

***Southwest Region University Transportation Center***

**Transportation Security Institute:  
Recruiting Next Generation Professionals**

SWUTC/13/161340-1

Center for Transportation Training and Research  
Texas Southern University  
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Houston, Texas 77004





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16. Abstract The Center for Transportation Training and Research (CTTR), as part of Texas Southern University (TSU), served as host for the 2013 Transportation Security Institute (TSI) in Houston and surrounding area. The 2013 Houston TSI focuses on the mission and objectives of transportation security professionals and introduces a pre-selected group of high school students to the various career opportunities within the profession.  TSI provides a curriculum framework that exposes high school students to the transportation security industry via hands-on technical activities, field trips to transportation facilities, lectures by transportation professionals, and on-site seminars. Furthermore, the primary goal of TSI is to introduce exemplary secondary school students to various career opportunities in transportation security. Secondly, industry professionals will reinforce the importance of mathematics, science, and technology skills in the twenty-first century. Lastly, students will observe how public/private partnerships work to strengthen the link between today's students and future transportation security professionals.					
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**2013 TRANSPORTATION SECURITY INSTITUTE:  
RECRUITING NEXT GENERATION PROFESSIONALS**

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SWUTC/13/161340-1

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**August 2013**



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## **ABSTRACT**

The Center for Transportation Training and Research (CTTR), as part of Texas Southern University (TSU), served as host for the 2013 Transportation Security Institute (TSI) in Houston and surrounding area. The 2013 Houston TSI focuses on the mission and objectives of transportation security professionals and introduces a pre-selected group of high school students to the various career opportunities within the profession.

The objective for the TSI was to create and execute a curriculum that would expose high school students to the various career fields in the transportation security industry. Through the use of hands-on technical activities, field trips to transportation facilities, lectures by transportation professionals, and on site seminars. Industry professionals will reinforce the importance of mathematics, science, and technology skills in the twenty-first century.

TSI received 75 applications and invited a total of 25 high school students to attend the two-week non-residential program from July 8-19, 2013, on the campus of TSU. In addition to highlighting the challenges faced by transportation security personnel, the two-week curriculum also addressed the three principal modes of transportation (air, land, and rail) with activities led by transportation and academic professionals whose fields of interests included the following: transit operations, entrepreneurship, commercial aviation, geographic information systems, urban transportation history, and STEM-related careers.

## EXECUTIVE SUMMARY

The Transportation Security Institute (TSI) was designed to introduce high school students with to the importance of security measures in the transportation industry and the various career opportunities that will be available to them in the near future. Federal officials anticipate a massive shortage in skilled workforce due to the impending retirements of the “baby-boom” generation. In order to meet future workforce needs within the transportation industry, the Federal government has sponsored summer enrichment programs that emphasize the sciences, technologies, engineering, and math (STEM) related careers, especially those as can be applied to the transportation industries.

The Center for Transportation Training and Research (CTTR) and Texas Southern University were the host facilities for the 2013 TSI. The 2013 TSI was a nonresidential, two week program with a curriculum that focused on transportation security in classroom lectures and exercises supported by field trips to transportation facilities throughout the Houston area.

TSI student participants were exposed to a variety of topics as part of the curriculum that emphasized the overall importation of transportation security since the terror attacks of 9/11. These topics included airport and public transit security, bridge and highway design, and the challenges involved in emergency management. At the conclusion of the 2013 TSI, student participants completed an end-of-course evaluation and overwhelming indicated *Strongly Agree* to many indicators that the 2013 TSI met their goals and objectives of introducing transportation security, the applications of STEM-related skills, and the overall importance of transportation to our nation’s society and economy.

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## SECTION I: PROGRAM ADMINISTRATION

### TSI Advisory Board

The 2013 TSI Advisory Board comprised of individuals from partnering institutions, state and federal agencies, public transit properties, and professionals in transportation from the public and private sectors. With a passion to inspire the next generation of transportation professionals, all Advisory Board members/Partners/Sponsors assisted the TSI program staff in pinpointing apt speakers, coordinating tours of local transportation facilities, and obtaining public and private support. Board members also gave input on the curriculum to ensure students are keyed into what the profession is looking for in perspective industry applicants.

### 2013 TSI Advisory Board/Partners/Sponsors

Dr. Siamak Ardekani	Professor The University of Texas, Arlington
Mr. Mark Arrington	Civil Rights Specialist Federal Highway Administration
Mr. Dock Burke	Director, Southwest University Transportation Center Texas Transportation Institute
Mr. Rick Collins	Director Research and Development Texas Department of Transportation
Mr. Quincy D. Allen, P.E	Deputy District Engineer Houston District
Mr. Khosro Godazi	Associate Director, Center for Transportation, Training and Research
Mrs. Audrey Lawson	Vice President, William A. Lawson Institute for Peace and Prosperity
Dr. Carol A. Lewis	Assistant Professor & Director CTTR
Mr. Robert Morgan Jr., MBA, M.S. (TRANS) CTL	Manager of Trade Development Port of Houston Authority, BCT
Ms. Anne Mrok-Smith	Senior Public Information Planner Transportation Dept. Houston-Galveston Area Council
Dr. Gholamali Owlia	Professor, Health and Physical Education TSU
Mr. Steven Payne	Director, ITS Wilbur Smith and Associates
Dr. Judy Perkins	Chair & Professor Prairie View A&M University
Dr. Fengxiang Qiao	Assistant Professor TSU
Ms. Marva Rasberry	Assistant Superintendent Stafford Municipal School District
Mr. Vincent Sanders	Senior Transportation Planner Metropolitan Transit Authority
Mr. Eshragh Vatani	President Vatani Consultant P.L.L.C.
Mr. John Whaley	Director Houston Transtar

### **Program Faculty and Staff**

Mr. Khosro Godazi served as the Director of the 2013 summer Transportation Security Institute (TSI). His responsibilities included coordinating with local representatives of Texas Southern University (the 2013 host facility) and local partners in developing relevant course curriculum, the assignment of relevant personnel, and the preparation of the final reports. The program coordinators, staff, and other speakers assumed the daily supervision of TSI participants. Faculty members were responsible for conducting academic instruction and related activities. TSI staff members were vital to the execution of the 2013 TSI summer program as they interacted with students and coordinated events and activities with staff members of the various organizations and host institutions. The following represents the 2013 TSI staff.

Mr. Khosro Godazi	Institute Director
Dr. Carol Lewis	Faculty
Dr. George Qiao	Faculty
Dr. Charles Glass	Faculty
Ms. Gwen Goodwin	Staff/Researcher
Ms. Latissha Clark	Staff/Researcher
Mrs. Henri Henson	Program Coordinator
Alexandra Miller	Program Coordinator
Jennifer Clark	Staff
Biko Walker	Staff

### **Program Objectives**

The primary objective of TSI is to introduce high school students to the career opportunities in the transportation industry, while emphasizing the security issues faced on various transport modes through stimulating hands on activities and lectures from transportation professionals. While the economic and social importance of transportation modes were generally discussed and presented to the participants, the security and safe operations of these modes were the focal point of the summer program. TSI curriculum stressed the integration of science, technology, engineering, and mathematics (STEM) in all hand-on activities, lectures, and field trips. The following is a broad example of the TSI curriculum presented to the 2013 summer participants:

- Introduced to the history and significance of the transportation industry and all modes of travel (including public transit, automobiles, buses, vans, trains, airplanes, as well as freight, rail, ports, waterways, and pipelines) with an emphasis on intermodalism;
- Discussed career opportunities in public and private sector transportation, with an emphasis on transportation design, engineering, planning, research, and security; and
- Emphasized the importance of STEM-related education and how such training will impact future transportation systems through advanced technology and intelligent transportation systems, particularly those involving the next generation aviation and space technologies.

## **Student Selection Process**

Student selection was based on criteria created by the Center for Transportation Training and Research (CTTR), including age, grade point average, letters of recommendation, and a written essay. All applications were sent to the project director for review and twenty-five students were selected to participate in the July 2013 TSI program. The project director and staff personally notified those students selected and sent the necessary forms for participating in the program. The institution received all signed forms required for participation as receipt of acceptance by the student.

## **Marketing**

The 2013 TSI staff distributed program information through a variety of formats in an attempt to reach a wide range of potential participants throughout the greater Houston area. TSI staff successfully targeted local faculty and staff through interagency emails; counselors from area school districts were contacted regarding high performing students; lastly local church and community leaders were asked to identify promising students in their respective areas and jurisdictions.



## SECTION II: PROGRAM CURRICULUM

### 2013 TSI Two Week Program

Date	Time	Topic	Speaker			Company/Organization	Enhancemnt Activities
<b>8-Jul-13</b>	<b>Welcome-Presentation Skills-Resume-Computer Skills</b>						
<b>(Mon.)</b>	8:00 - 8:30a.m	Registration and Orientation	Ms.	Alex	Miller	CTTR/TSU	Hands-on
	8:30 - 9:00	Welcome Message & Call to Excellence	Mr.	Khosro	Godazi	CTTR/TSU	Lecture
	9:00 - 10:00	Ice Breaker Session	Ms.	Henri	Henson	CTTR/TSU	Hands-on
	10:00 - 12:00	History of Transportation	Mr.	Khosro	Godazi	CTTR/TSU	Lecture
	<b>12:00 - 1:00</b>	<b>Lunch</b>					
	1:00 - 5:00	Presentation Skill-Resume-Computer Skills	Ms.	Alex	Miller	CTTR/TSU	Hands on
<b>9-Jul-13</b>	<b>Aivation-Flight Similiuator</b>						
<b>(Tue.)</b>	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Henri	Henson	Texas Southern University	Hands-on
	9:00 - 12:00	The Airplane and It's Components	Dr.	Charles	Glass	Texas Southern University	Hands-on
	12:00 - 1:00	<b>Lunch</b>					
	1:00 - 5:00	Flight simulator training - Airway Science Bldg	Dr.	Charles	Glass	Texas Southern University	Hands-on
<b>10-Jul-13</b>	<b>City Planning and Transportation</b>						
<b>(Wed.)</b>	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Henri	Henson	Texas Southern University	Hands on
	9:00 - 12:00	City Planning	Mr.	Jamaal	Schoby	Texas Southern University	Hands on
	12:00 - 1:00	<b>Lunch</b>					
	1:00 - 2:00	Sport	Mr.	Biko	Walker	Texas Southern University	Hands on
	2:00 - 5:00	Team Project	Mr.	Jamaal	Schoby	Texas Southern University	Hands on
<b>11-Jul-13</b>	<b>GIS and Transportation</b>						
<b>(Thur.)</b>	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Henri	Henson	Texas Southern University	Hands-on
	9:00 - 12:00	Transportation Safety	Ms.	Tish	Clark	CTTR-TSU	Hands-on
	<b>12:00 - 1:00</b>	<b>Lunch</b>					
	1:00 - 5:00	GIS/Team Work Project	Ms.	Tish	Clark	CTTR-TSU	Hands-on
<b>12-Jul-13</b>	<b>Math-Houston METRO</b>						
<b>(Fri.)</b>	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Henri	Henson	CTTR/TSU	Hands on
	9:00 - 12:00	Math	Mr.	Ismail	Rokhni	HISD	Hands-on
	<b>12:00 - 1:00</b>	<b>Lunch</b>					
	1:00 - 5:00	Houston Metro	Mr.	Vincent	Sanders	Houston METRO	Hand-on



**2013 TSI Two Week Program (continued)**

Date	Time	Topic	Speaker			Company/Organization	Enhancement Activities
<b>15-Jul-13</b>		<b>Alternative Fuels/Solar Energy</b>					
(Mon.)	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Henri	Henson	Texas Southern University	Hands on
	9:00 - 10:00	Alternative Fuels	Mr.	Adam	Burke	GreenEnergy	Lecture
	10:00 - 12:00	Solar Energy	Mr.	Adam	Burke	GreenEnergy	Hands on
	12:00 - 1:00	<b>Lunch</b>					
	1:00 - 5:00	Team Project	Mr.	Adam	Burke	GreenEnergy	Hands on
<b>16-Jul-13</b>		<b>Intersection Signal Timing</b>					
(Thur.)	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Henri	Henson	Texas Southern University	Hands on
	9:00 - 10:30	How to Conduct Traffic Survey in Road Intersection	Dr.	Fengxiang	Qiao	Texas Southern University	Hands on
	10:30 - 12:00	Techniques related to Intersection Signal Timing	Dr.	Fengxiang	Qiao	Texas Southern University	Hands on
	12:00 - 1:00	<b>Lunch</b>					
	1:00 - 5:00	Team Work Project	Dr.	Fengxiang	Qiao	Texas Southern University	Hands on
<b>17-Jul-13</b>		<b>Highway Design - Bridge Design-Security</b>					
(Wed.)	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Henri	Henson	Texas Southern University	Hands-on
	9:00 - 12:00	Introduction & Overview	Mr.	Nick	Horiszny	TxDOT	Hands-on
	<b>12:00 - 1:00</b>	<b>Lunch</b>					
	1:00 - 5:00	Team Work Project	Mr.	Nick	Horiszny	TxDOT	Hands-on
<b>18-Jul-13</b>		<b>Houston TranStar/Webpage</b>					
(Thur.)	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Henri	Henson	Texas Southern University	Hands-on
	9:00 - 12:00	Houston TranStar	Mr.	John	Whaley	TranStar	Lecture
	<b>12:00 - 1:00</b>	<b>Lunch</b>					
	1:00 - 5:00	Geoscience Engineering	Mr.	Jim	Palavan	Geoscience Engineering	Hands-on
<b>19-Jul-13</b>		<b>TxDOT - How to become an Entrepreneur - Closing Ceremony</b>					
(Fri.)	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Henri	Henson	Texas Southern University	Hands-on
	9:00 - 11:00	TxDot and Career Opportunities	Ms.	Charlene	Shirley	TxDOT	Lecture
	11:00 - 12:00	How to become an Entrepreneur	Mr.	Jim	Palavan	Geoscience Engineering	Hands on
	12:00 - 1:00	<b>Lunch</b>					
		Closing Ceremony	Mr.	Khosro	Godazi	Texas Southern University	
		Guest Speaker	Mr.	Dock	Burke	SWUTC	



## Academic Program: Classroom Experiences (hands – on activities)

### Aviation

Students started the day with the hands on activity of building and testing paper airplanes, with the intent to learn the basics of thermodynamics and critical thinking. The students competed to see whose plane could stay in the air longest, and were able to apply problem solving skills to make improvements. The class then went into a discussion on different career fields in the aviation industry, the rigor, safety precautions, and joys of the field, specifically in Homeland Security, pilots, aircraft maintenance, and air traffic control. The students watched a movie on the building of Hong Kong International Airport to emphasize that the



transportation industry is vast in career opportunities. Whether you want to be an engineer, architect, economist, police officer, project manager, or whatever else, there is a position for you within the transportation industry. Other discussions throughout the day included what customs agents do and the role they play in keeping us as safe as possible and the dangers of negligible security measures. The students concluded their day learning and practicing flying on flight simulators as well as looking at flight maps to learn how pilots know where they are going while in the air.

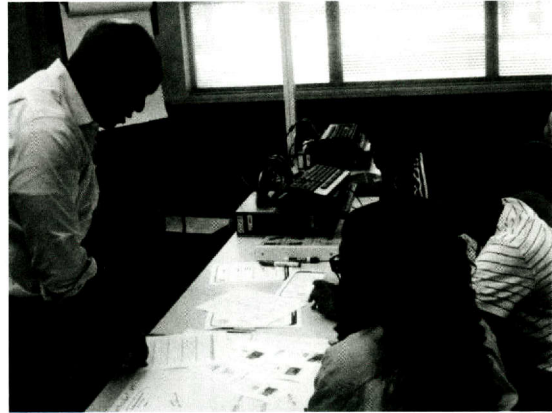


### City Planning

Jamaal Schoby introduced students to the world of city planning and creating sustainable neighborhoods. They watched a video on what METRO plans to do in the future to help Houston stay sustainable and participated in several hands on activities throughout the day. In the first activity, students broke up into six groups and created a list of places and services that they felt was important to incorporate into a hypothetical city if they were planners themselves. They were then given a lecture on sustainable development and learned about the three E's, economy, environment, and equity that city planners use every day to improve the quality of life for all citizens as well as understand how they connect together. The six groups broke down into five groups in order to prepare to play a game called Terminus. In the game, each group represented district chairs of separate districts, with a unique set of people and problems, to form a collaborative region. The region itself had to a budget of \$100,000 to spend and each district had to decide how to spend a portion of this budget on transportation projects for their area. Staying on budget was not the only constraint, however. Each group had 13 cards with possible projects they could impose, with required amount of

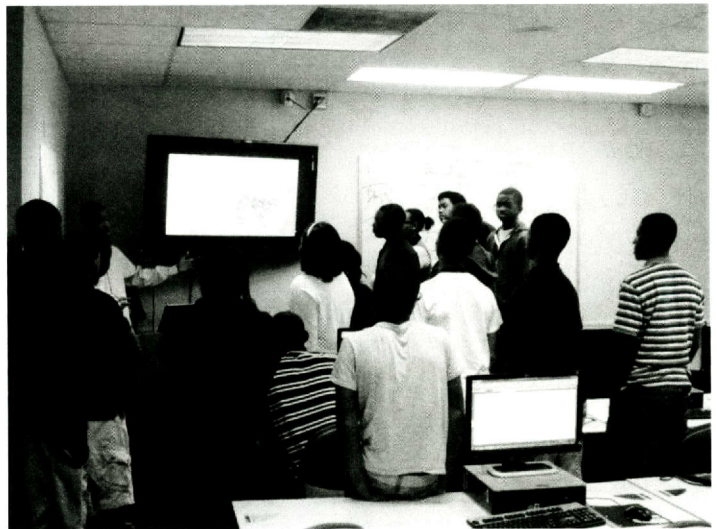


points for equity, environment, and economy factors that they had to meet. The proposed projects also had to meet the community requests presented to the district chairs through a community engagement survey. When projects were chosen, district mayors had to present their decisions to the regional board (the entire class), and went through several rounds of negotiations in order to come to a consensus on what projects the region would take on. There were also unforeseen challenges thrown at students like environmental groups threatening to withdraw financial support if more eco-friendly projects are imposed as well as errors in revenue projections reducing the total regional budget by \$5000. The districts had to take these challenges into consideration and create ways to meet these new criteria. This game gave students the opportunity to learn how and why city planners make the decisions they do when planning. It also gave them a glimpse of how planning organizations have to work with each other, government officials, city constituents, and other organizations that advocate for certain city projects.



### **Geographic Information Systems (GIS)**

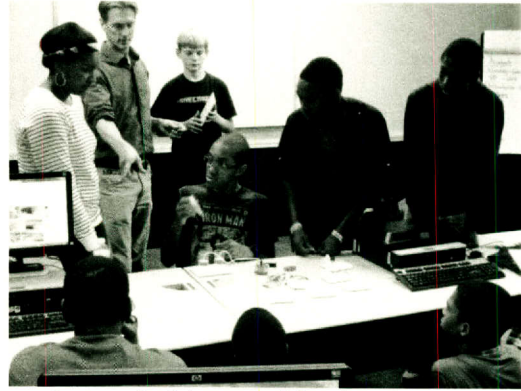
Mr. Vincent Hassell introduced students what GIS is, how it used in the transportation industry, and the mechanics behind it. The students made a list of websites and companies that they felt use or should use the system. This exercise was used to show the class that GIS is used by many different professions and has incredible versatility. Students were surprised to find out that many of the things that they use on a daily basis has GIS working with it, such as Facebook, navigation system, and Google. Students then took this information and created Power point presentations of their own demonstrating what they learned.





## Solar Energy

Mr. Adam Burke, a professional from Green Energy, spent the day teaching students about the different principles of solar energy as well as other forms of renewable energy, and it is something that should be looked at as an alternative to fossil fuels. He also discussed its past and future roles in the transportation industry. Students learned about solar cells participated in various activities such as boiling water



with a solar conductor, baking cookies by the sun using a solar oven, and constructing personal solar panels that attach to phone and ipod/ipad chargers. Students had the ability to test their chargers on their personal phones. The students were also able to see and ride around the parking lot in his Chevy Volt, a car that runs on electricity mainly but still has the availability to use gas.

## Signal Timing

Dr. Fengxiang Qiao spent a day talking to students about signal timing, a career that is usually overlooked and not as well known to most people. He began with a PowerPoint presentation discussing how signal timing is done, the math that is involved with it, and the importance of timing the lights perfectly. For example, he explained that after one set of lights at the intersection turn red the other lights all stay red for a few seconds in order to allow the traffic from the lights that just completed the cycle to clear the intersection. Dr. Qiao then took students out to the intersection of Ennis and Wheeler to do a hands on activity in which the students counted the

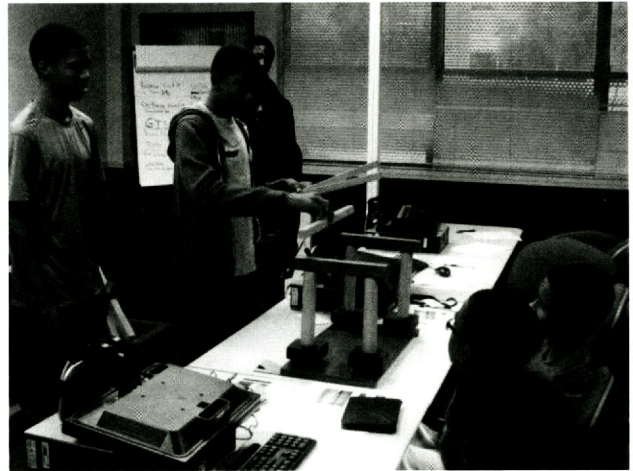


different types of cars and the direction in which they went either left, right, or thru. In groups, the students then used excel to calculate how long each traffic signal needed to be at red, green, and yellow based off of the primary data observed. In conjunction each group made a PowerPoint presentation to present their finding to their peers.



## **Highway Design**

Mr. Nick Horiszny began his presentation telling the students about the work he does at TxDOT, the reasons it is important to have bridges when constructing roads and freeways, and the roles they play in the transportation industry. He showed several short movie clips so that the students could recognize how vast Houston's infrastructure is when it comes to the building and maintenance of our highway system and bridges. He used a Power Point presentation that talked about the different types of bridges, what they are used for, the materials that go into said construction, types of stresses, and building components. Mr. Horiszny kept students engaged by using TV show games like "Family Feud" and "The Weakest Link" to test students' knowledge on bridges and their design. To conclude the day students used West Point Bridge Designer computer software to construct a simulated bridge and test it.



The components of construction, compression, tension, and cost were heavily stressed in this activity. The students competed to see who could come up with the most efficient bridge design at the lowest cost to show the economic standpoint bridge designers face on a regular basis. Students were very pleased to see a simulated truck safely cross their bridge design without the bridge collapsing.

## **Geoscience**

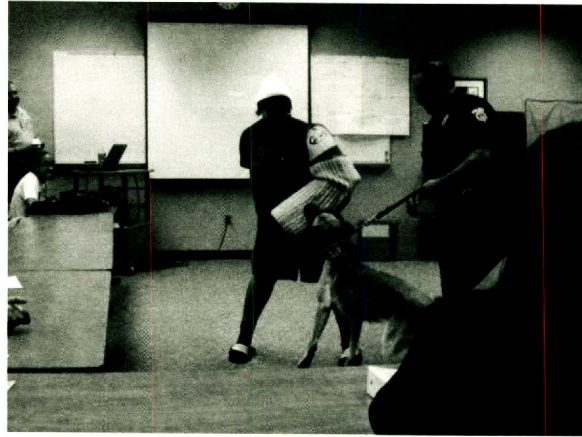
Students were exposed to the field of geoscience engineering and given a lecture on the role land plays when it is time to construct buildings, road ways, and rail lines. They learned about the different sediments that make up the ground like sand, silt, and clay as well as what type of sediment is more conducive to the building process. It was emphasized to students that the land is the most fundamental component of the building process, and that without a solid foundation the security of people's lives, belongings, and investments are left in the balance.



## Academic Program: Field Trip Experiences

### Houston METRO

Mr. Vincent Sanders, Lead Transportation Systems Planner for METRO, set up a series of activities for the students to do at the METRO Rail Operating Center on Fannin. The students were spoken to about what some of the functions of METRO are, its history, and the security aspects put in place for the protection of all riders. Officer Zepeda from METRO police brought in his dog Alex and showed students how the canine units help serve the officers. They learned about the type of training the dogs go through, their diets, and what happens to the dogs when they are retired from service. Students were had the ability to



participate in a demonstration with Alex where they wore the police sleeve the dogs use in training. They then were lead on a tour of the facility and learned about some of the different machinery such as air condition units, security of the door sensors, and engines needed to run the rail buses. They went into the operator center in the bus to learn about the gadgets and buttons the operators use when the rail bus is in use. The students were also able to experience being in the METRO control center where they learned about the security that is done on the rail lines, such as cameras, and how the control room operators



monitor the rail trains and its surroundings. Students then got to ride the METRO Rail from the transit center to the end of the end of the line at University of Houston Downtown.



## **Houston Transtar**

On the visit to Houston Transtar, students were able to see the control center as well as the emergency operating center. Here they learned about what Transtar does, who it serves, and what they do to help protect the citizens of Houston and surrounding counties on the road ways. Students were surprised to find out that METRO, the City of Houston, State of Texas, and Harris County all work together to make up Transtar. It was explained that these four agencies are



the ones who employ, train, and pay those who work at Transtar, not Transtar itself. Students were also enlightened about how the cameras work and what they are used for. They found it interesting to know that Transtar uses the EZ-Tag stickers to determine how fast cars are going on the roadways as well as tracks the time it takes to get from one freeway to another. Different career opportunities were discussed in emergency management and what occurs when there are hurricanes, tropical storms, wildfires, and other incidents that occur that require evacuation of people.

## **Enhancement Program**

The TSI provided enhancement activities that focused on fundamental educational achievement and STEM skills as they are applied to the transportation industry, and personal development activities that will prepare students for college and beyond. Students participated in lectures and activities that enhanced academic achievement, improved study skills, and fostered self-awareness and creativity. In addition, TSI participants were provided information regarding college/university admissions and the skills and characteristics necessary for success in the higher academic environment. Speakers talked to students about overcoming adversity and dealing with the hand life hands them. Many of the students were inspired and could relate to the stories that the speakers gave. Public Speaking was also emphasized to students throughout the program and they were given the opportunity to practice daily. Due to its vital role on the university level, as well as in the business world, improving the student's math skills was another important part of the program. Students broke up into teams and practiced sets of prepared algebra and fraction problems. They then competed in a jeopardy-like game to test their knowledge.

## **Surveys and Evaluations**

In order to improve the curriculum and course offerings in future TSI summer programs, student participants were surveyed to ascertain their general impressions of the 2013 TSI program. They were asked to Strongly Agree, Agree, Disagree or Strongly Disagree to numerous questions designed to solicit their opinions on the lectures, host facilities, staff, and field trips.



## Closing Awards Program

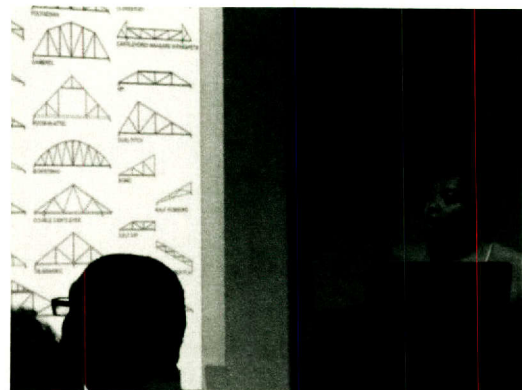
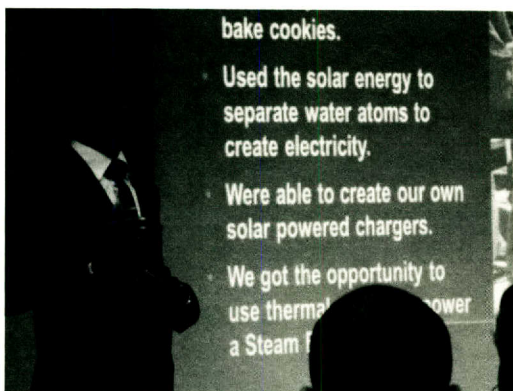
The Transportation Security Institute held its graduation ceremony at Texas Southern University in the Student Life Center on July 19, 2013. The program director, Mr. Khosro Godazi, provided those in attendance with a presentation on the history of transportation and an overview of the Institute. He discussed why the Institute was created and presented highlights from the classroom lectures, activities, as well as the field trips. Mr. Godazi also recognized the parents/guardians for their commitment to their children's education.

The student participants were divided into groups and each presented their observations of different aspects of their experiences of the TSI. The groups and their specific area of presentation were as follows:

- Aviation – Aja Stewart, Ryann Brown, Tiraja Blake
- Signal Timing – Daniel Johnson, Micah Sirles, Grace James
- Houston Transtar- Bryce Boyd, David Johnson, Mason Mayes
- Houston METRO – Enoma Osakue, LaMarcus , Amera Means
- Solar Energy – Oliver Vital, Kaylyn Dotson, Christian Love
- City Planning – Tre'Voy Lewis, Tyler Minor, Desmond Ford
- Highway Design – Nykiya Bailey, Jacobi Robinson
- GIS – Matthew Greene, Destiny Means, Kennedy Wislson

Mr. Godazi introduced the guest speaker, Mr. Doc Burke from the Southwest University Transportation Center (SWUTC) who talked to those in attendance about the importance of education and the need for student interest in the transportation field. He congratulated students for taking active steps in preparing for their futures. A number of parents made remarks about the effectiveness of this program and how it has been beneficial for their children. They applauded the staff of the program for their support and SWUTC for providing the funds.

The 2013 TSI summer program concluded with the awarding of certificates of participation to those students who completed the program.





## **SECTION III: RECOMMENDATIONS**

### **Program Overview and Recommendations**

The staff of the Transportation Security Institute at Texas Southern University believed the 2013 program was a success. The goals and objectives of the program were reached and went even beyond their expectations. As a non-residential program, the 2013 TSI program introduced student participants to the challenges of transportation security professionals as well as the many career paths and various modes of transportation within the public and private transportation sectors. While the program was a huge success, improvements can make it even more successful.

Suggested improvements include:

- (1) Involving state officials to encourage fundraising from the state by continually stressing the importance of transportation security in Houston and surrounding areas;
- (2) Emphasize the importance of TSI as an avenue to train future professionals for the transportation industry, consulting companies, and community stakeholders;
- (3) Establish professional relationships with local transportation agencies, consultants, TxDOT, and Federal agencies to develop internships (paid and voluntary) for past TSI participants;
- (4) Continue to refine the curriculum to better educate participants based on the evolving needs of the transportation security field and the transportation industry in general;
- (5) Emphasize the strong correlation of STEM-related education and the future needs of the transportation industry; and
- (6) Establish some form of mechanism or tool to “track” former TSI participants as they matriculate to establish NSTI Newsletter for NSTI’s alumni’s

### **Establishment of Post TSI Tracking System**

With the past successes of the Transportation Security Institute and the previous National Summer Transportation Institute, it has been suggested that a methodology for “tracking” students after participation in the summer program be developed. It has been proposed that a “tracking” methodology would aid students in college preparation and identification as well as be a conduit for professional internships and ultimately professional employment. However, there are many challenges that must be addressed with respect to privacy laws and parental permission to have contact with minors.





## APPENDICES

### 2013 TSI Survey and Evaluation Instrument

CATEGORY	Evaluation Question	Strongly Agree	Agree	Disagree	Strongly Disagree
		Strongly Agree			Strongly Disagree
<b>Classroom</b>					
1	Class activities were well organized	22	1		
2	Class activities were logically sequenced such that simpler activities preceded more complex activities.	20	3		
3	Participants were able to ask questions & discuss related issues during the course of class activities.	21	2		
4	Subject and topics discussed in class were related to the purpose of the project.	19	4		
5	Faculty and presenters provided sufficient explanation of the concepts covered	18	5		
6	Faculty and presenters provided valuable assistance to participants.	22	1		
7	The classroom area(s) were adequate to carry out the activities.	19	4		
8	Enough time was spent discussing the subjects and topics of the project activities.	20	3		
9	The number of projects was appropriate.	18	5		
10	Enough time was allowed for most students to adequately understand what was being taught.	19	4		
<b>Speakers</b>					
1	Activities were well organized.	22	1		
2	I was academically challenged by program activities.	19	4		
3	Computer training activities were very stimulating.	16	7		
4	Computer training activities were very enlightening.	20	3		
5	Adequate time was allotted for the activities.	20	3		
6	I felt free to ask questions.	18	5		
7	All enhancement activities were educational and beneficial.	19	4		

### 2013 TSI Survey and Evaluation Instrument (continued)

CATEGORY	Evaluation Question	Strongly Agree	Agree	Disagree	Strongly Disagree
		Agree			Disagree
<b>Staff</b>		w-1	w-2	w-3	w-4
1	The staff was very interested in my career awareness.	19	4		
2	The Staff was very helpful when I had problems.	17	6		
3	The Staff encouraged students to strive for excellence in all their academic pursuits.	19	4		
4	The Staff was always available when I had a question or needed assistance.	21	2		
5	The Staff was very friendly at all times.	23	0		
6	The Staff was very knowledgeable on transportation related careers.	21	2		
7	The Staff was very enthusiastic about transportation related careers.	20	3		
<b>Enhancement</b>					
1	Activities were well organized.	17	6		
2	I was academically challenged by program activities.	18	5		
3	Computer training activities were very stimulating.	13	10		
4	Computer training activities were very enlightening.	16	7		
5	Adequate time was allotted for the activities.	18	5		
6	I felt free to ask questions.	15	8		
7	All enhancement activities were educational and beneficial	14	9		

CATEGORY	Evaluation Question	Strongly Agree	Agree	Disagree	Strongly Disagree
		Agree			Disagree
<b>Field Trips</b>					
1	Field Trips were informative.	13	10		
2	Concepts from the field trips were related to the field of transportation.	18	5		
3	Field trip activities helped me understand transportation careers better than before.	19	4		
4	Generally, adequate time was allotted for project activities.	16	7		
5	Adequate time was allotted for questions.	18	5		
6	Transportation to and from the site was comfortable.	11	12		
7	Transportation to and from the site was safe.	15	8		
8	Transportation to and from the site was clean.	15	8		
9	The number of field trips was appropriate.	18	5		

## Demographic Summary Report

*FY 2013  
Transportation Security Institute Summer Program-  
Demographics Data Sheet*

<i>State</i>	Texas
<i>Host Site</i>	Texas Southern University

<i>Project Director</i>	Khosro Godazi
<i>Program Dates</i>	July 8-19, 2012
<i>Program Length</i>	2 Weeks

<i>Participant Information</i>	
Grade Level:	High School
Program Classification:	Non- Residential

<i>Gender of Participants</i>	
Male	14
Female	9

<i>Applicant Data</i>	
Number of Applications Received	75
Number of Participants Selected	25
Number of Participants Completed the Program	23

<i>Race/ Ethnicity</i>	
African American	23
Caucasian	0
Hispanic American	0
Asian American	0
Other	0

<i>Grade Level of Students</i>	
Ninth	9
Tenth	5
Eleventh	3
Twelfth	6

<i>Local Area Schools Represented</i>	
C. E. King High School	Lamar High School
Clear Springs	Madison High School
Cy-Creek High School	Pearland High School
Cy-Ridge High School	Ridgepoint High School
Cy-Woods High School	Stafford High School
Dawson High School	Summer Creek High School
Energy Institute for STEM Academy	The Elevated Places School
Hightower High School	Yates High School







