safety. The activity is called "Five Points Traffic Jam" and is a design challenge engaging students in the conversation about traffic safety and encouraging them to seek transportation engineering solutions to facilitate safe and convient travel.

We also informed the UAB ITE Student Chapter and the Birmingham SWE about the plans for conducting a family engineering event, selected the date and venue, and requested volunteers for the 2013 Kids in Engineering Day event. A number of forms were developed early on to assist with student registration for the event (Figure 2), and provide signed waiver for participants (Figure 3). A fee of $5 was charged per participant at registration to increase their commitment to attend the program during the day of the event.

An agenda was drafted and shared with volunteers and participants. A summary of activities planned for the day of the event are summarized in Figure 4. Volunteers were recruited for assisting in various tasks before, during, and after the event. Two volunteers were signed up for each hands-on experiment (a total of 12 volunteers), one was responsible for the refreshments area, two volunteers staffed the registration area, one was responsible for setting up presentations and aiding presenters, and two volunteers were responsible for tiding up the facility after the event. Volunteers also were used to "Meet & Greet" parents and student participants. These volunteers were engineering majors and were available throughout the program to discuss with parents about future plans and job opportunities in engineering fields.

The University of Alabama at Birmingham in partnership with the Society of Women Engineers presents:

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

KIDS IN ENGINEERING DAY

Society of Women Engineers

March 30, 2013
12:00P.M. - 3:00P.M.

1. GENERAL INFORMATION

Student Name: _____ Preferred First Name: _____

Address: _____ Date of Birth: _____ Gender: M F

State: _____ City: _____ Zip Code: _____

2. EMERGENCY CONTACT INFORMATION

Name: _____ Relationship: _____

Parent Email: _____ Cell Number: _____

3. SCHOOL INFORMATION

School Name: _____ Grade: _____

Teacher: _____

4. REGISTRATION FEES

Please submit your $5 registration fee with your form and indicate method of payment.

Method of Payment:

☐ Cheque
☐ Cash
☐ Money Order

Please make all checks payable to The University of Alabama at Birmingham - Society of Women Engineers.

Please carefully read the attached liability form and send it in completed along with the registration form.

_____ _____
Signature of Parent of Guardian Date

Please send registration forms by March 1st to UAB-SWE Engineering Day
2325 Regent Lane, Birmingham, AL 35226

Figure 2 UAB Kids in Engineering Day Registration Form

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

Society of Women Engineers

Kids in Engineering Day

March 30, 2013
12:00P.M. – 3:00P.M.

Assumption of Risk and Hold Harmless Agreement

My child, _____, myself, my heirs, and personal representative(s) hereby agree to hold harmless, release, and forever discharge the Society of Women Engineers, School of Engineering, the University of Alabama at Birmingham (UAB), the Board of Trustees of the University of Alabama (the Board), every division thereof, and its officers, employees, and agents, from any and all claims, demands, and actions, or causes of action, on account of damage to personal property, personal injury or death, which may result from my participation in the activity, and which result from causes beyond the control of, and without the gross negligence of the SWE, SOE, UAB, the Board and their officers, employees or agents, during the period of my participation as described herein.

In witness whereof, I have caused this Assumption of Risk and Hold Harmless Agreement to be executed on this ____day of _____, 2013.

_____ _____
(Signature of Parent or Guardian) Date

_____
(Signatory for SWE)

Figure 3 UAB Waiver Form

The University of Alabama at Birmingham in partnership with the Society of Women Engineers presents:

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

KIDS IN ENGINEERING DAY

Society of Women Engineers

Agenda

March 30, 2013

12:00P.M. - 3:00P.M.

9:00AM – Check in Volunteers

1. Sign in with staff
2. Get badges made

9:00AM-12:00PM – Volunteer Training Session

1. Receive station information
2. Go through experiments

11:00AM-12:00PM – Presenters Arrive & Set Up

1. Run through presentations
2. Volunteers set up stations
3. Set up refreshments
4. Begin signing in students

12:00PM-3:00PM – Experiments and Presentations

1. Volunteers conduct experiments for students
2. Presentation for adults
3. Meet & greet with presenters

3:00PM-4:30PM – Clean Up

1. Clean up all stations *(Must leave everything as it was!)*
2. Clean up refreshments area
3. Sign out with staff after station is checked off

Figure 4 Summary of 2013 Kids in Engineering Day Activities

Event Delivery

The 2013 Kids in Engineering Day event was on March 30, 2013 at UAB's Heritage Hall in Birmingham, Alabama. Participants were welcomed by UAB faculty and student volunteers who introduced themselves and their engineering majors and discussed why they decided to become engineers and how their career choice shaped their life and that of others. A total of 38 children attended the event.

Figure 5 UAB Studen Volunteers Welcom Event Participants

Then student participants were divided in groups and rotated through stations where they were guided by volunteers and assisted to complete a variety of activities representing a range of engineering fields including:

- Chemical Appearing Act
- Kaleidoscope
- Zip Line Construction
- Straw Tower and Paper Bridge
- Rolling Marbles & Whirly Gig
- Five Points Traffic Jam

More specifically, as part of the "Chemical Appearing Act" activity, participants drew a picture with starch and then showed it with iodine. Volunteers talked about chemicals and how science is important to engineering.

At the "Kaleidoscope" station volunteers helped make kaleidoscopes for the children and talked about light reflections and refractions.

The "Zip Line Construction" activity allowed kids to construct a zip line and time how long it takes the straw to get down the zip line.

At the "Straw Tower & Paper Bridge" kids worked in groups to construct towers made of straws or build paper bridged and then tested forces.

Figure 6 Straw Tower and Paper Bridge: Testing the Strength of a Paper Bridge

As part of the "Rolling Marbles & Whirly Gig" experiment volunteers helped participants roll marbles down different height ramps. In the whirly gig, kids used a round piece of cardboard and applied potential energy by winding the string by spinning the cardboard.

Last but not least, at the "Five Points Traffic Jam" volunteers guided kids through the design of intersections and other transportation facilities that are safe for car occupants, bicyclists, and pedestrians. Students were challenged to identify potentially dangerous locations on a transportation network map and use colored markers and traffic management tools (e.g., signs, traffic lights, pedestrian crosswalks, etc) to design a safer transportation environment for all users.

The six hands-on experiments planned for this event allowed student participants to learn about the different types of work that engineers do and get an appreciation of the contributions of engineers in the improvement of everyday life and the betterment of society.

Figure 7 Five Points traffic Jam: Learning about Traffic Safety

In addition to activities that targeted children participants, a series of presentations were offered during the program to parents from UAB faculty, alumni, and other professional engineers. These took place in parallel with the student hands-on activities. The following presentations were scheduled during the 2013 Kids in Engineering Day event:

- Jim Dorsten-Overview of all engineering disciplines
- Dr. Virginia Sisiopiku-Civil Engineering/Transportation
- Alex Gilbreath-Biomedical Engineering
- Dr. Uday Vaidya-Materials Engineering
- Deidra Garrett-Mechanical Engineering
- William Harden-Software Engineering
- Merideth Caldwell-Nuclear Engineering
- Melinda Norris-Electrical Engineering

The presentations explored different engineering disciplines and provide inside information about opportunities for education, employment, and career growth for engineers in those disciplines. Parents had an opportunity to ask questions about engineering professions and a lively discussion followed the presentations. Dr. Sisiopiku spoke about the Transportation Engineering discipline and introduced the various transportation engineering specialties and their contributions. The title of her presentation was "Transportation Engineering: A Look into the Present and Future" and the Power Point Presentation slides are available in Appendix A.

Figure 8 Presentations about Engineering Disciplines

Due to logistical issues, no formal evaluation was carried out, however, a form was developed after the event and it is strongly recommended that will be used to gather feedback from the

participants in follow-up events. A copy of the draft evaluation form is displayed in the Appendix.

Technology Transfer

In support of our technology transfer commitment we developed and delivered a poster presentation highlighting the Kids in Engineering event and other UAB Transportation workforce development activities at UTC Conference for the Southeastern Region in Orlando, Florida (April 4-5). A snapshot of the poster is available in Figure 9.

Figure 9 UAB Transportation Workforce Development Activities 2013

Moreover, the UAB transportation workforce development activities were featured in numerous presentations and publications including the STRIDE Spring, and Fall 2013 newsletters and the ALSITE newsletter (ALSITE NEWS - Summer 2013,Vol. XLIII, Issue 2). Finally, UAB students worked on a slideshow and poster presentation highlighting the event that was presented at the UAB Expo that took place in Birmingham, Alabama on April 26th, 2013.

CHAPTER 4: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This STRIDE-funded UAB workforce development project was designed to inspire and empower Birmingham-area elementary school children to learn about science and engineering subjects and fields and pursue careers in transportation and other related disciplines. Originally the project was envisioned as a Family Engineering event with UAB faculty and student volunteers visiting local elementary schools and engaging students and their caregivers in a dialogue about engineering as well as hands-on activities.

Due to contractual issues that delayed the start of the project we were not able to obtain timely commitments from local elementary schools for scheduling Family Engineering Nights during the academic year 2012-13. Instead we offered the Kids Engineering Program Day that targeted the same age group, used materials from the Family Engineering book for hands on workshops (such as the Five Points Traffic Jam Design Challenge) and delivered a presentation to parents on Transportation as a career path. The main difference was that we hosted the event on a Saturday at UAB and involved students from various local elementary schools rather than offering the event after school at elementary school locations as originally planned. This strategy helped meet the original goals and objectives of the project in a timely and effective manner and demonstrated the flexibility of the Family Engineering program to adapt to local needs and constraints.

The UAB Kids Engineering Event was held on March 30th, 2013 from 12pm-3pm at Heritage Hall at UAB and was hosted by UAB in collaboration with SWE. A total of 38 children from the 4th and 5th grades from the surrounding school districts were able to attend. Participants had the opportunity to learn about engineering disciplines and take part in experiments related to engineering through fun hands-on activities. Some of the activities were directly or indirectly related to transportation (such us the “Five Points Traffic Jam” and the “Straw Tower and Paper Bridge Construction”).

UAB student volunteers from SWE and ITE assisted with the set-up, registration, experiment stations, meet and greet, and clean up. While student worked on experiments, UAB faculty and other engineering professionals offered presentations on various engineering disciplines to educate parents about engineering careers. Project PI (Dr. Virginia Sisiopiku) spoke about the transportation engineering discipline and careers in transportation.

The event was very well received by students and parents and met its goal of delivering educational programs that actively engage K-12 children in activities relating to transportation. It exposed 38 elementary school children and their families to engineering and helped appreciate the benefits and opportunities that a career in transportation engineering and related field has to

offer. It also brought together undergraduate/graduate students, faculty, and local professionals who worked as a team to deliver a successful program.

Lessons learned include the need for a. more careful selection of the event date (which in 2013 coinsided with a religious holiday), and b. more widespread advertisement to attract a larger audience in future offerings. It is also recommended that a questionnaire be developed for event assessment that could be used to provide feedback for continuous quality improvement. Simple pre- and post-event surveys can also show if there is any difference in the percentage of kids that are interested engineering careers before and after the program, thus demonstrating the potential impact of the program activities on students perceptions regarding careers in engineering.

The student participants gained exposure in engineering concepts and related info through their attendance of the UAB Kids in Engineering Day. As students become familiar with transportation engineering principles early on and build an understanding of the important connections between engineering and everyday life, they would be more likely to consider engineering as a career path, and choose to pursue training in transportation engineering in the future.

Figure 10 Program Participants

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Beede D., Julian T., Langdon D., McKittrick G., Khan B., and Doms M. (2011), "Women in STEM: A Gender Gap to Innovation". Executive Summary for the U.S. Department of Commerce, Economics and Statistics Administration.

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National Academy of Engineering and National Research Council (2009), "Engineering in K-12 Education: Understanding the Status and Improving the Prospects". Washington, DC: The National Academies Press.

APPENDIX A

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

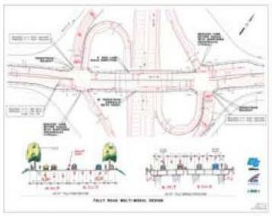
Transportation Engineering: A Look into the Present and Future

Dr. Virginia P. Sisiopiku
Associate Professor of Transportation Engineering
Civil, Construction, Environmental Engineering
UAB

3/30/2013

Roadway Design

- Design of new facilities or reconstruction of old facilities
- Involves all major CE areas:
  - Structural (bridges)
  - Geotech
  - Drainage/Environmental
  - Construction Mgmt.
  - Traffic operations
  - Public relations



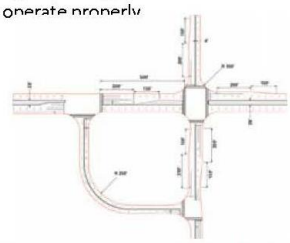
Civil Engineering

Civil Engineering:

- Structures (buildings, bridges, etc.)
- Construction Management
- Geotechnical (foundations, soils etc.)
- Transportation (highways, traffic management, transit etc.)

Geometric Design

Determining required geometrics for a new facility to operate properly



Transportation Engineering Focus

- Support safe and efficient transportation of people and goods

- Focus
  - Design
  - Operation
  - Planning

Specialties

- Roadway design
- Traffic operations/management
- Traffic safety/human factors
- Transportation planning

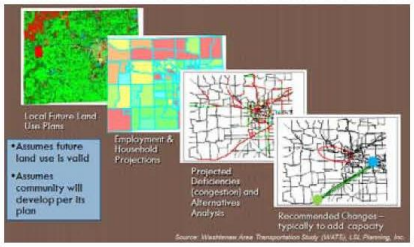
Traffic Operations

- Analyzing traffic operations for a given set of conditions:
  - Managing existing facilities
  - Design of new facilities
  - Long-range planning or impact analysis

Traffic Simulation

Testing alternatives to make better planning and design decisions

Transportation Planning



Traffic Control Systems

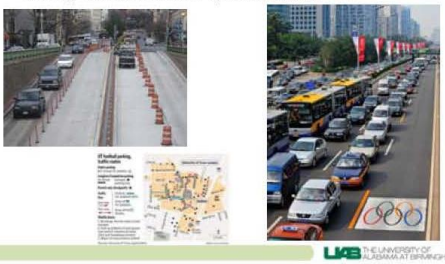
Traffic signals, control centers
Intelligent Transportation Systems

Transportation for All Users

Designing for more than the automobile…

Traffic Control

During construction or special events



Sustainability and Green Initiatives

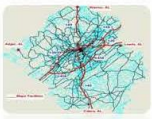
- Complete streets
- Livable cities
- HOV facilities
- Pedestrian and bike

New Technologies: Intelligent Transportation Systems

- Information, communication, surveillance, and control technologies used to enhance transportation system efficiency and safety.
  - Manage Congestion
  - Reduce Crashes
  - Reduce Environmental Impacts
  - Improve Energy Efficiency
  - Increase Economic Productivity
- Examples include:
  - Changeable Message Signs
  - Adaptive traffic signals
  - Route guidance
  - Electronic payment systems
  - Crash avoidance systems
  - ....

Current Transportation Research at UAB

- Distracted driving
- Electronic billboards
- Congestion management
- Pedestrian safety
- Incident management



Where do Transportation Engineers Work?

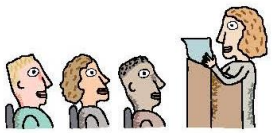
- Physically
  - Outdoors- "in-the-field"
  - In an office
  - In a lab
- Industry type
  - Public Sector (State DOT, City DOT, MPO, Transit Agency...)
  - Private Sector (Design consultant, Research consultants)
  - Research

What Transportation Engineering is all About

- Transportation Engineers find solutions to every day problems of mobility and accessibility
- Such solutions reduce congestion, improve traffic safety, contribute to economic growth, and reduce environmental impacts from traffic
- Transportation engineers have a major impact on the well being of the society

Employment Opportunities in Transportation

Public	Private
+ Job security	+ Higher pay (typically)
+ Retirement	+ Advancement opportunities
+ Variety	+ Travel
° Public interaction	° High intensity
- Often lower salary	- Job security
- Less hands on work	



QUESTIONS AND COMMENTS

THE UNIVERSITY OF ALABAMA AT BIRMINGHAM

KIDS IN ENGINEERING DAY

Society of Women Engineers

Event Date

Thank you for participating in the UAB Kids in Engineering Day. It was so great to have you! Now it is time to let us know how you liked the program. Thanks for sharing your thoughts and please return this form to a UAB volunteer.

This Program was (circle one): GREAT! GOOD OK I did not like it

Do you think that you learned something new about engineering today? YES NO

Did you enjoy the activities? YES! SO and SO NO, NOT AT ALL

What was your favorite activity? _____

Where the volunteers helpful and nice? YES! SO and SO NO, NOT MUCH

Would you come to this program again: YES! MAYBE NO, WAY!

Would you tell your friend to come to this program: YES! NO!

How do you feel about engineering? IT ROCKS! IT IS OK IT IS BORING!

What did you like MOST in this program?

_____

_____

What did you like LEAST in this program?

_____

_____

Thank you for your feedback!!