UTCA ANNUAL TECHNOLOGY TRANSFER PROGRAM

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The objective of this project was to develop and administer formal Technology Transfer programs for the University Transportation Center of Alabama (UTCA). The project included the research and development of a comprehensive technology transfer program. Efforts included the development of short courses, an annual UTCA conference, a UTCA newsletter, and a technology transfer-related web site. Project activities were developed form input from a technology transfer Steering Committee and from as a survey of transportation professionals throughout the stage and region.
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Executive Summary

The objective of the project was to develop and administer a formal technology transfer program for the University Transportation Center of Alabama (UTCA). The program was intended to showcase the accomplishments of UTCA and to promote its activities throughout the state, region, and nation. Successful implementation of the project will help establish the University of Alabama System as a major contributor to both the transportation profession and research community.

A contact database of over 5,000 names was obtained from the Auburn Technology Transfer (T²) Program. A new database was developed from the Auburn information and new names were captured through seminar offerings and a symposium. It is recommended that the database be examined to make sure that it is current and reaching an appropriate audience. It is also recommended that new methods be identified to obtain names and e-mail addresses of interested parties, and that a web survey be implemented in 2004.

A research-oriented newsletter, *The Signal*, was developed and the premiere issue was mailed in August 2003. It was well received by the Steering Committee and its ultimate audience. It worked well as a multipurpose vehicle for delivering UTCA project briefs and UTCA outreach activities. It is recommended that future *Signal* issues be published at least bi-annually and coordinated with dates of outreach activities.

A traffic signal design short course was successfully offered. All attendees were pleased with the course content and instruction. The evaluations indicated a demand for additional courses in traffic signal design as well as related traffic operations topics. Having the courses in Birmingham was convenient for participants throughout Alabama, and the fee structure for courses was very attractive to participants.

The First Annual UTCA Research Symposium was also very successful. This gave many project investigators a chance to showcase their work and to fulfill the tech transfer obligations of their projects. It is recommended that the format be retained for the 2004 symposium.

Overall, the program is off to a very positive start, and planning is underway to ensure that the 2004 tech transfer program is equally is successful.
Section 1
Introduction

1.1. Background

The University Transportation Center for Alabama (UTCA) began operation in March of 1999. Since its inception, UTCA has sponsored over 150 transportation-related projects. Figure 1-1 shows the distribution of UTCA projects (past and current) over six general categories. Of the categories shown below, Management, Safety, and Education are directly related to the UTCA theme. Bridges became a specific category due to the substantial expertise in this topic among the UTCA researchers. Numerous projects have fallen under the Miscellaneous category that addressed very specific topics. Finally, 6% of the projects have been designated as explicitly Technology Transfer. These projects were conducted for the specific purpose of developing and delivering short courses to transportation professionals in Alabama and supporting the Technology Transfer goal of the UTCA.

In addition to the projects that originated as technology transfer efforts, many of the research-oriented projects have (or are intended to) produced knowledge and expertise of value to other transportation professionals. The current project is aimed at assisting UTCA investigators to identify, develop, and deliver transferable results of their projects, and to promote the efforts of UTCA.
1.2. Purpose & Scope

The objective of the project was to develop and administer a formal technology transfer program for UTCA. It was intended to showcase the accomplishments of UTCA and to promote its activities throughout the state, region, and nation. It would draw attention to the projects conducted under UTCA and provide exposure for young researchers beyond those immediately involved in their projects. Successful implementation of the program would help establish the University of Alabama System as a significant contributor to both the transportation profession and research community.

The project objectives were achieved via the following tasks:

1. Identify a technology transfer steering (UTCA directors, advisory board members, Tech Transfer Director, etc.) and establish goals and objectives of the program. The proposed board would also help the project team determine needs and preferences for promotional materials, UTCA-wide seminars or conferences, promotion of the program at the Alabama Transportation Conference and within related professional organizations throughout the State and region.

2. Review other university-based technology transfer programs and investigate potential affiliation with the Technology Transfer Society and the National Association of Transportation Technology Transfer Centers, as well as explore coordination with the Alabama Technology Transfer (T³) Center, the Local Technical Assistance Program (LTAP), and the Rural Transit Assistance Program (RTAP) as appropriate.

3. Survey transportation professionals in Alabama to assess current transportation technology transfer and educational resources readily available. The survey will also determine interest in technology transfer from UTCA-affiliated projects and identify “hot topics” that address immediate educational and training needs.

4. Develop a database of transportation professionals and organizations throughout the state and southeast, using a web-based registration in conjunction with the UTCA technology transfer web site (Task 7). Input to the registration form, as well as contact information gained through other methods will be incorporated into a database for making mailing labels for direct mailings, generating e-mail announcements, and recording client interest/participation.

5. Inventory past and near-complete UTCA projects that have technology transfer components and address needs identified in Task 3. Contact investigators of projects to solicit interest in pursuing technology transfer activities.

6. Identify four short courses to be offered between the Summer of 2003 and the Spring of 2004. Promote and assist development, registration, and preparation of these courses. Courses will be of general interest and designed for 20–40 participants. EPD resources will be used to record and award continuing education unit (CEU) and professional development hour (PDH) credit to course participants.

7. Develop and produce a newsletter for UTCA to be distributed in June and December of each year to announce activities such as: seminars, briefings, workshops, short course, and the
Annual UTCA Conference (see Task 8). Develop and maintain a web site for the UTCA technology transfer program – the site would likely be a suite of pages on the existing UTCA website.

8. Develop, promote, and conduct an annual UTCA one-day conference to be presented in the Fall of each year. As with the short courses, EPD will help register participants, record CEU and PDH credit, provide audio/visual equipment and provide on-site management.

9. Keep a log of UTCA technology transfer activities and pursue conference presentations and journal publication to promote UTCA technology transfer activities beyond Alabama.

10. Investigate opportunities to conduct UTCA technology transfer activities (short course, etc.) outside of Alabama, especially in the Southeast.

11. Meet with the Steering committee to evaluate the success of the programs (goals and objectives met, lessons learned, etc.). Upon approval from the steering committee, develop a program for a continued UTCA technology transfer program. The development of the continuing program will include the creation of a business plan that will set goals for the number of courses to be taught per year as well as an annual budget.

12. Summarize all project efforts in a final report to UTCA.
Section 2
Review Other Transportation Technology Transfer Programs

A review of the literature, including brochures from other tech transfer programs as well as academic journals and government reports, yielded a comprehensive definition of technology transfer that was used to guide the program. As such, *technology transfer* encompasses a broad range of activities that include, but are not limited to:

- Dissemination of technical information (methodologies, results, etc.) and lessons learned derived from research projects via reports, journal papers, workshops, seminars, briefings;
- Serving as a clearinghouse for publications, reports, event schedules (conferences, etc.);
- Providing technical assistance via interaction with public and private organizations to answer questions, collect and synthesize information, etc.;
- Supporting coalitions, consortia, partnerships, advisory committees, etc.; and
- Developing and delivering formal training programs (TRB, 1998).

Specific points gleaned from these reviews are summarized in the sections below. Particular attention was given to information relevant to the development of the UTCA program.

2.1. Programs in Alabama

A review was conducted of other tech transfer entities in the state. The review was initiated by talking with and reviewing the Auburn University Technology Transfer (T²) Program. Its mission statement is:

“The mission of the Center is to provide training and information to assist public works, highway or transportation agencies plan, manage and execute their programs as a part of the Local Technical Assistance Program (LTAP) of FHWA.”

The Center also provides assistance to ALDOT in administering the Rural Transit Assistance Program (RTAP) of the Federal Transit Administration and maintains the Alabama RTAP website. They provide various forms of outreach including seminars and video tapes, and it maintains a library of publications. The Center publishes the Alabama Transportation Newsletter with topics of interest in managing, performing and evaluating public works functions. The newsletter is distributed primarily to agencies and individuals in Alabama and to all other centers in the nation. Articles originate in Alabama or are compiled from other sources in engineering and public works periodicals. The newsletter also lists many of the materials available from the Center. The Center also assists in making the arrangements for the Alabama Transportation Conference.
The UTCA technology transfer goal is to complement the efforts of the Auburn T² Program and not to duplicate its efforts. As such, UTCA produces outreach materials (newsletter, courses, seminars, etc.) that are primarily derived from UTCA-sponsored research and educational activities. It will also provide outreach that results from UTCA projects and help fulfill other educational needs as outlined by the Steering Committee. In addition it will hold its annual symposium in the fall of each year, so it will not conflict with the Alabama Transportation Conference hosted by Auburn T².

2.2. Programs outside of Alabama
This project conducted an extensive review of other transportation tech transfer programs including publications, organizational structure and outreach. This included Oregon State University, the University of Iowa, the U.S. Department of Defense, the Missouri Department of Transportation, the National Association of Transportation Technology Transfer Centers, South Carolina State University, the Mid Atlantic University Transportation Center (Penn State, the University of Pennsylvania, VPI and West Virginia University), the University of Nebraska Lincoln and the University of Minnesota tech transfer program. Consistent throughout all programs was some form of publication or newsletter describing results of research in the transportation field. Many provided a limited outreach program mostly consisting of workshops and seminars.
Section 3
Program Development and Accomplishments

As the project constituted the development of a new program, much of the work involved administrative tasks. These tasks, along with the accomplishments of first year of the UTCA technology transfer program, are described in the following sections. As described in Task 9, a log of all UTCA tech transfer activities was kept and served as the basis for this section of the report.

3.1. Administrative Setup

3.1.1. Steering Committee

As suggested in the first task, a UTCA Technology Transfer Steering Committee was established. Members represented the UTCA Executive Committee; all three campuses; the Federal Highway Administration; the ALDOT Design, Human Resources, Research & Development, and Training Bureaus; metropolitan planning organizations; and private consulting firms. A list of Steering Committee members is presented in Appendix A. The first meeting of the steering committee was held on May 1, 2003. The planned tech transfer program was introduced, and guidance was solicited from committee members. Meeting minutes were distributed and committee comments were incorporated into program activities as appropriate. A meeting agenda and a copy of the minutes are included in Appendix A.

3.1.2. Contact Database

A contact list of over 5,000 professionals from the southeastern U.S. was obtained from the Alabama T² program. These contacts were merged with the existing UAB Continuing Education database to establish the UTCA tech transfer client database. The new database was used to distribute outreach materials. In addition to the information for direct mailings a field was included to collect e-mail addresses for future use by UTCA and the Technology Transfer program. Currently 40% of the names have e-mail addresses.

3.1.3. Project Tracking Database

A database of UTCA projects was developed to describe the technology transfer activities of each project. The database serves as a tracking device to monitor the tech transfer results from UTCA projects as well as a way ensure that investigators fulfill their proposed tech transfer obligations. The projects were categorized in the database according to the subject areas (bridge, management, etc.). Tech transfer activities that occur during the year on any project can now be logged and the researchers can be recognized for fulfilling any tech transfer components of their project(s).
3.2. Outreach

The first year of the UTCA technology transfer program was very active. In addition to administrative activities, there was a concentrated outreach effort to create awareness and stimulate interest in the program. The outreach accomplishments are summarized in the following sections.

3.2.1. Web-based Survey

A website was developed to solicit specific input from UTCA clients on their research and technology transfer interests. It also allowed individuals to update their contacts information. A draft version of the website was presented to the Steering Committee at the kick-off meeting. After incorporating their comments the site was launched.

In addition to collecting updated contact information and e-mail addresses, the site included the questions shown in Table 3-1.

<table>
<thead>
<tr>
<th>Table 3-1 Sample questions from web-based survey</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Which of the following best describes your organization?</td>
</tr>
<tr>
<td>• Consulting firm</td>
</tr>
<tr>
<td>• Governmental organization</td>
</tr>
<tr>
<td>• Federal</td>
</tr>
<tr>
<td>• State</td>
</tr>
<tr>
<td>• Regional (MPO, etc.)</td>
</tr>
<tr>
<td>• County</td>
</tr>
<tr>
<td>• Municipal</td>
</tr>
<tr>
<td>• Academic</td>
</tr>
<tr>
<td>• Equipment supplier/vendor</td>
</tr>
<tr>
<td>• Construction (bridge, paving, etc.)</td>
</tr>
<tr>
<td>• Other, please describe</td>
</tr>
<tr>
<td>2. Which of the following best describes the type of work you do? (Please check all that apply)</td>
</tr>
<tr>
<td>Design</td>
</tr>
<tr>
<td>• Roadway</td>
</tr>
<tr>
<td>• Traffic signal</td>
</tr>
<tr>
<td>• Bridge</td>
</tr>
<tr>
<td>Planning</td>
</tr>
<tr>
<td>• Private development</td>
</tr>
<tr>
<td>• Public sector (corridor studies, master plans, etc.)</td>
</tr>
<tr>
<td>Transit</td>
</tr>
<tr>
<td>• Management</td>
</tr>
<tr>
<td>• Planning</td>
</tr>
<tr>
<td>• Operations (dispatch, etc.)</td>
</tr>
<tr>
<td>• Maintenance</td>
</tr>
<tr>
<td>• Construction</td>
</tr>
<tr>
<td>• Research</td>
</tr>
<tr>
<td>• Finance</td>
</tr>
<tr>
<td>• Administration</td>
</tr>
<tr>
<td>3. What are your primary interests in the UTCA Technology Transfer Program?</td>
</tr>
<tr>
<td>• Continuing Education Credits/Professional development hours</td>
</tr>
<tr>
<td>• Short courses and training opportunities to develop skills</td>
</tr>
<tr>
<td>• Learning about the latest research in the state</td>
</tr>
<tr>
<td>4. What types of information would you like from the UTCA Technology Transfer Research bulletin?</td>
</tr>
<tr>
<td>• A brief synopsis of several projects</td>
</tr>
<tr>
<td>• More in depth description of key projects</td>
</tr>
<tr>
<td>5. Any topics you would like to see covered (seminars, short courses, etc.) by the UTCA Technology Transfer Program?</td>
</tr>
</tbody>
</table>

Sample screen shots from the survey are presented in Figures 3-1 and 3-2. Figure 3-1 shows the general format of the survey page and its resemblance to the main UTCA page. Figure 3-2 shows the UTCA contact information and links to the member universities.
Figure 3-1. Screenshot of tech transfer survey opening page

Figure 3-2. Screenshot of tech transfer link to other campuses
Due to technical difficulties (server changes, etc.) the site has not yet been successful. Efforts are planned in the subsequent year to place the site on the main UTCA website rather than on a server at the University of Alabama at Birmingham (UAB).

3.2.2. **The Signal**

A research-oriented newsletter entitled, *The UTCA Signal*, was developed and distributed to the contact list. After being reviewed by the Steering Committee, 5,200 copies of *The Signal* were distributed via mail. In addition to introducing the tech transfer program, *The Signal* presented the link of the web-based survey so that interested parties could update their contact information and technology transfer interests. *The Signal* also served as an announcement for other outreach activities including a description and registration information for the Traffic Signal Design short course and the 1st Annual UTCA Symposium on Transportation. It is intended that future editions of *The Signal* will include research briefs of UTCA-sponsored projects, in addition to announcing outreach activities. An electronic version of *The Signal* was listed among the publications on the main UTCA website. The idea was to inform transportation professionals about UTCA research and to stimulate interest in the projects among practitioners throughout the State and region.

3.2.3. **Other Newsletters**

Other outreach activities included the incorporation of the Traffic Signal Design seminar and the 1st Annual UTCA Research Symposium in the Fall 2004 UAB Professional Development course catalog. This additional exposure for the UTCA Technology Transportation Program generated additional registrations for both the short course and the symposium. It also generated additional inquires and requests to be added to the mailing list developed under this project.

3.3. **Events**

3.3.1. **Short Course**

In response to suggestions from the Steering committee at its kick-off meeting, a new short course on traffic signal design was offered via UTCA tech transfer in October 2003. Birmingham was chosen as the location for the short course because of its central location, its classroom facilities and the availability of lodging. The course was a collaborative effort that utilized materials developed in conjunction with traffic signal designers from ALDOT. The course announcement was included in the general UTCA newsletter, *The Signal*, and a targeted mailing. The course enrollment exceeded expectations. In response to the interest, a second session was added – it also filled.

The course was scheduled in the School of Engineering Professional Development classroom at UAB, which held 16 participants. The initial offering date of October 15, 2003 filled within 6 days of the course announcement in *The Signal*. A second offering was scheduled for October 22, 2004 and served fourteen attendees. The participants included consultants, county engineers, city engineers and ALDOT personnel. Some non-transportation engineers attended the course as
well for the continuing education credits. A total of 22.5 CEUs and 225 PDHs were issued to course attendees. Attendees were issued a continuing education certificate for their records.

Not only was the course well attended, it was also well received. Attendees were requested to fill out a course evaluation form that rated the overall quality of the program, instructor’s expertise, communication skills, and responsiveness to questions. They were also asked whether they would recommend the program for other colleagues. A copy of the course evaluation survey is provided in Appendix B. The results of the survey are summarized in presented in Table 3-2.

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>Poor</th>
<th>Below Average</th>
<th>Satisfactory</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Quality of Program</td>
<td></td>
<td></td>
<td></td>
<td>13</td>
<td>17</td>
</tr>
<tr>
<td>Instructor’s Expertise</td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>Instructor’s ability to communicate ideas and concepts</td>
<td></td>
<td></td>
<td></td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Instructor’s Responsiveness to Questions</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>23</td>
</tr>
<tr>
<td>Course Description</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>Would you recommend this course to other colleagues</td>
<td></td>
<td></td>
<td></td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

In addition to the questions, participants were asked for comments. The comments are summarized in Table 3-3.

<table>
<thead>
<tr>
<th>Survey Question</th>
<th>Poor</th>
<th>Below Average</th>
<th>Satisfactory</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presentation was excellent.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Notes on two sides are easier to read. Show pictures of networks. Course needs to be offered annually.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would like more training on higher-level signal timing situations and signal design. Maybe some Traffic Impact analysis. Trip Distributions.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excellent program. Exactly what I needed to design traffic signals. Will there be a part 2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The program was very helpful and matched the description.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good for introduction.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Location was very convenient.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One of better seminars I have attended.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would like to see this as a 2-3 day more in-depth program.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excellent introduction course</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The best traffic signal class I have taken. Good job!</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good program. Much better understanding of ALDOT methods. More examples of signal layouts would be helpful.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Would like more ALDOT involvement, instructor had talked to them about their standards, however, having an ALDOT signal engineer as part of the program would be helpful – covered a lot of material for 1 day.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Good program. I would like to see more programs like this.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Programming traffic responsiveness operation would be very helpful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very informative, good presentation.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Informative.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>This program is probably the best class on basic traffic signals attended. Greatly recommended for all signal techs.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The responses from the evaluation support the need for an organized outreach effort for traffic engineering professionals. The subject matter and the instructor chosen for this course both rated above average to excellent. The comments also indicated a need for additional training at several levels on traffic signal design.
3.3.2. Research Symposium

The first annual UTCA research symposium was held on November 17, 2003. The symposium included presentations derived from UTCA-sponsored projects and was conducted in conjunction with a meeting of the UTCA Advisory Board. This afforded UTCA researchers the opportunity to interact with Board members and learn more about their research needs and priorities.

The symposium included 22 presentations from UTCA project investigators and nine presentations from students. Over 100 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. In conjunction with the symposium presentations, the UTCA advisory board held an open meeting and the Institute of Transportation Engineers Student Chapter at UAB held a reception for all attendees.

The objective of the symposium was to provide an annual forum for project investigators to highlight scholarly work, published findings and technology transfer components of UTCA projects. Two concurrent sessions were conducted providing attendees a variety of presentations to attend and on a broad spectrum of transportation issues. General topic areas followed the UTCA project focus areas and included Roadway Safety and Enforcement, Traffic Operations and Transportation Planning, Transportation Research Needs in Alabama, Congestion Mitigation, Air Quality, Preparing the Transportation Workforce, Bridge Inspection and Rehabilitation, and Roadway Asset Management. It also provided an opportunity for researchers, contractors, government entities and students to learn about current advances and to discuss future trends in the transportation field. They had an opportunity to discuss current research needs with UTCA advisory Board members and to gain valuable insight into the UTCA proposal writing and project selection process. A summary of the Symposium is presented in Table 3-4.
<table>
<thead>
<tr>
<th>Time</th>
<th>Arlington</th>
<th>Berkeley</th>
<th>Clarendon</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 – 8:15</td>
<td>Opening Remarks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8:30 – 10:30</td>
<td><strong>Roadway Safety and Enforcement</strong>&lt;br&gt;Red Light Running - Turner&lt;br&gt;Mobilizing Electronic Citations in Alabama - Parrish&lt;br&gt;Traffic Safety Analysis: A Data Mining Approach - Conerly&lt;br&gt;Traffic Safety Research Data from Care - Brown</td>
<td><strong>Bridge Inspection/Rehabilitation</strong>&lt;br&gt;Innovative Technologies for Rehabilitating Local Roads Bridges - Davidson&lt;br&gt;Bridge Inspector Sufficiency Rating Calculator – Hale&lt;br&gt;Modal validation and load rating of highway bridges using ambient traffic loads – Chen&lt;br&gt;Thermoplastic Composite Wrap for Vulnerability Reduction of Bridge Piers - Uddin&lt;br&gt;Integrity Monitoring of a Concrete Beam Structure Using Distributed Strain Sensor – Lin</td>
<td></td>
</tr>
<tr>
<td>10:30 – 10:45</td>
<td><strong>Traffic Operations and Transportation Planning</strong>&lt;br&gt;Access Management: Opportunities and Challenges- Sisiopiku&lt;br&gt;Travel Rate Indices for Alabama Cities – Anderson&lt;br&gt;Comparison of Traffic Simulation Software - Sullivan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10:45 – 12:00</td>
<td><strong>Roadway Asset Management</strong>&lt;br&gt;Evaluating the Design Safety of Highway Structural Supports - Fouad&lt;br&gt;Mechanical Properties and Durability of BCO and UTW Concrete - Delatte&lt;br&gt;Roadway Asset Management: Pavement Condition Management System - Hale</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><strong>Panel Discussion - Dr. Dan Turner and UTCA Advisory Board</strong>&lt;br&gt;Transportation Research needs in Alabama - How to Write Your Project</td>
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<td>2:00 – 3:15</td>
<td><strong>Air Quality</strong>&lt;br&gt;Transportation &amp; Air Quality in Alabama - Williamson&lt;br&gt;Reducing Particulate Exposure through Diesel Bus Retrofits – Hammond&lt;br&gt;Treatment of Synthetic Diesel Exhaust Using Catalysts/Zeolites - Gill</td>
<td><strong>Student Presentations</strong>&lt;br&gt;1) Web-based licensing for state airports – Jon Williams&lt;br&gt;2) Roller compacted concrete pavement mix design procedure using the Gyratory compactor – Nader Amer&lt;br&gt;3) A novel design and experimental study of a rolling contact fatigue testing system for precision components of advanced vehicles – Dale Schwach&lt;br&gt;4) Increasing the awareness of transportation engineering for underrepresented minorities and females – Shalana Brown&lt;br&gt;5) Feasibility study of the introduction of bus transit system between Tuscaloosa and Birmingham – Sharif Ullah</td>
<td><strong>UTCA Advisory Board Meeting</strong></td>
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<td>3:15 – 3:30</td>
<td>Break</td>
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<td>3:30 – 4:30</td>
<td><strong>Preparing the Transportation Workforce</strong>&lt;br&gt;Aviation Transportation Internship 2000 - Haynes Success Stories Using Real-Time Interactive Classrooms – Jones&lt;br&gt;Tech Transfer in the Coming Year - Jones</td>
<td><strong>Student Presentations</strong>&lt;br&gt;6) &quot;Development of an intermodal management system using GIS components with integration of environmental justice elements&quot; - Charles Robinson&lt;br&gt;7) &quot;Verifying the quality of the accident analysis data using statistical quality methods and tools&quot; - Rachna Narem&lt;br&gt;8) &quot;Regional traffic simulation for emergency preparedness&quot; - Sameer Patharkar&lt;br&gt;9) &quot;Is Greenshield’s Model valid for the Huntsville area&quot; - Jeff Wilson</td>
<td><strong>UTCA Advisory Board Meeting</strong></td>
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<td>4:30 – 5:30</td>
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<td><strong>Reception</strong>&lt;br&gt;Sponsored by UTCA and the UAB ITE Student Chapter</td>
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Section 4
Conclusions and Recommendations

Obtaining the database from the Auburn T² Program was a good start toward establishing a UTCA contact database. The new database was developed from the Auburn information and new names were captured through seminar offerings and the symposium. It is recommended that the database be examined to make sure it is current and is reaching an appropriate audience. It is also recommended that new methods be investigated of methods to obtain names and e-mail addresses of interested parties, and that the web survey be implemented in 2004.

The research-oriented newsletter, The Signal, was well received by the Steering Committee and its ultimate audience. It worked well as a multipurpose vehicle for delivering UTCA project briefs and UTCA outreach activities. It did not serve the goal of obtaining new names and contact information into the original web survey. This may have been due to website problems. It is recommended that future Signal issues be published at least bi-annually and coordinated with dates of outreach activities.

The short course offering was very successful. All attendees were pleased with the course content and instruction. The evaluations indicated a demand for additional courses in traffic signal design as well as related areas in traffic operations. Having the courses in Birmingham was convenient for participants throughout Alabama, and the course fee structure was very attractive to participants. It is recommended that the course evaluation survey be tailored for each course, so that it is applicable to the materials in individual courses.

The First Annual UTCA Research Symposium was very successful. This gave many project investigators a chance to showcase their work and to fulfill the tech transfer obligations of their projects. It is recommended that the format stay the same for the 2004 symposium.
Section 5
References

APPENDIX A

Technology Transfer Steering Committee Materials

- Roster of UTCA Technology Transfer Steering Committee Members
- Letter Used to Invite Steering Committee Members to Initial First Meeting
- Agenda for Initial Technology Transfer Steering Committee Meeting
- Cover Letter – Minutes of Initial Technology Transfer Steering Committee Meeting
Roster of UTCA Technology Transfer Steering Committee Members

Jim Meads, P.E.
Vice President
Sain Associates
Birmingham

Tim Taylor, P.E.
Asst. Maintenance Engineer-Traffic Operations
State Traffic Engineer
Alabama Department of Transportation
Montgomery

James Moore
Transportation Planner
Huntsville Planning Department

Donald Vaughn
Assistant Chief Engineer
Alabama Department of Transportation
Montgomery

W. Frank Topping
Bureau Chief
Human Resources Bureau
Alabama Department of Transportation
Montgomery

Willie Franklin
Assistant Director
Training Bureau
Alabama Department of Transportation

Jeff Brown
R & D Engineer
Research Bureau
Alabama Department of Transportation
Montgomery

Bill Foisy
Transportation Director
Regional Planning Commission of Greater Birmingham

Joe D. Wilkerson
Division Administrator
Federal Highway Administration
Montgomery

Fred Hawkins
Transportation Manager
USInfrastructure, Inc.
Birmingham

Virginia Sisopiku, Ph.D.
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Assistant Professor
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Jay K. Lindly, Ph.D., P.E.
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Daniel S. Turner, Ph.D., P.E.
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Jay U. Sterling, Ph.D., CPA
Senior Research Scholar
Center for Business & Economic Research
Culverhouse College of Commerce and Business Administration
The University of Alabama

Fouad Fouad, Ph.D., P.E.
Chair and Professor
Dept. of Civil & Environmental Engineering
The University of Alabama at Birmingham
Birmingham

Vijaya Gopu, Ph.D.
Chair & Professor of Civil & Environmental Engineering
The University of Alabama in Huntsville
Huntsville

April 21, 2001
Committee Member  
Address

Committee Member:

I am pleased to invite you to the kick-off meeting of the UTCA Technology Transfer Steering Committee. We are planning to hold the meeting on Thursday, May 1st at 10:30 AM. After the initial business of the meeting, we would like to have a brainstorming session over lunch and wrap things up by 1:00 PM. The meeting will be held at Hill University Center at the corner of University Blvd and 14th Street South in the President’s Conference Room (Room 325). I have included a map that shows both the meeting location and available parking (Lot 15A at the corner of University Blvd and 13 St So.).

If you have any questions about the meeting or any arrangements, please feel free to contact me. Also, please let me know if you can attend (via e-mail is fine) by Monday, April 28th so I can finalize lunch arrangements. Thanks you for your support and I look forward to seeing you next week.

Regards,

Steven L. Jones, Jr.
Agenda for Initial Technology Transfer Steering Committee Meeting

UTCA Technology Transfer Steering Committee Kick-off Meeting
May 1, 2003

- Introductions
- Project Background
- Steering Committee
- Review of Other Tech Transfer Programs
- Develop Client Database
- Client Survey
- Outreach
- Results
- Next Meeting
June 25, 2004

Committee Member
Address

Dear Committee Member:

Please find enclosed a copy of the minutes from the May 1st kick-off meeting of the UTCA Technology Transfer Steering Committee. As you were unable to attend the meeting, I have also included copies of the handouts. Enclosed you will find:

- Copies of the presentation,
- A list of tasks associated with the UTCA Tech Transfer project,
- A list of UTCA projects,
- A sample of client entries collected for the database,
- A draft of a web-based survey to collect information about potential tech transfer clients,
- A sample “research brief” as described in the minutes,
- A sample certificate of continuing education credits as issued through a UTCA tech transfer program (seminar, etc.), and
- Examples of scholarly papers on technology transfer.

Since the meeting we have been working to develop a working client survey webpage. The webpage is now functioning and can be viewed at http://www.eng.uab.edu/cee/utca/. If you have comments about the webpage, please feel free to call me. Alternatively, you can simply place your comments in the space provided on the webpage and submit. We will check for comments while we are finalizing plans to formally launch the page in mid-July.

We are currently finalizing the premiere issue of The Signal and plan to have it out by mid-July as well. As indicated in the kick-off meeting (and in the sample draft), we will focus on the tech transfer project and one other UTCA effort. We have reviewed completed UTCA projects and have narrowed the field to four candidates for inclusion into The Signal. I will send an e-mail with titles and information from the four projects to the steering committee members. That will allow the committee to vote on the project they choose via e-mail.

If you have any other questions about the meeting or other materials please feel free to contact me.

Regards,

Steven L. Jones, Jr.
# APPENDIX B

## 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.

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<th>RESPONSE</th>
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1. **Overall quality of program**
   - Poor
   - Below Average
   - Satisfactory
   - Good
   - Excellent

2. **Instructor’s expertise in this topic**
   - Poor
   - Below Average
   - Satisfactory
   - Good
   - Excellent

3. **Instructor’s ability to communicate ideas and concepts**
   - Poor
   - Below Average
   - Satisfactory
   - Good
   - Excellent

4. **Instructor’s responsiveness to attendees question**
   - Poor
   - Below Average
   - Satisfactory
   - Good
   - Excellent

5. **Facilities and classroom**
   - Poor
   - Below Average
   - Satisfactory
   - Good
   - Excellent

6. **Services provided by Engineering Professional Development staff**
   - Poor
   - Below Average
   - Satisfactory
   - Good
   - Excellent

7. **Course description in brochure**
   - Poor
   - Below Average
   - Satisfactory
   - Good
   - Excellent

8. **Would you recommend this class for other colleagues?**
   - Yes
   - No

9. **Comments about the program**
   _______________________________________________________

   _____________________________________________________________________________________

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** ________________________________