UTCA ANNUAL
TECHNOLOGY TRANSFER PROGRAM

By

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UTCA
University Transportation Center for Alabama
The University of Alabama, The University of Alabama at Birmingham, and
The University of Alabama in Huntsville

UTCA Report 04313
March 2005
This project built upon the technology transfer foundations developed under UTCA Project 03217, *UTCA Technology Transfer Program*. The second year UTCA tech transfer program has made an explicit effort to deliver information that constitutes “a better way of doing something” as evidenced by the topics chosen for presentation at the research symposium, and the bridge-related conference and seminar.

The project included the development of additional short courses, the continuation of the Annual UTCA Research Symposium and the *UTCA Signal*. It was especially beneficial to team up with the ALSITE professional organization and the Alabama T² Center to deliver an access management short course to ALDOT. It is recommended that UTCA investigate partnering with ALSITE to deliver additional sessions of the access management short course to non-ALDOT professionals throughout the State.

The 2nd Annual UTCA Research Symposium was very successful. It gave many project investigators a chance to showcase their work and fulfill the tech transfer obligations of their projects. It was also good to bring in an outside speaker to keep the program exciting. It is recommended that the additional non-UTCA speakers be included in the upcoming 3rd symposium in 2005.
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Executive Summary

The project built upon the technology transfer foundations developed under UTCA Project 03217, UTCA Technology Transfer Program. In particular, the project continued the administration of tech transfer program during its second year. As such, it focused more on tech transfer deliverables (short courses, outreach, etc.) and less on the program development (setting up the client database, establishing outreach formats and venues, etc.).

The project objectives were achieved via the following tasks:

1. Met with the steering committee (adjusted as necessary) to plan the activities of the 2004 program.
2. Continued updating and expanding client database.
3. Finalized and maintained the UTCA Technology Transfer Webpage. Incorporated information on past and upcoming Seminars onto the Tech Transfer page under the UTCA main webpage. This required more coordination with the UA campus and the main UTCA webpage administrator.
4. Offered a short course on Traffic Signal Design short course.
5. Developed and disseminated two issues of The UTCA Signal.
6. Conducted the UTCA Bridge Conference.
7. Worked with the Alabama Technology Transfer (T²) Center to facilitate the delivery of the Access Management Short Course developed by the Alabama Section of the Institute of Transportation Engineers (ALSITE).
9. Sponsored a seminar on Rapid Bridge Construction.
10. Summarized all project efforts in a final report for submittal to the UTCA.

The short course offering was very successful. It was especially beneficial to team up with the ALSITE professional organization as well as the Alabama T² Center to deliver the access management short courses to ALDOT. This was an excellent opportunity for UTCA to provide a direct service to the transportation community in Alabama. It is recommended that UTCA investigate partnering with ALSITE to deliver additional sessions of the access management short course to non-ALDOT professionals throughout the State.

The 2nd Annual UTCA Research Symposium was very successful. It gave many project investigators a chance to showcase their work and fulfill the tech transfer obligations of their projects. It was also good to bring engage an outside speaker to keep the program exciting. It is recommended that the additional non-UTCA speakers be included in the upcoming 3rd symposium in 2005.
Section 1
Introduction

1.1. Background

Technology transfer has emerged as an important component of university-based transportation education and research programs. Early on, a comprehensive definition of technology transfer was offered by NCHRP: “(T)echnology transfer is the process by which a better way of doing something is put into use as quickly as possible (Hodgkins, 1989).” The current UTCA tech transfer program has made an explicit effort to deliver information that constitutes “a better way of doing something” as evidenced by the topics chosen for presentation at the research symposium, and the bridge-related conference and seminar.

The importance of the technology transfer efforts of all University Transportation Center (UTC) programs is explicitly addressed in the upcoming transportation bill, the Safe, Accountable, Flexible and Efficient Transportation Equity Act of 2003 (SAFETEA). An early U.S. Department of Transportation (USDOT) summary states that for projects to be eligible for UTC funds “All grantees are also required to conduct technology transfer activities to disseminate the results of their research and education activities (USDOT, 2003).” Clearly, the USDOT is emphasizing tech transfer as a measure of the effectiveness (and therefore competitiveness) of any UTC.

The program documented in this report built upon the successes of the initial 2002-2003 program and established a consistent, concerted, and clearly visible technology transfer program for UTCA that will contribute to its competitiveness in the national UTC program.

In addition to disseminating research results, a tech transfer program can (and should) be used to advance the professional capacity of its client base. The Forum on Transportation Education and Training held in Washington, DC in 1999 identified university-based tech transfer programs as an important contributor to capacity in the transportation profession. It specifically cited the role tech transfer can play in augmenting traditional degree or certificate programs by offering specialized training in a concise format (short course, etc.) that accommodates busy professionals (TRB, 2000). Indeed, the UTCA program responded to a specific need in the transportation community in Alabama (based on input from the steering committee) and offered a specialized short course on traffic signal timing and design. Rather than “bring in” lecturers, the UTCA program tapped “in house” talent to deliver the course. As such, the activity truly encompassed a sharing of UTCA resources with the professional community. It is worth noting that the 1998 State of the Practice document affirmed the use of “in-house” tech transfer talent in the following statement,
“University-based field office programs generally make engineers available to assist firms in problem areas. By virtue of being university-based, these programs can easily access engineering faculty and R&D centers for assistance (Wallace et al., 1998).”

A recent technical article cited the need to be innovative with continuing education and particularly at the importance of exploring distance learning opportunities within transportation technology transfer (Mason, 2003).

1.2. Purpose & Scope

The project built upon the technology transfer foundations developed under UTCA Project 03217, UTCA Technology Transfer Program. In particular, the project continued the administration of tech transfer program during its second year. As such, the second year focused more on tech transfer deliverables (short courses, outreach, etc.) and less on the program development (setting up the client database, establishing outreach formats and venues, etc.).

The project objectives were achieved via the following tasks:

11. Meet with the steering committee (adjusted as necessary) to plan the activities of the 2004 program.
12. Continue updating and expanding client database.
13. Finalize and maintain UTCA Technology Transfer Webpage. Incorporated information on Past and Upcoming Seminars onto the Tech Transfer page under the UTCA main webpage. This required more coordination with the UA campus and the main UTCA webpage administrator.
15. Developed and disseminated two issues of The UTCA Signal.
16. Conducted the UTCA Bridge Conference.
17. Worked with the Alabama Technology Transfer (T³) Center to facilitate the delivery of the Access Management Short Course developed by the Alabama Section of the Institute of Transportation Engineers (ALSITE).
19. Sponsored a seminar on Rapid Bridge Construction.
20. Summarize all project efforts in a final report for submittal to the UTCA.
Section 2
Program Development and Accomplishments

The project continued several activities initiated in the original tech transfer project (03217). The accomplishments continued from the first year and new developments are described in the following sections.

2.1. Newsletter

Two issues of The UTCA Signal were developed. They were distributed to more than 4,000 addresses throughout Alabama and the southeast. The first 2004 (Volume 2, Issue 1) issue was mailed in March and included the following topics:

- A synopsis of UTCA-sponsored bridge projects;
- An announcement for the UTCA Bridge Conference;
- An announcement for the third delivery of the UTCA Traffic Signal Design short course (see Section 3.3.2. of this report);
- A general announcement for the 2nd Annual UTCA Research Symposium (see Section 3.3.1. of this report);
- A “Hot Topics” briefing on UTCA Projects 03416 and 03419; and
- UTCA Technology Transfer administrative information (contacts, website addresses, survey information).

The second 2004 issue (Volume 2, Issue 2) was mailed in October and included as topics:

- The CARE program at the University of Alabama and its impact nationwide;
- The Alabama Telework Initiative that began with UTCA project 02205;
- A specific announcement (including session information) for the 2nd Annual UTCA Research Symposium and a registration form;
- A “Hot Topics” briefing on the Access Management courses facilitated by UTCA (see Section 3.2.3 of this report); and
- UTCA Technology Transfer administrative information (contacts, website addresses, survey information).

2.2. Short Courses

The UTCA Technology Transfer Program facilitated the delivery of two short courses. Each course and its outcome are described in the following sections.
2.2.1. Traffic Signal Design

In response to request received from the local traffic engineering community, the Traffic Signal Design course that UTCA sponsored during the 2003 was repeated. The delivery consisted of the same instructor and materials. A summary of the course evaluation for the third delivery are summarized in Tables 2-1 and 2-2. A sample of the UTCA course/seminar survey is presented in Appendix A.

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>Poor</th>
<th>Below Average</th>
<th>Satisfactory</th>
<th>Good</th>
<th>Excellent</th>
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<tr>
<td>Instructor’s Expertise</td>
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<td>Instructors ability to communicate ideas and concepts</td>
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<tr>
<td>Instructors Responsiveness to Questions</td>
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<tr>
<td>Course Description</td>
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</tr>
<tr>
<td>Would you recommend this course to other colleagues</td>
<td>No - 0</td>
<td>Yes -6</td>
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</tr>
</tbody>
</table>

In addition to the questions, participants were asked for comments. The comments are summarized in Table 2-2.

Table 2-2. Summary of comments from course evaluation surveys: Traffic Signal Design
- Good overview.
- Great job.
- Should always include software overview.

2.2.2. Access Management

The UTCA Technology Transfer Program worked with the Alabama T² Center to facilitate the delivery of the Access Management Short Course developed by ALSITE. The course was delivered to ALDOT personnel and transportation professionals from other government agencies (city, county, MPO) throughout the State. Recruitment for the course was coordinated with the ALDOT Training Bureau and the Maintenance Bureau. The course was offered four times; twice at the ALDOT Central Office in Montgomery, once at the Third Division office in Birmingham and once at the First Division office in Guntersville. UTCA Technology Transfer assisted in the organization and facilitation of the course at the Birmingham and Guntersville locations. It was taught by ALSITE members. More than 200 individuals attended the four courses. Evaluations from the two UTCA-facilitated courses are provided in Tables 2-3 through 2-6. The promotional information developed for the course and displayed in ALDOT offices is presented in Appendix B.

<table>
<thead>
<tr>
<th>Survey Question</th>
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<th>Below Average</th>
<th>Satisfactory</th>
<th>Good</th>
<th>Excellent</th>
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<td>Course Description</td>
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<tr>
<td>Would you recommend this course to other colleagues</td>
<td>No - 0</td>
<td>Yes -29</td>
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</table>
Table 2-4. Summary of comments from course evaluation surveys: Access Management at Birmingham

- Excellent topic – Very informative for district engineers / permit personnel.
- Excellent info for daily use in our jobs.
- Make it real! Alabama deserves good road design and AM.
- I received tools that I will use when evaluating permit applications. Useful information.
- For traffic engineers.

Table 2-5. Summary of Course Evaluation Surveys: Access Management at Guntersville

<table>
<thead>
<tr>
<th>Survey Question</th>
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<th>Below Average</th>
<th>Satisfactory</th>
<th>Good</th>
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<tr>
<td>Instructors Responsiveness to Questions</td>
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<tr>
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<td>No - 0</td>
<td>Yes - 16</td>
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</table>

The surveys indicated that the course was well received and that the subject matter was both important to the audience and considered timely.

2.3. Events

2.3.1. Bridge Conference

UTCA held a Bridge Conference on July 23rd, 2004. It featured 6 presentations from bridge researchers from all three UTCA campuses as well as a keynote address from the Alabama Division FHWA Bridge Engineer. A listing of the presentations and presenters is shown in Appendix C. It was co-sponsored by the Alabama Bridge Builders Association and was attended by 26 people. The results from conference surveys are summarized in Tables 2-7 and 2-8.

Table 2-7. Summary of course evaluation surveys: Bridge Conference

<table>
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<tr>
<th>Survey Question</th>
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<th>Below Average</th>
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<th>Excellent</th>
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</thead>
<tbody>
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<tr>
<td>Instructor’s Expertise</td>
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<tr>
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</tr>
<tr>
<td>Instructors Responsiveness to Questions</td>
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<td>8</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Course Description</td>
<td></td>
<td>13</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would you recommend this course to other colleagues</td>
<td></td>
<td>No - 0</td>
<td>Yes - 18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 2-8. Summary of comments from course evaluation surveys: Bridge Conference

- It was a nice exchange of knowledge.
- Excellent job.
- Two of the instructors spoke too softly.
2.3.2. 2nd Annual Research Symposium

The second annual UTCA research symposium was held on November 15th, 2003. The symposium included presentations derived from UTCA-sponsored projects. The symposium included 19 presentations from UTCA project investigators and three presentations from students. Also, ten additional students were given the opportunity to present their research via a poster session. The symposium also included a keynote presentation by a national FHWA expert on innovative construction techniques. The program for the 2nd Annual UTCA Research Symposium is presented in Appendix D.

More than 80 people attended the symposium. Participants included university faculty, students, and transportation professionals from around the State. The program was held at the Holiday Inn Homewood in Birmingham and included lunch and breaks for all participants.

2.3.3. Bridge Construction Seminar

The UTCA Technology Transfer Program sponsored a short seminar on November 19th on Rapid Bridge Construction. The seminar was delivered by the FHWA and ALDOT. The seminar complemented the keynote presentation from the symposium as well as the focus on bridge research at UTCA as evidenced by the Bridge Conference. It was held in the Department of Civil and Environmental Engineering at the University of Alabama at Birmingham. A flyer for the seminar is presented in Appendix E.
Section 3
Conclusions and Recommendations

The short course offering was very successful. It was especially beneficial to team up with the ALSITE professional organization as well as the Alabama T² Center to deliver the access management short courses to ALDOT. This was an excellent opportunity for UTCA to provide a direct service to the transportation community in Alabama. It is recommended that UTCA investigate partnering with ALSITE to deliver additional sessions of the access management short course to non-ALDOT professionals throughout the State.

The 2nd Annual UTCA Research Symposium was very successful. It gave many project investigators a chance to showcase their work and fulfill the tech transfer obligations of their projects. It was also good to bring in an outside speaker to keep the program exciting. It is recommended that the additional non-UTCA speakers be included in the upcoming 3rd symposium in 2005.
Section 4
References


APPENDIX A
UTCA Short Course Evaluation Form

PROFESSIONAL DEVELOPMENT PROGRAM EVALUATION

PROGRAM TITLE _______________________________________________________________________

DATE_________________

INSTRUCTOR __________________________________________________________________________

To provide us your assessment of this continuing education program, please read each item and then rate the
questions by circling the appropriate response.

To provide us your assessment of this continuing education program, please read each item and then rate the
questions by circling the appropriate response.

RESPONSE

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1. Overall quality of program</td>
<td>Poor</td>
<td>Below Average</td>
<td>Satisfactory</td>
<td>Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>2. Instructor’s expertise in this topic</td>
<td>Poor</td>
<td>Below Average</td>
<td>Satisfactory</td>
<td>Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>3. Instructor’s ability to communicate ideas and concepts</td>
<td>Poor</td>
<td>Below Average</td>
<td>Satisfactory</td>
<td>Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>4. Instructor’s responsiveness to attendees question</td>
<td>Poor</td>
<td>Below Average</td>
<td>Satisfactory</td>
<td>Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>5. Facilities and classroom</td>
<td>Poor</td>
<td>Below Average</td>
<td>Satisfactory</td>
<td>Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>6. Services provided by Engineering Professional Development staff</td>
<td>Poor</td>
<td>Below Average</td>
<td>Satisfactory</td>
<td>Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>7. Course description in brochure</td>
<td>Poor</td>
<td>Below Average</td>
<td>Satisfactory</td>
<td>Good</td>
<td>Excellent</td>
</tr>
<tr>
<td>8. Would you recommend this class for other colleagues?</td>
<td>Yes</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Comments about the program</td>
<td></td>
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</table>

Please provide your name and company name if we may use your comments in future marketing efforts.

Thank you for taking the time to complete this important evaluation process. We look forward to your
participation in future continuing education programs with the School of Engineering.

Name____________________________________  Company________________________________

9
APPENDIX B
Access Management Promotion Literature Sent to ALDOT

Access Management Short Course

A service project of the Alabama Section of the Institute of Transportation Engineers
The Alabama Section of the Institute of Transportation Engineers (ALSITE) used national publications and criteria adopted by other states to write this seminar and to prepare a series of presentations. The idea was to provide a tool to help planners, traffic managers, and permit offices make difficult decisions while balancing the two competing uses of roads: (1) moving traffic and (2) providing access to adjacent property.

The short course will provide an introduction to access management during several presentations and group discussions that cover roughly 5 hours (9 AM to 3 PM). The major topics are outlined below, as separate workbook chapters.

COURSE CONTENT
Chapter 1 - What Is Access Management (Why Use it)? This chapter outlines the typical road life cycle, that almost always ends with the street becomes so congested and so unsafe that motorists dread using it. Access management can help prevent or delay that situation. It adopts and uses sound principles of traffic management to preserve traffic capacity. It also uses sound principles for design and location of driveways and commercial entrances to allow reasonable access while minimizing traffic crashes and congestion. This chapter includes examples of state and city adoption of access management plans, and contact information for many of these jurisdictions, along with access management reference materials.

Chapter 2 – Steps in Access Management This chapter presents a series of steps that might be followed to place access management into effect. This starts with creating categories of access management control based upon street type, and works through development of design and access management criteria, and administrative procedures.

Chapter 3 – Access Management Techniques The six basic techniques for access management are introduced, discussed, and illustrated with examples.

Chapter 4 – Access Management Guidelines The basic techniques cannot be applied in the same manner in all parts of Alabama or on all roadway classes. This chapter helps users understand the reasons why certain access management techniques might be better suited for certain situations than others. It also provides information on the principles of traffic movement and safety that influence selection of appropriate techniques.

Chapter 5 – Retrofitting Access Management to Local Roads It is far better to adopt an access management program before a road is opened than after it has become congested. This chapter presents some of the constraints of working on mature roads, along with applicable procedures that allow retrofit.
Chapter 6 – Case Studies  Several “real life” examples will be reviewed, where application of access management preserved or extended the life of existing roads.

INSTRUCTORS
All course instructors are volunteer members of ITE, and the specific instructors will vary from site to site. They are practicing Alabama consultants, transportation agency managers, or transportation professors with experience in access management.

Additional information on Access Management is available from the Transportation Research Board at http://www.accessmanagement.gov/index.html
Access Management

A service project of the Alabama Section of the Institute of Transportation Engineers, The Alabama Technology Transfer (T2) Center, and The University Transportation Center for Alabama

BACKGROUND
The Alabama Section of the Institute of Transportation Engineers (ALSITE) reviewed national publications as well as criteria adopted by other states to develop a short course on access management for audiences in Alabama. The idea is to provide a tool to help planners, traffic managers, and permit offices make difficult decisions while balancing the two competing uses of roads: (1) moving traffic and (2) providing access to adjacent property.

The short course provides an introduction to access management during several presentations and group discussions that cover roughly 5 hours (9 AM to 3 PM). The major topics are outlined below, as presented in the chapters of the workbook developed for the course.

COURSE CONTENT
What Is Access Management & Why Use it?

Steps in Access Management

Access Management Techniques

Access Management Guidelines

Retrofitting Access Management to Local Roads

Case Studies

INSTRUCTORS
All course instructors are volunteer members of ALSITE, and specific instructors vary from site to site. They are practicing Alabama consultants, transportation agency managers, or transportation professors with experience in access management.
APPENDIX C
UTCA Bridge Conference Agenda

Friday July 23rd, 2003

8:15 – 8:45  Registration
8:45 – 9:00  Opening Remarks
9:00 – 9:45  Keynote Address: Get In, Get out and Stay out
             Robert King, P.E.
             Division Structural Engineer, FHWA
9:45 – 10:00 Break
10:00 – 10:30 Stability of Curved Bridges during Construction
             Jim Davidson, Ph.D.
             Associate Professor
             UAB, Dept. of Civil and Environmental Engineering
10:30 – 11:00 Load Testing Concrete Bridges
             Jim Richardson, Ph.D., P.E.
             Associate Professor
             UA, Dept. of Civil and Environmental Engineering
11:00 – 11:30 Innovative VARTM technique for Bridge Repair
             Nasim Uddin, Ph.D., P.E.
             Assistant Professor
             UAB, Dept. of Civil and Environmental Engineering
11:30 – 1:00 Lunch (sponsored by the Alabama Bridge Builders Association)
1:00 – 1:30 Implementation Study of the WDBN Remote Sensing System for Bridge Integrity
             Monitoring at the County Level
             Dale Callahan, Ph.D., P.E.
             Assistant Professor
             UAB, Dept. of Electrical and Computer Engineering
1:30 – 2:00 Bridge Building and the Archaeological Record: How to Prepare a Project in Historically
             Sensitive Areas, or What to Expect When You Don’t
             Tom Grimes, P.E.
             Shelby County, Dept. of Engineering
2:00 – 2:30 Multimedia Technology for Bridge Repair
             Eugene Anselm
             Graduate Student
             UAH, Dept. of Civil and Environmental Engineering
2:30 Adjourn
# Appendix D

## 2nd Annual UTCA Research Symposium Agenda

<table>
<thead>
<tr>
<th>Time/Room</th>
<th>Agenda Item</th>
</tr>
</thead>
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<td><strong>NOVEMBER 15th, 2004</strong></td>
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<tr>
<td>Arlington/Berkeley</td>
<td>Clarendon</td>
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<tr>
<td>8:00 – 8:15</td>
<td>Opening Remarks</td>
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<td>8:30 – 10:30</td>
<td>New Developments in Traffic Design and Operations – Jones, Moderator</td>
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<td></td>
<td>• Statewide Traffic Signal Design Manual – Sullivan</td>
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<td></td>
<td>• Assessment of Ramp Metering Options – Sisiopiku</td>
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<td></td>
<td>• Design Criteria for Traffic Signal Support Structures - Fouad</td>
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<td>• Evaluation of Retroreflectometers - Lindly</td>
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<td>Bridge Inspection – TBA, Moderator</td>
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<td></td>
<td>• Bridge Maintenance Prioritization System Recommendation - Duggan</td>
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<td>• Bridge Inspector Sufficiency Rating Calculator - Duggan</td>
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<td>• Progressively Phased Bridge Inspection – Haynie</td>
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<td>• Dynamic Load Rating – Chen</td>
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<td>10:30 – 10:45</td>
<td>Break</td>
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<td>10:45 – 12:00</td>
<td>ADVANCES IN TRANSPORTATION PLANNING – SULLIVAN, MODERATOR</td>
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<td>• Transportation Improvements in Alabama through Telework – Callahan</td>
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<td>• Development of a Methodology to Predict the Through Trip Rates for Small Communities – Anderson</td>
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<td>• Alternative Project Delivery Systems for ALDOT Projects - Rizk</td>
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<td>Roadway Safety and Enforcement – Sisiopiku, Moderator</td>
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<td></td>
<td>• Safety Research at UTCA - Turner</td>
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<td>• Variable Selection and Ranking for Analyzing Automobile Traffic Accident Data – Wang</td>
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<td>• Mining and Analysis of Traffic Safety and Roadway Condition Data - Lin</td>
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<td>• Enhancements to the Alabama Electronic Citation Project – Keith</td>
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<td>12:00 – 1:00</td>
<td>Lunch</td>
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<td>1:00 – 2:00</td>
<td>Keynote Address from the FHWA – Integrating New Technologies into the Highway Design and Construction Process</td>
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<td>2:00 – 3:15</td>
<td>Transportation &amp; Security – Turner, Moderator</td>
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<td>Transportation Infrastructure Security Assessment Methodology for Alabama Local Governments – Stovall</td>
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<tr>
<td>Student Presentations – Robinson, Moderator</td>
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<td>3:15 – 3:30</td>
<td>Break</td>
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<tr>
<td>3:30 – 4:30</td>
<td>ACCESS MANAGEMENT AND CORRIDOR ANALYSIS</td>
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<td>• CORRIDOR X ACCESS MANAGEMENT AND DEVELOPMENT PLAN – LEWANDOWSKI</td>
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<td>• Comparison of Traffic Simulation Software for Access Management - Jones</td>
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<tr>
<td>Graduate Student Research Poster Session</td>
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APPENDIX E
Rapid Bridge Construction Seminar Flyer

"Rapid Bridge Construction"

Presented by
The University Transportation Center for Alabama &
UAB Department of Civil & Environmental Engineering

Speakers:
Mr. Benjamin Tang
Office of Bridge Technology - Federal Highway Administration
Team Leader - Special Structures Review & Development
Presentation Title "Accelerated Bridge Construction Technology"

Mr. Fred Conway
Alabama Department of Transportation
Chief Bridge Engineer
Presentation Title "I-65 Bridge Replacement Due to Truck Fire"

Where:
Business Engineering Complex
Room 157
1169 10th Avenue South

When:
November 19, 2004
10:30 a.m. to 12:30 p.m.
(Lunch will be provided)

Please R.S.V.P. to Jennifer at 205-934-6430 or by email