Advanced Transportation Institute 2009

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

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16. Abstract

The eighth version of the Advanced Transportation Institute (ATI-09) was conducted in 2009 to encourage high school students to pursue careers in the field of transportation engineering. The University Transportation Center for Alabama partnered with the Alabama Department of Transportation (ALDOT) to teach a one-week institute in June at ALDOT's central office headquarters in Montgomery, AL. The headquarters location provided access to practicing transportation professionals who served as lecturers, and it provided a real-life, transportation working environment. A second three-day institute was taught at the ALDOT Fifth Division office and the UTCA offices at the University of Alabama in Tuscaloosa, AL in July (ATI-Div-09).

ATI-09 was open to rising high school juniors and seniors, with preference given to African Americans and females. Participants came from high schools in west central Alabama from which ALDOT typically recruits. ATI-Div-09 was taught to middle and high school members of the Junior Chapter of the National Society of Black Engineers.

Institute presentations, lab experiences, and field trips were designed to give participants a general overview of ALDOT, an introduction to transportation engineering as a career, and hands-on examples and challenges. The comprehensive evaluations conducted at the ends of ATI-09 and ATI-Div-09 indicated that the students enjoyed their experiences, and that they were influenced to consider transportation careers.

The 43 student participants in the two ATI sessions indicated that they enjoyed the experience, that they learned about transportation careers and ALDOT, and that (as a group) they were favorably influenced to consider transportation careers.

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Executive Summary

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1.0 Introduction

Problem Statement

The University Transportation Center for Alabama (UTCA) established six goals to guide its development. Two of these goals involve human resources and diversity and are intended to help Alabama meet its future need for transportation professionals.

The number of young people entering the transportation profession is far below the number needed to fill the gap left by retiring professionals. Of this population, females and African Americans are extremely underrepresented. These groups are now experiencing "a closing but continuing gap in degree conferral rates…compared to their percentages in the general population" (Borden, 2003). The shortage of motivated, qualified candidates in these groups hinders the effort to increase the number of practicing transportation professionals, especially in the upper levels.

Project Approach

After trying other approaches (scholarship, graduate assistantships, etc.), UTCA determined that the most appropriate course of action to expand transportation human resources and to improve diversity was to increase the awareness of high school students about opportunities in the transportation profession, with preference given to minority and female students.

A summer program called the Advanced Transportation Institute (ATI) was created in 2002 to allow representatives of transportation agencies and companies, along with practicing transportation professionals, to interact with students in a "real-world" situation and to provide insight into rewarding transportation careers. The Institute was as informative and influential as possible by requiring that Institute staff members, ALDOT speakers and other professionals devote time to classroom and laboratory settings to present information, answer questions, and mentor individual students.

UTCA partnered with the Alabama Department of Transportation (ALDOT). The Personnel Bureau was ALDOT's designated action group, since it was already charged with recruiting high school students, especially minorities and females. This made the partnership a win-win effort.

The initial ATI was patterned after UTCA transportation institutes conducted by Dr. Kathleen M. Leonard at The University of Alabama in Huntsville (Leonard, et al 2000; Leonard, et. al 2001; Leonard, et. al 2002; Leonard, et. al 2003). Early on, Dr. Leonard realized that hands-on, active learning was the best way to implant motivation and self-learning in the participants of her

summer institutes. She used lots of field trips, active lab sessions and similar efforts to keep her students fully engaged.

The 2009 version of ATI (ATI-09) was improved in response to suggestions from previous institute attendees and the availability of ALDOT presenters and facilities with expertise in particular fields (Turner and Anderson, 2002; Turner and Anderson, 2003). The morning sessions were filled with informative presentations, and the afternoon sessions featured projects, competitions, and field trips. ALDOT staff members and managers provided mentoring, field trips, mementos, and an award dinner at the conclusion of the week**.**

For the second year, a second session was offered involving a different location and a different age group. In July a three-day session was offered in Tuscaloosa to student members of the Junior Chapter of the National Society of Black Engineers. The Chapter is sponsored by the Cornerstone Full Gospel Baptist Church. For this new effort, the session was hosted by the ALDOT 5th Division office and the University Transportation Center for Alabama offices at The University of Alabama in Tuscaloosa in July (ATI-Div-09).

2.0 Recruiting Students

Marketing

UTCA and ALDOT knew that marketing would be a critical element of both Institute sessions, based on prior efforts. With ATI-09 immediately following the end of the high school academic year, obtaining early student commitments was important. Primary efforts were focused on making the Institute more exciting and memorable for students to increase its marketability.

For ATI-09, the approaches utilized in previous Institutes provided good background materials in the development of marketing materials. Well in advance of the initial planning effort, several schools from the ALDOT recruiting area were contacted about their willingness to participate. Initially, the response rate was lower than anticipated. This lead to a primary strategy of increasing the amount of written material provided to teachers and guidance counselors for delivery to interested students. An announcement was sent to publicize the event, and UTCA and the Personnel Bureau developed and distributed a brochure to show all of the excitement.

Care was taken to make the distributed material straightforward and informative to increase its effectiveness. The material had numerous pictures illustrating the highlights of the program and to show the different and exciting events planned for ATI-09. General information about the Institute included the following topics:

- The overall objective
- The procedure for student nomination and selection
- Transportation career and transportation educational opportunities
- ATI activities, laboratories, and competitions
- Field trips
- Institute staff
- The overall experience

The program was advertised as an opportunity to learn about stimulating careers in the transportation profession and to learn how to prepare for college.

Marketing was much simpler for ATI-Div-09. Members of the NSBE Student Chapter were already used to exciting activities and field trips. The ATI-09 materials were revised to target these students, and were provided to the leader of the NSBE Student Chapter. He distributed them to students and returned the applications to UTCA.

Both ATI-09 and ATI-Div-09 were free of charge to participants to increase the program's attractiveness. Funding was provided by UTCA, and ALDOT provided facilities and human

resources for the program. At both locations, ALDOT provided transportation to students for lab trips, field trips, etc.

Selection of Attendees

Emphasis was placed on acquiring students who had potential, open minds, and genuine interest in the program. For ATI-09, ALDOT took this message to school principals and guidance counselors, as well as county school system superintendents from within the typical ALDOT recruiting area. Focus was placed on schools from Montgomery, Wilcox, and Dallas counties. Wilcox County embraced the ATI concept and became the primary provider of students this year. As applications were received they were reviewed for accuracy and eligibility, until a full complement of students was admitted.

For ATI-Div-09, selection of attendees was done by the ATI Director and co-Directors, based upon review of student applications. In this case the age range was much wider than ATI-09, so care was used to ensure that they were qualified candidates who would benefit from the Institute and who were candidates for potential transportation careers.

Contacts with Students

In contacting the target schools for ATI-09, ALDOT provided an informative letter, a program announcement, a flyer, and an informative brochure. Students selected by the schools completed an application form, which was returned to either ALDOT or UTCA. The application form was a critical element, because it allowed UTCA to begin a series of contacts with the students. UTCA contacted the students to inform them of the program's opportunities, to stimulate their interest, and to answer questions.

First, the participants received a welcoming letter containing information about the Institute and a registration form that they could return to indicate their acceptance of a position in ATI-09. Next, phone calls were made as time was available, to confirm each student's degree of interest in the Institute. During this call, the students' interest in ATI-09 was stimulated, questions were answered, and uncertainties of the students and their parents were addressed. A second letter was later sent, which included an acceptance form, a parental permission form, an overview of planned daily activities, and a map with detailed directions to ALDOT headquarters.

To alleviate the concerns of extensive travel, UTCA made travel arrangements for students from two schools that were located more than an hour from the instructional site. This included housing, travel, meals, and chaperone expenses. Additional letters and updates were sent to these students and their school principals or sponsors. As a result of the recruiting, selection and encouragement directed toward high school students, 27 were enrolled for the Montgomery session.

The procedure for ATI-Div-09 was much simpler. The NSBE Student Chapter advisor handled all contact with the students and their parents. A total of 16 students were enrolled in the 5th Division version of ATI.

3.0 Curriculum and Instruction Issues

Curriculum Development

A balanced curriculum with informative sessions was desired, to make the Institute meaningful to all of the students and participants. The intent was important to provide a view of the wide range of transportation employment opportunities and to illustrate how a technical education could put those jobs within reach.

The ATI-09 draft agenda was derived from previous ATI sessions. Each day had a theme or several related themes. For example, one day might emphasize bridges issues, and the next day might feature design issues. The draft schedule was updated to reflect recommendations from the previous year's students, speakers, and facilitators. Once the draft agenda was approved, presenters and facilitators for the topics and field trips were identified and secured. The following list of major topics resulted from several iterations between UTCA, the Personnel Bureau, and other ALDOT bureaus. (These topics are explained in more detail in Table 3-1.):

- Bridges/Bridge Design
- Roadway Materials
- Environmental Concerns
- The Role of Professional Organizations
- Professional Development/Business Etiquette
- Roadway Design and Construction
- Traffic Engineering
- Transportation Career Opportunities
- Transportation Safety/Safety Enhancements
- University of Alabama College Admissions Overview

The starting and ending times (9:00 a.m. - 4:00 p.m.) were arranged so that commuter students could avoid rush hour traffic and to keep the Institute short enough to prevent overburdening the participants. Efforts were made to simplify each day as much as possible to prevent confusion and to further streamline the schedule. One of the recommendations from prior years had been to allow students to move outside the ALDOT building for recreation, like a visit the Montgomery Zoo. This was added to the curriculum and was well received in succeeding years, because it allowed time to relax and encourage further bonding.

The schedule for ATI-Div-09 was modeled after ATI-09 and ATI-Div-09. In some cases it was simplified to reflect the addition of younger students at the Tuscaloosa sessions.

Table 3-1. ATI-09 Curriculum Topics and Session Contents

Session Title	Session Description
ALDOT Careers	This presentation offered an overview of ALDOT, including its mission and career options in many exciting transportation-related fields.
Alabama Traffic Crash Facts	This session reviewed ALDOT's role in traffic safety by examining crash statistics and trends, and by applying them to the participants' lives.
Bridge Overview	This topic reviewed the variety of bridge types, construction methods and materials, and emphasized the importance of bridge inspection.
Computer Bridge Design	This presentation and lab session demonstrated the role of cost-effectiveness in the design of basic truss bridges, using the West Point Bridge Designer® computer software.
Materials and Testing	This session reiterated roadway construction materials. Demonstrations were given to show ALDOT's role in inspection and materials testing.
Pin and Straw Bridge Design	This lab session was used to show the importance of key design concepts like bridge symmetry, joint placement, and quality of construction.
Professional Development/Business Etiquette	Students were briefed on the importance of using proper etiquette in the business setting. Examples were given to further illustrate key concepts.
Professional Organizations	Students were introduced to the programs of the American Society of Civil Engineers and the National Society of Black Engineers.
Program Overview	The purpose, goals and content of ATI-09 were explained to students in this initial session.
Roadway Design Process	This presentation illustrated the multiple considerations and interactions involved in the long process of road design and construction.
Roadway Safety	The second traffic safety module detailed risks involved in everyday driving, and how barrier and other safety devices reduce crash fatalities and injuries.
Safety Design Lab (Egg Drop Competition)	Students designed a safety container using the principles of energy absorption, to protect an egg dropped from the boom of a utility truck. The winning design achieved a 35-foot drop!
Safety Management	This session answered some of the participant's earlier safety questions. It also outlined cost/benefit warrants for traffic improvements.
Traffic Engineering	This lab session included reviews of signs, signals and pavement markings to illustrate how they are manufactured and used.
University Overview	A University of Alabama recruiting specialist gave a short overview detailing college admission procedures, engineering courses, and university life.

Conducting the Institute

ATI-09 was held in adjacent conference rooms at ALDOT headquarters. The rooms were easily accessible to the students and their parents. The rooms had excellent audiovisual equipment and ample space for presentations and student interaction sessions (breaks, snacks, and meals).

Presenters were transportation professionals from The University of Alabama, ALDOT, and industry. Assistance with registration and for all activities during the week was provided by members of the Personnel Bureau. One or more Personnel Bureau employees remained with the students throughout the duration of the Institute. They were available in the classroom each day,

encouraged individual students, transported students to and from the field trip sites, distributed lunches and snacks, and provided presentation materials and other "as needed" resources.

To make the students feel more welcomed and appreciated, packets were given to each participant during the initial registration. This consisted of the following items provided by the sponsors and co-sponsors:

- Institute Agenda
- T-shirt
- Pens, Pencils, Folders, etc.

During the week, the students were allowed to show their school spirit and to congregate throughout the presentations, but they were placed with members of different schools for the group projects. Most of the sessions were interactive and encouraged students to ask questions and initiate deeper discussion. Some of the presenters even provided additional mementos to increase their impact on the students. A flexible timetable was used to allow extension of individual sessions so that discussions could address all concerns and questions of the students.

All things considered, the week ran rather smoothly. Students genuinely enjoyed interacting with ALDOT professionals in hands-on situations like soils and material testing, computer bridge design, and field trips. Group bonding occurred, and the students were very receptive to presentations.

At ATI-Div-09, sessions were conducted in the ALDOT 5th Division training room and labs, and at the UTCA labs and classrooms at The University of Alabama campus. Both 5th Division and UTCA managers and employees assisted with registration, hosting, and meals throughout the session. The schedule was modified to alleviate the transportation problems experienced from the previous year. Whole days were held in one location. The students only changed location during the day. Additional time was allowed in the schedule for the traveling.

Closing Session

The closing session at both Institutes was conducted similarly and generated similar smiles and warm feelings. These events culminated an intense period of learning, friendship, and excitement. A barbeque dinner was provided to student participants, parents, invited ALDOT representatives and others. Prior to the meal, a slide presentation was shown, featuring highlights of the students in the week's workshops, presentations, and field trips. (Sample photos may be found in Appendices C and D.)

Following the dinner, certificates and awards were presented for each of the competitions, contributing sponsors, and staff members. Motivational speakers provided insights and accounts of the Institute's successes. The casual atmosphere and slide show set a positive tone that sent the participants and their parents home with wonderful memories of a week well spent.

4.0 Evaluation of the Institute

The last activity on the final afternoon for both sessions was distribution of an evaluation form to gather information about the success of the Institute. There were four major portions of the form: presentations, site visits and lab projects, general success of the Institute, and whether the Institute influenced students to consider transportation careers.

Analyses of Evaluations

For analysis purposes, the evaluation scores were converted to numerical values of one to five, which corresponded to *poor, acceptable, good, very good,* and *great,* respectively. In the tables in this chapter, higher average scores indicate higher approval by students.

ATI-09 Results

Table 4-1 shows that 15 of the presentations scored between *very good* and *great,* and one scored between *good* and *very good*. This implies high acceptance of the presenters and topics by the students. Over half of the students felt that the top five presentations in the table were exceptionally good. Presentations that received lower scores will be evaluated for improvement prior to next year's Institute.

Table 4-1. Evaluation Scores for Presentations (ATI-09)

Presentation	Mean
Intro to Straw Bridge Design	4.75
Safety, Road Safety Design	4.64
Environmental Issues	4.52
Being a University Student	4.48
Hurricane Evacuation, Interstate Reverse Flow	4.47
Careers, NSBE	4.40
Safety Management	4.38
Enhancement/Transportation History	4.36
Introduction to Materials Testing	4.28
Prof Development/Business Etiquette	4.25
Traffic Engineering	4.24
Bridges	4.20
Construction of Roads and Bridges	4.20
University/Admissions Overview	4.11
ALDOT Careers	4.04
Underwater Bridge Inspection	3.29

Average evaluation scores for field trips and laboratory work were particularly stong (Table 4-2). Only one of them scored less than *very good*. The students gave the highest average evaluation scores to the "Egg Drop Testing." This is a perennial winner with students. The two competitions on bridges also scored very high. (These were also the top three in last year's ATI). It is worth noting that the average score for the labs and field trips (4.38) was higher than the average for the presentations (4.28). This indicates that even more labs and field trips should be planned for future versions of ATI.

Table 4-2. Evaluation Scores for Site Visits and Labs (ATI-09)

Lab or Field Trip	Average
Egg Drop Contest	4.80
Pin & Straw Bridge Design	4.76
Computer Bridge Design	4.64
Materials Lab	4.40
Zoo	4.29
Sign & Signal Shop	4.25
Construction Sites	3.54

For the "general topics" category of the evaluation, the overall experience, food, and support of ATI staff members scored very high with good agreement among the students. The length of sessions (probably presentations) was somewhat lower. This is another possible area of change for future ATI sessions. This is reflected in Table 4-3.

Table 4-3. Evaluation Scores for General Topics (ATI-09)

Topic	Mean
Institution Staff Members Helpful?	4.78
Overall Experience	4.48
Food (Lunch & Break)	4.72
Individual Sessions Length about Right?	3.70

The most important element of the evaluation was determining the impact ATI-09 had on the students. In other words, did exposure to transportation organizations like ALDOT, to transportation professionals, and transportation issues influence the students to consider transportation careers? As shown in Table 4-4, there was a good movement in the preferred direction, toward transportation careers.

Table 4-4. Impact of ATI-09 on Participants

Considering Transportation Career?	Yes	No	Strongly Considering
Before ATI-09?	17	7	na
Transportation After ATI-09	10	5	9
Recommend ATI-09 to Friends?	24	0	na

ATI- Div-09 Results

The ATI 5th Division students gave good scores to the presentations (Table 4-5), but not as high as the scores for similar presentations at the ATI-09. This might reflect the lower age students at the 5th Division session. The ALDOT Careers presentation received the highest score with virtually all students scoring it as *great* for an average score of 4.94. The scores for the remaining seven presentations were bunched together, with scores from 3.64 to 4.13. More than half of the participants scored these categories as *very good* or better. In general, all of the scores in Table 4-5 indicate presentation topics that will be suitable for future ATI sessions; however, those with the lowest scores will be evaluated for improvement prior to next year's Institute.

Table 4-5. Evaluation Scores for Presentations (ATI-Div-09)

Presentation	Mean	Std. Dev
ALDOT Careers	4.94	0.25
Intro to Straw Bridge Design	4.13	1.15
Construction Engineering	4.00	1.07
Intro to ALDOT Materials Testing	3.94	1.20
Scholarships/University Life	3.94	1.28
Map Reading/Project Development	3.75	1.00
Road Safety/Guardrail	3.65	1.18
ALDOT Research & Development	3.64	1.26

The ATI-Div-09 field trips and laboratory work received particularly strong average scores (Table 4-6). Two received *great* scores from more than half of the students, and none of them scored less than *very good*. The Tuscaloosa students selected the materials testing at the 5th Division as their highest event. This was different from the Montgomery students.

Overall, the Tuscaloosa students gave the labs and field trips an average score (4.55) that was higher than the average for the presentations (4.26). As with the Montgomery ATI, this indicates that even more labs and field trips should be planned for future versions of the Institute.

Table 4-6. Evaluation Scores for Site Visits and Labs (ATI-Div-09)

Lab or Field Trip	Average
Materials Testing at ALDOT	4.65
Computer Bridge Design	4.59
Pin & Straw Bridge Design	4.41

The evaluation scores for the "general topics" for ATI-Div-09 were very similar to the scores for ATI-09. The overall experience, food and support of ATI staff members scored very high with good agreement among the students. The length of sessions (probably presentations) was somewhat lower. This is another possible area of change for future ATI sessions. This is reflected in Table 4-7.

Table 4-7. Evaluation Scores for General Topics (ATI-Div-09)

Topic	Mean
Institution Staff Members Helpful?	4.87
Food (Lunch & Break)	4.65
Overall Experience	4.59
Individual Sessions Length about Right?	3.80

As with the ATI-09 session, the Tuscaloosa session showed good movement in influencing students to consider transportation careers. This information is reflected in Table 4-8.

Table 4-8. Impact of ATI-Div-09 on Participants

Considering Transportation Career?	Yes	No	Strongly Considering
Before ATI-Div-09?	6	9	na
Transportation After ATI-Div-09?	5	6	4
Recommend ATI-Div-09 to Friends?	15	0	na

Summary of Evaluations

In general, the evaluation scores from both sessions of the ATI were similar with the students at both locations giving very high scores to lab activities and field trips, and high scores to presentation topics and other activities.

For the most important topic, the impact of the Institute in encouraging students to consider transportation careers, the Institute was very successful.

Overall, the evaluations indicated that the ATI concept was very successful for students over a wide range of ages. Most of the topics, labs, and field trips can be utilized next year with very few changes.

5.0 Summary and Recommendations

Noteworthy Areas

Since its initial offering, the goals of the Advanced Transportation Institute have always been to inform and educate high school students and to encourage them to pursue careers in the field of transportation, to improve transportation human resources and diversity in Alabama. ATI-09 and ATI-Div-09 were successful in meeting these goals, with the assistance of the ALDOT Personnel Bureau. Successful elements of the program are detailed below:

- The partnership of UTCA and ALDOT again proved to be a potent method to deliver a successful Institute.
- Feedback from prior Institutes was used to improve the 2009 Institutes.
- Instructive demonstrations reinforced key concepts.
- Key transportation engineering principles were integrated with business and other non-engineering factors.
- The students interacted daily with transportation professionals.
- Mentoring occurred daily.
- The end-of-course evaluation showed that students enjoyed the Institute and had been influenced towards careers in transportation.

Areas of Concern

Overall, the Institute was excellent in its characteristics and quality. There were continuing concerns with starting recruiting earlier and confirming whether accepted students would actually attend. The name, address, and other contact information for each participant are needed earlier in the process.

The ATI-Div-09 was the second offering in Tuscaloosa. The area of concern is still whether students will actually attend. Another concern is the age range of the participants. Careful attention should be paid to the eagerness of the students to determine acceptance to the program. In some instances the younger participants required more attention, which distracted attention from the older participants.

Recommendations

1. Both the 2009 Advanced Transportation Institute and the 5th Division Institute were successful and should be repeated.

2. The partnership with the ALDOT Personnel Bureau and the ALDOT 5th Division were successful, and similar partnerships should be established for the 2010 year.

3. The ALDOT central office was an excellent location for the Institute. The instant access to the job environment, materials labs, computers, and practicing professionals was excellent, and should be retained.

   Likewise, the combination of the 5th Division offices (especially the materials lab sessions) and the UTCA classrooms and labs provided excellent locations for the Institute.

4. Although the Institute was successful, several improvements should be considered:

   - The most important improvement should be to start ATI-10 recruiting earlier. Selecting participants earlier will alleviate problems with planning workshops, ordering supplies and materials, determining the costs of transportation and housing, and estimating catering costs.
   - Recruiting can be expanded to additional schools to increase the number of applicants. Contacts with the schools should be conducted earlier, and the contact persons should be informed of responsibilities to prevent confusion. By doing this, students can be recruited earlier, and applications will be forwarded and processed more quickly.
   - Course evaluations should continue to be used to modify the curriculum. ATI-09 presentations and lab sessions that were not effective should be deleted or enhanced. Those that were highly effective should be expanded. ATI-Div-09 sessions will become even better now that the 5th Division managers have gained more experience with it.
   - Speakers, lab instructors and field trip guides should be encouraged to provide written materials to the students. This might be as simple as an outline of the presentation, lab or trip. The written materials could be more specific and can provide names for the students to contact in the future for additional information or for career guidance.

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Appendix A: ATI-09 Daily Curriculum, Instructors, and Locations

Time	Event	Location/Room	Instructor
Monday, June 15, 2009			
8:30 - 9:00 AM	Check-in / Refreshments	ALDOT	
9:00 - 9:15 AM	Program Overview	Conf Room	ALDOT-Cleo Daniel
9:15 - 10:00 AM	Environmental Overview	Conf Room	ALDOT-James Blanding
10:00 - 10:15	*Refreshments, travel to materials lab*		
10:15-11:00 AM	Materials demo (concrete + asphalt)	Mtls & Tests Lab	ALDOT-Frank Carr
11:00 - 11:45	PROJECT 2: - Materials Testing	Mtls & Tests Lab	ALDOT-Bart Pickett
12:00 - 12:45	*LUNCH-*	Conf Room	
12:45 - 1:45 PM	ALDOT Speaker - Bridge Bureau	Conf Room	ALDOT-John Black
1:45 - 3:30 PM	PROJECTS 1-A/B: Computer/Straw Bridge Design	Conf Room	Turner/Wilkes
3:30 - 4:00 PM	Wrap Up Discussion - 'What We Learned,' Depart		UA-ALDOT- Walter Anderson
Tuesday, June 16, 2009			
9:00 - 9:15 AM	Daily Overview and Ice-Breaker	Conf Room	ALDOT – Jerome McReynolds
9:15 - 10:45 AM	Traffic Engineering (MUTCD, Sign shop visit)	Conf Room	ALDOT - Sean Mobley
10:45-11:00 AM	*BREAK (refreshments)*	Conf Room	
11:00-11:45 AM	UA Speaker - University / Admissions Overview	Conf Room	UA-Tara Rick
12:00 - 1:00 PM	*LUNCH*		
1:00-1:45	University of Alabama Speaker - Road Safety/Barriers	Conf Room	UA-Dr. Dan Turner
1:45 - 2:45 PM	PROJECT 3: Safety project - egg drop	Conf Room	UA-Turner/Wilkes
2:45-3:15	Test egg drop devices	Outside	UA-Turner/ALDOT truck
3:00 - 4:00 PM	Wrap Up Discussion - 'What We Learned,' Depart		ALDOT – Walter Anderson
Wednesday, June 17, 2009			
9:00 - 9:15 AM	Daily Overview and Ice-Breaker	Conf Room	ALDOT – Michelle Moore
9:15 AM	ALDOT Speaker - Enhancement/Transportation History	Conf Room	ALDOT-Cecil Colson
10:15 - 11 AM	Construction of Roadways and Bridges	Conf Room	ALDOT-Jeff Benefield
11:00 - 11:45	Being A University Student	Conf Room	Wilkes
Noon - 1:00 pm	*Lunch*		
1:00-3:00	Field Trip (construction sites, division office)	6th Div / Project	6th Division – Chad Harris
3:00 PM	*Break*, Return to ALDOT headquarters, Montgomery		All ATI staff members
4:00 PM	Wrap up	Conf Room	Connie Dennis
Thursday, June 18, 2009			
9:00 - 9:15 AM	Daily Overview and Ice-Breaker	Conf Room	ALDOT – Tameka Rose
9:15 - 10:15 AM	ALDOT Speaker - Safety Management	Conf Room	ALDOT - Craig Thomas
10:15-12:00 AM	*Morning entertainment – ZOO*	Montgomery Zoo	ALDOT-Jerome McReynolds
12:00-12:45 AM	*LUNCH - (During Zoo Visit)*	Montgomery Zoo	ALDOT-Jerome McReynolds
12:45 - 1:00 PM	Return to ALDOT HQ		
1:00 - 1:45 PM	ALDOT Speaker - ALDOT Careers	Conf Room	ALDOT-T Rose / C Robinson
1:45 – 2:30 PM	Hurricane Evacuations – Reverse Lanes on Interstate	Conf Room	ALDOT – Bill Woddail
2:45 - 4:00 PM	Projects 1-A/1-B: Computer/Straw Bridge Designs	Conf Room	Turner, Wilkes
Friday, June 19, 2009			
9:00 - 9:15 AM	Daily Overview and Ice-Breaker	Conf Room	ALDOT- C. Robinson
9:15 - 10:15 AM	Professional Development/Business Etiquette	Conf Room	ALDOT - Willie Franklin
10:15-10:30	*Break*		
10:30-11:15 AM	Projects 1-A/1-B: Computer/Straw Bridge Designs	Conf Room	Turner/Wilkes
11:15-12:00 PM	Careers/NSBE	Conf Room	W. Anderson
12:00-12:45 PM	*LUNCH*	Conf Room	
1:45-3:30 PM	Projects 1-A/1-B: Computer/Straw Bridge design/testing	Conf Room	Anderson/Wilkes
3:00-3:30	*Break (during bridge tests)*		
3:30-4:30 PM	Closure- Summary of Institute, evaluation	Conf Room	UA - Dr. Dan Turner
5:30-7:30 PM	Closing Session / BBQ Dinner by AL Roadbuilders	Conf Room	Jeff Brown-Dan Turner

Appendix B: ATI-Div-09 Daily Curriculum, Instructors, and Locations

The Alabama Department of Transportation, 5th Division			
Time	**Event**	**Location/Room**	**Facilitator**
Monday, July 6, 2009			
8:30 - 9:00	Check-in / Refreshments	ALDOT Conf Room	ALDOT / UTCA staff
9:00 - 9:30	Welcome, Program Overview	ALDOT Conf Room	Ms. Dee Rowe
9:30 - 10:30	ALDOT Careers	ALDOT Conf Room	Robert Peyton
10:30 - 10:45	BREAK (refreshments)	ALDOT Conf Room	ALDOT Staff
10:45 - 11:45	The Project Development Process	ALDOT Conf Room	David Kemp
12:00 - 12:15	Start lunch (sandwiches	ALDOT Conf Room	ALDOT Staff
12:15 - 1:00	Intro to ALDOT Materials and Testing (during lunch)	ALDOT Conf Room	Ms. Valerie Branyon
1:00 - 3:30	Materials Inspection and Testing Stations	Materials & Tests Lab	Materials Staff
	PROJECT 1: Concrete Analysis and Design-cylinder	Materials & Tests Lab	Valerie Branyon
3:30	Wrap up and what we learned	ALDOT Conf Room	Wr Anderson
4:00	*Depart 5th Division*		
Tuesday, July 7, 2009			
9:00 - 9:15	Daily Overview, and Ice Breaker	UA L250 Shelby Hall	Dan Turner
9:15 - 10:00	Scholarships / University Life	UA, 251 Shelby Hall	Greg Singleton
10:00-10:15	Break	UA, L210 Shelby Hall	UTCA staff
10:15 - 11:45	***PROJECT 2***: Computer Bridge Design	UA, L203 Shelby Hall	Turner / Wilkes / Patel
	PROJECT 3: ITS experiment in TMC Lab	UA, L205 Shelby Hall	Turner / Wilkes
12:15 - 1:00	LUNCH	UA, Fresh Foods	UTCA staff
1:00 - 1:15	Group Photo	UA, Shelby Hall	UTCA Staff
1:15 - 2:00	Construction Engineering	UA, 251 Shelby Hall	Dr. Ed Back,
2:00 - 3:30	***PROJECT 2***: continue Computer Bridge Design	UA, L203 Shelby Hall	Turner / Wilkes / Patel
	PROJECT 4: Pin & Straw Bridge Design	UA, 251 Shelby Hall	Turner / Wilkes / Patel
3:45 - 4:00	Wrap Up Discussion - 'What We Learned'	UA, L251 Shelby Hall	W Anderson
4:00	*Depart Shelby Hall*		
Wednesday, July 8, 2009			
9:00 - 9:15	Daily Overview, and Ice Breaker	UA L210 Shelby Hall	Ms. Mary Beth Wilkes
9:15 - 10:15	Road Safety / Barriers	UA L210 Shelby Hall	Dan Turner
10:15 - 11:30	***PROJECT 4***: Pin & straw bridge	UA L210 Shelby Hall	Wilkes/Patel
11:30-12:15	Education as it Used to Be, during lunch	UA L210 Shelby Hall	Oldest Engr Professor
12:15 - 12:45	*Transport students to ALDOT 5th Division*	Vans	*5th Division Staff*
1:00 - 2:30	***PROJECT 4***: finish Pin & straw bridges	ALDOT Conf Room	Turner / Wilkes
2:30-3:00	Test pin & straw bridges	ALDOT Conf Room	Anderson
3:15 - 3:30	Break		
3:30 - 4:30	Career Presentation / Institute Evaluation	ALDOT Conf Room	Dan Turner
4:30 - 5:00	BREAK		
5:30 - 7:00	Awards Dinner	ALDOT Conf Room	Ms. Dee Rowe

Appendix C: Examples of Photos Taken During ATI-09

Figure C-1. ATI-09 students at ALDOT headquarters.

Figure C-2. ATI-09 students during the sign shop visit.

Appendix C: Examples of Photos Taken During ATI-09 (continued)

Figure C-3. ATI-09 students testing their pin and straw bridge.

Figure C-4. ATI-09 students during the zoo visit.

Appendix D: Examples of Photos Taken During ATI-Div-09

Figure D-1. ATI-Div-09 students and staff at UA.

Figure D-2. Dr. Turner helping ATI-Div-09 students during pin and straw bridge construction.

Appendix D: Examples of Photos Taken During ATI-Div-09 (continued)

Figure D-3. ATI-Div-09 students during the plan reading presentation.

Figure D-4. ATI-Div-09 student labeling his concrete cylinder.