

University Transportation Research Center Region 2

1999



2000



Annual
Report



UTRC

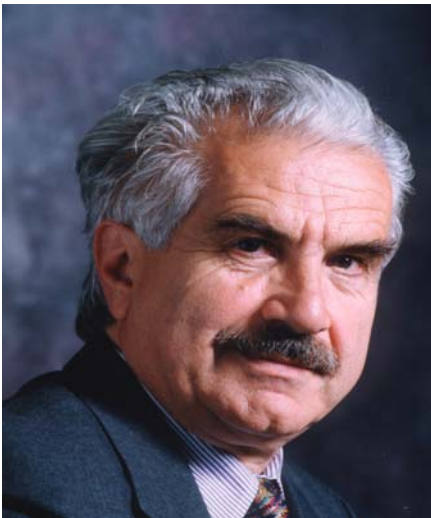
University Transportation Research Center, Region 2

*“Planning and Management of Regional
Transportation Systems”*

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Table of Contents

Message from the Director.....	5
Theme.....	7
Staff.....	9
Management Structure.....	11
Member Universities	13
Financial report.....	15
Research.....	16
Education.....	26
Technology Transfer.....	31



Message from the Chair

As a consortium of twelve major Academic Institutions, UTRC draws upon a broad set of disciplines and professional experience. To the

more traditional engineering disciplines, UTRC adds management, public policy, psychology and behavior, political science, GIS, planning, architecture and urban design.

When it was first established twelve years ago, the involvement of university faculty in the transportation activities of State and regional agencies was very minimal, and the reputation of transportation faculty in the applied arena of the regional transportation agencies was not very good. Faculty were typically viewed as being not responsive to the needs of agencies for producing products they could readily use, or for adhering to schedules.

I am happy to state that UTRC has changed this stereotypical view of university research. Over the past twelve years, UTRC has served Region 2 in strong and positive ways.

These are seen in the tremendous variety of projects done for a number of sponsors - a market study for a proposed new regional ferry, commuter stress and mode choice or new freight models. The strength of UTRC is seen through the professionals it trains. The many students, taking courses or programs in these disciplines, enter into or are promoted upwards in careers that address regional transportation issues. And a common "success story" is from the many students who cite significant career advancement as a reward for being engaged in UTRC programs or studies. UTRC also plays a leadership and integrative role with the many other Institutes and centers in the region. Many

who sit on the UTRC Board, sit on the Boards of these other organizations; this brings much needed cross fertilization to all. As Chairperson of the UTRC Board, I commit the Board to continue to strive to serve the region well and to promote the professional development of our staff and students.

John Falcocchio
Chair





Message from the Director

The calendar says 2000; this indeed is a period of significant change. The field of transportation

looks significantly different from only ten years ago. Rather than talk about “modes”, we talk about multi and intermodal. Rather than talk about the operators perspective, we talk from the customers perspective. Rather than talk about a singular discipline that founds transportation studies and research, we insist upon multi disciplinary approaches, including the social sciences as well as traditional technology. During the last decade, our culture itself has undergone change. We have become a wired society - one that gets up to the second information from the Internet. Our styles of work have changed; our forms of recreation have changed. Yet one constant has been our demand for mobility, and the transportation infrastructure to support this demand. Our transportation systems are undergoing profound change. The rapid advance of high technology, driven by a strong entrepreneurial spirit, is bringing high speed computers, computer miniaturization and information technology to all aspects of transportation planning, management and operations. Further, these technologies are bringing new levels of information to the users. With new levels of real time information, the organizations and institutions that support transportation systems are changing. And finally, in this new Century, new methods of paying for our systems are being developed.

It is an important time for the University Transportation Research Center.

Through its programs of education, research and technology transfer, it serves as a regional focal point for the exposition, investigation and discussion of these changes. Centered in the New York, New Jersey region, reinforced by work in Puerto Rico, UTRC maintains close relationships with the transportation community at all levels. We do research for DOTs, hold forums for MPOs, sponsor seminars for broad ranges of local stakeholders, and educate new students as well as practicing professionals. UTRC is an active participant, and a leader in regional transportation thinking. Examples will be presented in this annual report, but a few can be cited here to give examples of work being done, not thought of a mere decade ago:

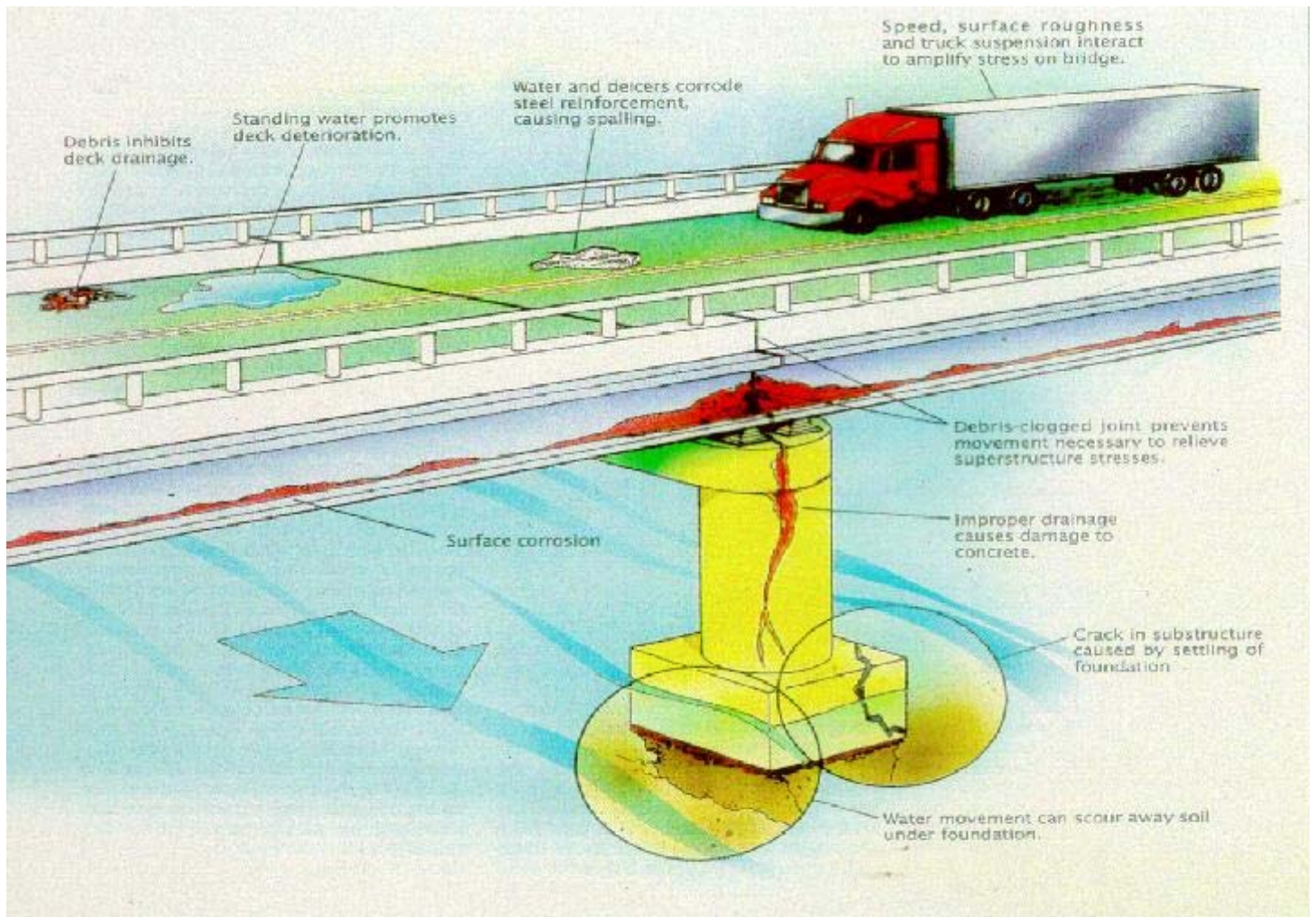
- USDOT is supporting a workforce training initiative targeting transit labor unions. UTRC has the responsibility of identifying the jobs and skills needed arising from the rapid integration of new technologies into our nations public transit systems. UTRC will work with local high schools, NTI and its own students to develop curricula and training approaches for this important work,
- UTRC is taking the lead, for the local MPO, on developing a new generation of freight models for the region. It has finally been recognized that freight has a strong determining role in infrastructure planning and investment, and is not just an “add-on to traditional travel modeling.,
- Member institutions of UTRC are adding ITS courses to their curricula, and shifting emphasis from the “handbook” courses of a few years ago, to the operational perspectives that ITS brings to transportation.

Message from the Director (continued)

The UTRC supports the traditional programs of education and research; but in the New York Area little is traditional. Students can and often must work full time. However, many, with careers being started in transportation study full time. UTRC adds value through curricula designed to meet the needs of these students; it also provides opportunities to work on research projects that add value to their jobs. And these students take part in the many seminars and forums conducted every year, using the Internet as the tool of communication.

As transportation undergoes its transformation to an information based profession, UTRC will play the role as a guide for the participants designing, managing, operating or even just thinking about our mobility and how to improve it.

Dr. Robert E. Paaswell
Director



The Center's Theme

"Planning and Management of Regional Transportation Systems"

The transportation systems and the environment in which they operate throughout Region 2 are complex and undergoing rapid change. The complexity comes from the extent of the Region, and the impact that the nation's largest city has on it. For example, the New York Metropolitan area has over 19 million people, 600,000 businesses and 9 million workers, three major airports, 10,000 miles of highway, one third the nation's transit riders, dozens of marine and intermodal terminals, and over 700 million tons of freight that must be moved. The Region also serves International borders along the Great Lakes and Northern New York, and in Puerto Rico. The transportation systems that serve Region 2, both multi modal and intermodal must serve the customers and stakeholders within the region and globally.

Planning today, in Region 2, assumes knowledge of multi-modal and intermodal systems serving both freight and passenger movements. Professionals must address the demands of sustainability and the environment while squeezing more capacity out of aging and costly infrastructure to meet current pressures of economic growth. Planners must also understand why regional stakeholders make implementation of projects time consuming and difficult while the region is characterized by severe congestion and the high costs of moving goods and people. And planners must understand the links between investment needs and funding strategies. Examples of major planning issues

abound: access to New York regional airports, restructuring of the Niagara Frontier Transportation Authority, development needs linked to new rail rapid construction in Northern New Jersey. Today's professionals involved with regional infrastructure improvements need to integrate a broad base of disciplines that cut across technology, law, finance, management and consumer behavior.

Management today, in Region 2, means knowledge of interaction among complex multi modal systems, budgeting, system operations and performance targets, customer needs, and, when fighting fires stop, a sense of vision of system performance and regional change. Management takes place at every level - from Board Chairpersons to line operators. Managers are called upon to become productive and efficient, to understand their roles in operations and administration, and to help make the complex set of many modes in the region respond to customer needs from a quality perspective in a multi modal fashion.

Planning and management as a response to change: Transportation systems serving the Region are being rapidly modernized. The introduction of electronic toll or fare collection has had major impact on the region: 80% of morning commuters over the Tappan Zee Bridge use EZ Pass;



The Center's Theme (continued)

introduction of Metrocard on New York subways and buses have generated 1 million new riders per day! New Jersey is building a number of new rail transit lines, using innovative financing. It will need to plan and design new organizations to operate these systems and manage the development they stimulate.

Puerto Rico is building a rail system in San Juan; it will force major cultural changes in the traditional *por puesto* - a private cab system. While modernization involves the integration of new technologies into the modes it also concerns new ways of linking labor and management to operate the systems, new organizational and institutional structures to address multi modal and multi jurisdictional issues, and new means of funding investments - coupled to new means of users paying for the services they receive. Planners and managers need new tools to address such issues.

The examples show that the momentum of change in our systems is well underway; we need to create a momentum toward advanced capability for those who plan and manage these systems.

The University Transportation Research Center (UTRC) presents unique capabilities to the profession as these changes evolve. A concentration of major universities with capabilities to address such issues: the quantification of environmental impacts (Columbia) and valuation of externalities and congestion pricing (RPI, POLY, Rutgers, SUNY), Intermodal (SUNY, UPR, Cornell), transit operations and reform (CCNY), **UTRC, is at the intersection of practice and the entering professional.**





Robert E. Paaswell,
Director



Darlene Williams
Assistant Director



Camille Kamga
Assistant Director of Administration



Robert Baker
Assistant Director of Research



Claire McKnight
Assistant Director for Educa-
tion and Training

Principal Center Staff

The UTRC Director is Dr. Robert E. Paaswell. Dr. Paaswell is an experienced transportation professional, having experience in the private sector, the public sector and academia. He is currently a Distinguished Professor of Civil Engineering at the City College of New York. He has overall Center responsibility, including the conduct of all programs, development of new initiatives and public presentation of UTRC business and accomplishments and serves as liaison with USDOT, sponsors and other groups. He is responsible for the initiation and conduct of the "Icon Mentor Program".

The Assistant Director of the Center, Darlene Williams, manages the technology transfer program. The AD oversees daily operations of the Center, including coordination with other agencies, centers and groups. The AD represents the Director at meetings the Director designates or is unable to attend. The AD is responsible for maintaining the Baseline Measures data base, and meeting the UTC report requirements.

The Assistant Director of Research (ADR), Robert Baker, oversees the administration of the research program, including issuing of Request For Proposals, insuring reporting and other requirements are met, scheduling sponsor briefings and preparing agenda for annual research conference. The ADR assists Principal Investigators in addressing administrative needs of sponsors. The ADR has primary responsibility for maintenance of the UTRC Web site.

The Assistant Director of Education and Training (ADE). oversees the Administration of the Education and Training programs including the Graduate and Undergraduate fellowship programs, the assessment programs, and the professional training efforts. A faculty member, from the Board serves in this position.

The Assistant Director of Administration (ADA), Camille Kamga, manages the accounts and serve as a link between USDOT and the Center. The ADA keeps records of expenditures and balances to insure smooth program flow.

The ADA is responsible for the maintenance of personnel records and time sheets as well as procurement records.

The programmatic elements of the Center are established by Committees of the UTRC Board. The Research Committee selects themes and projects and allocates budget to the various research projects, and to the technology transfer program. The Education and Training Committee selects and allocates budget to the various education programs. These are accomplished by semi annual meetings of the committees and more frequent meetings of the Center Director with Committee Chairs. The administration of the programs are carried out by UTRC staff as noted above.

Management Structure

UTRC has adopted a corporate style of management. In this style, the UTRC Board provides policy guidelines, and approval of UTRC activities. Dr. Robert Paaswell, Distinguished Professor of Civil Engineering at City College of New York, serves as Chief Executive Officer, overseeing day to day operations and providing a bridge between UTRC policies and the activities and resources used to carry out those policies.

The Board of Directors, chaired by Dr. John Falcochio of Polytechnic University, and conducts its business through a well organized committee structure. The Board (Committee of the whole) reviews Center Objectives and Programs, approves budgets, and reviews and recommends actions forwarded by its two major working committees.

The two committees, Research and Technology Transfer, chaired by Ali Maher of Rutgers University, and Education and Training, chaired by Clifford Bragdon of Dowling College, are the working hearts of the Board. Each is responsible for developing the yearly program of activities, overseeing the selection of projects, and recommending to the full Board the programs of projects commensurate with the budget.

The Center have available for its use the collective resources of its supporting consortium which include the faculty, laboratories, and training facilities of twelve major institutions. At the lead Institution, UTRC is housed at the Institute for Transportation Systems of the City University of New York, comprising a suite of offices, library, computer lab, and conference room. CCNY has an extensive library, computer network, and is linked by e-mail throughout the world.

The consortium members have a long history of transportation research, education and training. Eleven of the schools have graduate programs in transportation areas such as civil

engineering, public administration, and public policy. Undergraduate programs, community college programs, and technical high schools in the region allow for the development of career paths in the transportation industry.

Each of the twelve schools contribute significant resources to the center with regard to faculty, equipment, and research and training facilities, libraries and computational capabilities.

Chairperson of the Board

John C. Falcocchio is Head of the Department of Civil Engineering and Director of the Transportation Research Institute (TRI) and the Urban Intelligent Transportation Systems Center (UITSC) at Polytechnic University in New York. He is also Professor of Transportation Planning and Engineering with a long career in the academic and private sectors.

Dr. Falcocchio is a founding principal of Urbitran, a major planning and engineering consulting firm, and is a registered professional engineer in Pennsylvania, New York, and California.

Dr. Falcocchio is an author and co-author of many professional papers and one book. He has a Bachelor in Civil Engineering, and MS and Ph.D. (Transportation Planning), from the Polytechnic Institute of Brooklyn, and is a graduate in Traffic Engineering from the Bureau of Highway Traffic at Yale University.

Advisory Board

The Advisory Board is the Transit Council. The Chairman of the Council is Elliott Sander. Mr. Sander is also the Director of the Rudin Center for Transportation Planning & Policy at NYU, and a Senior Vice President at Frederic R. Harris, an international architectural, planning & engineering firm. The Council consists of the pre-eminent transportation professionals in Region 2.



City University of New York
The City University of New York (CUNY), situated in one of the world's pre-eminent cities, is the largest urban university in the United States and its third-largest public university system. Some 200,000 students are enrolled for degrees on 20 campuses in all five boroughs of New York City. Another 150,000 students take adult and continuing education courses.



Rensselaer Polytechnic Institute - The Center for Infrastructure and Transportation Studies provides a focal point for campus research addressing the world's infrastructure and transportation needs. More than 30 faculties over 15 departments and each Rensselaer's five schools participate in the research of the Center.



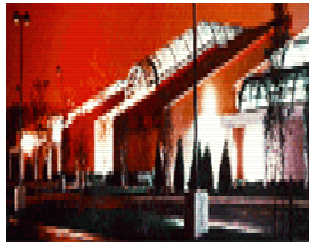
Columbia University
Through its broad range of innovative multidisciplinary programs, and through the earnest exploration of difficult questions, Columbia provides students from the United States and around the world with the depth of understanding and intellectual flexibility they need to respond to the challenges we all will face in the years to come.



New York University
Center for Transportation Policy and Management conducts research and education in the field of transportation policy and management, with particular emphasis on urban transportation issues. The Center has an extensive program for transportation managers and professionals.



Princeton University's program in transportation is an interdisciplinary program offered jointly by the School of Engineering and Applied Science and the Woodrow Wilson School of Public and International Affairs.



Dowling Housed at the Brookhaven Center, Dowling College's School of Aviation & Transportation is a nationally recognized leader in aviation education, as well as a pioneer in the field of intermodal transportation.



Polytechnic University - The Urban Intelligent Transportation Center was established by New York City Department of Transportation to promote the use of ITS technologies that enhance the operational efficiency of City services, better serve customer' travel needs, and improve the City's quality of life.



Rutgers, The State University of New Jersey programs of graduate study leading to the Masters of Science and Ph.D. degrees may be arranged in a wide variety of areas. The fields of specialization may include structural analysis and design, computational mechanics, structural reliability, or structural optimizations., et el.



State University of New York
Maritime's graduate program offers instruction in transportation management.
Stony Brook's graduate programs lead to degrees in applied mathematics and statistics, computer science, electrical engineering, material science and engineering, and mechanical engineering.



Cornell University offers a Master of Civil Engineering Program (usually a ten course curriculum) designed to prepare students for professional practice. There are two options in this program: one in civil and environmental engineering design and one in engineering management. Both options require a broad based background in an engineering field.



University of Puerto Rico offers a five year degree of Bachelor of Science in Civil Engineering, and programs leading to the degrees of Masters of Science, and Doctorate of Philosophy. Students specialize in Structural, environmental/water resources, soils or transportation engineering.



Stevens Institute of Technology
Major areas of current faculty research include soil structure interactions, soil mechanics and deep foundation systems, advanced oxidation of hazardous wastes, transport of nonaqueous-phase liquids in the subsurface.

The UTRC Consortium, established in 1988 by formal agreement of the twelve member universities, is the policy body of the Center.

The Consortium brings to the Center a rich and extensive diversity of talented faculty. It also allows the Center to address regional issues from a local perspective and simultaneously to employ the most qualified experts in the region on any given issue. The majority of all research projects will be joint ventures involving two or more member institutions.

The UTRC Board of Directors, which meet bi-annually, consists of one member and one alternative from each Consortium school. The Center Director is an ex-officio member of the Board and The Center management team serves as staff to the Board. The City University of New York, through its Research Foundation, is the formal contractor for the grant.

UTRC Consortium Members and Board of Directors

Consortium Members	Board of Directors
City College of New York (CCNY), New York	Neville Parker, Ph.D.
Columbia University, Earth Center, New York	Arthur Lerner-Lam, Ph.D.
Cornell University, New York	Arnim Meyburg, Ph.D.
Dowling College/NAT Center, New York	Clifford Bragdon, Ph.D.
New York University, New York	Roy Sparrow, Ph.D.
Polytechnic University, New York	John Falcocchio, Ph.D., Chairman
Princeton University, New Jersey	Alain Kornhauser, Ph.D.
Rensselaer Polytechnic Institute, New York	George List, Ph.D.
Rutgers University, New Jersey	Ali Maher, Ph.D.
State University of New York, Maritime, New York	Shmuel Yahalom, Ph.D.
State University of New York, Stony Brook, New York	Herbert Herman, Ph.D.
Stevens Institute of Technology, New Jersey	Henry Dobbelaer, Jr., Ph.D.
University of Puerto Rico, Puerto Rico	Benjamin Colucci, Ph.D.

Financial Report

BUDGET AT A GLANCE



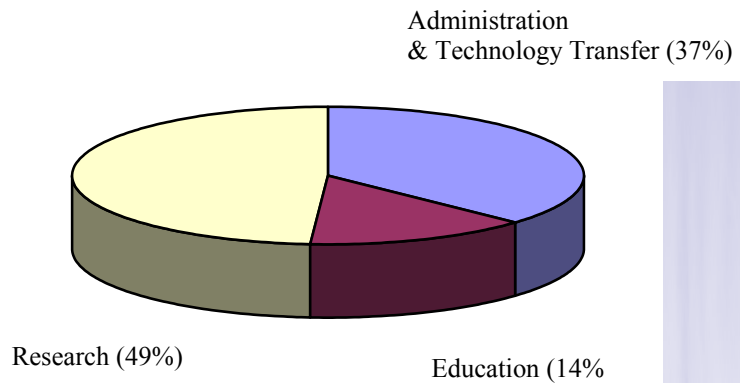
Budget at a Glance

The University Transportation Research Center Region 2 budget totaled \$2,012,527 in 1999-2000.

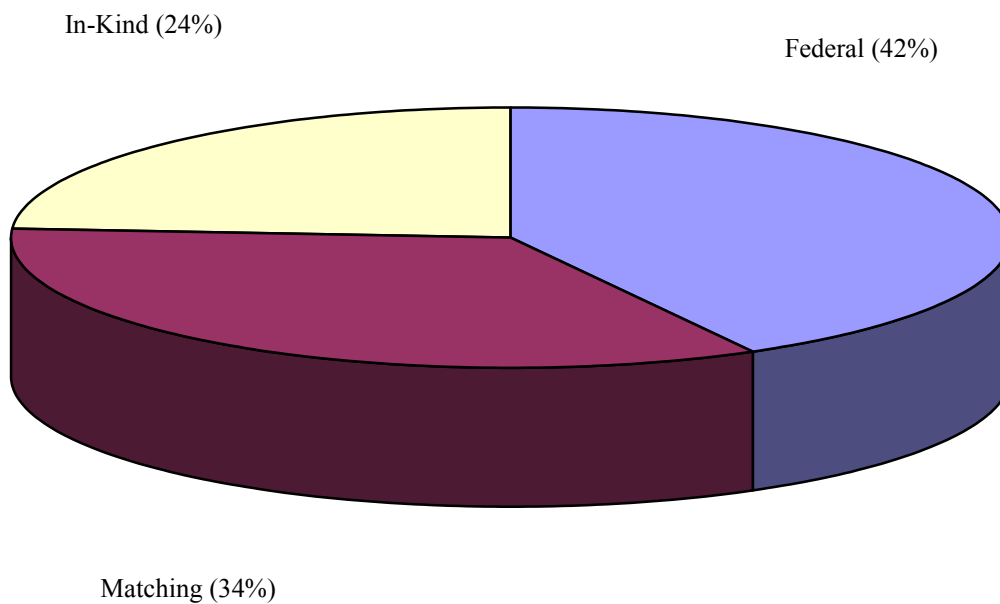
This year, the annual federal grant allocated to programs represents 42% of the total budget.

UTRC's longtime partners, New Jersey Department of Transportation, Metropolitan Transportation Authority, New York City Department of Transportation, New York Metropolitan Council and the Center for Advanced Infrastructure and Technology at Rutgers University provided a combined 34% of the budget in 1999-2000.

UTRC's In-kind fund from university members and agencies was 24% of the total budget.



UTRC allocated 49% of its total budget to Research projects. The administration of the Center and Technology Transfer programs receive 37% and Education programs 14% of the total budget.





Research

UTRC Research Program

New Projects

Ongoing Projects

Completed Projects

Research

The objective of the research program is to develop an agenda that is responsive to the problems addressed by regional organizations and stakeholders, and to conduct that program in close cooperation with these partners, developing means of rapid dissemination of results. The program includes both peer reviewed studies as well as targeted, short term projects. All have one fundamental characteristic: they are conducted by teams of faculty and students, and bring current thinking and state of practice approach to the problems.

The research program is responsive to the UTRC theme. A cross cutting approach to the research program addresses the impact of system needs and system changes, especially due to the integration of new technologies, on the institutions that plan and manage them and on the skills needed by the people who operate and manage the multi modal and intermodal systems at every level. This is a major concern of UTRC partners, and an issue that UTRC is currently addressing. Specific projects being discussed with UTRC partners now include: impacts of transit investments in Northern New Jersey; restructuring of regional labor organizations in response to new paradigms in transit; improved multi modal and intermodal regional freight models; defining regional transportation system hazards and developing management strategies to address these hazards; expanding stakeholder input to innovative strategies to manage aging infrastructure; impacts of technology (especially information technology) on system planning and operations - including user responses, agency capabilities and organization; and customer's changing demands for transportation.

Each of the studies incorporate the latest analytic tools and theories. Sponsors can evaluate competitive proposals to insure the most responsive UTRC team conducts the work. Research work spills over directly to the classroom. For example, a project for New Jersey DOT involves the use of a complex land use transportation model. The inventor of the model was invited to UTRC to present a series of classes on all aspects of designing, using and interpreting the model. The class was attended by a large group of students, as well as faculty and staff from transportation agencies.

New Research Projects

During fiscal year October 1, 1999 to September 30, 2000, UTRC funded five new research projects and two ongoing research projects received additional funds for their final phases.

Intermodal Operation Strategic Plan for the Development of the Regional Freight Model

Investigator: Dr. Jose Holguin-Veras, Institute of Transportation Systems, City College of New York, New York

Crosswalk Safety: Evaluating the Light-guard System (Phase 2)

Investigator: Dr. Peter Boyce, Rensselaer Polytechnic Institute, Troy, New York

Maintenance and Operation Green Bus Line Route Analysis

Investigator: Dr. Claire McKnight, Institute of Transportation Systems, City College of New York, New York

Development of Bus Maintenance Information and Advisory System for the New York City Transit

Investigator: Dr. Mohsen Jafari, Rutgers University, Piscataway, New Jersey

Measurement and Modeling of Systems Analytical Tool for Measuring Emission Impact of Acceleration/Deceleration

Investigator: Dr. Hualiang Teng, Urban Intelligent Transportation Center, Polytechnic University, Brooklyn, New York

Determined Effectiveness of Graduated Driver's License

Investigators: Dr. Claire McKnight, Institute of Transportation Systems, City College of New York, New York. Dr. Srinivasan Raghavan, School of Aviation and Transportation, Dowling College, Long Island, New York

Transportation Planning New Jersey Link to the 21st Century (Phase 2)

Investigators: Dr. Robert Paaswell, Dr. Jose Holguin-Veras, and Dr. Claire McKnight, Institute of Transportation Systems, City College of New York, New York. Dr. Srinivasan Raghavan, School of Aviation and Transportation, Dowling College, Long Island, New York, and Dr. Kaan Ozbay, CAIT, Rutgers University, New Brunswick, New Jersey.



Ongoing Research Projects

New Jersey Link to the 21st Century (Phase 1) Investigators: Dr. Robert Paaswell, Dr. Jose Holguin-Veras, and Dr. Claire McKnight, Institute of Transportation Systems, City College of New York, New York. Dr. Srinivasan Raghavan, School of Aviation and Transportation, Dowling College, Long Island, New York, and Dr. Kaan Ozbay, CAIT, Rutgers University, New Brunswick, New Jersey.

Impact of Future Freight Transportation Needs on the New York City

Investigators: Dr. George List, Rensselaer Polytechnic University, Troy, New York. Dr. Arnim Meyburg, Cornell University, and Dr. John Falcochio, Urban Intelligent Transportation Center, Polytechnic University, Brooklyn, New York.

Cost of Transporting People in New Jersey

Investigator: Dr. Kaan Ozbay, CAIT, Rutgers University, New Brunswick, New Jersey.

Crosswalk Safety: Evaluating the Light-guard System (Phase 1)

Investigator: Dr. Peter Boyce, Rensselaer Polytechnic Institute, Troy, New York

Parking Information and Demonstration

Investigator: Dr. John Falcochio, Urban Intelligent Transportation Center, Polytechnic University, Brooklyn, New York.

Impact of Mode and Mode Transfer on Commuter Stress (Phase 2)

Investigator: Dr. Richard Wener, Polytechnic University, Brooklyn, New York.

Lane Occupancy Charges

Investigators: Dr. Dimitri Goulias, Polytechnic University, Brooklyn, New York, Dr. Shmuel Yahalom, SUNY Maritime, Bronx, New York, and Dr. S. Chien, New Jersey Institute of Technology, Newark, New Jersey.

Comparative Evaluation of Deflection and Wave Propagation

Investigators: Dr. Nenad Gucunski, CAIT, Rutgers University, New Brunswick, New Jersey, Dr. Lynne Irwine, New Jersey Institute of Technology, Newark, New Jersey, and Dr. Neville Parker, Institute of Transportation Systems, City College of New York, New York.

Intermodal Productivity and Goods Movement (Phase 2) Investigator: Dr. Shmuel Yahalom, SUNY Maritime, Bronx, New York.

Implementation of Advanced Fiber Optic and Piezoelectric Sensors

Investigators: Dr. Ali Maher, CAIT, Rutgers University, New Brunswick, New Jersey, Dr. F. Ansari, New Jersey Institute of Technology, Newark, New Jersey, and Dr. Neville Parker, Institute of Transportation Systems, City College of New York, New York.

Evaluation of Plastic and Recycled

Plastic Composite Piling

Investigators: Dr. Ali Maher, CAIT, Rutgers University, New Brunswick, New Jersey, and Dr. I Juran, Urban ITS Center, Polytechnic University, Brooklyn, New York.

Blacktop Resurfacing of Bridge Decks

Investigator: Dr. Nenad Gucunski, CAIT, Rutgers University, New Brunswick, New Jersey.

Logical and Physical Simulations of Automated and Dedicated Bus Lanes

Investigator: Dr. Mohsen Jafari, Institute of Transportation Systems, Rutgers University, Piscataway, New Jersey.

Complete Research Projects

Heat Exchange Modeling for Curing Process of Concrete

Investigator: Dr. J. Plawsky, Rensselaer Polytechnic University, Troy, New York.

Economic Benefits of Pedestrian Traffic

Investigator: Dr. Elena Prassas, Urban ITS Center, Polytechnic University, Brooklyn, New York.

Cement Hydration and Heat Exchange Modeling

Investigator: Dr. J. Plawsky, Rensselaer Polytechnic University, Troy, New York.

Study of Transit Governance

Investigator: Dr. Robert E. Paaswell, UTRC, The City College of New York, New York.

UTRC Research Projects

Transit Maintenance Work Review

Investigator: Dr. Robert E. Paaswell, UTRC, New York and Dr. Mohsen Jafari, Institute of Transportation Systems, Rutgers University, Piscataway, New Jersey.

Gowanus Tunnel Feasibility Studies

Investigator: Dr. Robert E. Paaswell, UTRC, New York and Regional Plan Association, New York.

Queens Bus Line project

New York City Department of Transportation (NYCDOT) subsidizes the franchise bus operators which operate in Queens and Brooklyn -the private companies that started operating in the first half of the 20th Century. Few changes have been made to their routes in the last several decades despite the normal changes in the neighborhoods that their routes serve -for example, new shopping areas developing, neighborhoods that gentrify or degenerate, exodus of industry. To add to the changes, in the last several years, the increases in ridership due to the implementation of the Metrocard with its free transfers between bus and subway and the booming economy has affected the franchise operators just as



it has affected the New York City Transit buses, straining the ability of the franchise companies to serve the passengers. Thus NYCDOT decided it was time to take a closer look at the ridership of the franchise bus companies, or more specifically Green Bus, one of the larger of the franchise operators.

The UTRC team of Robert Paaswell, Jose Holguin- Veras, Claire McKnight, and Herbert Levinson, assisted by Research Associate Angel Medina and several graduate students are undertaking two parallel efforts for NYCDOT.

First Ellen Thorson, a Ph.D. student at City University of New York and AITE scholar, has produced a GIS map of the 15 local and five express routes of the Green Bus system, showing current ridership on each route, characteristics of the service area (e.g., population density, school age population, automobiles per household, etc.), and the streets and subway system. Major traffic generators, such as JFK Airport, Aqueduct Racetrack, Shopping Centers, and Schools, are currently being added. Green Bus has the distinction of carrying more students to and from school than many school bus companies.

In the second effort a method of estimating and analyzing ridership from a

sample of routes is being developed. Students have ridden buses on several routes, recording how many passengers board and alight at each stop. Passenger load profiles (pattern of ridership over the length of the route) have been constructed for these routes. The on-off passenger data that the students are collecting will also be analyzed with a Fratar-type model that will develop an origin-destination matrix (origins and destinations are specific bus stops) for each route.

Strategic Plan for the Development of the Regional Freight Model

Moving freight in New York costs substantially more than anywhere in the United States. To address this issue, UTRC was approached by the Metropolitan Planning Organization (MPO) for the New York City Metropolitan region to develop solutions to this issue.

The main objective of the project is to review the spectrum of methodological possibilities for the development of the Regional Freight Model that NYMTC needs. This information will be used by NYMTC to define the nature and characteristics that the proposed Regional Freight Model should have. The proposed model will be used to assist in the long term planning of the freight infrastructure for the NYMTC region that is characterized for a freight transportation system of unique size and complexity: 475 million tons/year of freight in/out of the region, 20 million tons/year of produce, dozens of intermodal and marine terminals, and three regional airports.

By providing an in-depth review of freight modeling methodologies and recommending lines of research, the proposed project is expected to make significant contributions to the state of the art and practice of freight transportation modeling, both in the New York area and the Nation.

This important project is sponsored by the New York Metropolitan Transportation Council (NYMTC), the New York City MPO and benefits from the leadership of its Principal Investigator, Professor Jose Holguin-Veras (CCNY), and the participation of the prominent freight transportation and transportation modeling researchers of Region 2. The list of participating faculty members include: Dr. Arnim Meyburg (Cornell University), Dr. George List (Rensselaer Polytechnic Institute), Dr. Robert E. Paaswell (City University of New York), Dr. Kaan Ozbay (Rutgers University), Dr. Harry Teng (Polytechnic University) and Dr. Shmuel Yahalom (State University of New York Maritime College). In addition, Professors Edward K. Morlok (University of Pennsylvania) and Lazar Spasovic (New Jersey Institute of Technology) are collaborating with the project team.



Research





Education and Training

Objective

AITE

Undergraduate Program

Student Awards

Developmental Courses

The objective of the UTRC Education and training program is to train students and provide advanced or re-training of practitioners to plan and manage regional transportation systems. To achieve this objective, UTRC concentrates on both the tools of education and the ways of delivering the programs to a diverse group of future and practicing professionals. One aspect of UTRC's program is to reach out to under represented minorities, women, and others to whom transportation was an unthought of or unattainable career choice. UTRC has a history of training and educating such students, who have gone on to great rewards in their careers.



UTRC INFLUENCES A CAREER

Andrew Sakowicz

A turning point in my career took place after I joined UTRC. The opportunity to work with seasoned transportation professionals, training and exposure to the current transportation issues allowed me to grow at an accelerated rate. Besides the invaluable experience, knowledge and skills, UTRC gave me the exposure and confidence that has shaped me to be not only a better transportation professional, but a leader .

When employed by UTRC I was a Civil Engineer in the Traffic Engineering and Highway Design Division of the New York State Department of Transportation.

I was responsible for all phases of highway and traffic engineering design, including price analysis, construction quantities and cost estimation. In June 1999 I was hired as the Assistant Director of Research, at the University Transportation Research Center, Region 2. I was responsible for interfacing with US DOT, regional transportation agencies and UTRC's twelve university members to facilitate timely response to research needs; organizing research conferences; initiating development of proposals; ensuring objective research proposal review; and identifying high quality, cost-effective research projects; preparing the strategic plan and reporting to US DOT .

I also had the opportunity to conduct research in the fields of transportation engineering, planning, and economics including assessment of the impact of planned transport infrastructure investment on travel behavior and economic development, freight demand modeling, and bus route rationalization.

Because of my work in ITS, I was approached by the New York City Department of Planning and offered the position of Telecommunications Specialist/ITS Team Leader of its Transportation Division.

Clearly UTRC prepared me not only for technical skills, but to assume significant management responsibilities.

**Advanced Institute
for Transportation Education (AITE)**

The Advanced Institute for Transportation Education (AITE) provides fellowships to Master’s level students in transportation programs at Region 2 consortium schools. The fellowships may be used for either a traditional civil engineering transportation program or in related fields, such as urban planning or public administration. The program is aimed at two types of students: the recent bachelor degree recipient who has not yet started a transportation job (termed a “full time student”) and the working transportation professional who wants to enrich their transportation expertise. Besides free tuition and a stipend, the full time students have the opportunity to work on a major research project under a faculty mentor; some of the research projects are listed below. The scholarship for full time students lasts for three semesters.

For the transportation professionals, the UTRC AITE coordinator works closely with agency coordinators at the major regional transportation agencies to promote the AITE program, to target those employees who can most benefit, and to ensure a smooth application process. Each agency employee must have their supervisor sign off on the application to minimize conflicts between job and school responsibilities and to encourage the agencies to benefit from the program, for instance, by having the students do master’s projects on topics of interest to the agency. The employee/students receive free tuition and paid time off from work for four semesters.

This year, UTRC received 22 applications for AITE scholarships. Awards were made to five students and five agency employees; however, one of the agency employees could not accept due to job conflicts. In addition, UTRC has awarded a partial scholarship to a New Jersey DOT employee to help him complete a program started two years ago.

In 1999, six of the previous year’s scholars received their master’s degrees, with another six continuing their work and expected to graduate soon. Among the 1999 scholars, Ellen Thorson, an AITE scholar, has recently received her master’s degree and is continuing in a PhD program.



The AITE graduate scholars for 1999 are:

Full Time Students	School	Research Project
William A. Cao	Rutgers	Design and Field Testing of Bridges
Nichola O. Fraser	Polytechnic Univ.	Real time traffic control
Hudson V. Jackson	Rutgers	Pavement & soil mech. properties using a laser vibrometer
J. Todd Nelson	SUNY @ Albany	Density and public transit
Ellen Thorson	CCNY	Modeling Freight Transportation Demand

Agency Employees	School	Agency
Ryan Lund	RPI	NYSDOT
Robert E. Morley	NJIT	NJDOT
Carlos Rivera	RPI	NYSDOT
Michael Vigna	CCNY	NYCTA
Michael Wyatt	SUNY Albany	NYSDOT

Undergraduate Program in Transportation

UTRC and ITS developed the undergraduate program in transportation education in the early 1990's, with the objective of encouraging undergraduates, especially women and minorities, to pursue studies in transportation, planning, urban affairs and economic development.

The program is available to both students currently matriculated at a college or university, in an Associates or Bachelors degree program, as well as transportation agency/industry employees who demonstrate an interest in furthering their education. Scholarships are earmarked in amounts up to a maximum of \$2,500. Scholarship recipients must include internships, and research assistantships as well as course work in their programs of study, and are awarded pro-rated payments from the overall award when they achieve grades of B+ or higher in those studies.

Students benefit from intensive mentoring provided by faculty at various City University campuses that participate in the program. Since inception approximately thirty students have been awarded scholarships, with by far the largest percentage going to women and minorities.

Professor Jim Cohen of John Jay College/CUNY, whose professional expertise includes transportation and infrastructure finance, is the Director of the program. Professor William Milczarski, a transportation planning expert, is the program liaison at Hunter College.

Many graduates have validated the success of the program by pursuing transportation careers. Some examples are as follows:

- ♦ Fermin Fana, a 1994 graduate of the program went on to earn a Masters Degree in Urban Planning from the NYU Robert F. Wagner Graduate School of Public Service. Mr. Fana's research assistantship was with the NYCDOT Pedestrian Group where he wrote a report on city ordinances and their effects on public plazas, open spaces and pedestrian mobility. After DOT he went on to work on economic development projects for the Upper Manhattan Empowerment Zone Development Corporation, and is currently a staff analyst for the Triborough Bridge and Tunnel Authority.
- ♦ Tanya Hodgson, also a member of the first cohort to graduate from the program, and went on to earn her Masters Degree in Urban Planning at Hunter College. While earning her degrees, Tanya supported her family through a clerical position at NYC Transit that lacked career ladder opportunities. Her education allowed her to move from the clerical position to a position of staff analyst with the procurement department at NYCT.
- ♦ Geneve Davis, who earned her Bachelors Degree at John Jay College and Masters in Urban Planning from Hunter College now works in the Transportation division of the City Planning Commission of New York, where she participates in studies of transportation corridor development and their effects on local economic developments.

Undergraduate Program in Transportation

(Continued)

- ◆ Mark Foggin earned a Master's Degree with a dual major in Urban Affairs and Geography. He interned with NYCDOT, working on the Employee Commute Option Program. Since graduating he has been working for the New York City Office of Emergency Management.
- ◆ Carrie Tai, a 1999 Bachelors Degree graduate from Hunter College, moved directly into her Masters Degree Program in Urban Planning. Carrie is currently completing her internship with NYC Transit, having previously interned with the NYCDOT's Pedestrian Group.

The significance of the program is perhaps best captured by the comments of one of Hunter's recent scholars, Ellen Cavanaugh, who wrote her mentor, saying: "More than anything the scholarship encouraged me to focus and think seriously about transportation planning as a career. As a result of the scholarship, I realized this was the career I wanted to enter." Ellen is currently working for Transportation Alternatives in their Bronx Safe Routes Program, a school based traffic calming and pedestrian safety program, which has been cited as a national. Ellen expects to graduate in June 2001.



Student Awards

UTC Student of the Year

Adam Levine received a B.S. in Engineering for Princeton University in 1988. In 1989, Adam became a junior engineer in the Long Island office of the New York State Department of Transportation. After working as a designer on projects including the first Long Island Expressway high occupancy vehicle lanes, Adam received his professional engineer's license in 1995. Since 1995, Adam has worked in the quality assurance section of the design group as the regional estimating engineer and value engineering conductor, the design automation coordinator, and the supervisor of the quality assurance review and photogrammetry/project visualization units.

In January of 1998, Adam began his study for a M.S. in transportation planning and engineering at Polytechnic University. He is a member of the New York State Association of Transportation Engineers.

WTS Student Award

In its efforts to attract minorities and women UTRC also support scholarship activities of minority professional associations, including Conference of Minority Transportation Official, The Association of Dominican Engineers, and Women Transportation Seminar.

This year's UTRC's \$1,000 Annual WTS scholarship award went to Leigh Gresalfi, who has by now finished her Masters of Science in Transportation Planning and Engineering at Polytechnic University. She is currently a traffic engineer in the Civil/Highway Design Division at Parsons Brinckerhoff.

Development of 3-D and 4-D simulation courses

Visual simulation tools are becoming essential for involving stakeholders in transportation decision making issues. Using the leadership of the National Aviation and Transportation Center at Dowling College, courses will be developed to address use of visual simulation, simulation in conflict resolution and decision making, understanding of new technologies and impacts on system management and operations. The courses, bringing together the various disciplines of UTRC, would be developed based on ongoing programs with Region 2 agencies and organizations: infrastructure investment (Airport access - LaGuardia), border issues (NAFTA influenced border crossings, NY/Canada), Design and management of intermodal facilities and global competitiveness (Port of New York, New York State, New Jersey State). Region 2 is also increasingly concerned with system response to natural and man made hazards. Columbia, and its Earth Sciences Center will lead in developing a course targeted to the most sensitive agencies (Port Authority of New York and New Jersey, Metropolitan Transportation Authority, and New Jersey Transit).

Distance Learning

UTRC is in the beginning stages with Dowling College to develop a Region 2 Distance Learning Center. This Center will be available to its consortium and customers. These modern facilities will be for studio based and laboratory based instruction and interactive learning. UTRC will take advantage of state of the art facilities at the Distance Learning Center of CCNY, as well as utilize the distance learning and connective capabilities of RPI, NYU, Polytechnic, UPR and Dowling. UTRC will provide short courses to UTRC faculty and its partners on the use of interactive techniques.

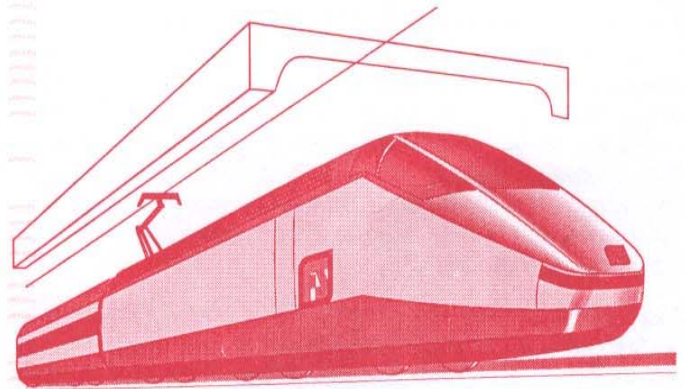
Technology Transfer

Visiting Scholars Seminars
Research Showcase
Regional Activities
Icon Mentor
Summer Transp Institute
Website
Newsletters
Reports, Papers & Videos

VISITING SCHOLARS SEMINAR

University Transportation
Research Center
REGION 2

Pricing the Emissions Savings
Due to Modal Shift From
Air to High Speed Rail:
The Impact of TGV's on French
Regional Airports



ANTHONY PERL

University of Calgary

Associate Professor of Political Science

TUESDAY, JUNE 13, 2000

Co-Sponsored by:
Port Authority of New York & New Jersey

Parsons Brinckerhoff,
Quade & Douglas, Inc.

Frederick R. Harris

Institute for Civil Infrastructure Systems (NYU)
(At Wagner Graduate School of Public Service)

1999

2000

Technology Transfer

UTRC's Technology program goes beyond what might be considered "traditional" technology transfer activities. The Center continues to be the most broad based and successful outreach programs in Region 2 by continually increasing its recognition as a regional resource through its activities:

As the oldest Center in the Region

UTRC serves as secretariat for regional transportation centers and groups. It acts as liaison with CAIT (Rutgers) and NCTIP (NJIT). UTRC serves on the Board of the Center for Transportation Policy and Management (NYU).



Associated Regional Centers

Center	Lead Institution	UTRC Role
TIRC - Transportation Infrastructure Research Center	Cornell University	UTRC members on policy committee, helped form the Center
ICIS - NSF sponsored Institute for Civil Infrastructure Systems	New York University	UTRC members assisted in proposal, serve on Executive com-
Urban ITS Center	Polytechnic University	UTRC members sit on Policy committee
Center for Transportation Policy and Management	New York University	UTRC members helped organize, serve on all committees, in-
NTI - National Transit Institute	Rutgers University	NTI Director serves on UTRC Advisory Council. UTRC has participated in mentoring and in courses
CAIT - Center for Advanced Infrastructure Technology	Rutgers University	UTRC assisted in founding, serves on Executive committee
NCTIP - National Center for Transportation and Industrial	New Jersey Institute of Technology	CTIP will participate in UTRC Executive committee meetings



Member Universities
 City University of New York
 Columbia University
 Cornell University
 Drexel College, PA
 New York University
 Pennsylvania State University
 Polytechnic Institute
 Rutgers University
 State University of New York
 Stevens Institute of Technology
 University of Puerto Rico

About UTCRC
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Over the years, the Center has developed better relationships with local sponsors by being more responsive to their needs. As a result, state and local transportation agencies seek the center's help continually, to deal with research and training problems that require academic input, and/or the application of state-of-the-art technologies. It is expected that more public agencies and private organizations will participate in the research program making it easier to secure matching funds for future projects.

Research
 UTCRC conducts research in critical areas to transit intermodalities, infrastructure financing and pricing. To develop the annual research agenda, UTCRC organizes a Regional Research Conference which brings together state and local transportation agencies and university researchers to determine regional research needs. In addition to providing updates on research progress to sponsoring agencies, UTCRC works with regional organizations to provide technical briefings on a wide range of topics. UTCRC is also active in responding to specific requests for academically-oriented, yet agency or joint agency specific, research and analysis.

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Technology transfer
 UTCRC's Technology Transfer program is supported by regional agencies, and broadly reach thousands of professionals, students, and lay people. Technical briefings are presented at agencies, upon request, and serve as a stimulus for further assistance between UTCRC study sites and regional agencies. UTCRC technical meetings have become places for critical and additional regional meetings have become places to interact and discuss regional issues in a constructive way. Not always possible in an office setting, UTCRC sponsors, bi-monthly, along with the past authority of New York and New Jersey, Parsons Brinckerhoff, Inc., and Frederick R. Harris, a "Working Scholars Seminar Series" these seminars focus on themes of environmental and societal impacts of transportation alternatives. The UTCRC's visiting scholar seminar series have covered topics from close air to travel demand, and from London transport to the French TGV Monorail system. In addition, these seminars provide a responsibility to research, not only among UTCRC members, professionals, and academic institutions, but among those of regional and national interest.

New Jersey Link to the 21st Century: Maximizing the Impact of Infrastructure Investment Objectives, Approach and Structure of Study

University Transportation Research Center, Region 2
 City College of New York, CUNY • Dowling College • Rutgers University

Partial support for this study has been provided by the United States Department of Transportation and the New Jersey Department of Transportation. The views and opinions stated herein are the opinions of the authors.

The overall goal of this project is to assess the impact of planned transport infrastructure investment projects on travel behavior and economic development in New Jersey. The proposal for this research project discusses 5 main objectives for this study. The purpose of this working paper is to review these objectives, provide basic definitions, highlight key issues and suggest methodologies to accomplish these objectives. It should be understood that while each objective is stated separately, they are interconnected in that they focus on the relationship between infrastructure investment and transportation, land use and economic development.

THE RELATIONSHIPS BETWEEN TRANSPORT INVESTMENT AND ECONOMIC DEVELOPMENT
 The fundamental assertion of this study is that planned and in progress transportation infrastructure investment projects in New Jersey have the potential to engender economic development in the state. This economic development will be manifested primarily in the form of land use activity changes, improved environment, and increased employment. These effects, in turn, will transpire mainly from improved accessibility and from the non-transportation impacts of the investments. For this study the key question then is how to define and quantify these impacts and how to model the functional links between the investment projects and the resultant economic development.

OBJECTIVE 1: To describe, quantify and assess the nature and impact of current and proposed transportation infrastructure investments upon accessibility and economic development.

OBJECTIVE 2: To review and quantify recent and proposed land-use changes and developments, and evaluate such changes as a response to investment and accessibility.

Whereas the first objective was to propose how improved accessibility from infrastructure projects can affect land-use, this objective aims at reviewing land use changes and ascertaining the degree to which they were caused or affected by accessibility changes.

OBJECTIVE 3: To develop analytical tools to assess the feasibility of investment to accessibility, to assist in policy decisions concerning future infrastructure investments and development projects. These tools will be especially useful to assess New Jersey's potential for growth within the highly competitive region.

OBJECTIVE 4: To conduct the above assessment looking at all modes, freight and passenger, understanding that both are essential for economic well being and that investment strategies must examine means of providing both.

OBJECTIVE 5: To study the above in a joint academic - NJDOT setting, providing training and education for the professionals who will eventually be responsible for infrastructure and land use planning and implementation. Some may be agencies and firms today; others may be students, soon to be employed by agencies.

(continued on page 8)



Member Universities
 City University of New York
 Cornell University
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 Polytechnic Institute
 Princeton University
 Rutgers University
 State University of New York
 Stevens Institute of Technology
 University of Puerto Rico
 University of the Virgin Islands

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 The Region 2 University Transportation Research Center, representing New York, New Jersey, Puerto Rico and US Virgin Islands, is one of the ten original university centers established in 1985 by Congress to provide research, education and technology transfer in the field of transportation.

UTCRC is supported by the US Department of Transportation and by regional agencies and organizations. The Center, through its Consortium of Member Universities, the Agency Industry Council and its staff provides the following:

Research: Particularly in critical areas related to transit, intermodalities, infrastructure and regional financing and pricing.

Education: Support to traditional and non-traditional education through scholarships, outreach, and professional development programs.

Technology Transfer: Promotion of immediate and ongoing exchange of ideas via technical briefings, seminars, working papers, report dissemination and continual regional contact.

CUNY, Institute for Transportation System's "Summer Transportation Institute for Secondary School Students"

According to a recent survey, conducted by the College Placement Council (CPC), the high demand for graduates in Engineering, Science and Technology will continue well into the next century. The Summer Transportation Institute is a unique concept that provides orientation to engineering and technology programs and creates awareness of the attractive career choices and opportunities that exist in the transportation industry. The Intermodal Surface



Above: Engineer discusses with students important aspects of construction during site visit to Gowanus Expressway Rehabilitation Project.

Transportation Efficiency Act (ISTEA) has created opportunities to change the nature of transportation in America. The opportunity to improve our communities and move our transportation system in a positive direction has never been greater. The Summer Transportation Institute is structured to enable students to take maximum advantage of opportunities in the transportation industry. During the fall semester of 1992 South Carolina State University (SCSU), the South Carolina Department of Transportation (SCDOT), and the Federal Highway Administration (FHWA) entered into a partnership agreement. One of the committees established from this agreement was the student committee. This committee identified goals and objectives and established subcommittees to develop

Institute which is now in its fourth year of operations - demonstrates how partnerships of this nature are able to attract youth to the transportation field. The establishment of an Institute at The City College of New York (CCNY) significantly enhances the outreach efforts of the Institute for Transportation Systems (ITS) to encourage youth studies of ways to allocate costs in transportation - ITS has a continuing commitment to provide quality education for all students and openly seeks every opportunity to expand efforts to assist them.

The Institute was held during the early part of the summer at CCNY with eighteen (18) student participants (continued on page 4)

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UPR/MIT Students came to the Big Apple to learn about Rapid Rail Transit System in New York City



During the period of Sunday, March 23 through Wednesday, March 26 professors and students from the University of Puerto Rico's School of Graduate Planning, Architecture, and Engineering and from the Massachusetts Institute of Technology came to New York City, to learn about the history, operation and maintenance of the New York City Metropolitan Area public transportation systems. The University Transportation Research Center/Region 2 and the City University of New York hosted the visit. Thirteen students, seven professors and two additional guests from the University of Puerto Rico participated in this site visit, along with professors, students and guests from the Massachusetts Institute of Technology. The 2 1/2 days of activities included panels on transit issues in the New York City area, "For Hire Vehicles," and an overview of the NYCT system. Field trips were conducted to several metro stations, including Penn Station, which has recently been renovated, as well as the Coney Island Yard and the Long Island Railroad Hillside Maintenance Complex. The group visited the New York and New Jersey Port Authority Agency to learn about the John F. Kennedy International Airport Access Project.

A reception hosted by Frederic R. Harris and Daniel, Mann, Johnson and Mendenhall was held at the Double Tree Guest Suites, where the group stayed. Edward L. Thomas, Associate Administrator for Research, Demonstration and Innovation from the Federal Transit Administration, made a special trip from Washington, D.C. to greet the group at the reception.

(continued on page 3)

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Cost of Transporting People In New Jersey

The objective of this two year study is to develop a comprehensive model to estimate the full cost of highway transportation services in New Jersey. This study focuses on three major highway transportation modes (automobile, truck and bus transit). The common characteristic of all three modes is that they all use road infrastructure of New Jersey. For computing the full costs of highway transportation in New Jersey, we will use the four major cost categories shown in Table 1.

Cost Categories	Payer	Possible Data Sources
1. User Costs	Private & Public	<ul style="list-style-type: none"> Insurance Companies NJDOT DMV DOI TRANSCOM FHWA
<ul style="list-style-type: none"> Auto Ownership Auto Operations (Gasoline + Maintenance + Insurance) Parking Tolls Transit Fares Travel Time (Free and Congested) 		
2. Infrastructure	Public	NJDOT
<ul style="list-style-type: none"> Capital Maintenance & Operations 		
3. Environmental	Public & Private	<ul style="list-style-type: none"> NJTRANSIT NJDOT FHWA EPA Previous Studies
<ul style="list-style-type: none"> Air Pollution Noise Water Impacts Solid Waste 		
4. Accident & Safety	Public & Private	<ul style="list-style-type: none"> NJDOT DMV Local Transportation Agencies
<ul style="list-style-type: none"> Bodily & Property Damage Productivity Emergency & Medical Services (Police + Ambulance + Rescue) 		

In this project, we employ a comprehensive methodology to develop generic full cost models of highway transportation in New Jersey with the ultimate goal of applying these models to pricing policy decisions. The most important part of the proposed methodology is the development of a "dynamic marginal cost" model to estimate the full costs of transporting people in New Jersey. The "dynamic marginal cost methodology" differs from the approach used in traditional studies of ways to allocate costs of government services among transportation users. Traditional studies are generally concerned with the costs that appear on government budgets and not with external costs, mainly congestion, accident, and environmental [1].

However, most of the recent studies including the "British Columbia Lower Mainland" study [2] fully or partially deviate from traditional approach and address external costs too. For example, "British Columbia Mainland" study uses societal costs such as cost (continued on page 6)

Visiting Scholar Seminar Series

The UTRC Visiting Scholars Seminar (VSS) series continues to be one of the regions most repeatedly and well attended programs, and brings cutting edge scholars and practitioners of national and international influence to present talks before large audiences of regional professionals and lay people. This year's program included:

Dr. Michael Meyer, Professor and chair of the School of Civil and Environmental Engineering at the Georgia Institute of Technology

"Transportation Planning in (an for) the Future: Challenges and Opportunities"

We are still awaiting the issuance of federal planning regulations that will implement the planning provision of TEA-21. However, preliminary indications suggest that they will continue a decades-long trend toward broadening the linkages between transportation planning and other societal concerns. Dr. Meyer examined the state of transportation planning in the U.S. and suggested likely directions where the planning process is heading. Examples was given of Atlanta, Georgia where many of the important linkages - transportation and land use, environmental quality, economic development, and environmental justice - are being debated and acted upon.

Dr. Meyer is active in several professional organizations. He has chaired numerous conferences for the Transportation Research Board on transportation planning and policy. Dr. Meyer is Professor and Chair of the School of Civil and Environmental Engineering at the Georgia Institute of Technology.

Gabriel Roth, Transportation Economist

"Is It Time to Run U.S. Roads on a Commercial Basis"

Most roads in the U.S., as in all other countries, are run, like public parks, by politically, appointed officials. The predictable results include excessive congestion, waste and deterioration. Might the application of commercial principles produce a road system more responsive to the wishes of road users?

Mr. Roth discussed a plausible commercial framework for roads, and the possibilities of implementation.

How might U.S. roads be run as a commercial basis? The framework was presented at the seminar .

Gabriel Roth, transportation economist and civil engineer, whose work on the provision of roads has stretched over five continents. He is author, most recently of Roads in a Market Economy which considers the commercial provision of roads, on the model of telecommunications.

Arthur B. Goodwin, P.E. and Manager of Transportation Projects for the Port of Los Angeles

“Alameda Corridor: A Project of National Significance”

The Alameda Corridor designated by the White House, Congress and USDOT as a project that will receive the largest federal transportation infrastructure loan in the country. The corridor is a \$2.4 billion 20 mile rail and highway intermodal infrastructure project expected to increase the access to the Ports of Long Beach and Los Angeles, the two largest seaports in the United States.

Topics included in the presentation: Historical perspective of port landside access; Projects planning and environmental considerations; Ports' cargo's growths and projections; ACTA's plan of finance and revenue projections; Implementation strategies for a 20 mile long project; Status of construction; and Development of partnerships to ensure success.

Arthur B. Goodwin is a professional engineer in California with over 25 years of experience in transportation engineering, primarily with rail freight and intermodal terminal layout and development. Mr. Goodwin initiated a planning concepts study in 1980 that eventually led to the Intermodal Container Transfer Facility (ICTF). As the ICTF project manager he was responsible for planning, negotiating the rail agreements with Southern Pacific, assisted in obtaining project financing, and supervised design and construction.

Dr. John Bennett, VP of Amtrak

“Economics of Amtrak Choices within the Policy Frame Work”

Amtrak, the National Rail Passenger Corporation, is under a congressional mandate to achieve operating self-sufficiency by 2003. A number of changes to Amtrak's operating environment and requirements were enacted with the Amtrak reauthorization in 1998 to support this objective. Several initiatives are underway to achieve this mandate including the implementation of high-speed rail (Acela) service between Boston and Washington, development of service quality initiatives, expansion of the express service as part of passenger train service and development of service improvements based on a market based network analysis.

Mr. Bennett described the mission and charter of Amtrak as established by congress. In that context, he summarized current operations, markets, and financial performance of Amtrak and the strategic business plans for achieving overall improvements. Continuing capital funding will be needed to achieve and sustaining operational self-sufficiency.

In particular, Mr. Bennett described the current status, challenges and plans for implementing Acela service.

Planning efforts underway for high-speed rail service in other corridors around the U.S. was also described and the policy implications in terms of funding and state/federal roles were discussed.

Mr. Bennett is the Vice President for Transportation Planning and Policy for Amtrak's Northeast Corridor business unit. In that role he led the economic and financial justification for high-speed rail in the Northeast Corridor leading to a \$750 million procurement of equipment and facilities. He has also worked on special assignment to develop the process and initial results of the national Market Based Network Analysis focusing on long distance as well as corridor services. Before joining Amtrak, Mr. Bennett was the Vice President for Infrastructure and Systems at the Long Island.

Dr. Anthony Perl of the University of Calgary

“Pricing the Emissions Savings Due to Modal Shift From Air to High Speed Rail: The Impact of TGV's on French Regional Airports”

This presentation documented and quantified one element of the "external social benefits" arising from modal shift between domestic aviation and high-speed rail (TGV) services in France. Since the mid- 1980s, there has been a clear decrease in aircraft movements between Paris and regional cities such as Lyon, Nantes, and Bordeaux, following the introduction of TGV service. This "TGV effect" has created significant changes in French domestic transportation patterns, and their associated environmental impacts.

The reduced cost of local and regional air pollution at French regional airports resulting from the TGV effect can be estimated by linking environmental assessment techniques that yield an emissions inventory for aircraft operations with economic cost evaluations of air emissions from ground based sources (e.g., road transport, industry, and agriculture).

To highlight both the uncertainty that exists regarding the economic assessment of damages from air pollution's effects and the variation in "willingness to pay" for environmentally sustainable transportation, estimates are expressed as a range covering four possible scenarios. These scenarios differ along two parameters: rural versus urban impact of pollution and minimal versus potential preferences for environmental protection in a particular jurisdiction.

Such an approach produces an estimate range that could be applied to other airports, thus allowing public officials to assess this dimension of the external costs savings associated with modal shifts, or other reductions in air craft movements.

Anthony Perl is Associate Professor of Political Science at the University of Calgary where he also directs the Research Unit for Public Policy Studies. He received an undergraduate honours degree from Harvard University, majoring in Government, an MA from the University of Toronto, specializing in Public Administration, and a Ph. D. from the University of Toronto in Political Science.

Perl has been a visiting scholar at the Foundation Nationale des Sciences Politiques in Paris and a Chaateaubriand Scholar at the Universite-Lyon 2 -Lumiere during the 1994-95 academic year. He has taught a graduate seminar on the economic and historical development of North American transportation infrastructure in France, and graduate courses on transportation and communications policy in Calgary, as well as undergraduate courses in Canadian Politics and Public Policy Analysis.

NJDOT's Second Annual Research Showcase

The second Annual Research Showcase, held at the New Jersey Performing Arts Center at Newark on November 8, 2000, attracted transportation professionals from across the region. The conference, which was organized by the Division of Research and Technology of the New Jersey Department of Transportation (NJDOT), and hosted by the National Center for Transportation and Industrial Productivity (NCTIP), featured speeches and presentations by local officials and transportation experts on a variety of issues. The forum offered attendees the opportunity to discuss the latest transportation technologies and research. This year's theme was "Turning Problems into Solutions".

Dr. Saul K. Fenster, President of New Jersey Institute of Technology (NJIT), host of NCTIP, welcomed over 200 attendees.

Mr. Bill Hoffman, Director of the Division of Research and Technology of NJDOT, emphasized the significance of the relationship his department has with the three regional transportation research centers. He insisted on the importance of the rich resources offered by universities and encourages other state departments of transportation to partner with Transportation Research Centers to find solutions for their transportation problems.



Mr. Nicholas Vitillo, Manager of the Bureau of Research of NJDOT, thanked all participants and addressed the commitment of his department to continue to enhance the partnership with the three transportation centers.

The Keynote Speaker was Mr. Robert Skinner, Executive Director of The Transportation Research Board (TRB). Mr. Skinner addressed current issues that transportation professionals face and discussed national travel trends in the new millennium.

Honorable James Weintin, Commissioner, NJDOT, Mr. Dennis Merida, District Administrator, FHWA, Honorable Diane Allen, Vice Chair, Senate Transportation Committee, and Honorable Alex De Croce, Chair, Assembly Transportation Committee, addressed the attendees.

The conference showcased research projects currently done by the transportation research center in the region. Dr. Robert E. Paaswell, Director of UTRC, led UTRC team presentation that covered its mission, the technology transfer and education programs, and the capability of the center in Geographic Information System and Transportation Modeling.

The three NJDOT's partners centers – The University Transportation Research Center (UTRC), the Center for Advanced Infrastructure and Transportation (CAIT) and the National Center for Transportation and Industrial Productivity (NCTIP) have contributed in the success of the showcase.

UTRC will host the third Annual Research Showcase in Fall 2001.

Work Review Team Sponsor: MTA-NYC Transit

PI- Robert Paaswell, CCNY, co PI, Prof. Mohsen Jafari -Rutgers.

UTRC was asked by the New York Transit Authority to serve as "Independent Expert" for an innovative labor management agreement concerning bus maintenance hours for core tasks. The Center Director, based upon his experience as Executive Director of the Chicago Transit Authority, served as the Expert and formed a study team consisting of UTRC member Rutgers Faculty -Professor Mohsen Jafari and 2 Industrial Engineering students. They devised a quantitative work analysis process that was accepted by both labor and management as the proper tool for coming to agreement on very difficult time assignments. This process was so successful, it was also used for other bus maintenance studies. The team has since followed up with new studies on maintenance productivity. The work was important for two significant reasons: (1) It served as a means of building trusts between groups, ordinarily adversarial, and added significant respect and understanding to a negotiation process. (2) The resulting productivity saves the TA in the tens of millions of dollars every year.

Commuter Choice

Sponsors: NYMTC; UTRC; NY, NJ, and CT ACT and the Metropolitan Mobility Network

In looking at ways to provide relief to an already dense area, and the single occupant vehicle, NYMTC, the regional MPO responded to the Commuter Choice Provisions of TEA -21. NYMTC solicited UTRC, The Metropolitan Mobility Network of the Tri-State Region, Rutgers University Policy Institute, and The New York, New Jersey, and Connecticut Chapters of the Association for Commuter Transportation to co-host a workshop and strategize ways to educate regional corporations on the advantages of tax benefits available to them by offering commuter choice incentives to their employees. As a result of this workshop a "White Paper" was written, and then a sketch plan, for "Employer Parking Management Demonstration" (based on comments from FHWA), was developed and approved by all four primary regional MPOs. This sketch plan was submitted in October 2000 to the FHWA as the first step toward developing a full grant application under the "Value Pricing Pilot Program".



Summer Transportation Institute

The CUNY Institute for Transportation Systems conducted its Summer Transportation Institute (STI) program from July 5, to July 29, 2000 with twenty-seven (27) students, eight (8) of them returning students (Interns), from a cross-section of schools across New York City. The four-week program is being hosted at the City College of New York. There are 35 host sites across the country this year.

The STI was started as part of a National initiative of the Federal Highway Administration (FHWA) and the South Carolina State University (SCSU) in 1992. This year marks the fifth year that the program is being hosted at the City College. The internship component is unique to the program at CCNY and was introduced in 1997 as a mechanism of student tracking and sustaining student interest. In April 2000, CCNY received a meritorious award from FHWA for furthering the motives of the program by incorporating the Internship Component.

Program Objectives

The objectives of the STI are threefold:

- To stimulate student interest in a career in the field of transportation at the secondary education level.

- To provide students with academic and technological enrichment to assist them in the pursuit of a career in the transportation industry
- To sustain motivation among students towards transportation careers

Program

To achieve these objectives, the Institute has developed two (2) separate components: The first or the primary component consists of a curriculum that combines academic instruction, hands-on activities, and field trips to transportation related sites. The second component is an internship program.

Primary Component: With intermodalism over multimodalism as a common theme and, using the various New York City's transportation networks for illustrations, the students engaged in a range of topics that included studies of land, air, and water transportation; transit planning and operations; intelligent transportation systems and traffic control; archives and history; highway and rail construction; transportation safety; and environmental impacts. There were ten (10) field trips to various sites including visits to two collaborating colleges, Dowling College and SUNY Maritime College.



In addition, the Institute held computer workshops to train the students on transportation research, web page design and basic Windows System skills. Oral communication is emphasized during the entire program and the students made slide presentations using PowerPoint and/or transparencies. Nineteen (19) students were in the primary program

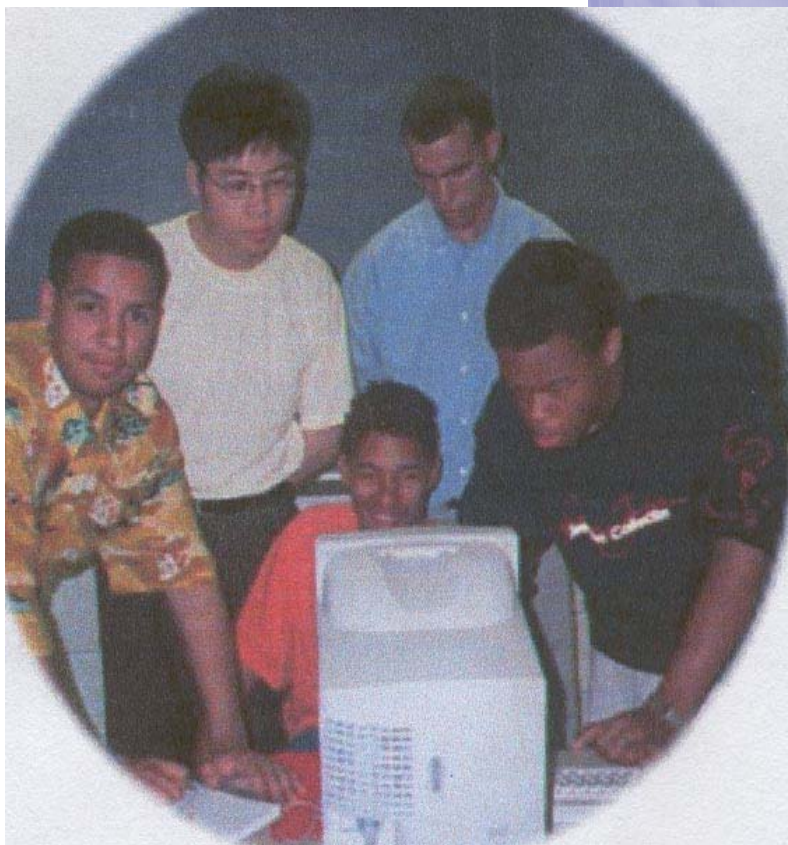
Internship component: This component coincides with the existing program, and is open only to previous Institute graduates. During the first week, the interns attend a rigorous orientation program conducted by Dr. Parker, the Program Director. Four days per week over a four week period the students serve on internship at a station that specializes in transportation engineering design, construction or supervision. On the fifth day, interns met at the ITS office to share their experiences and engaged in various activities which included resume writing, college and career guidance, and developing job-related skills and research. Eight (8) previous STI graduates returned to participate in the intern program. Intern placements included positions at Urbitran Associates, CUNY-ITS; Gandhi Engineering; and UTRC/Region 2.

Funding & Participation

Funding support for the STI was provided by the FHWA, New York City Transit (NYCT), the City University of New York (CUNY), the University Transportation Research Center/Region 2 (UTRC), and Jackson & Tull. Strong support in the form of participation was also received from many agencies including the FHWA Office in NYC, New York City Department of Transportation (NYCDOT), New York State Department of Transportation (NYSDOT), and the Metropolitan Transportation

(Authority (MTA), Dowling College and SUNY-Maritime College.

Urbitran Associates has employed two interns while both Gandhi Engineering and DeLeuw Cather, all of whom are reputable transportation engineering firms in the City, have each employed an intern. One student who has been in the program for over 3 years joined the City College in the fall to start a transportation career. 18 of the Program's 24 counselors since the inception of the program in 1996, who are drawn from different engineering majors at CCNY are now either working or majoring in the transportation industry. All the previous 4 program coordinators are presently employed in the transportation industry. Tracking of other STI graduates and participants is a continuing process.



Icon Mentor Program

Region 2 is rich in professionals who have devoted their careers towards advancing transportation theory and practice. Each year, the University Transportation Research Center will select one of these persons to serve as its Consortium wide mentor. He/she will be available throughout the year to meet with students, and faculty at each consortium institution and literally, give out pearls of wisdom.

This year UTRC selected Herbert Levinson, a member of the National Academy of Sciences to serve as this year's icon mentor. Herbert Levinson is considered to be one of the fathers of modern transportation planning and has extensive knowledge of transportation activities and operations throughout the world.

Herb is a planning innovator and member of NAE. He is also one of the major leaders and innovators in modern transportation planning. His knowledge about technique, practice and projects is without parallel. Herb is an invaluable resource to the region.



Assoc. of Dominican Engineers' 4th Anniversary Dinner

UTRC co-sponsored the Association of Dominican Engineers' 4th Anniversary Dinner that took place at the Faculty Dining Room of the City College of New York on October 20th, 2000. This important event had the participation of the CUNY authorities, Hispanic politicians, and more than two hundred engineers of Dominican descent. The dinner also provide an opportunity to welcome the new Dean of the School of Engineering, Professor Mohammad Karim, and to honor Mrs. Sonia Rivera for her role as an outstanding example for the engineering, women and minority community of New York and the United States.

Tranus Training

The City College of New York, in collaboration with Rutgers University and Dowling College are conducting a major research project for the New Jersey Department of Transportation. As part of this important project, entitled "New Jersey's Links to the 21st Century," an integrated Land Use-Transportation Model is being calibrated. Training on this important model, TRANUS, was provided by Professor Ana Morais (Universidad Central de Venezuela) to the staff of New Jersey Department of Transportation, New Jersey Transit and the participating universities.

UTRC's Website

The University Transportation Research Center maintains a Website at <http://www.utrc2.org> which contains a comprehensive overview of the center's objectives, purposes and functions for planning and management of regional transportation systems.

The Website serves as an information tool for those transportation agencies that are interested in the Center's Research activities and as a bulletin board for students who are interested in pursuing transportation research studies toward advanced degrees.

The Website is a focal point for updated information presented in an accessible format which is visually pleasing and logically navigable.

Directory & Contacts

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- UTRC Office Staff
- Principal Investigators
- Visiting Scholars

Research, Technology Transfer, & Publications

- Current Research Projects
- Research Reports
- Regional & National Transportation Studies
- Local Community Agencies

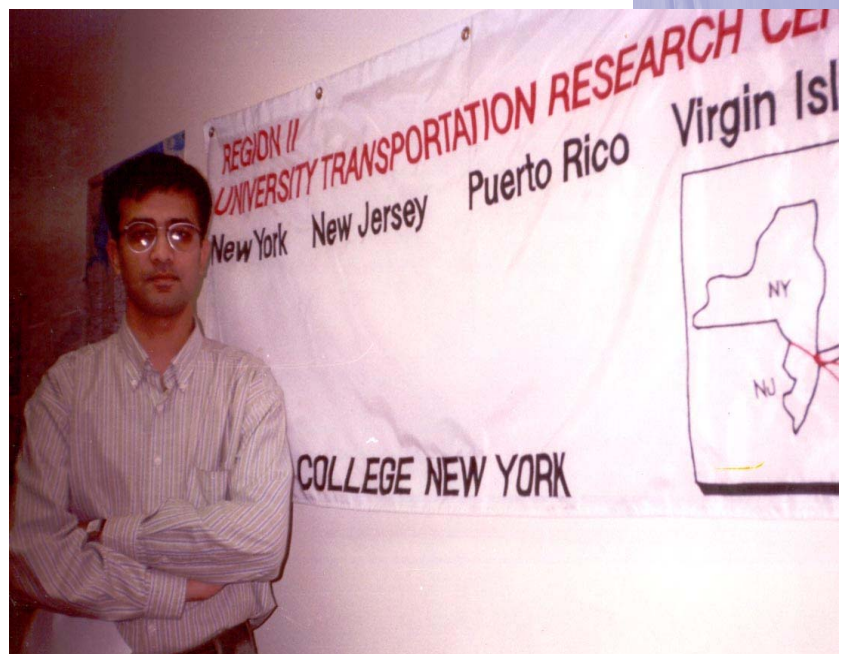
Education, Scholarships & Seminars

- Advanced Institute for Transportation Education Graduate Scholars Program
- Transportation Careers Pipeline Institute Program
- NYMTC Technical & Managerial Training Program
- Visiting Scholars Seminars & Registration Information

Newsletter & Links

- Region 2 News
- Federal Agencies
- Institutes
- Transportation Statistics

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