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16. Abstract <p>The Center for Transportation Training and Research (CTTR), as part of Texas Southern University (TSU), served as host for the 2012 Transportation Security Institute (TSI) in Houston and surrounding area. The 2012 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.</p> <p>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.</p>			
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**2012 TRANSPORTATION SECURITY INSTITUTE:  
RECRUITING NEXT GENERATION PROFESSIONALS**

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**SWUTC/12/161240-1**

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August 2012



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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 2012 Transportation Security Institute (TSI) in Houston and surrounding area. The 2012 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 of the TSI is to provide the framework that would expose 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 needs.

TSI received 25 applications and invited a total of 19 high school students to attend the two-week non-residential program from June 18-29, 2012, on the campus of TSU. In addition to highlighting the challenges faced by transportation security personnel, the two-week curriculum also addressed the four principal modes of transportation (air, land, rail, and water) with activities led by transportation and academic professionals whose fields of interests included the following: transit operations, entrepreneurship, commercial aviation, maritime security, geographic information systems, urban transportation history, and STEM-related careers.

## EXECUTIVE SUMMARY

The Transportation Security Institute (TSI) was designed to introduce exemplary high school students 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 2012 TSI. The 2012 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, maritime, and public transit security, bridge and highway design, and the challenges involved in emergency management. At the conclusion of the 2012 TSI, student participants completed an end-of-course evaluation and overwhelming indicated *Strongly Agree* to many indicators that the 2012 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 2012 TSI Advisory Board consists of individuals from partnering institutions, state and federal agencies, public transit properties, and professionals in transportation from the public and private sectors. All Advisory Board members/Partners/Sponsors assisted the TSI program staff in identifying relevant speakers, coordinating tours of local transportation facilities, and obtaining public and private support. Board members also participated in the development of program curriculum and the graduation ceremonies.

### 2012 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. Delvin Dennis	Deputy District Director Texas Department of Transportation
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 2012 summer Transportation Security Institute (TSI). His responsibilities included coordinating with local representatives of Texas Southern University (the 2012 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 assumed the daily supervision of TSI participants as well as the coordination of the academic staff and other speakers. Faculty members were responsible for conducting academic instruction and related activities. TSI staff members were vital to the execution of the 2012 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 2012 TSI staff.

Mr. Khosro Godazi	Institute Director
Dr. Ronald Goodwin	Program Coordinator
Dr. Carol Lewis	Faculty
Dr. George Qiao	Faculty
Dr. Charles Glass	Faculty
Ms. Gwen Goodwin	Staff/Researcher
Ms. Latissha Clark	Staff/Researcher
Alexandra Miller	Staff/Student Assistant

## Program Objectives

The TSI's principle objectives were to expose high school students to critical issues surrounding security on various transportation modes. 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. Furthermore, the 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 2012 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, and research; 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 nineteen students were selected to participate in the 2012 TSI program. The project director 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 2012 TSI staff disseminated 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 specifically 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.

# 2012

## Transportation Security Institute

Summer Study/Career Opportunities for High School Students

**Discover the exciting world of air, land, and water transportation security. Meet professionals who work in the transportation security profession. Learn about career opportunities and your potential for success!**



**Who:** Open to Houston & Surrounding High School Students

**When:** June 18 – June 29, 2012

**Where:** Texas Southern University

**How:** To obtain an application or information  
**Contact: Mr. Khosro Godazi**  
**Phone: (713) 313-7925**

Funded in part by a grant to Texas Southern University from the Southwest University Transportation Center (SWUTC)



## SECTION II: PROGRAM CURRICULUM

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

**Jeff Tabel and Kelly Porter**, representatives from Houston- Galveston Area Council (HGAC) used a slide show to acquaint students with what city planning is and what they do on a daily basis. The slide show also showed well-known places such as the Champs-Élysées in Paris to emphasize to students that a city plan is made with the intent to create a scenic, safe, and efficient environment for all users of the area. He then divided the students into three groups and



asked them to design their own city. This was done to show them all the considerations planners have to go through when they are in the design process. He told the students to use their imaginations to come up with a concept and start drawing it out, leaving the students with little to no guidelines on what their cities could become. As they continued to draw and come up with ideas, Tabel and Porter would walk around and asked the students questions on what

would happen to their cities if different scenarios were to occur. For examples one group had a volcano in the middle of the city and the representatives posed the question to students if it were to erupt how the people of their city would get out of the city or away from the devastation, or was there a way to get out. The students then had to take the scenarios into account and ensure that their city plan could handle the safety problem that was posed. When complete the students presented their plans to their fellow peers and had to defend why and how their city plan was efficient.

**Robert Morgan**, a representative from the Port of Houston talked to students about the different career fields that the Port of Houston provides. With his Power Point presentation he talked about jobs such as the Coast Guard and how they protect the country. Mr. Morgan also explained how the Houston ports need to have high security because if an attack were to happen at the Port, it would affect the Houston and United States economies as well as jobs that are available.



**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.

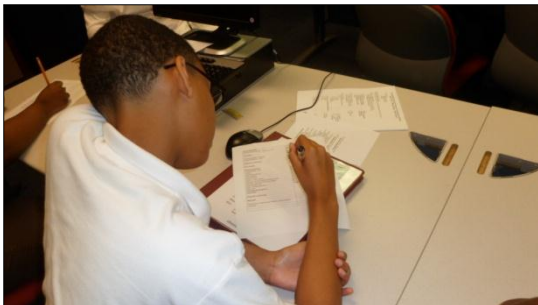
He began with a PowerPoint presentation discussing how signal timing is done, the math that is involved with it, and the importance of timing the lights perfectly. For example, he explained that after one set of lights at the intersection turn red the other lights all stay red for a few seconds in order 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.

**Mr. Clarence Miller**, who owned his own business for 13 years came and spoke to students about how to become an entrepreneur and other business aspects. He discussed what it takes for companies to make a profit

by using real life application. The class came up with an imaginary product they would like to sell and created an income statement so that they could see all of the expenses versus revenues that go into making their imaginary company a profit. Most students felt the company would be broke half way through the activity, but the income statement put real life money situations into perspective for the types of decisions they would have to make if they were to go into business for themselves. They then



looked at the income statements

of companies like Apple and Dell to show how one great product can change a company's empire, as well as emphasize the competition aspect that comes with a capitalist philosophy that we have here in America.

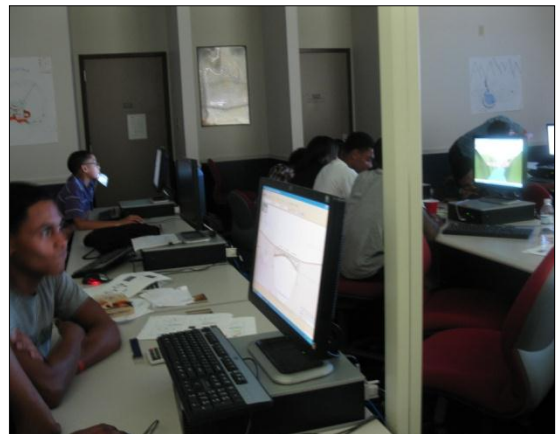


**Mrs. Gwen Goodwin** introduced students about the US Census and the importance of the census data to transportation planning. Students volunteered to give information on their families in for to show an analysis of the data. Students learned that over the years the family lineage had



dwindled in number and realized that we are not like our parents and grandparents generations where it was normal to have 5 kids or more. Mrs. Goodwin also showed the students how to get on the census website and find out information on the progression of city planning through census data based on where people live.

**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 used a Power Point presentation that to talk about the different types of bridges, what they are used for, and how they are constructed. Mr. Horiszny also used TV show games like “Family Feud” and “Jeopardy” 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.

**Dr. Carol Lewis** familiarized students on transportation security and the impact September 11<sup>th</sup> had on the United States. She defined what terrorism really is and informed them of how the Department of Homeland Security was formed, the Transportation Security Administration, and other government agencies on both the state and federal levels. The concept of “See Something, Say Something” was introduced to students to inform them about how to handle being around suspicious activity and what they need to do when put in these types of situations. The students watched a short movie on what to do when in these types of situations when on Public



Transportation, which can be adapted to other circumstances. The students got into groups and were given a scenario on “See Something, Say Something” and had to come up with a consensus on what action they would take, not take, and how they would handle the situation. The group leader then came and told the class what their situation was and how the group decided to handle it. Their peers critiqued them and the class discussed the right and wrong ways to handle high stress situations.



**Mr. Vernon Baker and Dr. Charles Glass** tag teamed and taught the students about aviation and all its basic components. Mr. Baker began by discussing his past in the aviation industry, as well as some of the jobs that are going to be in demand in the coming years such as air traffic controllers and pilots due to the fact that there are a lot of people in those position who are approaching retirement age. He emphasized that the aviation industry will be in need of new bright talent in the coming years, along with mentioning the span of potential salaries that those who want to go into this field can make. Mr. Baker did not neglect to speak on the need for such high security at the airports, and how September 11<sup>th</sup> played a big role in how the nation's airports have become stricter when it



comes to security. He told students of the different jobs in the security field such as Customs, what they do and the role they play in keeping us as safe as possible as we fly. Dr. Glass then showed the students a movie about the building of the Hong Kong International Airport which highlighted the fact that every job is equally important when a project needs to be completed, whether you are a pilot, an engineer, a construction worker, or someone who simply cleans up when the project is complete. The students then had a hands-on activity where they

split up into two groups. One group was taught how to fly a plane and the security measures put in place so that they would not crash on the flight simulators while the other group became the control room operators and told the students on the simulators what to do to fly the plane. They then switched roles so that all students could take part in both activities. To end the day the students watch another video on the top 10 most dangerous airports in the world.



**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, why it is something that should be looked at as an alternative to fossil fuels, and their past and future roles



in the transportation industry. He got students to participate in various activities such as baking cookies in the sun, building and testing water powered cars, and making rechargeable battery chargers into solar battery chargers. The students were also able to see his Chevy Volt, a car that runs on electricity mainly but still has the availability to use gas.

**Latissha Clark** introduced the concept of geographic information systems (GIS) how it used in the transportation industry. She emphasized the various GIS applications through the Petrochemical Incident Location System (PILS) software. Students were surprised to find out that GIS gives navigation systems information so that it can route people where they need to go. They then created their own GIS map based off of their presentation topics: aviation, solar energy, highway design, city planning, water transportation, metro, NASA, and transportation security. Many students were able to see that GIS plays a role in a variety of career fields, not just transportation.



## Academic Program: Field Trip Experiences

### NASA

**Dr. Pamela Denkins**, a NASA representative talked to the students about the different career fields that NASA has to offer. The students talked with her about their future career goals and what colleges and universities they aspire to attend in the days to come. The students learned that any and every career field they could imagine can be used by NASA including fields like cardiology and sports management.



Dr. Denkins included information on the security measures taken to ensure safety of the astronauts and all the people involved in NASA's projects. Students then went on the tram tour and got to see the Christopher C. Kraft Jr. Mission Control Center where they learned about the history of mission control, what they did there, what it's used for now, and the safety features put in place

to maintain a safe mission. The group was supposed to see the Saturn 5 rocket and the memorial to the fallen astronauts, but due to the rain their tour was cut short. To compensate for this, NASA representatives talked to students about what they would have seen and the importance behind each event. Students went to the Starship Gallery and saw different modules used during NASA's trips to outer space and its history. The group then saw a movie on what it is really like to be an



astronaut, how they train and prepare for missions, the equipment they



have to use, and the safety measures they need to take on the ground, in the shuttle, and in outer space.

## Houston-Galveston Area Council (H-GAC)

**Ms. Lydia Abebe**, a city planner at H-GAC, met the group with a list of people to talk to students about what H-GAC does. Alan Clark, the Metropolitan Planning Organization Director



greeted the students and gave them an overview of the agency and the leadership and public process. Kelly Porter, a regional planner talked to the students about sustainable mobility in association with ped/bike and community planning through a Power Point presentation. Students were requested to be interactive and come up with solutions to make an area look more appealing as well as efficient for the people who would live there. He was followed by Stephan Gage, a

transportation planner, who talked about hurricane evacuation, why it is important, and how planners make decisions based off of previous observations in order to get people out of cities safely and orderly. The students sat in on the Transportation Planning Council (TPC) meeting and saw how a planning meeting with planning board members as well as concerned community members come up with way to inform and improve a proposed project. Students learned about a major project the city is working on as well as was able to recognize the pros and cons of public speaking that they had learned in class. The day at H-GAC was finished by a presentation on Air Quality and Transportation Demand Management and closing remarks by Ms. Abebe.



## 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 transit center on Fannin. The students were



spoken to about what some of the functions of metro, the history, and the security aspects put in place for the protection of all riders. METRO Police officers also talked to the students about the more in depth things that they do on a regular basis. Students were surprised to know that METRO has a SWAT team in place for high crisis situations. In order for students to realize the



heaviness of armor police wear and to acknowledge the cautionary procedures officers have in place, the students were allowed to try on the police vests which were fully loaded with the materials officers need to have for all situations. They were also allowed to pretend to shoot an unloaded M4 gun that officer's use when needed. 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 down the rail lines, such as cameras, and how the control room operators monitor the rail trains and its surroundings. They were able to get on the bus and car simulators to learn about the training operators go through and how they avoid

causing traffic accidents every day. 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.

### **Enhancement Program**

The TSI provided enhancement activities that focused on fundamental educational achievement and STEM skills as they are applied to the transportation industry. Students experienced a variety of lectures and activities that enhanced academic achievement, improved study skills, and fostered self-awareness and creativity. Furthermore, TSI participants were provided information regarding college/university admissions and the skills and characteristics necessary for success in the higher academic environment. Public Speaking was also emphasized to students throughout the program and they were given the opportunity to practice it as much as possible. Students participated in athletic activities order to reiterate the importance of team work in a business and school settings, as well as support the national initiative of healthy living. Studies have shown that moderate aerobic exercise helps get oxygen to the brain and muscles resulting in improved brain activity and learning.



### **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 2012 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 June 29, 2012. The program director, Mr. Khosro Godazi, provided those in attendance with an overview of the Institute and presented highlights from the classroom lectures



and 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 - Celeste Caldwell & Joseph Reagan;
- Signal Timing - Rodney Francois II & George Ybarra;
- NASA - Zenzi Owusu & Harvey Pittman;
- Houston METRO - Jarron Marcel & Marriahn Jackson;
- Solar Energy - Asyja Brown & Orlando Hayward;
- City Planning - Brandon Dimas & Daijah McBeth;
- Highway Design - Quincy Campbell & Shirley Okyem;
- Water Transportation - Brianna Crawford & Jordan Nichols; and
- Transportation Security - Alexis Williams & James Bryant III.

Mr. Godazi introduced the guest speakers, Ms. Latanya Miles and Ms. Alice Walker, from Space Center Houston (NASA). Both Ms. Miles and Ms. Walker commented on the group presentations and found the participants to be well prepared and succinct in discussing their observations and experiences. They also remarked that initiatives such as the TSI summer programs were needed in preparation of the next generation of transportation professionals as they anticipate massive labor shortages in STEM and security related fields as the "baby boom" generation enters retirement age.

The 2012 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 2012 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 2012 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 2012 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

### 2012 TSI Two Week Program

<b>18-Jun-12</b>	<b>Welcome-Presentation Skills-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	TBA
	9:00 - 10:00	Ice Breaker Session	Ms.	Alex	Miller	CTTR/TSU	Hands-on
	10:00 - 12:00	History of Transportation	Mr.	Khosro	Godazi	CTTR/TSU	Hands-on
	<b>12:00 - 1:00</b>	<b>Lunch</b>					
	1:00 - 5:00	Presentation Skill	Dr.	Ronald	Goodwin	CTTR/TSU	Hands on
<b>19-Jun-12</b>	<b>Resume-Excel/Power Point-Port of Houston</b>						
<b>(Tue.)</b>	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Alex	Miller	CTTR/TSU	Hands on
	9:00 - 12:00	Resume/Excel/Powerpoint	Ms.	Sascha	Saborache	CTTR/TSU	Lecture
	<b>12:00 - 1:00</b>	<b>Lunch</b>					
	1:00 - 5:00	Port of Houston Tour-Security	Mr.	Robert	Morgan	Port of Houston	Hand-on
<b>20-Jun-12</b>	<b>City Planning/Census &amp; City Evacuation</b>						
<b>(Wed.)</b>	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Alex	Miller	CTTR/TSU	Hands on
	9:00 - 12:00	City Planning	Mr.	Jeff	Tabel	HGAC	Hands-on
	<b>12:00 - 1:00</b>	<b>Lunch</b>					
	1:00 - 5:00	Census and Transportation- City Evacuation	Ms.	Gwen	Goodwin	CTTR/TSU	Hand-on
		City Evacuation	Dr.	Carol	Lewis	CTTR/TSU	Hands-on
<b>21-Jun-12</b>	<b>Intersection Signal Timing</b>						
<b>(Thur.)</b>	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Alex	Miller	CTTR/TSU	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
	<b>12:00 - 1:00</b>	<b>Lunch</b>					
	1:00 - 5:00	How to Make the Signal Timing in Computer	Dr.	Fengxiang	Qiao	Texas Southern University	Hands-on
<b>22-Jun-12</b>	<b>HGAC Tour - Houston METRO</b>						
<b>(Fri.)</b>	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Alex	Miller	CTTR/TSU	Hands on
	9:00 - 12:00	HGAC Tour	Ms.	Lydia	Abebe	HGAC	Hands-on
	<b>12:00 - 1:00</b>	<b>Lunch</b>					
	1:00 - 5:00	Houston Metro	Mr.	Vincent	Sanders	Houston METRO	Hands-on

### 2012 TSI Two Week Program (continued)

Date	Time	Topic	Speaker			Company/Organization	Enhancement Activities
<b>25-Jun-12</b>	<b>Custom Security-Aviation History &amp; Basic Flight</b>						
<b>(Mon.)</b>	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Alex	Miller	Texas Southern University	Hands-on
	9:00 - 11:00	Custom Security	TBA	TBA	TBA	DHS	Hands-on
	11:00 - 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.	Mr.	Vernon	Baker	Texas Southern University	Hands-on
<b>26-Jun-12</b>	<b>Solar Energy</b>						
<b>(Tues.)</b>	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Alex	Miller	Texas Southern University	Hands-on
	9:00 - 12:00	Introduction - Team Project	Mr.	Adam	Burke	Texas Green Energy	Hands-on
	12:00 - 1:00	<b>Lunch</b>					
	1:00 - 5:00	Team Project	Mr.	Adam	Burke	Texas Green Energy	Hands-on
<b>27-Jun-12</b>	<b>Highway Design - Bridge Design-Security</b>						
<b>(Wed.)</b>	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Alex	Miller	Texas Southern University	Hands-on
	9:00 - 12:00	Introduction & Overview	Mr.	Nick	Horiszny	TxDOT	Hands-on
	12:00 - 1:00	<b>Lunch</b>					
	1:00 - 5:00	Team Work Project	Mr.	Nick	Horiszny	TxDOT	Hands-on
<b>28-Jun-12</b>	<b>GIS and Transportation/Transportation Safety</b>						
<b>(Thur.)</b>	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Alex	Miller	Texas Southern University	Hands-on
	9:00 - 12:00	Transportation Safety	Ms.	Tish	Clark	CTTR-TSU	Hands-on
	12:00 - 1:00	<b>Lunch</b>					
	1:00 - 5:00	GIS/Team Work Project	Ms.	Tish	Clark	CTTR-TSU	Hands-on
<b>29-Jun-12</b>	<b>TxDOT - How to become an Entrepreneur - Closing Ceremony</b>						
<b>(Fri.)</b>	8:00 - 9:00	Report from students/Presentation & Written	Ms.	Alex	Miller	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.	Clarence	Miller	Texas Southern University	Lecture
	12:00 - 1:00	<b>Lunch</b>					
	1:30 - 4:00	Closing Ceremony	Mr.	Khosro	Godazi	Texas Southern University	
		Closing Ceremony -Guest speakers	Ms.	Latanya	Miles	NASA	
			Ms.	Alice	Walker	NASA	

## 2012 TSI Survey and Evaluation Instrument

CATEGORY	Evaluation Question	Strongly Agree	Agree	Disagree	Strongly Disagree
<b>Classroom</b>					
1	Class activities were well organized	13	6		
2	Class activities were logically sequenced such that simpler activities preceded more complex activities.	9	10		
3	Participants were able to ask questions & discuss related issues during the course of class activities.	12	7		
4	Subject and topics discussed in class were related to the purpose of the project.	10	9		
5	Faculty and presenters provided sufficient explanation of the concepts covered	14	4	1	
6	Faculty and presenters provided valuable assistance to participants.	13	5	1	
7	The classroom area(s) were adequate to carry out the activities.	12	6	1	
8	Enough time was spent discussing the subjects and topics of the project activities.	9	10		
9	The number of projects was appropriate.	8	10	1	
10	Enough time was allowed for most students to adequately understand what was being taught.	9	10		
<b>Speakers</b>					
1	Activities were well organized.	9	10		
2	I was academically challenged by program activities.	9	9	1	
3	Computer training activities were very stimulating.	10	9		
4	Computer training activities were very enlightening.	8	11		
5	Adequate time was allotted for the activities.	9	10		
6	I felt free to ask questions.	9	10		
7	All enhancement activities were educational and beneficial.	10	9		

### 2012 TSI Survey and Evaluation Instrument (continued)

CATEGORY	Evaluation Question	Strongly Agree	Agree	Disagree	Strongly Disagree
		Agree			Disagree
Staff		w-1	w-2	w-3	w-4
1	The staff was very interested in my career awareness.	11	7	1	
2	The Staff was very helpful when I had problems.	12	7		
3	The Staff encouraged students to strive for excellence in all their academic pursuits.	13	6		
4	The Staff was always available when I had a question or needed assistance.	10	8	1	
5	The Staff was very friendly at all times.	11	7	1	
6	The Staff was very knowledgeable on transportation related careers.	8	11		
7	The Staff was very enthusiastic about transportation related careers.	12	5	2	
Enhancement					
1	Activities were well organized.	10	9		
2	I was academically challenged by program activities.	12	7		
3	Computer training activities were very stimulating.	9	10		
4	Computer training activities were very enlightening.	10	9		
5	Adequate time was allotted for the activities.	14	5		
6	I felt free to ask questions.	10	9		
7	All enhancement activities were educational and beneficial	8	11		

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



## Demographic Summary Report

*FY 2012  
Transportation Security Institute Summer Program-  
Demographics Data Sheet*

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

<b>Project Director</b>	Khosro Godazi
<b>Program Dates</b>	June 18-29, 2012
<b>Program Length</b>	2 Weeks

Participant Information	
Grade Level:	High School
Program Classification:	Non- Residential

Gender of Participants	
Male	10
Female	9

Applicant Data	
Number of Applications Received	25
Number of Participants Selected	19
Number of Participants Completed the Program	18

Geographic Representation	
Number of Cities	3
Number of Counties	3
Congressional District Number	18

Race/ Ethnicity	
African American	17
Caucasian	0
Hispanic American	2
Asian American	0
Other	0

Grade Level of Students	
Ninth	9
Tenth	4
Eleventh	3
Twelfth	3

Local Area Schools Represented	
Alief Early College	ESTEM Academy High School
Bellaire High School	Klein High School
Carver High School	Lamar High School
Cristo Rey Jesuit High School	Manvel High School
Dawson High School	St. Pius X High School
Dobie High School	Waltrip High School
Elkins High School	YES Preparatory High School

