

The National Summer Transportation Institute (NSTI): 10 years motivating minority students toward professions in the transportation industry.

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Abstract

Ten years have passed and it seems as it was yesterday when a group of minority students gathered at the South Carolina State University (SCSU) to participate in the first pilot Summer Transportation Institute (STI). Today, more than 40 Institutions of Higher Education serve as Host Sites to offer STIs around the nation with a common format that has evolved from the pilot program. The objective of this program is to expose high school students to the many opportunities available in the field of transportation and to inspire them to pursue professions in the transportation industry through a variety of educational, motivational, recreational, and cultural activities. In addition, the institute provides supplementary experience and training in mathematics, science and technology needed for a better involvement in the careers related to the transportation field.

Besides achieving its main objective, the NSTI has also been beneficial at many other levels including the opportunity to present the students a diverse group of transportation educators and professionals, the optimization of expertise and available resources to meet adequately the goals of NSTI, and the excellent opportunity for high school students to learn about university life in all its manifestations.

This paper includes a description of the program, the experiences in the last 10 years and the plans for the future to continue generating the benefits for many potential minority engineering and science students.

I. History

The first Summer Transportation Institute (STI) was founded in 1993 as an initiative of the South Carolina State University (SCSU) and South Carolina Department of Transportation

(SCDOT) with the collaboration of Federal Highway Administration (FHWA). The purpose of the program is to attract youth into transportation related careers. It consisted of 20 minority students of ninth and tenth grade from South Carolina State. During four weeks students got together in the campus of SCSU and were exposed to different topics related primarily to highways. Additionally, students participated in Scholastic Aptitude Test (SAT) prep courses, time management, field trips, seminars and student projects.

The first STI was a success but the organizers wanted the STI to be in accordance with the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA). The ISTEA authorized funds for construction of highways, for highway safety programs, for mass transit programs, and for other purposes. In 1994, 40 new students of South Carolina had the opportunity to participate of the second Institute. That year STI expanded its curriculum to reflect intermodalism, safety and environmental awareness. In addition it offered activities that showed the participants diverse transportation modes of land, water and air. Different government agencies began to collaborate with the Institute that year.

When the FHWA and SCSU realize the success of the 1993 and 1994 STI they decided to spread out the program nationwide. It was transformed into the National Summer Transportation Institute (NSTI). The first expansion took place in five Historically Black Colleges and Universities (HBCUs) including Albany State University, Georgia; Jackson State University, Mississippi; North Carolina State University, North Carolina; Virginia State University, Virginia. There were 13 institutes in 1996 including one Hispanic service institution with the program. In this year about 375 students participated in the national program. In 1997, the NSTI continues to expand across the nation with three more institutions becoming part of it.

The pilot program concluded in 1998, with eighteen colleges and universities participating of the NSTI. The Congress authorized funding for the National Summer Transportation Institute under Section 1208 of the Transportation Equity Act for the 21st Century (TEA-21). National STI supports the President's Executive Orders 12876, 12900 and 13021 directing Federal Agencies to advance the development of human potential and to strengthen the capacity of HBCUs, Hispanic Serving Institutions (HSIs) and Tribal Colleges and Universities (TCUs).

II. National Resource Center

In 1999, the United States Department of Transportation and Federal Highway Administration established the NSTI as a recognized educational initiative by awarding SCSU a cooperative agreement to establish a National Resource Center (RC). The RC provides common procedures and guidelines for all the host sites in developing their institutes. It serves as a program management center, responsible for data collection, financial management and technical support. It plans and conducts training workshops for STI Project Directors, coordinates and schedules all STI field trips to DOT/FHWA Headquarters, maintains and publishes a list of STI Directors, submits the final report to FHWA and coordinates and publishes all STI activities.

A Request for Applications (RFA) to host a Summer Transportation Institute is distributed by the RC annually. The RC is responsible of distributing the funds among the host sites. The

overall budget is calculated based on the proposal submitted by the host sites to the RC. The amounts awarded to each host site vary from \$25,000 to over \$50,000 based on the approved budget for each host site.

III. National Summer Transportation Institute

The primary objective of the NSTI is to expose High School (9th, 10th, 11th) and Middle School (7th, 8th, 9th) students to the many opportunities available in the transportation industry. Through a variety of educational, motivational, recreational and cultural activities inspire them toward professions in the field.

The High School program offers activities that will help the students prepare for post-secondary school and encourage them to pursue transportation related careers while the Middle School program focuses on career exploration.

The STI is divided in two categories residential or non-residential. The residential program provides students with college dormitory housing, meals, sports and recreational activities, in addition to academic and enhancement programs. The non-residential program must include an academic program, enhancement activities and some recreational activities. Participants have to commute to campus every day.

All phases of each STI are conducted under the supervision of a Project Director who is the link with the NSTI Resource Center. The RC trains the directors on how to select key staff, prepare materials, select participants, publicize activities and schedule field trips. STI directors are required to attend the annual training workshop conducted by the RC. The RC ensures that all participants are introduced to all modes of transportation and to careers opportunities that exist in the industry.

Each STI establishes an Intermodal Advisory Committee (IAC) to support and advise the faculty. This committee helps review the proposals and curriculum, assists with planning and securing funds, and provides technical assistance. It should be composed of representatives from the host site, state and federal agencies, public transit properties, and professionals in transportation from the public and private sector.

The academic program introduces the transportation industry in a way that captures the attention and interest of the participants. Is important to discuss in detail what the transportation industry is and the related careers opportunities. All modes of transportation including air, land and water are discussed during the STI. Professionals who are related to the industry also share their experiences through presentations. Field trips to agencies are included as part of the learning experience. Hands-on activities such as project design, construction and testing of models related to the transportation field are included and may conclude with student competition. Some recommended activities are: rocket design, computer programming, computer applications, solar car design, glider design, bridge design, poster competition and mass transit design.

The enhancement program exposes students to methods and activities that improve study

habits, promote academic achievement, and foster self-awareness. Enhancement activities may include: time management, study habits, SAT prep, library use, vocabulary development, computer skills and oral communication skills.

A sport recreation program is always included in residential programs and may be included in non-residential programs. It provides a healthy and competitive attitude among the participants, exposition to rules and regulations, and will encourage good sportsmanship.

FHWA Deputy Administrator Gloria Jeff said. "Transportation careers represent one in seven jobs and the highest paying employment sector in America. As we look to the future, we want to encourage all Americans to consider careers that will help our nation meet tomorrow's complex transportation challenges. These summer institutes will help students see the impact and career opportunities in the transportation industry."⁴

More than 4,000 youth have participated in the National Summer Transportation Institute in 42 colleges and universities across the United States and Puerto Rico. Figure 1 presents the number of students that participated every year during the past 10 years.

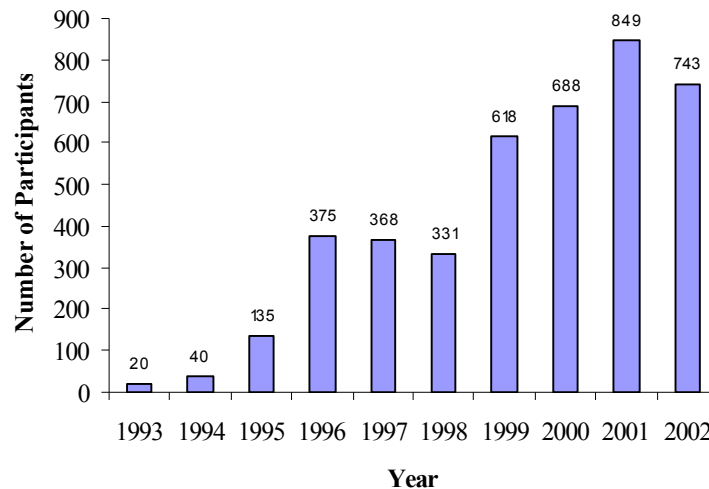


Figure 1. Number of Students that have Participated in STI During the Past 10 Years

What began as a pilot program in South Carolina 10 years ago is today a successful program thanks to the commitment of the higher education community, Federal Highway Administration, States Department of Transportation and many public and private industry leaders. The Resource Center Director's vision for the NSTI is that "the NSTI will reach its full potential as a viable productive link in the transportation education pipeline exposing young secondary school students to careers in transportation."²²

IV. List of Host Sites

The map presented in Figure 2 indicates all the states that have offered Summer Transportation Institutes.

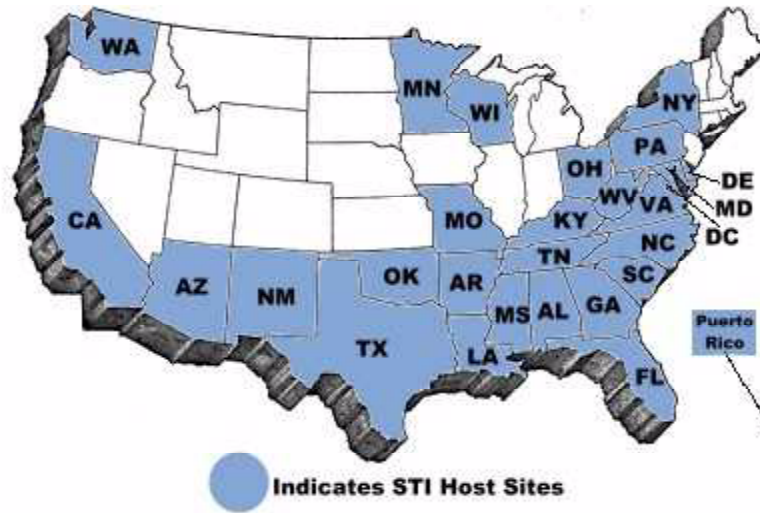


Figure 2. Map representing the states where STI have been offered.

Figure 3 presents the evolution in the number of host sites during the past 10 years. A list of the institutions that have served as Host Sites is presented below. This list also indicates the year that each host site was added to the NSTI program.

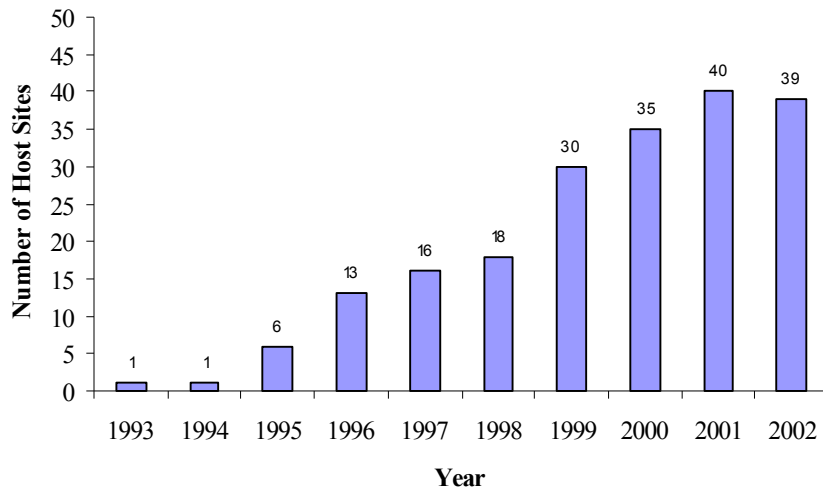


Figure 3. Number of Host Sites participating in the NSTI program by year

Table 1: List of institutions that serve as host sites for NSTI

Entrance Year	Institutions
1993-94	South Carolina State University
1995	Albany State University Jackson State University North Carolina A&T State University Virginia State University
1996	Alabama A&M University Benedict College City College of New York (CUNY) Florida A&M University Southern University and A&M College Tennessee State University University of Arkansas at Pine Bluff
1997	Clark Atlanta University Delaware State University Morgan State University
1998	Arizona State University Howard University Lac Courte Oreilles Ojibwa Community College
1999	Bethune Cookman College California State University-Los Angeles Cheyney University of Pennsylvania Elizabeth City State University Florida International University Kentucky State University Lincoln University of Pennsylvania Northwest Indian College Texas A&M University Tuskegee University University of Missouri-Rolla West Virginia State College
2000	College of the Menominee Nation Fond Du Lac Tribal and Community College Hampton University Prairie View A&M University University of Maryland Eastern Shore
2001	Central State University Langston University Southwestern Indian Polytechnic Institute University of Puerto Rico at Mayagüez White Earth Tribal and Community College

V. Plans for the Future

There are several plans that have been laid out to continue attracting bright minds to the transportation field at early ages. The National Summer Transportation Institute will continue looking for Universities to participate in the current Transportation Institute Program to attract high school students to the Transportation Field. In addition, there is a plan to have graduates from STI come back for a second summer experience related to the transportation field. Several formats have been explored. Some of the STI's host sites have already initiated pilot programs that will serve as a basis for a National program in the near future.

VI. Final Remarks

Ten years full of exciting experiences in more than 40 Universities providing excellent training to more than 4,000 students represent a complete success for the National Summer Transportation Institute. All the students who have participated in these institutes have been exposed to the gamut of career opportunities within the transportation industry and have had the opportunity to gain hands-on technical experience and networking with professionals to learn more about career choice. Many of them have already completed their bachelors, and masters in transportation related careers. Others have continued working with state and local agencies building up careers in the transportation arena. Some have decided to look for different paths, but some of the components of the STI program (i.e. the enhancement component) will stay in their lives helping them through their careers. In summary, this NSTI has been a program that has had an extraordinary impact on many young people and has served as a model for others to follow.

As part of the ten year anniversary celebration, an effort is currently underway to collect diverse types of data, such as success stories, in order to assess the real impact the STI have had both on their students and on the transportation industry. The Office of Civil Rights of the FHWA is leading this effort. By May 2003 this data collection will be concluded and the information will serve as part of future dissemination efforts.

During the last 10 years organizing and conducting STIs we have felt the support obtained from a number of very helpful friends of each host site institution. It should be noted also that every host site has its own personnel, including students and staff of each institution that have worked very hard and beyond the call of duty to make all these years plenty of interesting experiences. This sense of doing things right and not objecting to long hours have been instrumental for the success of the NSTI.

Many public agencies and private companies around the nation have had an impact on the NSTI by supporting individual host sites and helping them to carry-on the activities planned for each STI. These agencies responded as partners to this endeavor. For next summer's institute, we will continue our efforts in obtaining funds and support from the private industry and the various agencies of the federal and local government in order to secure a successful continuation of the job started 10 years ago.

VII. Acknowledgments

We express our sincere gratitude to all those who have contributed in one way or another to the successful completion of the 10 years of Summer Transportation Institutes. Many important people have been instrumental in the success of our NSTI program. Congressmen and congresswomen, as well as high level executive officials from government and private industries have supported our program and its expansion to where it is today. Thanks to all of them. Very special thanks are due to the US Department of Transportation, the Federal Highway Administration and the Federal Transit Administration for their support and motivation during all these years. In addition, our gratitude to South Carolina State University host of the first STI and leader in the making of the NSTI through its National Resource Center. As an extension, our gratitude to every host site that has participated during these last 10 years. Special thanks to the staff at the University of Puerto Rico as one of the host sites and to Magaly Colón, STI mentor and graduate student in transportation for her contributions to this paper.

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