

# UTCA

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

## **A Review of the Center's Activities in 2013** *1/1/2013 – 12/31/2013*

### **I. Center Mission and Theme**

The UTCA mission contributes to the overall mission of the US Department of Transportation (USDOT). Specifically, the UTCA seeks

To advance technology and expertise in the multiple disciplines that comprise transportation through the mechanisms of education, research, and technology transfer while serving as a university-based center of excellence (*2006 UTCA Strategic Plan*, p. 12)

The UTCA theme – *Management of Safety of Transportation Systems* – reflects the transportation needs of Alabama and the expertise of The University of Alabama System faculty.

## II. Active Center Projects

The following three sections describe projects the center is involved in 2013 regardless of funding source or even whether the projects were funded.

### a. Proposals with 2013 start dates

Project ID	Project Title	Status	Faculty	Campus	Award Amount	Initial Start Date
*12413	Operational Analysis of Diverging Diamond Interchanges	Awarded	Jones, S.	UA	54,519	6/1/2013
13401	Rail Highway At-Grade Crossing Prioritization and Ranking Program Analysis	Awarded	Jones, S.	UA	234,419	1/1/2013
13402	Development of the ALDOT Roundabout Design and Operations Manual	Awarded	Jones, S.	UA	307,618	2/6/2013
13403	Short Term, Quick Turnaround Services to Facilitate Safety Research and Implementation	Awarded	Turner, D.	UA	59,494	1/28/2013
13404	Guidance for the Development and Application of Crash Modification Factors	Rejected	Lou, Y.	UA	49,994	4/1/2013
13405	Developing a Frame Work for Sustainability Screening of Transit-Oriented Developing Projects	Rejected	Jones, S.	UA	104,830	8/16/2013
13406	Guidebook for Selecting and Implementing Sustainable Highway Construction Practices	Submitted	Grau, D.	UA	185,081	5/1/2013
13407	Engineering Consulting Services	Awarded	Giannini, E.	UA	3,000	6/1/2013
13408	Eisenhower Summer Exchange Program	Awarded	Giannini, E.	UA	8,600	6/1/2013
13409	WisDot - Wisconsin Info System for Local Roads	Submitted	Graettinger, A.	UA	63,938	9/1/2013
					<b>\$1,071,493</b>	

\* This project was submitted in 2012, awarded in 2013. Start date changed to 6/1/13.

## b. Projects continued from previous years

Project ID	Project Title	Project Status	Faculty	Campus	Award Amount	End Date
10401	Pilot Car Driver Certification Program	Ongoing	Lindly, J.	UA	113,222	8/30/2013
12401	Natural Gas Encasement for Highway Crossings	Ongoing	Lindly, J.	UA	128,428	8/30/2013
12402	Safety & Operational Evaluation of Adaptive Traffic Signal Control	Ongoing	Jones, S.	UA	489,684	9/30/2014
12403	Technical Assistance, Liaison and Coordination Services for Highway Safety Research	Ongoing	Turner, D.	UA	71,549	9/30/2014
12404	Bridge Rail Safety Analysis	Ongoing	Jones, S.	UA	129,485	9/30/2014
12406	Comparative Analysis of Dynamic Pricing Strategies for Managed Lanes	Ongoing	Lou, Y.	UA	59,541	11/15/2013
12407	Wisconsin DOT - Crash and Analysis Mapping Phase III	Ongoing	Graettinger, A.	UA	118,641	12/31/2013
12409	Life Cycle Cost in ALDOT Infrastructure Projects	Ongoing	Lindly, J.	UA	227,296	10/1/2013
12410	ALDOT Economic Sustainability	Ongoing	Batson, B.	UA	50,384	1/31/2013
12411	Revision of the Traffic Signal Design Guide and Timing Manual	Ongoing	Jones, S.	UA	45,179	8/1/2014
12412	Travel Time Assessment of Adaptive Traffic Signal Control Systems	Ongoing	Jones, S.	UA	160,262	9/30/2013
12413	Operational Analysis of Diverging Diamond Interchanges	Ongoing	Jones, S.	UA	54,519	4/30/14
12414	Red Light Running Camera Implementation Guide	Ongoing	Jones, S.	UA	22,449	2/28/2013
12415	Alabama Traffic Data Collection Analysis	Ongoing	Jones, S.	UA	1,499,841	9/30/2014
					<b>\$3,170,480</b>	

### c. Projects ending in 2013

Project ID	Project Title	Project Status	Faculty	Campus	Award Amount	End Date
10401	Pilot Car Driver Certification Program	Ongoing	Lindly, J.	UA	113,222	8/30/2013
12401	Natural Gas Encasement for Highway Crossings	Ongoing	Lindly, J.	UA	128,428	8/30/2013
12406	Comparative Analysis of Dynamic Pricing Strategies for Managed Lanes	Ongoing	Lou, Y.	UA	58,806	11/15/2013
12407	Wisconsin DOT - Crash and Analysis Mapping Phase III	Ongoing	Graettinger, A.	UA	118,641	12/31/2013
12409	Life Cycle Cost in ALDOT Infrastructure Projects	Ongoing	Lindly, J.	UA	227,296	10/1/2013
12410	ALDOT Economic Sustainability	Ongoing	Batson, B.	UA	50,384	1/31/2013
12412	Travel Time Assessment of Adaptive Traffic Signal Control Systems	Ongoing	Jones, S.	UA	160,262	9/30/2013
12414	Red Light Running Camera Implementation Guide	Ongoing	Jones, S.	UA	22,449	2/28/2013
13407	Engineering Consulting Services	Ongoing	Giannini, E.	UA	3,000	6/1/2013
					<b>\$882,488</b>	

### III. Projects in Development

The list below shows transportation research projects for which proposals have been submitted or awarded through UTCA in 2014.

Project ID	Pre-Proposal Title	PI	Budget	Proposed Start Date	Proposed End Date	Status
14401	Comparative Evaluation of Concrete Bridge Deck Sealers	Giannini Lindly	61,895	1/21/14	9/30/14	Awarded
14402	Development of Crash Modification Factors for DOT Funded Selective Enforcement	Graettinger Jones Smith	145,129	1/1/14	6/30/15	Awarded
14403	Southeastern University Transportation – Education	Lindly Turner	72,613	9/30/13	7/31/17	Awarded
14404	Texas Southern University/USDOT	Jones Li	93,750	6/1/14	5/31/16	submitted
14405	End Zone Design for Alabama Deep Restressed Girders	Song Aaleti Richardson	154,539	7/1/14	6/30/15	Awarded
14406	Southeastern University Transportation – T squared	Jones	18,217	1/1/14	12/31/14	Awarded
14407	Southeastern University Transportation – Education (Year 2)	Lindly	46,224	9/30/14	8/31/15	submitted
14408	Intercity Bus Service Study 2014	Lindly Jones	75,170	5/15/14	9/30/14	submitted
14409	Investigation of the Use of Carbonate Coarse Aggregates in Alabama Concrete Pavements	Giannini Lindly	48,000	6/15/14	12/31/14	Awarded
14410	Alabama SHSP Update & Implementation Phase I	Jones Lindly Smith	350,305	7/1/14	9/30/15	submitted
14410	Evaluation of Travel Demand Modeling Throughout Alabama Using Highway Performance Monitoring System Data	Jones/ Tedla	2,974,775	10/1/14	9/30/16	submitted
			<b>\$4,040,617</b>			

## **IV. Center Participants**

### **a. Administration**

The UTCA headquarters is located in the Bevill Building on The University of Alabama campus. Each campus (UA, UAB, and UAH) has a branch office operating under the direction of an associate director. The executive director and associate directors form the Executive Committee, which provides guidance and direction for Center activities. Faculty members engaged in UTCA projects work in their own offices on their own campuses.

The five individuals listed below are continuously assigned to the UTCA, all on a part-time basis.

#### **Dr. Jay K. Lindly, Executive Director**

Department of Civil, Construction, and Environmental Engineering  
The University of Alabama  
Tuscaloosa, AL

#### **Dr. Michael Hardin, Associate Director**

College of Commerce and Business Administration  
The University of Alabama  
Tuscaloosa, AL

#### **Dr. Fouad H. Fouad, Associate Director**

Department of Civil, Construction, and Environmental Engineering  
The University of Alabama at Birmingham  
Birmingham, AL

#### **Dr. Houssam Toutanji, Associate Director**

Department of Civil and Environmental Engineering  
The University of Alabama in Huntsville  
Huntsville, AL

#### **Mrs. Connie Harris, Administrative Secretary**

Department of Civil, Construction, and Environmental Engineering  
The University of Alabama  
Tuscaloosa, AL

## b. UA Faculty Working on UTCA Projects/Activities in 2013

Faculty	Dept.	Project ID	Project Title	PI	Fund Source
Back, W.E.	CCEE	12409	Life Cycle Cost in ALDOT Infrastructure Projects		ALDOT
Batson, R.	CCEE	12410	ALDOT Economic Sustainability	X	ALDOT
Cover, J.	ELFS	12410	ALDOT Economic Sustainability		ALDOT
Fridley, K	CCEE	12409	Life Cycle Cost in ALDOT Infrastructure Projects		ALDOT
Giannini, E.	CCEE	13407	Engineering Consulting Services	X	UWY
Giannini, E.	CCEE	13408	Eisenhower Summer Exchange Program	X	USDOT
Graettinger, A.	CCEE	12401	Natural Gas Encasement for Highway Crossings		ALDOT
Graettinger, A.	CCEE	12407	Wisconsin DOT - Crash and Analysis Mapping Phase III	X	WDOT
Johnson, P	CCEE	12401	Natural Gas Encasement for Highway Crossings		ALDOT
Jones, S.	CCEE	12402	Safety & Operational Evaluation of Adaptive Traffic Signal Control – Sub UAB	X	ALDOT
Jones, S.	CCEE	12404	Bridge Rail Safety Analysis	X	ALDOT
Jones, S.	CCEE	12411	Revision of the Traffic Signal Design Guide and Timing Manual – Sub UAB	X	ALDOT
Jones, S.	CCEE	12412	Travel Time Assessment of Adaptive Traffic Signal Control Systems	X	ALDOT
Jones, S.	CCEE	12413	Evaluation of DDI for Alabama – Sub UAH	X	ALDOT
Jones, S.	CCEE	12414	Red Light Running Camera Implementation Guide	X	ALDOT
Jones, S.	CCEE	12415	Alabama Traffic Data Collection Analysis	X	ALDOT
Jones, S.	CCEE	13401	Rail Highway At-Grade Crossing Prioritization and Ranking Program Analysis		ALDOT
Jones, S.	CCEE	13402	Development of the ALDOT Roundabout Design	X	ALDOT
Jones, S.	CCEE	13403	Short Term, Quick Turnaround		ALDOT
Lindly, J.	CCEE	10401	Pilot Car Driver Certification Program	X	ALDOT
Lindly, J.	CCEE	12401	Natural Gas Encasement for Highway Crossings	X	ALDOT
Lindly, J.	CCEE	12409	Life Cycle Cost in ALDOT Infrastructure Projects	X	ALDOT
Lindly, J.	CCEE	12414	Red Light Running Camera Implementation Guide		ALDOT
Lindly, J.	CCEE	14403	Southeastern University Transportation Center – Year 1	X	UT/USDOT

## UA Faculty Working on UTCA Projects – continued from page 7

Faculty	Dept.	Project ID	Project Title	PI	Fund Source
Lou, Y.	CCEE	12404	Bridge Rail Safety Analysis		ALDOT
Lou, Y.	CCEE	12406	Comparative Analysis of Dynamic Pricing Strategies for Managed Lanes (2012-089)	X	STRIDE
Lou, Y.	CCEE	13401	Rail Highway At-Grade Crossing Prioritization and Ranking Program Analysis	X	ALDOT
Turner, D.	CCEE	12403	Liaison and Coordination Services for Highway Safety Research and Implementation Programs	X	ALDOT
Turner, D.	CCEE	13403	Short Term, Quick Turnaround	X	ALDOT
Turner, D.	CCEE	14403	Southeastern University Transportation – Year 1		UT/USDOT



**c. UA Research Scientists/Post-Doctoral Associates Working on UTCA Projects/Activities in 2013**

<b>Research Eng/ Post Doc</b>	<b>Dept.</b>	<b>Project ID</b>	<b>Project Title</b>	<b>Fund Source</b>
<b>Burnett, Brandon</b>	CS	12415	Alabama Traffic Data Collection Analysis	ALDOT
<b>Ijaz, A.</b>	CBER	12410	ALDOT Economic Sustainability	ALDOT
<b>Li, Jing,</b>	CCEE	12404	Bridge Rail Safety Analysis	ALDOT
<b>Li, Jing,</b>	CCEE	13401	Rail Highway At-Grade Crossing Prioritization and Ranking Program Analysis	ALDOT
<b>Tedla, E.</b>	CCEE	12414	Red Light Running Camera Implementation Guide	ALDOT
<b>Tedla, E.</b>	CCEE	12415	Alabama Traffic Data Collection Analysis	ALDOT
<b>Tedla, E.</b>	CCEE	13403	Short Term, Quick Turnaround	ALDOT

#### d. UA Graduate Students Working on UTCA Projects/Activities in 2013

GRA	Dept.	Project ID	Project Title	Fund Source
Abdul, M.	CCEE	13402	Development of the ALDOT Roundabout Design	ALDOT
Abdul, M.	CCEE	13403	Short Term, Quick Turnaround	ALDOT
Biswas, S.	CCEE	12407	Wisconsin DOT - Crash and Analysis Mapping Phase III	ALDOT
Cochran, C.	CCEE	12410	ALDOT Economic Sustainability	ALDOT
Fields, R.	CCEE	12404	Bridge Rail Safety Analysis	ALDOT
Fields, R.	CCEE	13401	Rail Highway At-Grade Crossing Prioritization and Ranking Program Analysis	ALDOT
Kashani, A.	CCEE	12407	Wisconsin DOT – Crash and Analysis Mapping Phase III	WDOT
Li, Peiheng	CCEE	12406	Comparative Analysis of Dynamic Pricing Strategies for Managed Lanes	STRIDE
Lidbe, A	CCEE	12406	Comparative Analysis of Dynamic Pricing Strategies for Managed Lanes (2012-089)	STRIDE
Lidbe, A.	CCEE	12409	Life Cycle Cost in ALDOT Infrastructure Projects	ALDOT
Lidbe, Al.	CCEE	12413	Evaluation of DDI for AL – sub UAH	ALDOT
Mehta, G.	CCEE	12404	Bridge Rail Safety Analysis	ALDOT
Sherer, M.	CCEE	12401	Natural Gas Encasement for Highway Crossings	ALDOT
Zephaniah, S.	CCEE	12413	Evaluations of DDI for Alabama – sub UAH	ALDOT

### e. UA Undergraduate Students Working on UTCA Projects/Activities in 2013

Undergrad	Dept.	Project ID	Project Title	Fund Source
<b>Bardosi, K</b>	CCEE	12407	Wisconsin DOT – Crash and Analysis Mapping Phase III	WDOT
<b>Dye, D.</b>	CCEE	12402	Safety & Operational Evaluation of Adaptive Traffic Signal Control	ALDOT
<b>Dye, D.</b>	CCEE	12415	Alabama Traffic Data Collection Analysis	ALDOT
<b>Dye, D.</b>	CCEE	13403	Short Term, Quick Turnaround	ALDOT
<b>Howell, J.</b>	CCEE	13403	Short Term, Quick Turnaround	ALDOT
<b>Johnson, K.</b>	CCEE	12401	Natural Gas Encasement for Highway Crossings	ALDOT
<b>Killeen, O.</b>	CCEE	13407	Engineering Consulting Services	UWY
<b>Killeen, O.</b>	CCEE	13408	Eisenhower Summer Exchange Program	USDOT
<b>Klenke, D.</b>	CCEE	13407	Engineering Consulting Services	UWY
<b>McDaniel, J.</b>	CCEE	13403	Short Term, Quick Turnaround	ALDOT
<b>Perkins, L</b>	CCEE	12409	Life Cycle Cost in ALDOT Infrastructure Projects	ALDOT
<b>Schmidt, C.</b>	CCEE	12402	Safety & Operational Evaluation of Adaptive Traffic Signal Control	ALDOT

## V. Internal Collaborations

UTCA is housed in the Department of Civil, Construction, and Environmental Engineering (CCEE) at UA. The table below indicates other UA units (including other non-transportation civil engineering faculty) that participated in UTCA projects during 2013. The table below also includes UTCA faculty that were Co-PI's in other departments.

Project ID	Project Title	PI/Co-Pis	Dept.	Title
12401	Natural Gas Encasement for Highway Crossings	Graettinger, A.	CCEE	Assoc. Professor, Civil, Construction & Env. Eng.
12401	Natural Gas Encasement for Highway Crossings	Johnson, P	CCEE	Assoc. Professor, Civil, Construction & Env. Eng.
12407	Wisconsin DOT - Crash and Analysis Mapping Phase III	Graettinger, A.	CCEE	Assoc. Professor, Civil, Construction & Env. Eng.
12409	Life Cycle Cost in ALDOT Infrastructure Projects	Back, W.E.	CCEE	Director of Construction Engineering and Management
12409	Life Cycle Cost in ALDOT Infrastructure Projects	Fridley, K	CCEE	Department Head of Civil, Construction & Env. Eng.
12410	ALDOT Economic Sustainability	Batson, R.	CCEE	Professor, Civil, Construction and Env. Eng.
12410	ALDOT Economic Sustainability	Cochran, C.	CCEE	GRA Student, Civil, Construction
12410	ALDOT Economic Sustainability	Cover, J.	ELFS	Professor of Economics
12410	ALDOT Economic Sustainability	Ijaz, A.	CBER	Associate Director and Director of Economic Forecasting; Center for Business & Economic Research
13407	Engineering Consulting Services	Giannini, E.	CCEE	Assistant Professor, Civil, Construction & Env. Eng.
13408	Eisenhower Summer Exchange Program	Giannini, E	USDOT	Assistant Professor, Civil, Construction & Env. Eng.
CAPS	Evaluation of the AL Ticketing Aggressive Cars and Trucks (TACT)	Parrish, A	CS, CAPS	Director of Center for Advanced Public Safety (CAPS)
		Brown, D.	CS, CAPS	Deputy Director of CAPS
		Jones, S.	CCEE	Assoc. Professor, Civil, Construction & Env. Eng.

## VI. External Collaborations

The table below indicates individuals and organizations outside UA that participated in UTCA projects during 2013. Many of the collaborations reflect agencies that fund UTCA projects; other collaborations come in the form of external groups that were subcontractors to UTCA projects.

Project ID	Project Title	Participants	Organizations
10401	Pilot Car Driver Certification Program	Lindly, J.	Alabama Dept. of Transportation, funding
12401	Natural Gas Encasement for Highway Crossings	Lindly, J.	Alabama Dept. of Transportation, funding
12402	Safety & Operational Evaluation of Adaptive Traffic Signal Control	Jones, S.	Alabama Dept. of Transportation, funding Subs - UAB & Southern Traffic Svcs – FL
12403	Liaison and Coordination Services for Hiway Safety Research and Implem. Prog.	Turner, D.	Alabama Dept. of Transportation, funding
12404	Bridge Rail Safety Analysis	Jones, S.	Alabama Dept. of Transportation, funding Sub – Arizona State University
12406	Comparative Analysis of Dynamic Pricing Strategies for Managed Lanes	Lou, Y.	University of Florida, funding
12407	Wisconsin DOT & Crash and Analysis Mapping Phase III	Graettinger, A.	Wisconsin Dept. of Transportation, funding
12409	Life Cycle Cost in ALDOT Infrastructure Projects	Lindly, J.	Alabama Dept. of Transportation, funding
12410	ALDOT Economic Sustainability	Batson, R.	Alabama Dept. of Transportation, funding
12411	Revision of the Traffic Signal Design Guide and Timing Manual	Jones, S.	Alabama Dept. of Transportation, funding UA Sub with UAB
12412	Travel Time Assessment of Adaptive Traffic Signal Control Systems	Jones, S.	Alabama Dept. of Transportation, funding, Sub – Southern Lighting & Traffic - GA
12413	Evaluation of Diverging Diamond Interchanges for Alabama, Phase I	Jones, S.	Alabama Dept. of Transportation, funding, UA Sub with UAH
12414	Red Light Running Camera Implementation Guide	Jones, S.	Alabama Dept. of Transportation, funding
12415	Alabama Traffic Data Collection Analysis	Jones, S.	Alabama Dept. of Transportation, funding, Sub – Southern Traffic Svcs - FL
13401	Rail Highway At-Grade Crossing Prioritization and Ranking Program Analysis	Jones, S.	Alabama Dept. of Transportation, funding, Sub – Arizona State University
13402	Development of the ALDOT Roundabout Design and Operations Manual	Jones, S.	Alabama Dept. of Transportation, funding, Subs: USA & NE Roundabouts
13403	Short Term, Quick Turnaround Services to Facilitate Safety Research	Jones, S.	Alabama Dept. of Transportation, funding
13407	Engineering Consulting Services	Giannini, E.	University of Wyoming
13408	Eisenhower Summer Exchange Program	Giannini, E.	USDOT / Federal Hwy Administration

**Note:** Additionally, Dr. J.K. Lindly collaborated with University of Tennessee (UT) personnel to write a University Transportation Center Proposal for federal transportation funding. This proposal was successful, and UTCA is now part of the Regional UTC headed by UT.

## VII. Grants/Contracts Submitted

The information contained in the following chart was obtained through the Office for Sponsored Programs at UA for calendar year 2013.

UTCA Project #	OSP Proposal #	Project Title	PI	Co. PI	Co. PI	Agency	Submitted Date	Award Amount
13403	13-0206	Short Term, Quick Turnaround Services to Facilitate Safety Research and Implementation	Turner, D.	Jones, S.		ALDOT	1/24/13	59,494
13404	13-0193	Guidance for the Development and Application of Crash Modification Factors	Lou, Y.			TX Trans. Institute	1/2/13	49,994
13405	13-0517	Developing a Frame Work for Sustainability Screening of Transit-Oriented Developing Projects	Jones, S.	Appiah-Opoku, S.		U.S. Dept. of Housing & Urban	6/1/13	104,830
13407	13-0557	Engineering Consulting Services	Giannini, E.			Univ. of Wyoming	6/19/13	3,000
13408	13-0483	Eisenhower Summer Exchange Program	Giannini, E.			USDOT	5/30/13	8,600
13409	13-0733	WisDot - Wisconsin Info System for Local Roads	Graettinger, A.			Univ. of Wisconsin-Madison	9/19/13	63,938
14401	13-0533	Comparative Evaluation of Concrete Bridge Deck Sealers	Giannini, E.	Lindly, J.		ALDOT	6/3/13	61,895
								<b>\$351,751</b>

## VIII. Grants/Contracts Awarded

Section VIII shows externally funded contracts and grants awarded in 2013.

UTCA Project #	OSP Proposal #	Project Title	PI	Co. PI	Co. PI	Agency	Start Date	End Date	Award Amount
12402	12-0182	Safety & Operational Evaluation of Adaptive Traffic Signal Control	Jones, S.			ALDOT	1/1/12	9/30/14	*47,359
12403	12-0183	Technical Assistance, Liaison and Coordination Services for Highway Safety Research and Implementation Programs	Turner, D.			ALDOT	10/1/12	9/30/14	*32,530
12404	12-0341	Bridge Rail Safety Analysis	Jones, S.	Lou, Y.		ALDOT	3/23/12	9/30/14	*70,000
12413	12-0202	Operational Analysis of Diverging Diamond	Jones, S.			ALDOT	6/1/13	4/30/14	55,530
13401	13-0021	Rail Highway At-Grade Crossing Prioritization and Ranking Program Analysis	Jones, S.			ALDOT	1/1/13	8/15/14	234,419
13402	13-0075	Development of the ALDOT Roundabout Design and Operations Manual	Jones, S.	Tedla, E.		ALDOT/FED	2/6/13	12/31/14	307,618
13403	13-0206	Short Term, Quick turnaround Services to Facilitate Safety Research and Implementation	Turner, D.	Jones, S.		ALDOT	1/28/13	9/30/14	59,494
13407	13-0557	Engineering Consulting Services	Giannini, E.			Univ. WY	6/1/13	10/31/13	3,000
13408	13-0483	Eisenhower Summer Exchange Program	Giannini, E.			USDT/Fed	6/1/13	9/30/14	<u>8,600</u>
									<u>\$818,550</u>
		*Additional funding awarded							

## IX. Grants/Contracts In-Force (Multi-year, externally-funded projects still active)

Section IX shows externally funded contracts that began in 2013 or that began prior to 2013 and were still active in 2013.

UTCA Project #	OSP Proposal #	Project Title	PI	Co. PI	Co. PI	Agency	Start Date	End Date	Award Amount
10401	09-0583	Pilot Car Driver Certification Program	Lindly, J.			ALDOT	4/8/2010	8/30/2013	113,222
12401	12-0204	Natural Gas Encasement for Highway Crossings	Lindly, J.	Graettinger		ALDOT	6/19/2012	8/30/2013	128,428
12402	12-0182	Safety & Operational Evaluation of Adaptive Traffic Signal Control	Jones, S.	Gurupackiam		ALDOT	1/1/2012	12/31/2012	489,684
12403	12-0183	Technical Assistance, Liaison and Coordination Services for Hiway Safety Research and Implem. Prog.	Turner, D.			ALDOT	1/1/2012	12/31/2013	71,549
12404	12-0341	Bridge Rail Safety Analysis	Jones, S.	Lou, Y.		ALDOT	3/23/2012	12/31/2013	129,485
12406	12-0471	Comparative Analysis of Dynamic Pricing Strategies for Managed Lanes (2012-089)	Lou, Y.			U of FL	8/15/2012	11/15/2013	59,541
12407	11-0583	Wisconsin DOT & Crash and Analysis Mapping Phase III	Graettinger, A.			WIDOT	1/11/2012	8/31/2013	118,641
12409	12-0571	Life Cycle Cost in ALDOT Infrastructure Projects	Lindly, J.	Fridley, K.	Back, E.	ALDOT	6/26/2012	1/31/2013	227,297
12410	12-0665	ALDOT Economic Sustainability	Batson, R.	Cover, J.		ALDOT	8/16/2012	1/31/2013	50,384
12411	13-0001	Revision of the Traffic Signal Design Guide and Timing Manual	Jones, S.	Tedla, E.		ALDOT	10/19/2012	9/30/2013	45,179
12412	13-0007	Travel Time Assessment of Adaptive Traffic Signal Control Systems	Jones, S.			ALDOT	10/11/2012	9/30/2013	160,262
12413	12-0202	Operational Analysis of Diverging Diamond Interchanges	Jones, S.			ALDOT	6/1/13	4/30/14	54,519
12414	13-0008	Red Light Running Camera Implementation Guide	Jones, S.	Lindly, J.	Tedla, E.	ALDOT	11/1/2012	2/28/2013	22,449
12415	13-0046	Alabama Traffic Data Collection Analysis	Jones, S.			ALDOT	11/28/2012	9/30/2014	1,499,841
13401	13-0021	Rail Highway At-Grade Crossing Prioritization and Ranking Program Analysis	Jones, S.			ALDOT	1/1/13	8/15/14	234,419
13402	13-0075	Development of the ALDOT Roundabout Design and Operations Manual	Jones, S.			ALDOT	2/6/13	12/31/14	307,618
13403	13-0206	Short Term – Quick Turnaround Services to Facilitate Safety Research and Implementation	Turner, D.	Jones, S.		ALDOT	1/28/13	9/30/14	59,494
13407	13-0557	Engineering Consulting Services	Giannini, E.			U of WY	6/1/13	10/31/13	3,000
13408	13-0483	Eisenhower Summer Exchange Program	Giannini, E.			USDOT	6/1/13	9/30/14	8,600
14403	14-0177	Southeastern University Transportation	Lindly, J.	Jones, S.		UT/USDOT	9/30/13	7/31/17	72,613
14406	14-0462	Southeastern University Transportation	Jones, S.			UT/USDOT	10/1/13	9/30/14	21,745
									<b>3,877,970</b>



## X. Publications

List the transportation research papers published in refereed journals and/or conference proceedings that resulted from projects funded by UTCA. Please list only those papers published in the calendar year 2013. \* denotes student author

- Fonseca, D., **Lou, Y.**, Moynihan, G., and \*Gurupackiam, S. (2013) “Incident Occurrence Modeling during Hurricane Evacuation Events: the case of Alabama’s I-65 corridor.” *Modeling and Simulation in Engineering*, Vol. 2013, Article ID 168126, 6 pages, doi:10.1155/2013/168126.
- \*Green, F., **Lou, Y.** and Jones, S. (2013) “Investment Practices of Transit Service Providers in Land Development.” *Urban Public Transportation Systems 2013: Proceedings of the 3<sup>rd</sup> International Conference on Urban Transportation Systems*, November 17-20, 2013, Paris, France.
- Jones, S.**, \*Gurupackiam, S., and Walsh, J. 2013. “Factors Influencing the Severity of Crashes Caused by Motorcyclists: Analysis of Data from Alabama.” *ASCE Journal of Transportation* 139(9), 949–956.
- Jones, S.**, \*Tefe, M. and Appiah-Opoku, S. 2013. “Proposed Framework for Sustainability Screening of Urban Transport Projects in Developing Countries” *Transportation Research Part A, Policy and Practice* (49), 21-34.
- \*Mehta, G. and **Lou, Y.** (2013) “Safety Performance Function Calibration and Development for the State of Alabama: two-lane two-way rural roads and four-lane divided highways.” *Transportation Research Record: Journal of the Transportation Research Board* (accepted).
- \*Mehta, G. and **Lou, Y.** (2013) “Modeling School Bus Seat Belt Usage: nested and mixed logit approaches.” *Accident Analysis and Prevention*, Vol. 51, 56-67.
- \*Mehta, G. and **Lou, Y.** (2013) “Safety Performance Function Calibration and Development for the State of Alabama: two-lane two-way rural roads and four-lane divided highways.” *Transportation Research Board 92<sup>nd</sup> Annual Meeting Compendium of Papers DVD*, Paper No. 13-4221, Washington D.C., USA.
- Moynihan, G., **Lou, Y.**, Fonseca, D., and \*Gurupackiam, S. (2013) “Design of a Demand Forecasting Module for Contraflow Evacuation Planning.” *Proceedings of the 2013 International Annual Conference of the American Society for Engineering Management*, October 2-5,2013, Minneapolis, MN.
- \*Wang, P., \*Gurupackiam, S. and **Jones, S.** 2013. “A Novel Cell Transmission Model Based Simulations of Left Turn Blockages Inside Intersections.” *Transportation Research Record*, No. 2390, 60-67.
- \*Wang, P., **Jones, S.**, Yang, Q., \*Gurupackiam, S. 2013. “Sensitivity Analysis of Key Input Parameters in Conditional Cell Transmission Model for Oversaturated Arterials.” *Journal of Central South University*, Volume 20, No. 7, 1772-1780.
- \*Wang, P., **Jones, S.**, Yang, Q. and \*Gurupackiam, S. “Cell Transmission Model Based Traffic Signal Timing in Oversaturated Conditions.” *Journal of Central South University*. Volume 20, No. 4, 1129-1136.

## XI. Presentations

List the transportation research papers presented at academic/professional meetings that resulted from projects funded by UTCA. Please list only those papers presented in the calendar year 2013. \* denotes student author

\*Green, F., **Lou, Y.**, and **Jones, S.** “Investment Practices of Transit Service Providers in Land Development.” *Proceedings from the 3<sup>rd</sup> Annual International Conference on Urban Transportation Systems*. ASCE, Transportation & Development Institute, Paris, France, November 17 – 20, November, 2013.

**Jones, S.**, and \*Tefe, M. “Assessing the Sustainability of Public Transport in A Developing Country – Case Study of Accra Ghana.” *Proceedings from the 3<sup>rd</sup> Annual International Conference on Urban Transportation Systems*. ASCE, Transportation & Development Institute, Paris, France, November 17 – 20, November, 2013.

**Lindly, J. K.**, “Revenue Enhancement Alternatives for ALDOT.” *Fifty-Sixth Annual Transportation Conference*, Montgomery, AL, February 13, 2013

**Lindly, J. K.**, “Encasement and Pipeline Integrity.” *2013 AASHTO Subcommittee on Right of Way, Utilities, and Outdoor Advertising Control Conference*, Savannah, GA, April 16, 2013.

**Lou, Y.**, “Empirical Analysis of Students’ Usage of School Bus Seat Belts: Findings from the Alabama Pilot Project.” *Transportation Research Board 92<sup>nd</sup> Annual Meeting*, Washington D.C., January 2013, Poster.

**Lou, Y.**, “Safety Performance Function Calibration and Development for the State of Alabama: two lane two-way rural roads and four-lane divided highways.” *Transportation Research Board 92<sup>nd</sup> Annual Meeting*, Washington D.C., January 2013, Poster.

**Lou, Y.**, “Real-time Pricing of Managed Lanes with Refund Option.” *Institute for Operations Research and the Management Sciences Annual Meeting*, Minneapolis, MN, October 2013.

## **XII. Patents**

None.

## **XIII. Short Courses Presented**

List the transportation seminars, symposia, distance learning classes, etc. you conducted in the calendar year 2013 that resulted from projects funded by UTCA.

None

## **XIV. Outreach Activities**

Refers to editorial boards of other groups that UTCA personnel served on, any institutes UTCA puts on for underprivileged school and/or high school students, and other outreach activities not previously listed.

*Drs. Lindly, Jones, and Lou teach transportation courses and advise transportation graduate students, in addition to carrying out research. Dr. Turner, who retired in December 2009, has ended his formal teaching and advising duties but continues to be an active member in the community of transportation professionals. The outreach activities of these four individuals are highlighted on the following pages.*

## Outreach Activities – continued from page 19

**Dr. Jay Lindly** directly participated in outreach in several ways:

- Member, Transportation Research Board Panel 44-11 which reviewed NCHRP Project 20-05.
- Member, Transportation Research Board Committee Member: AFB70
- Collaborated with the UA Aging Infrastructure Systems Center of Excellence on UTCA Project #12409 – Life Cycle Cost in ALDOT Infrastructure Projects
- Collaborated with University of Tennessee (UT) personnel to write a University Transportation Center Proposal for federal transportation funding. This proposal was successful, and UTCA is now part of the Regional UTC headed by University of TN.

**Dr. Daniel Turner** was also active:

- Chair, Alabama Board of Licensure for Professional Engineers and Land Surveyors
- Vice President, Southern Zone, National Council for Examination of Engineers and Surveyors
- Incoming Chair, Technical Activities Council, Transportation Research Board
- Operations and Preservation Group Executive Board, Transportation Research Board
- Younger Member Committee, Institute of Transportation Engineers
- Member, Roadway Safety Committee Performance Committee, Transportation Research Board
- Member, Operational Effects of Geometrics Committee, Transportation Research Board
- Member, Risk Management and Tort Liability Committee, Transportation Research Board
- Member, Task Committee on Technologist Credentialing, American Society of Civil Engineers
- Member, Foundation Board of Directors, American Society of Civil Engineers
- Made 11 presentations of “Transportation Leadership Development Program” to ITE groups in four states
- Made 2 presentations at the 2013 Transportation Research Board Annual Meeting

**Dr. Steven Jones** has engaged the community of transportation professionals worldwide:

- Member, ASCE Transportation & Development Institute Public Transportation Committee
- Transportation Research Board (TRB) Representative for the University of Alabama
- Member & Communications Coordinator, TRB Technology Transfer Committee (ABG30)
- Member, ASCE Transportation & Development Institute Committee on Sustainability and Environment
- Editor, *Journal of Transportation Safety & Security*
- Corresponding Editor, ASCE Journal of Professional Issues in Engineering Education and Practice
- University of Alabama ITE Student Chapter Faculty Advisor, 2009 – present
- Collaborated with the UA’s Center for Advanced Public Safety and the Department of Geography.

## Outreach Activities – continued from page 20

**Dr. Yingyan Lou** – Conducted research with UTCA until 8/15/13. She then transferred to Arizona State University.

- Worked on research project outside of UA – *Prioritizing Emissions Mitigation Strategies at the Mariposa Point of Entry*, EPA
- Worked on research project outside of UA – *Behavioral Study for Managed Lane Pricing with Refund Option*, UTC @ Maryland
- Vice Chair, Intelligent Transportation Systems Interest Group, Transportation and Logistics Society, Institute for Operations Research and Management Sciences (2013 – present)
- Member, Committee on Transportation Network Modeling (ADB30), Transportation Research Board (2012-present)
- Member, Committee on Highway Safety Performance (ANB25), Transportation Research Board (2012-present)
- Member, Committee on User Information Systems (AND20), Transportation Research Board (2011-present)
- Editorial Board Member, International Journal of Applied Management Science, 2009 – present
- Reviewer for multiple journals, ASCE Journal of Transportation Engineering, IATSS Research, IEEE Transactions on Intelligent Transportation Systems, IET Intelligent Transport Systems, International Journal of ITS Research, Journal of Applied Mathematics, Transportation Research Part A, Transportation Research Part B, Transportation Research Part C.
- Reviewer for multiple conferences, American Society of Engineering Education 2013, Transportation Research Board Annual Meeting 2010 – 2014
- Proposal Reviewer for multiple agencies, Southeastern Transportation Research, Innovation, Development and Education Center, National Center for Intermodal Transportation for Economic Competitiveness, and University of California Transportation Center.
- Collaborated externally with University of Florida, Georgia Institute of Technology and Arizona State University.

## **XV. Honors and Awards**

### **Dr. Daniel Turner**

- Inducted into the Alabama Engineering Hall of Fame, February 2013.

## **XVI. Minutes of Center Meetings**

N/A

## **XVII. Other Information**

UTCA ends calendar year 2013 in a strong position to continue its theme of Management and Safety of Transportation Systems. UA recently signed two long-term contracts with the Alabama Department of Transportation:

- A \$2M Supplemental Agreement For Conduct of Various Studies (end date Sep. 30, 2015)
- A \$7M Highway Safety Improvement Plan Agreement (end date Sep. 30, 2016)

Additionally, in 2013, UTCA joined the University of Tennessee (lead university) and six other universities in a successful proposal to become the USDOT's Southeast Region University Transportation Center (UTC). Thus, UTCA continues its involvement in federally-funded UTC work, and UTCA will benefit from associations with leading transportation research universities in the southeast.

UTCA is therefore firmly established in state, regional, and national highway safety research and plans to strengthen and enlarge its research efforts in the future.