

**RSPA**  
**SEMI-ANNUAL REPORT**  
January 1 – June 30, 2004  
(TEA-21)

For the  
**UNIVERSITY TRANSPORTATION CENTER FOR ALABAMA**

A University Transportation Center  
Reporting to

The Research and Special Programs Administration  
US Department of Transportation

July 31, 2004

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2004 RSPA Semi-Annual Report  
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**A. SUCCESS STORIES**

**Introduction by Executive Director**

The University Transportation Center for Alabama (UTCA) is pleased to provide this Semi-Annual Report, which is a snapshot of its operations. The Center is a joint effort of the three campuses of The University of Alabama System: The University of Alabama (UA) located in Tuscaloosa, The University of Alabama at Birmingham (UAB), and The University of Alabama in Huntsville (UAH).

The highlight of the first six months of 2004 has been UTCA's move into Shelby Hall, a 225,000 square foot interdisciplinary research and graduate education facility (see the first "success story" following this introduction). Another highlight was passing the \$25 million mark in project funding in a little more than five years of operation. As always, the hallmark of the Center's operation is wide network of talented, interdisciplinary faculty members recruited from all three campuses to participate in transportation education, research, and technology transfer activities. These and many other indicators of success may be found on the following pages.

It is my constant pleasure to work with the many individuals who contribute to UTCA, and to see their many efforts benefit transportation stakeholders in Alabama and the region.

Sincerely,

Daniel S. Turner  
Director of UTCA

## 1. New Home for UTCA

On May 14, 2004, the University of Alabama dedicated Shelby Hall, named in honor of Senator Richard and Dr. Annette Shelby. It is a 225,000 square foot interdisciplinary graduate instruction and research facility. UTCA has moved into its administrative suite, where it is providing services for four transportation-related centers that are sharing 11 laboratories, faculty offices, graduate student offices, and an Executive Teleconference facility. The centers are:

- UTCA – University Transportation Center for Alabama
- CAVT – Center for Advanced Vehicle Technology
- CRDL – Care Research Development Laboratory
- CBER – Center for Business and Economic Research (transportation programs)

The four centers have common computational research capabilities, in particular for safety and data mining aspects of transportation. The centers have worked cooperatively for several years, but intend to carry this effort even further by conducting joint research projects, utilizing faculty and graduate students from multiple disciplines on individual projects to optimize results. The experiences of the four centers in planning the office suite and labs, ordering and installing equipment, and beginning operations have already proven very beneficial.

**Shelby Hall under construction**



**Completed, rotunda view**



**Completed, UTCA offices on second floor**



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## 2. Another Successful Summer Institute for Middle School Students

For the fifth consecutive summer, Dr. Kate Leonard of UAH has conducted her Gearing Up for Transportation Engineering Program (GUTEP) for middle school students, with preference given to women and underrepresented groups. Over this period, 150 students have participated in this unique educational experience. The consistent objective of the program has been to provide tomorrow's transportation workforce, by influencing students to consider careers in transportation engineering through a fun learning experience in an academic setting.

The participants for the week-long event learned basics of materials, structures, safety and other transportation engineering topics by performing hands-on experiments. A new experiment for this year was building a water wheel that produced enough electricity to activate a light emitting diode. Mr. William Byrd, a national award winning science teacher from Riverton Middle School, helped to formulate and refine this project. The water wheel project will now go "on the road" to help teachers demonstrate water power and alternative energy to their students.



**Dr. Leonard's students with their solar-powered cars**

Also new this year was an "alumni program" for previous GUTEP participants. Twelve former students returned to work with faculty members for a day. For example, they learned how to use GPS to locate areas on the UAH campus and then downloaded their data onto a digital map with Dr. Michael Anderson. Another day they designed, built, and raced solar-powered cars with Dr. Kate Leonard. We are looking forward to the day when these motivated students will be old enough to enter the transportation workforce.

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### **3. Bridge Seminar Showcases UTCA Research Successes**

The UTCA technology transfer program markets the skills of faculty members who have conducted UTCA projects, and shares their successes with stakeholder groups across the state and region. One such effort that is drawing strong attention is a bridge conference scheduled for Friday, July 23.

Over the past five years, 22 bridge projects have been conducted by UTCA. They have dealt with topics like prioritization of rehabilitation and replacement of county bridges, new materials for bridge decks, repair techniques for structural members, standardized bridge systems, decreased structural vulnerability to catastrophic events through application of new materials, development of multimedia resources for bridge engineers and bridge inspectors, and many similar topics.

One of the exciting aspects of the upcoming seminar is that it brings together several stakeholders. For example, the cosponsor of the event is the Alabama Bridge Construction Association. The keynote address is being given by the structural engineer of the Alabama Division FHWA. The other presentation will be given by four UTCA professors (representing the University of Alabama, the University of Alabama at Birmingham, and the University of Alabama in Huntsville - all three of the campuses involved in UTCA), a doctoral graduate student and an assistant county engineer (who was a UTCA graduate student for the project he will be presenting).

We anticipate that such “hot topic” seminars will be conducted annually as research results continue to be generated in the future.

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#### 4. Success in Implementation of Research

Dr. Nasim Uddin of UAB has developed a process to strengthen existing bridge members by applying innovative materials. The process involves externally bonded carbon fiber reinforced polymer (CFRP) fabrics retrofitted to concrete bridge members using an improved repair and hardening technique. The technique is called vacuum assisted resin transfer molding (VARTM), and it is very efficient. He conducted a demonstration project for the Alabama Department of Transportation (ALDOT), repairing a simple span concrete bridge girder on I-565. This was the first known application of VARTM in the field, and resulted in a complete repair within two days with no interruption of traffic.

The demonstration project (project 03405) was funded by ALDOT, and companion projects were funded by UTCA to investigate the feasibility of the method, to establish material performance characteristics, and to develop optimum VARTM application procedures:

- Project 03229, Vulnerability Reduction for Bridge Structures
- Project 03405, I-565 Bridge Girder Repair with VARTM
- Project 04210, Low Cost Thermoplastic Wrap to Enhance Bridge Safety

The repair process involves placing CFRP at the desired location on a structural member, then introducing a resin to bond the fibers together and to the concrete. Dr. Uddin's research found that VARTM had several processing advantages like saving the processing time, uniform resin application, intimate contact between each layer of CFRP and concrete substrata, good consolidation to remove voids and dry spots, higher fiber volume fraction and greater wettability of the fiber. Based upon his research and the success of the demonstration project, ALDOT expressed interest in funding the development of specifications and a design method for the technique.



I-565 bridge girder, ready for repair



Girder after VARTM repair

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## 5. Student Success, One Example

UTCA is proud to work with outstanding young men and women, and enjoys the benefits of their hard work and productivity. A good example is Mr. Jesse Creel of Jackson, Alabama. Jesse is a senior civil engineering student who has completed two courses in transportation. He began working for UTCA as an Undergraduate Research Assistant in May of this year. His primary assignments have been: (1) developing background information for a UTCA project that is implementing portions of the AASHTO Strategic Highway Safety Plan for the Alabama Department of Transportation, (2) helping write the final report for that project, (3) reviewing other draft final reports for style, format and content, (4) helping with the move of UTCA to Shelby Hall, and (5) helping prepare PowerPoint presentations for transportation courses. Obviously, he has been a versatile and busy young man.



**Mr. Jesse Creel, Undergraduate Research Assistant, with his ever-present smile**

Other organizations have recognized the direction of his life and the quality of his work. This summer he received two important scholarships, both earned through competition with students from five universities in the state. The Alabama Section of the Institute of Transportation Engineers awarded him its \$2500 Billy Jones Memorial Traffic Engineering Scholarship (one of two named scholarships given by the organization). The Alabama Road Builders Association awarded him its \$1000 Ed and Charlotte Rogers Scholarship. Way to go, Jesse! We are proud of you and appreciate your work.

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## 6. UTCA Success Spins Off a New Research Center

The success of UTCA researchers David Hale, Shane Sharp, Joanna Hale and Alisa Malloy is leading to the development of a new research Center at the University of Alabama. Over a three year period, these researchers have conducted multiple projects for the Alabama Department of Transportation (ALDOT), some funded by UTCA and some funded by ALDOT.

- Project 01459, ALDOT and GASB 34 – Phase I
- Project 02114, GIS-Resource Allocation Visualization
- Project 02411, GASB-34 Compliance: Phase II
- Project 03112, Bridge Decay/Maintenance Forecasting
- Project 03411, Web Enable Bridge Sufficiency
- Project 03416, Pavement Management System Review
- Project 03417, GASB 34 Compliance – Phase III (Highways)
- Project 03418, GASB 34 Compliance – Phase IV (Bridges)
- Project 03419, Trans Network: Data-Analysis-Visualization

The initial work assisted ALDOT in preparing its mandatory GASB-34 report on fixed assets. But the success of early efforts lead to radical expansion of the concept, to help ALDOT use its infrastructure condition data as a management tool for decision makers.

In working with data for pavement, bridges, and similar items, the researchers cleaned and “repaired” old data sets, found methods to bridge between data collected by manual and automated methods, and otherwise enhanced the data. The most important part of their work was the creation of a decision-tool system to assist managers in selecting strategies for allocating funding between maintenance, rehabilitation, or replacement of infrastructure.

The technology and analytical processes used in these projects are transportable to other types of infrastructure, so The University of Alabama is creating an “aging infrastructure systems center for excellence.” It will be build around the expertise of these researchers, supplemented by a large interdisciplinary team of faculty members with experience in other types of infrastructures systems.

As part of the center’s operation, University officials have already made plans for a multi-disciplinary doctoral program that will emphasize aging infrastructure analysis and treatment. Students in the program will intern with industry, government agencies, and research programs in other academic programs.

In summary, a series of UTCA research projects created a tool and carried it to implementation. But even better, they created a methodology and a technology that can educate tomorrow’s practitioners while it is being applied to pressing infrastructure problems facing our nation.

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## **7. Enhancement of UTCA Administrative Management**

The administrative management of UTCA is complex. The Director is located in Shelby Hall at the University of Alabama (UA). The three Associate Directors are located in the civil engineering departments at the University of Alabama at Birmingham (UAB) and the University of Alabama in Huntsville (UAH), and in the Culverhouse College of Commerce and Business Administration at UA. The Director and Associate Directors form the Executive Committee, which manages UTCA. This arrangement has been quite satisfactory in giving all campuses an opportunity to participate in all policy and management functions. However, at times it has been awkward and time consuming. Part of this is because of administrative differences between campuses (formal contracts required for projects between campuses, different nomenclature and techniques for project accounting, different semester class schedules, etc.). The four individuals who have managed UTCA have become close friends and have willingly dedicated extra time to ensure the success of the center; but all desire a simpler form of management.

To streamline management, UTCA is moving its primary management functions to the Internet. Detailed data for individual projects (project number, contract number, financial account/matching account numbers, percent completed, funds extended, status of quarterly progress reports, status of final reports, etc.) will be available on the web for Associate Directors on their own campuses. This will improve their ability to communicate with individual faculty members and to oversee the work ongoing on individual campuses. This is particularly important when dealing with new faculty members and those who have never conducted research before (and recruiting such faculty members is one of UTCA's priorities).

The new system will save management time and improve the ability to generate useful, timely results from each project. In addition, the goal is to eventually configure it to automatically generate basic information for the Center's Annual and Semi-annual reports.

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## 8. Technology Transfer – Papers Result from UTCA Projects

Dr. Fouad Fouad and Ms. Elizabeth Calvert of UAB have completed two successful projects, with a third project underway, dealing with new design criteria that support highway structures that support signals, signs and luminaries. The researchers have applied the new national wind and fatigue criteria to such structures in Alabama, and have compared structures designed by the most recent criteria to structures designed by previous criteria in the three projects:

Project 00218 Evaluating the Design of Highway Sign Supports  
Project 02216 AASHTO 2001 Design of Cantilevered Sign Supports  
Project 04219 New Design Criteria for Traffic Signal Support Structures

As part of their technology transfer efforts from the projects, the researchers presented three papers on innovations in the design of highway sign structures at the Annual Meeting of the Transportation Research Board (TRB) in January 2004 in Washington, DC. The papers, listed below, will be published by TRB.

- Fouad, F. H. and Calvert, Elizabeth, Davidson, James S., and Delatte, Norbert, “Proposed Revisions to AASHTO 2001 *Supports Specifications*,” Proceedings of the 83<sup>rd</sup> Transportation Research Board Annual Meeting, Washington, D.C., January 2004, 12 pp.
- Fouad, F. H. and Calvert, Elizabeth, “Impact of the New Wind Load Provisions on the Design of Structural Supports,” Proceedings of the 83<sup>rd</sup> Transportation Research Board Annual Meeting, Washington, D.C., January 2004, 23 pp.
- Delatte, Norbert, Calvert, Elizabeth A., and Fouad, F. H., “Anchor Bolt Design for Support Structure Foundations,” Proceedings of the 83<sup>rd</sup> Transportation Research Board Annual Meeting, Washington, D.C., January 2004, 21 pp.

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## **9. Success in Supporting Access Management Service Project**

In 2003, two individuals with ties to UTCA helped develop a short course on access management. This was a service project by the Alabama Section of the Institute of Transportation Engineers (ALSITE) for ALDOT. A pilot offering of the course was given to ALDOT managers and local government officials. Dr. Dan Turner, UTCA Director, was a member of the task committee that prepared the original materials. Mr. Joe Meads, practitioner advisor to the UAB Student Chapter of ITE, was also a member of the task committee.

Since that time, these individuals have given many access management presentations at meetings of transportation groups to build support for the concept. Examples include the Conference on the Future of Highway 280, the Alabama Section of the American Planners Association, the Annual Meeting of the Alabama Association of Regional Councils, and the ALDOT Maintenance Management Meeting.

To improve the training materials developed by ALSITE, Dr. Virginia Sisiopiku of UAB conducted UTCA project 03235. Her project involved preparation of course notes and development of visual aids. The enhanced course now offers an overview of access management options; potential impacts on safety, mobility, accessibility, and economic growth; and ways to achieve maximum benefits through access management. The project deliverables included a narrative in notebook-format, notebook labels, a PowerPoint presentation for each chapter, checklists for practitioners, and a short course evaluation form. Parts of these materials were used during the delivery of an access management presentation at the ASITE Annual Meeting in June 2004.

The synthesis of access management materials by Dr. Sisiopiku during this project led to the development and publication of a paper titled "Access Management Techniques and Issues," authored by Dr. Sisiopiku and Mr. Xiaohong Tang.

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## **B. RESEARCH PROJECT STATUS**

Table 1: New Projects (Since 2003 Annual Report)

Table 2: Projects Underway

Table 3: Projects Completed

Table 4: Non UTC Projects

**Table 1 New Projects (since 2003 Annual Report)**

<b>Project No.</b>	<b>Project Title</b>	<b>PI</b>	<b>Start-Date</b>	<b>End-Date</b>
04101	Minimizing Highway Const. Emissions	Williamson, D.	1-Jan-04	31-Dec-04
04107	Data Mining to Improve Traffic Safety	Smith, R.	1-Jan-04	31-Dec-04
04108	Impact of Sprawl on Commuting in AL	Weber, K.	1-Jan-04	31-Dec-04
04111	Web Enabled Bridge Sufficiency	Malloy, A.	1-Jan-04	31-Dec-04
04112	NPDES Technology Transfer	Johnson, P	1-Jan-04	31-Dec-04
04115	Advanced Transportation Inst. 2004	Turner, D.	1-Jan-04	31-Dec-04
04116	Transportation Labs Shelby Hall	Turner, D.	1-Jan-04	31-Dec-04
04117	Drainage Conservation Design	Pitt, R.	1-Jan-04	31-Dec-04
04203	Freeway Ramp Metering	Sisiopiku, V.	1-Jan-04	31-Dec-04
04210	Thermoplastic to Enhance Bridge Safety	Uddin, N.	1-Jan-04	31-Dec-04
04213	Technology Transfer Continuation	Jones, S.	1-Jan-04	31-Dec-04
04215	Alternative Project Delivery Systems	Rizk, T.	1-Jan-04	31-Dec-04
04219	Design for Traffic Signal Support Structures	Fouad, F.	1-Jan-04	31-Dec-04
04301	Transportation Summer Institute 2004	Leonard, K.	1-Jan-04	31-Dec-04
04303	County Road Pavement Management System	Anderson, M.	1-Jan-04	31-Dec-04
04306	Student Seminar and TRB Attendance	Anderson, M.	1-Jan-04	31-Dec-04
04310	Data Mining, Traffic Safety & Rd Conditions	Graves, S.	1-Jan-04	31-Dec-04
04312	Multimedia Tech. for Bridge Repair; Final	Toutanji, H.	1-Jan-04	31-Dec-04
04401	Vehicle Fleet Database & Asset Mgmt	Anderson, M.	24-Sep-03	30-Apr-03
04402	Sections 5310 & 5311 FTA Compliance	Anderson, M.	24-Sep-03	23-Sep-05
04403	Statewide Implementation of MIMS	Anderson, M.	24-Sep-03	23-Sep-06
04404	Off-Road Accidents and Safety Plan Dev.	Turner, D.	1-Dec-03	31-May-05
04405	Evaluation of Profiled Pavement Markings	Lindly, J.	5-Nov-03	30-Sep-04
04406	Characterizing Work Zones	Lindly, J.	1-Nov-03	31-May-04
04407	Traffic Signal Design/Timing Manual	Jones, S.	3-Dec-04	4-Dec-04

**Table 2: Projects Underway**

<b>Project No.</b>	<b>Project Title</b>	<b>Faculty Name</b>	<b>Start Date</b>	<b>End Date</b>
01105	Emergency Evacuation Procedures	Triche, M.	1-Jan-01	31-Oct-02
02201	Catalysts/Zeolites for Diesel Exhaust	Peters, R.	1-Jan-01	31-Mar-03
02205	Trans Improvement Through Telework	Grimes	1-Jan-01	31-Jan-03
02215	Hazmat Crash Education	Clark, S.	1-Jan-01	30-Jun-03
02217 <sup>1</sup>	Traffic Simulation Software Comparison	Jones, S.	1-Sep-02	31-Dec-03
03102	GIS & Crash Data	Graettinger, A.	1-Jan-03	31-Dec-03
03105	PM2.5 Emissions from B'ham Roads	Williamson, D.	1-Jan-03	31-Dec-03
03112	Bridge Decay/Maintenance Forecasting	Sharpe, S.	1-Jan-03	31-Dec-03
03114	ITS Applications for Trans Infrastructure	Turner, D.	1-Jan-03	15-Aug-04
03228	Stability of Curved Bridges	Davidson, J.	1-Jan-03	31-Aug-04
03229	Vulnerability Reduction for Bridges	Uddin, N.	1-Jan-03	1-Aug-04
03301	Multimedia Tech - Timber Bridge Repair	Toutanji, H.	1-Jan-03	31-Jul-04
03304	GIS to Accompany CARE	Gholston	1-Jan-03	1-Aug-04
03402	Proof Load Test Concrete Bridges	Richardson, J.	1-Jan-03	31-Dec-03
03405	I-565 Bridge Girder Repair- VARTM	Uddin, N.	1-Jan-03	31-Dec-03
03412	CO Air Quality Model	Jones, S.	14-Feb-02	14-Feb-04
03416	P'vmt Condition Management Update	Hale, D.	1-May-03	30-Jun-004
03417	Roadway GASB	Hale, D.	1-Aug-03	31-May-04
03418	Bridge Management System	Hale, J.	1-Aug-03	31-May-04
03419	Statewide Needs Analysis	Hale, D.	1-Apr-03	/31-Dec-03

<sup>1</sup>Project 02301 was previously classified as a UTC project, but has been deleted and replaced by project 02217.

**Table 3: Projects Completed**

<b>Project No.</b>	<b>Project Title</b>	<b>Faculty Name</b>	<b>Start Date</b>	<b>End Date</b>
99101	Co. Bridge Replace Guide, Phase-1	Triche, M.	1-Jul-99	15-Aug-00
99104	Rural Public Transit Systems	Lindly, J.	1-Jul-99	15-Aug-00
99113	Crash Data Mining and Visualization	Conerly, M.	15-Aug-99	15-Aug-00
99115	Improving Crash Locations w/ GPS/GIS	Graettinger, A.	1-Jul-99	31-Aug-00
99118	Multidisciplinary Transportation/Logistics	Sterling, J.	1-Oct-99	30-Sep-00
99211 <sup>1</sup>	Exhibit at McWane Center, Outreach to K-12	Lalor, M.	1-Jan-00	Canceled
99236	Trans Programs via Distance Learning	Lalor, M.	1-Jul-99	30-Sep-03
99238	Drivers with Diminished Capabilities	Owsley, C.	1-Jul-99	28-Feb-01
99244	GIS-Based Hazardous Materials. Routing	Pitt, R.	1-Aug-99	31-Dec-00
99247 <sup>2</sup>	Concrete Pavement Short-course	Delatte, N.	1-Jul-99	30-Jul-00
99249	Multi-campus Trans Education Program	Delatte, N.	1-Jan-00	31-Dec-00
99250	Crashes in Minorities/High Risk Groups	Wynn, T.	1-Jan-99	31-Dec-00
99252	UTCA & Other Safety-Related Centers	Davidson, J.	1-Sep-99	30-Nov-00
99324	3-D Safety Alarms for Drivers	Bliss, J.	1-Jul-99	31-Aug-00
99328 <sup>3</sup>	Tranplan and GIS Support	Anderson, M.	1-Jul-99	28-Feb-01
00102	Video for Traffic Mgmt. and Safety	McFadden, J.	1-Jan-00	31-Mar-01
00103	ITS Expert Services	McFadden, J.	1-Jan-00	31-Mar-01
00107	Work Zone Enhancement Short course	Lindly, J.	1-Jan-00	31-Mar-01
00108	Air Quality Aspects of Traffic Mgmt.	Williamson, D.	1-Jan-00	31-Dec-00
00110	Traffic Mgmt./Emergency Communication	Bunn, M.	1-Jan-00	31-Dec-00
00202	Materials Short course/ITS Short course	Delatte, N.	1-Jan-00	31-Dec-00
00214	Health/Public Safety -Hazardous. Materials	Becker, S.	1-Jan-00	31-Dec-00
00304	Transportation Summer Institute 2000	Leonard, K.	1-Jan-00	31-Dec-00
00305	Cementitious Materials for Bridge Decks	Toutanji, H.	1-Jan-00	31-Jul-02
00456	Managing Construction Bidding	Turner, D.	19-Jan-00	19-May-01
00461	Highway Capacity Manual	Turner, D.	14-Dec-00	15-Aug-02
00462	MUTCD	Turner, D.	14-Dec-00	4-May-02
00463	Video Tech/Traffic Mgmt	Graettinger, A.	5-Mar-01	30-Jun-02
00465	Work Zone Safety	Lindly, J.	2-Jan-01	2-Jan-02
00466	MOBILE-6	Williamson, D.	4-Dec-00	4-Dec-01
00467	Computer-based Sign Support Design	Davidson, J.	1-Oct-00	31-Feb-02
01110 <sup>4</sup>	Intercity Bus Service Study	Lindly, J.	1-Jan-2001	2-May-02
01111	Aviation Transportation Internship	Haynes, C.	1-Jan-01	31-Dec-01
01112	Maintenance System for Stormwater	Durrans, R.	16-May-01	15-Oct-02
01216	Advanced Public Trans in Birmingham	Jones, S.	1-Jan-01	30-Sep-03
01218	Flowable Fill – Local Bridge Replacement	Davidson, J.	1-Jan-01	30-Sep-03
01220	Concrete Overlays and Repairs	Delatte, N.	1-Jan-01	30-Sep-03
01326	Transportation Summer Institute 2001	Leonard, K.	1-Jan-01	30-Sep-03
01327	New Procedure for Bridge Deck Evaluation	Toutanji, H.	1-Jan-01	30-Sep-03
01328 <sup>5</sup>	Trip Generation & Travel Rate Indices	Anderson, M.	1-Jan-01	30-Jun-04
01453	Utility Pole Safety Program	Lindly, J.	15-Feb-01	15-Mar-02
01461	Software Support for ALDOT – Phase 3	Brown, D.	1-May-01	10-May-02
01465	Evaluate Profile Pavement Markings	Lindly, J.	13-Aug-01	13-Aug-03
02101	Web-Based Airport Licensing	Haynes, C.	1-Jan-02	31-Dec-02
02113	Adv. Transportation Summer Institute	Turner, D.	1-Jan-02	31-Dec-02
02114	GIS-Resource Allocation Visualization	Hale, D.	1-Jan-02	31-Dec-02
02115	Crash Safety - Data Mining Approach	Hardin, M.	1-Jan-02	31-Dec-02
02209	High School Trans Education Program	Jones, S.	1-Jan-02	31-Dec-02



**Table 3: Projects Completed (continued)**

Project No.	Project Title	Faculty Name	Start Date	End Date
02304	EDTR for Bridge Strain Monitoring	Lin, M.	1-Jan-03	31-Dec-03
02402	Evaluation of Retroreflectometers	Lindly, J.	1-Nov-01	1-Jun-02
02403	Bridge Database and Data Retrieval	Graettinger, A.	14-Feb-02	14-Nov-02
02409	Adj. of Pavement Life Cycle Cost Factors	Lindly	4-Jun-02	30-Jun-03
02410	Revise System of Airport Licensing	Haynes	4-Jun-03	4-Sep-03
02411	Phase 2: GASB-34 Compliance	Hale	12-Feb-02	31-May-03
03103	St. Clair Co. Trans Needs Assessment	Lindly, J.	1-Jan-03	31-Dec-03
03108	Runway Topo Considerations in Airports	Haynes, C.	1-Jan-03	31-Dec-03
03113	Advanced Transportation Institute II	Turner, D.	1-Jan-03	31-Dec-03
03217	Technology Transfer Program	Jones, S.	1-Jan-03	31-Dec-03
03226	Regional Traffic Simulation	Sisiopiku, V.	1-Jan-03	31-Dec-03
03235	Access Management Training	Sisiopiku, V.	15-Jul-03	15-Jul-04
03303	Sensor Networks for Auto Tracking	Yoo, S.	1-Jan-03	31-Dec-03
03305	Transportation Summer Institute 2003	Leonard, K.	1-Jan-03	31-Dec-03
03306	Hand-held Explosives Sensor System	Bosco, C.	1-Jan-03	31-Dec-03
03308	Student Funding for TRB	Anderson, M.	1-Jan-03	31-Dec-03
03309	Expert Sys – Drilled Shaft Const Inspect	Gopu, V.	1-Jan-03	31-Dec-03
03401	Study of 511 Traveler Information System	Lindly	1-Jan-03	31-Dec-03
03404	Computerize ALDOT R&D Library	Lindly	1-Jan-03	31-Dec-03
<sup>1</sup> Partially funded by UTC monies; partially funded by other sources. Cancelled in early 2001 by UTCA Executive Committee				
<sup>2</sup> Partially funded by UTC monies; partially funded by other sources.				
<sup>3</sup> Projects 99328 and 99458 were initially reported as separate projects. They were merged and are now reported as project 99328				
<sup>4</sup> Projects 01110 and 01452 were initially reported as separate projects. They were merged and are now reported as project 01110.				
<sup>5</sup> Projects 01328 and 01451 were initially reported as separate projects. They were merged and are now reported as project 01328.				

In addition to conducting projects with funding provided by US DOT as part of the University Transportation Centers program, UTCA actively seeks other partners for its activities. These efforts have been quite successful, as shown in Table 4.

**Table 4: Non-UTC projects**

Year	Number of Non-UTC Projects	Non-UTC Funding
1999	7	\$2.94 M
2000	12	\$3.58 M
2001	20	\$3.06 M
2002	21	\$1.77 M
2003	16	\$2.16 M
2004*	9	\$0.89 M
Total	85	\$14.40 M

\*Partial year

## **C. FINANCIAL STATUS REPORTS**

Semi-Annual Financial Report Grant Year 1999  
Semi-Annual Financial Report Grant Year 2000  
Semi-Annual Financial Report Grant Year 2001  
Semi-Annual Financial Report Grant Year 2002  
Semi-Annual Financial Report Grant Year 2003  
Semi-Annual Financial Report Grant Year 2004

## EXHIBIT A

Annual Financial Status Report  
University Transportation Centers Program

### University Transportation Center for Alabama

Grant year 1999 Fund Status as of June 30, 2004

	Approved (Revised) Budget <sup>1</sup>	Committed to Date <sup>2</sup>
<b>Salaries</b>		
Director	59,318	\$59,318
Associate Directors	26,523	\$31,272
1/4 FTE Faculty, each campus	41,198	\$41,198
Faculty Project Salaries	430,154	\$416,707
Administrative Staff Salaries	16,846	\$17,216
Student Salaries	172,486	\$116,945
Benefits	128,852	\$112,630
<i>Total salaries and benefits</i>	<i>875,377</i>	<i>\$795,286</i>
<b>Expenses</b>		
Scholarships/Grad Tuition	13,766	\$25,368
Permanent Equipment	0	\$4,453
Expendable Prop/Supplies/Services	64,917	\$77,441
Other – Expendable Equipment	40,465	\$11,345
Domestic Travel	31,689	\$20,071
Foreign Travel	0	\$0
Other – Peer Review Honoraria	1,850	\$1,850
Other – Student of the Year	1,000	\$1,000
<i>Total expenses</i>	<i>153,687</i>	<i>\$141,528</i>
Total Direct Costs	1,029,064	\$936,815
F&A – Indirect Costs	358,851	\$345,697
<b>99 Grant Year Totals</b>	<b>1,387,915</b>	<b>\$1,282,511</b>
Federal Share	686,000	\$622,729
Matching Share	701,915	\$654,075
<sup>1</sup> Revised Budget Approved by RSPA on September 8, 2000		
<sup>2</sup> Expended or Encumbered		

## EXHIBIT A

Annual Financial Status Report  
University Transportation Centers Program

### University Transportation Center for Alabama

Grant year 2000 Fund Status, as of June 30, 2004

	Approved (Revised) Budget <sup>1</sup>	Committed to Date <sup>2</sup>
<b>Salaries</b>		
Center Director Salary	\$60,925	\$61,861
Associate Director Salaries	\$32,084	\$41,483
Administrative Staff Salaries	\$27,666	\$27,688
Faculty Salaries - Projects	\$303,405	\$426,201
Student Salaries	\$210,132	\$315,502
Benefits	\$104,238	\$109,932
<i>Total salaries and benefits</i>	<i>\$738,450</i>	<i>\$982,669</i>
<b>Expenses</b>		
Scholarships/grad Tuition	\$67,306	\$61,650
Permanent Equipment	\$0	\$1,979
Expendable Prop/Supplies/Services	\$102,540	\$118,878
Other – Expendable Equipment	\$13,250	\$33,450
Domestic Travel	\$52,654	\$65,341
Foreign Travel	\$0	\$0
Other – Peer Review	\$4,400	\$8,766
Honoraria		
Other – Student of the Year	\$2,000	\$1,338
<i>Total expenses</i>	<i>\$242,150</i>	<i>\$291,402</i>
<b>Total Direct Costs</b>	<b>\$980,600</b>	<b>\$1,274,071</b>
F&A – Indirect Costs	\$342,858	\$395,911
<b>2000 Grant Year Totals</b>	<b>\$1,323,458</b>	<b>\$1,669,981</b>
Federal Share	\$655,500	\$619,950
Matching Share	\$667,958	\$1,058,197
<sup>1</sup> Revised Budget Approved by RSPA on September 8, 2000 <sup>2</sup> Expended or Encumbered		

## EXHIBIT A

Annual Financial Status Report  
University Transportation Centers Program

### University Transportation Center for Alabama

Grant year 2001 Fund Status, as of June 30, 2004

	Approved Budget <sup>1</sup>	Committed to Date <sup>2</sup>
<b>Salaries</b>		
Center Director Salary	\$61,000	\$60,942
Associate Director Salaries	\$43,000	\$9,916
Administrative Staff Salaries	\$33,000	\$26,197
Faculty Salaries - Projects	\$288,000	\$459,193
Student Salaries	\$200,000	\$244,898
Benefits	\$106,250	\$126,750
<i>Total salaries and benefits</i>	<i>\$731,250</i>	<i>\$927,896</i>
<b>Expenses</b>		
Scholarships/grad Tuition	\$65,000	\$53,685
Permanent Equipment	\$0	\$13,226
Expendable Prop/Supplies/Services	\$100,000	\$104,388
Other – Expendable Equipment	\$10,000	\$1,739
Domestic Travel	\$50,000	\$43,678
Foreign Travel	\$0	\$0
Other – Peer Review		
Honoraria	\$4,000	\$7,050
Other – Student of the Year	\$2,000	\$2,000
<i>Total expenses</i>	<i>\$231,000</i>	<i>\$225,766</i>
<b>Total Direct Costs</b>	<b>\$962,250</b>	<b>\$1,153,663</b>
F&A – Indirect Costs	\$336,788	\$381,250
<b>01 Grant Year Totals</b>	<b>\$1,299,038</b>	<b>\$1,534,912</b>
Federal Share	\$646,000	\$620,606
Matching Share	\$653,038	\$914,306
<sup>1</sup> Submitted Nov 24, and approved by RSPA on Nov 27, 2000		
<sup>2</sup> Expended or Encumbered		

## EXHIBIT A

Annual Financial Status Report  
University Transportation Centers Program

### University Transportation Center for Alabama

Grant year 2002 Fund Status, as of June 30, 2004

	Approved Budget <sup>1</sup>	Committed to Date <sup>2</sup>
<b>Salaries</b>		
Center Director Salary	\$61,000	\$67,619
Associate Director Salaries	\$0	\$0
Administrative Staff Salaries	\$33,000	\$89,315
Faculty Salaries - Projects	\$305,000	\$481,606
Student Salaries	\$225,000	\$229,428
Benefits	\$99,750	\$125,319
<i>Total salaries and benefits</i>	<i>\$723,750</i>	<i>\$993,288</i>
<b>Expenses</b>		
Scholarships/grad Tuition	\$72,000	\$23,472
Permanent Equipment	\$0	\$14,737
Expendable Prop/Supplies/Services	\$100,000	\$131,399
Other – Expendable Equipment	\$10,000	\$35,483
Domestic Travel	\$55,000	\$47,210
Foreign Travel	\$0	\$0
Other – Peer Review Honoraria	\$5,000	\$2,950
Other – Student of the Year	\$2,000	\$2,000
<i>Total expenses</i>	<i>\$244,000</i>	<i>\$257,250</i>
<b>Total Direct Costs</b>	<b>\$967,750</b>	<b>\$1,250,538</b>
F&A – Indirect Costs	\$338,713	\$354,993
<b>02 Grant Year Totals</b>	<b>\$1,306,463</b>	<b>\$1,605,531</b>
Federal Share	\$652,700	\$556,971
Matching Share	\$653,763	\$1,048,560
<sup>1</sup> Submitted Oct 29, 2001 and approved by RSPA on Nov 8, 2001		
<sup>2</sup> Expended or Encumbered		

**EXHIBIT A**Annual Financial Status Report  
University Transportation Centers Program**University Transportation Center for Alabama**Grant year 2003 Fund Status, as of June 30, 2004

	<b>Approved Budget<sup>1</sup></b>	<b>Committed to Date<sup>2</sup></b>
<b>Salaries</b>		
Center Director Salary	\$61,000	\$60,925
Associate Director Salaries	\$5,000	\$9,926
Administrative Staff Salaries	\$21,000	\$27,000
Faculty Salaries - Projects	\$422,000	\$579,841
Student Salaries	\$325,000	\$378,580
Benefits	\$140,000	\$163,756
<i>Total salaries and benefits</i>	<i>\$974,000</i>	<i>\$1,220,028</i>
<b>Expenses</b>		
Scholarships/grad Tuition	\$110,000	\$62,169
Permanent Equipment	\$0	\$12,850
Expendable Prop/Supplies/Services	\$145,000	\$207,965
Other – Expendable Equipment	\$30,000	\$3,250
Domestic Travel	\$90,000	\$57,082
Foreign Travel	\$0	\$0
Other – Peer Review Honoraria	\$7,500	\$4,400
Other – Student of the Year	\$2,000	\$2,000
<i>Total expenses</i>	<i>\$384,500</i>	<i>\$349,716</i>
<b>Total Direct Costs</b>	<b>\$1,358,500</b>	<b>\$1,569,744</b>
F&A – Indirect Costs	\$475,475	\$551,078
<b>03 Grant Year Totals</b>	<b>\$1,833,975</b>	<b>\$2,120,822</b>
Federal Share	\$916,300	\$907,749-
Matching Share	\$917,675	\$1,213,073-
<sup>1</sup> Submitted Oct 24, 2002 and approved by RSPA on Oct 28, 2002. <sup>2</sup> Expended or Encumbered		

## EXHIBIT A

Annual Financial Status Report  
University Transportation Centers Program

### University Transportation Center for Alabama

[Grant year 2004 Fund Status](#), as of June 30, 2004

	Approved Budget <sup>1</sup>	Committed to Date <sup>2</sup>
<b>Salaries</b>		
Director	\$60,925	\$60,925
Associate Directors	\$9,926	\$12,000
Faculty Project Salaries	\$392,621	\$454,352
Administrative Staff Salaries	\$183,063	\$160,663
Student Salaries	\$251,613	\$310,807
Benefits	\$141,735	\$155,410
<i>Total salaries and benefits</i>	<i>\$1,039,883</i>	<i>\$1,154,157</i>
<b>Expenses</b>		
Scholarships/Grad Tuition	\$72,797	\$72,797
Permanent Equipment	\$58,250	\$58,250
Expendable Prop/Supplies/Services	\$66,245	\$146,736
Other – Expendable Equipment	\$300	\$0
Domestic Travel	\$45,028	\$47,402
Foreign Travel	\$0	\$0
Other – Peer Review Honoraria	\$4,400	\$4,500
Other – Student of the Year	\$2,000	\$2,000
<i>Total expenses</i>	<i>\$249,020</i>	<i>\$331,685</i>
Total Direct Costs	\$1,288,903	\$1,485,842
F&A – Indirect Costs	\$527,618	\$503,461
<b>04 Grant Year Totals</b>	<b>\$1,816,521</b>	<b>\$1,989,303</b>
Federal Share	906,000	\$901,082
Matching Share <sup>3</sup>	910,521	\$1,098,221
<i>1</i> Budget approved by RSPA on December 4, 2003. <i>2</i> Expended and encumbered funds <i>3</i> SPR projects acquired after budget approval produced an "overmatch"		