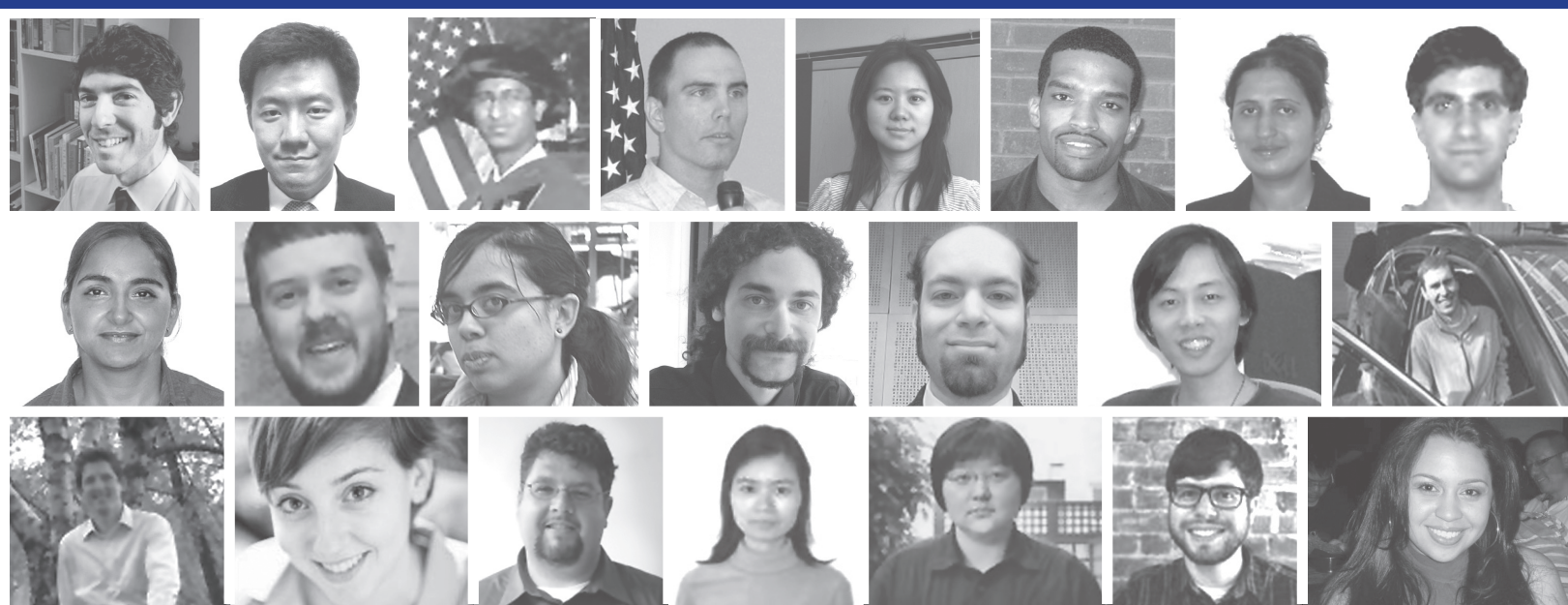




IN MEMORY OF  
**IGNATIUS ADANGA**  
**CHARLES LESPERANCE**  
**SEE WONG SHUM**

## **September 11th Memorial Program for Regional Transportation Planning:** **A Five Year Retrospective - Planning and Academic Initiatives**



**Participants in the Academic Initiative, September 11th Memorial Program**

September, 2011

## Acknowledgments

---

**T**he September 11th Memorial Program for Regional Transportation Planning would not have been possible without the support from and involvement of the families of Ignatius Udo Adanga, Charles Lesperance, and See Wong Shum. Affiong Adanga, Renee Alexander and Rebecca Shum have given generously of their time and their talents to make the Memorial Program a worthy tribute to Ignatius, Charles and Shum. The members and staff of the New York Metropolitan Transportation Council (NYMTC) are truly grateful for their invaluable contributions to the creation and success of this living memorial.

This retrospective was prepared by the University Transportation Research Center, Region 2 (UTRC) for NYMTC. Both organizations appreciate the efforts of all involved in its preparation.

Thanks go especially to the NYMTC member agencies for their direct involvement in the September 11th Memorial Program, and the following agencies in particular:

- Metropolitan Transportation Authority (MTA) and MTA Capital Construction (MTA CC)
- New York City Department of City Planning (NYCDCP)
- New York City Department of Transportation (NYCDOT)
- New York State Department of Transportation (NYSDOT)
- Port Authority of New York & New Jersey (PANYNJ)
- Westchester County Department of Planning (WCDP)
- Westchester County Department of Public Works and Transportation (WCDPWT)

This retrospective acknowledges the student participants in the September 11th Memorial Program's Academic Initiative who demonstrated dedication and professionalism while working to address regional transportation goals and objectives. Their efforts contributed to the Program's success to date.

Acknowledgments also go to the sponsors and participants in the September 11th Memorial Program's Planning Initiative for their planning projects, including:

- Rockland County and Manhattan College;
- The Rudin Center for Transportation Policy and Management at NYU Wagner; and
- NYCDOT and the Hunts Point Development Corporation.

This retrospective was prepared by:

Nadia Aslam, UTRC  
Gerry Bogacz, NYMTC  
Lisa Daglian, NYMTC  
Penny Eickemeyer, UTRC  
Stephen Hausch, NYMTC  
David Kletsman, NYMTC  
Rodolfo Leyton, UTRC  
John Lopez, NYMTC

# An Overview of the September 11th Memorial Program for Regional Transportation Planning

*The September 11th Memorial Program was announced on November 18, 2004, during ceremonies to commemorate the return of NYMTC's headquarters to lower Manhattan.*



**T**he September 11th Memorial Program for Regional Transportation Planning honors three NYMTC staff members who died in the attack on the World Trade Center on September 11, 2001: Ignatius Adanga, Charles Lesperance and See Wong Shum. The Program provides assistance to students and organizations for projects in both academic and public policy arenas as a way to educate and motivate those who are interested in transportation technology and planning. It is comprised of two elements: the Planning Initiative and the Academic Initiative.

Planning projects funded through the Planning Initiative, which is administered by NYMTC are consistent with NYMTC's mission and the Shared Goals and Vision of the Regional Transportation Plan. The projects have explored innovative concepts in transportation, and enhanced public awareness and involvement in transportation issues.

The Academic Initiative, which is administered through UTRC, has

funded student internships or independent research projects, which are also aligned with NYMTC's mission and the Shared Goals and Vision of the Regional Transportation Plan. The Academic Initiative is designed to foster the academic and professional development of students by providing them with opportunities to participate in innovative research and planning work.

The September 11th Memorial Program was announced on November 18, 2004, during ceremonies to commemorate the return of NYMTC's headquarters to lower Manhattan. The Academic Initiative began on January 28, 2005, and awards were announced later that year. Twenty two students participated in the Academic Initiative during its first five years. The Planning Initiative launched on February 22, 2005, and to-date, three planning projects have been awarded and completed.

## Joel Ettinger

Executive Director, New York Metropolitan Transportation Council



Ten years ago, a bright September morning was transformed as the towers of the World Trade Center were reduced to smoldering piles of unrecognizable debris containing the remains of 2,753 victims. The terrorist attacks of September 11, 2001 had a profound impact on the New York Metropolitan Transportation Council. Our headquarters office was destroyed, as was the headquarters office of one of our member agencies, the Port Authority of New York & New Jersey. Three NYMTC staff members – Ignatius Adanga, Charles Lesperance and See Wong Shum – were among the victims. The Port Authority lost 84 of its employees, including 37 Port Authority police officers and Executive Director Neil Levin.

In 2005, NYMTC established the September 11th Memorial Program for Regional Transportation Planning as a living memorial to Ignatius, Charles and Shum to acknowledge their dedication to NYMTC's mission of providing a collaborative forum

for transportation planning in the New York metropolitan region. The September 11th Memorial Program was established to educate and motivate people interested in transportation technology and planning and to encourage innovation in planning activities. Through the Program, projects in both the academic and public policy environments have been funded and have brought forth significant results.

The September 11th Memorial Program honors NYMTC's three staff members first and foremost, but it has also come to symbolize the resilience of all of NYMTC's staff and the staffs of its member agencies, as well as acknowledging the hundreds of first responders and other public servants who perished that day. As the Program has provided opportunities for individuals and organizations interested in transportation planning, it has become a fitting commemoration of both the tragedy and the extraordinary spirit born of September 11th.

## Robert E. Paaswell

Ph.D., ASCE, Distinguished Professor of Civil Engineering, The City College of New York/CUNY and Director Emeritus, University Transportation Research Center, Region 2



UTRC has been honored to be a partner with NYMTC on the September 11th Memorial Program dedicated to the memories of three brave NYMTC staff – Ignatius Udo Adanga, Charles Lesperance and See Wong Shum. To New Yorkers, and those who worked in and around the World Trade Center Towers, making the transformation, 10 years later, from the trauma of 2001 to the vision of a better New York City has been a prime goal. And what could be better for the regional community than to see reinvestment in our infrastructure, and in finding the brightest young minds to lead the way. Twenty two students engaged in transportation planning and engineering

from Rutgers, New York University, The City College of New York, Hunter College, Cornell University, Columbia University and Rensselaer Polytechnic Institute have been selected through a highly competitive process to participate in the Program to apply their knowledge and skills to addressing cutting edge regional problems. The problems, their work and their stories are found here. While the new Towers will be stone and steel, these students and their mentors have constructed a fitting tribute to the NYMTC staff and to the people of the region, because it reflects the ideals and work of the three who lost their lives on September 11, 2001.

# The September 11th Memorial Program was established in memory of Ignatius Udo Adanga, Charles Lesperance and See Wong Shum. Here are their stories . . .

---

## Ignatius Udo Adanga

---



Ignatius Udo Adanga was born 62 years ago in Nigeria. As a young man, he left home for Lagos, the capital. He moved on to Liberia and then Germany before migrating to New York some two decades ago.

Mr. Adanga's quest for a better life led him through a series of city and state jobs in housing, probation, children's services and, finally, the planning department of the New York Metropolitan Transportation Council, at the World Trade Center.

For all that, Mr. Adanga struck those who knew him as energetic rather than restless. He always seemed to have spare time to help family members – his wife,

Affiong, and three daughters – friends and co-workers.

"Your country or your nativity was immaterial," said McLord Obiora, a friend, at a memorial service in November. Judith Wilson, a co-worker, said Mr. Adanga not only took the time to help her settle in but also became a mentor for her son Kareem, when he learned she was a single parent. "I was always going to him for advice," she said.

*Copyright © 2004 The New York Times Co. Reprinted with permission.*

## Affiong Adanga, Wife of Ignatius, reflects on the September 11th Memorial Program

---

Thanks for inviting me to share my thoughts on the September 11th Memorial program.

On that fateful day, I spoke to my husband, Ignatius three times after the plane hit the north tower before it actually collapsed. It was a traumatic experience to watch a building collapse with your loved one buried in it. I was thrown into this world of depression, pain and loneliness. Then it dawned on me, what about the colleagues and co-workers that experienced this trauma first hand. How are they feeling?

Then the September 11th Memorial Program was started. Defining the mission and scope, establishing the criteria and the selection process. The depth of the commitment of NYMTC to keep the memories of Ignatius Adanga, Charles Lesperance and See Wong Shum alive just blows my mind. My family is humbled and honored by it.

My husband left home as a young man trying to make a life for himself. He was able to educate himself and he loved to learn new things and he impacted young lives when he was alive. I am honored that this

## **Affiong Adanga, Wife of Ignatius, reflects** *continued*

---

Memorial Program has given deserving students an opportunity to thrive in their respective fields. I know Ignatius is smiling down from heaven.

Life is a journey marked by bumps and bruises but one has to stay positive and live

life expecting the best. Thanks NYMTC for the September 11th Memorial Program. It is a lasting tribute to Ignatius, Charles and See Wong. God bless you all.

## **Charles Lesperance**

---



Charles Lesperance loved the good life, and he loved to learn. He was a pro at cooking salmon, had season tickets to the opera, and could take a computer apart and put it back together again. He had an M.B.A. from Columbia and enough credits for a second bachelor's degree. The Saturday after Thanksgiving, Mr. Lesperance, 55, was supposed to marry Renee Alexander, whom his daughter described as "like the love of his life."

"I really tried to go about being as normal as I possibly could," Ms. Alexander said of that day. "I just didn't know what to do. I did not know what to do. I figured it's just a day; it'll come and go. But then his birthday was right after that. Holidays are very difficult.

Mr. Lesperance had spent his early childhood in Haiti, and he and Ms. Alexander enjoyed traveling to the Caribbean, espe-

cially St. Martin, Jamaica, the Dominican Republic, Martinique and St. Lucia.

"We were always very at peace and comfortable back there," she said. He wanted to go back to the blue water of the Caribbean. He loved it," she said of her fiancé, who had spent his early childhood in Haiti.

Nilaja Shealy, the second of his three daughters, remembers the lesson she learned from her father, who was a systems analyst with the State Department of Transportation. "The biggest thing that my father did, that anyone should try to do in their life, is to always improve, to always continually seek to be better," she said. "I think he did that."\*

Copyright © 2004 The New York Times Co. Reprinted with permission.

## **Renee Alexander,** **Fiancé of Charles, reflects on the September 11th Memorial Program**

---

Thanks for inviting me to share experiences.

First, let me begin by saying what it was like for me to be involved in the process. I felt genuinely welcomed and included from the very beginning. It was really exciting to meet at the very beginning, create the

logo, define the mission and scope, establish the criteria, and begin reaching out to applicants through various channels.

The office was temporarily relocated to Long Island City, and I trekked out there on a number of occasions. I was truly amazed at the level of passion and commit-

## Renee Alexander, **Fiancé of Charles**, reflects *continued*

---

ment to this endeavor. It was heartfelt.

Everyone really wanted to contribute. It was the first time that I realized how traumatic the 9/11 attacks were to those of you who were in the North Tower that fateful morning.

Up until this point, I was experiencing the tragedy through the lens of my personal loss: seeing Charles leave the house that fateful morning twice – once to vote then again when he returned to pick up his laptop before heading to work. Working on this project really got me to think about and feel your organization's loss of three colleagues.

It was abundantly evident how much they meant to NYMTC and how grieved you were when they perished. These words cannot describe how impactfully this experience resonated with me.

I was struck by the level of professionalism that went into the planning. Colleagues from regional organizations attended and offered an abundance of suggestions. Good ideas seemed to flow from around the room and the phone. The energy was exuberant and uplifting.

After we structured the program, I received cover letters, resumes, and evaluation forms, and settled into the process of reading, assessing, and ranking our applicants.

It was exhilarating to review the applications of ambitious and well-deserved young adults who were seeking opportunities to

further their education by applying to our program. Todd [Goldman] did an excellent job of coordinating this effort. I attended several sessions where the recipients were awarded their scholarships. And I really appreciated speaking and being asked to participate. It was an honor.

Charles loved knowledge. He loved to learn. He was inquisitive and always wanted to know more about how things worked. The students we selected over the years embodied a quest for knowledge and a discipline for problem-solving; they exemplified all we set out to accomplish. They are bright, ambitious minds with a strong work ethic; students committed to making transportation systems work better. There is no greater tribute to your three colleagues

From my vantage point, I am committed to personal growth and development. In 2006, I returned to Cornell University, my alma mater, to work for the school, completed my doctorate, and have continued to make progress. I was recently appointed Associate Dean of Students at Cornell University, and I am thrilled to be working with students again.

My life was shattered on September 11, 2001; however, I continue to move forward, without ever forgetting the unimaginable events of that awful day. I feel as though I am part of the NYMTC family and I hope you continue to include me in future gatherings and events.

## See Wong Shum

---



Globetrotting was just one of See Wong Shum's interests. Born in Hong Kong, he migrated to the U.S. in the late 80's, leaving behind his years teaching high school biology – his college major – and being a corrections officer. Between earning an MBA at the State University of New York, Albany, in management information systems, and his work in the New York State Department of Health and the New York Metropolitan Transportation Council, he traveled to Europe, South America, Mexico, India and other destinations. His wife Rebecca, whom he wed in 1992, remarked that it would have been nice if he'd waited to take her along on some of those trips.

When Shum wasn't on the road, he read voraciously, books of all kinds: finance, science, politics, religion, mysteries. On September 11, 2001, he was busy at yet another passion: his computer and his information systems job at NYMTC. Technology bonded him

with Rebecca, herself a programmer.

Shum called Rebecca "the glue that held his family together." Their two children, Leon and Chanel, were the highlights of their lives. "His stories centered on them," a colleague recalled. "He worried about their health when they became ill." And with good reason. Shum was acquainted with tragedy. He'd lost two siblings in accidents and was the only remaining son in his close-knit family.

Since 9/11, Rebecca hasn't had much time to pursue Shum's other interests: movies and working out at health clubs. She's quit her job and devoting her time to raising Leon and Chanel. Family is of utmost importance to her, too, especially now.

© 2008 September 11th Memorial Program. All rights reserved

### Rebecca Shum,

#### Wife of See Wong Shum, reflects on the September 11th Memorial Program

---

I was touched when I first heard that the September 11th Memorial Program would be established as a living memorial to my husband, See Wong Shum and his two colleagues, Ignatius Adanga and Charles Lesperance. In remembering them in such a noble way, I feel immensely grateful and honored that I could be part of it.

With the support and contribution from everyone, the program is up and running. I was taken aback by how impressive the concept, design, planning, coordination and organizing was that contributed to the success. Being busy with two children, I wish I could have been more involved. I was involved in the first year and again this year. Each time it stirs up a lot of emotions and feelings. It took a lot out of me. I feel drained and exhausted. But yet I gained my strength back afterward and grew even stronger.

I know Shum wants me to do it. As his first job, Shum was a high school teacher.

He once said the best we could give for our children is education. Their biggest asset is their knowledge, not the inheritance. It is not easy to assess and rank the applicants since their work and credentials are so outstanding and extraordinary. The scholarship recipients throughout the years are truly the rising stars of the transportation sector. They will continue to walk their path and make their mark along the way both for themselves, and also for Shum, Ignatius and Charles.

A big piece of us was gone along with all the victims on September 11, 2001. But this doesn't stop my children, Leon and Chanel, from turning into young and beautiful teenagers. They will definitely continue their journey of life and live their life fully with the biggest inheritance that their Dad had left for them.

**NYMTC's staff, its member agencies and the staff and faculty at UTRC all played a role in developing the September 11th Memorial Program as a living memorial and a successful program. Their reflections on the Program follow . . .**

---

*The September 11th Memorial Program provides assistance to students and organizations for projects in both academic and public policy arenas as a way to educate and motivate those who are interested in transportation technology and planning.*

**Lou Venech**, General Manager, Transportation Planning and Policy,  
The Port Authority of New York & New Jersey

---

Staff at the Port Authority feel a special kinship with our colleagues at NYMTC over our shared losses in the 9/11 attacks, and our determination to go right back to work laying the foundation for restored and reconstructed transportation connections, despite the traumatic destruction of our headquarters. Many will recall how federal, state, and local agencies convened under NYMTC's auspices within days of the disaster. Even as they mourned, Council staff toiled non-stop to help coordinate initial planning for transportation recovery, and, in the years that followed, to clear the way of procedural hurdles that might have impeded the momentum of recovery planning and the timely com-

mitment of federal funds. NYMTC fully restored its mandated functions and nurtured a shared vision for regional growth. Lower Manhattan's resurgence and the passage of years challenge us never to forget those we lost on September 11th. By enriching the community of young transportation professionals, the September 11th Memorial Program has served as a wonderful and durable remembrance of the NYMTC staff members who perished that day. The Port Authority appreciated the opportunity to help formulate the initial program, and we look forward to welcoming a talented intern as we mark the 10th anniversary this fall.

# REFLECTIONS ON THE PROGRAM

**John Falcocchio**, University Transportation Research Center Chairman of the Board, Professor of Transportation Planning and Engineering, Polytechnic Institute of NYU, and Director of the Urban ITS Center

---

The young lives and careers of Ignatius Udo Adanga, Charles Lesperance, and See Wong Shum were cut short by the tragic events of September 11, 2001. For those of us who knew them professionally, their passing shocked our senses and filled our hearts with great sadness. For the NYMTC family, their loss was a tragic and personal tragedy.

But their spirit endures.

NYMTC staff resolved to keep the memory of their lost colleagues alive by establishing the September 11th Memorial Program.

The purpose of this program is to provide annual grants to transportation and planning students in transportation research topics that support NYMTC's mission.

With this action NYMTC staff ensured the legacy of their lost colleagues through the research products of scholarship recipients and their mentors.

It has been an honor and a truly rewarding experience for me to participate in the selection committee of scholarship recipients.

**Jan Khan**, Manager, Regional Planning, New York Metropolitan Transportation Council Staff and September 11th Survivor

---

The September 11th Memorial Program continues to be a fitting tribute to fellow staff members who perished on that fateful day. It has allowed students and planners to pursue endeavors that represent the work done by our fallen colleagues and that is still being pursued by NYMTC today as we strive to make the regional

transportation system better. The parking study completed by Amit Arora as part of the Program is very useful to the Metropolitan Mobility Network and NYMTC, helping us better understand some of the parking issues in the region and identifying potential strategies to address these issues.

**Todd Goldman**, Manager, Regional Transportation Planning, the Port Authority of New York & New Jersey

---

It has been a great pleasure to meet talented students from many of the region's diverse planning and engineering programs, watch them tackle regional problems under the guidance of professional and academic advisors, and bump into them now and then as they move on with their professional careers. I believe the collaboration between universities and agencies that this program embodies has been extremely beneficial

to the students, their host agencies, and their academic programs alike. In a small but vital way, the September 11th Memorial Program has helped forge the new cross-sectoral relationships our profession needs to remain innovative and effective and to meet the challenges of these times. NYMTC deserves credit for its vision in creating this program. The region would benefit from more collaboration of this type.

# REFLECTIONS ON THE PROGRAM

## **Naomi Klein**, Principal Planner, Westchester County Department of Public Works and Transportation

---

Overall, the September 11th Memorial Program has allowed positive scholarship to result from the immense tragedy of the falling of the World Trade Center Towers. As a NYMTC member agency, this has been particularly meaningful given the loss of the three NYMTC staff members.

On a project level, the September 11th Memorial Program has provided a valuable opportunity for students to work with professionals in transportation planning and

to pursue research that responds directly to a transportation agency's specific needs. Westchester County hosted a student who studied the relationship between transportation and land use in the Tappan Zee Corridor as part of the effort to develop a Bus Rapid Transit (BRT) system in the corridor. The results of the student's work provided significant value to the BRT station planning process.

## **Munnesh Patel**, Data Manager, New York Metropolitan Transportation Council Staff

---

The research conducted by Richard Barone during his internship proved very valuable to NYMTC and the region in that he contributed to the development of the scope of work for a project called "Transportation Information Gateway (TIG)." The objective of the TIG project is to create a data management system to store, access, and visualize a large amount of transportation and demographic data; it is currently underway.

Richard showed great interest and enthusiasm in learning the MPO planning process while working at NYMTC. We believe that the experience he gained at NYMTC helped him get a job at the Regional Plan Association (RPA). We also believe that the September 11th Memorial Program mutually benefitted NYMTC and Richard.

## **Ed Buroughs**, Commissioner, Westchester County Department of Planning

---

The September 11th Memorial Program internship of Peter Feroe at the Westchester County Department of Planning came at a remarkably fortuitous time. The Tappan Zee Bridge/I-287 Environmental Review, the largest public infrastructure study in the Hudson Valley, was just moving into high gear. We saw a need to better engage the Westchester communities along the I-287 corridor to discuss the potential for a new east-west transit system and the implications for future land use. Peter's interest

was a precise match for our needs. He was able, with enthusiasm and confidence, to conduct the detailed work and outreach that we simply did not have staff to do on our own. The internship program allowed him to be free to focus on this one topic and work seamlessly with our staff, allowing us as a team to produce a level of analysis, outreach and website content that would have otherwise been beyond our reach. The products served to complement and enhance the State study team's work.

# REFLECTIONS ON THE PROGRAM

## **Larry McAuliffe**, Manager, Sustainability Planning, New York Metropolitan Transportation Council Staff

---

September 11th Memorial Program intern Nancy Mahadeo worked diligently for NYMTC's Planning Group on an overall evaluation of transportation greenhouse gas reduction strategies. Nancy provided in-depth analysis and quantification of the potential strategies in determining their viability in a re-

gional context. Nancy brought a number of fresh perspectives to the assignment from her graduate program at Rutgers in environmental studies. She currently works as a program consultant where she is supporting home energy audits for existing residential programs.

## **Ann Marie Doherty**, Chief, Research, Implementation & Safety Unit, Office of Traffic Planning, NYCDOT and Seth Berman, Planning Program Coordinator, NYCDOT

---

We believe that our participation in the September 11th Memorial Program was extremely beneficial. Matthew Roe developed various mapping and analytical techniques utilizing GIS technology that helped us expand our safety program and was a key resource in the development of our Safe Streets for Seniors Program.

One of the analytical tools that Matthew utilized was "kernel density analysis," which helped identify neighborhoods with high incidence of crashes involving seniors and helped identify Senior Pedestrian Focus Areas where the Department initiated the Safe Streets for Seniors program. The program is a key departmental initiative and many improvement treatment measures have been implemented, resulting in improved safety and the reduction in fatalities and injuries. Matthew also developed various analytical and statistical tools to analyze crash patterns and help prioritize NYC-DOT's program of safety improvements.

At the conclusion of his internship, we hired Matthew and he is now a key member of the Research, Implementation and Safety Unit in the Office of

Traffic Planning. Matthew is managing two safety-related research initiatives in addition to being involved in all aspects of the Department's Safety Program. As a result of Matthew's skills and introduction of GIS to the unit, the crash data management and crash analytical capabilities of the Agency have been greatly enhanced and streamlined.

Traffic Planning staff has benefitted from its association with Matthew as we have learned new techniques and have been buoyed by his enthusiasm and initiative. We believe that Matthew benefitted from his internship as it gave him a solid footing as to the day-by-day working of a governmental agency and interacting with professionals of various backgrounds and skills to accomplish goals and get things done.

Working with the September 11th Memorial Program in various capacities over the years has been a privilege and a rewarding professional experience.

# REFLECTIONS ON THE PROGRAM

## **Jorge Argote**, Survey Manager, New York Metropolitan Transportation Council Staff

---

In travel surveys, it has been found that respondents have a tendency to misreport certain crucial variables, such as number of trips taken and trip distance. Using GPS-based travel data from two small surveys in New York City, Evan Bialos-tozky developed an algorithm to determine the transportation mode that a survey respondent used for each segment of each trip taken. Studies have shown that surveys enhanced by these devices are much more accurate in reporting many of the variables typically affected by respondent error when using traditional methods, and the algorithm that Evan developed correctly detected the mode for 79.1% of all properly-divided segments as compared with the

survey respondents' travel diaries. To develop this, Evan assessed the variables in order to distinguish between walk, bus, subway, commuter rail and car of location, speed, and acceleration.

Evan showed great interest and enthusiasm during his research; he also helped in the development of various travel surveys. His work assists NYMTC and the transportation research community in the development of tools and procedures to infer travel information from GPS-based travel surveys.



## Program Retrospective: Planning Initiative

### Public Policy and Transportation Planning Studies



**T**he Planning Initiative of the September 11th Memorial Program for Regional Transportation Planning solicited innovative planning project ideas from municipalities, not-for-profit organizations, academic institutions, government agencies, and community and civic groups located within NYMTC's planning area. The project proposals were to address issues relevant to the guiding principles and goals of NYMTC's Regional Transportation Plan and were ranked on the basis of technical merit and potential for broader application within the region.

At the outset of the program, a total of seven planning project proposals were received. Of those seven projects, three were selected through a competitive process:

- *Air Quality and Transportation in the New York Metropolitan Area*, proposed by Manhattan College and sponsored by the Rockland County Planning Department;

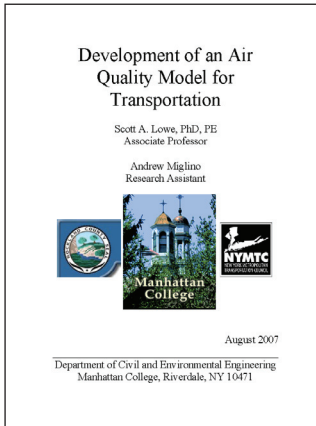
- *Transportation and Land Use in the NYMTC Region: Strengthening Urban-Suburban Coordination*, proposed by the Rudin Center for Transportation Policy and Management at the NYU Wagner School in conjunction with the University Transportation Research Center and sponsored by NYMTC; and

- *Hunts Point Green Fleets Study*, proposed by the Hunts Point Economic Development Corporation (HPEDC) and sponsored by NYC-DOT.

Descriptions and findings of these projects follow. Full study descriptions and final reports can be found on [www.NYMTC.org](http://www.NYMTC.org) under "Programs and Projects, September 11 Memorial Program."

## Air Quality and Transportation in the New York Metropolitan Area

Sponsor: Rockland County Planning Department, Project Manager: Dr. Scott Lowe, P.E., Manhattan College, Riverdale, New York



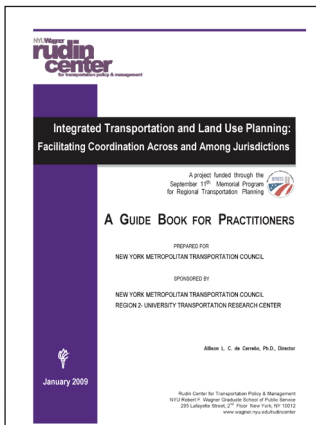
The objective of the Air Quality and Transportation in the New York Metropolitan Area project, completed in 2007, was to investigate how regional air quality could be evaluated in terms of projected air quality benefits of transportation projects. To address this, a two dimensional regional air quality model capable of predicting concentrations of air quality pollutants was developed. The model simulates emissions of fine particulate matter, carbon dioxide, carbon monoxide, ozone and nitrogen oxide.

To demonstrate how the model would work, the project included an example application to simulate the nitrogen oxide emissions and ozone impacts of trucks arriving at and leaving the Hunts Point

Market in the Bronx, which is recognized as one of the largest produce and meat markets in the world, and where hundreds of diesel vehicles idle each day. The emissions were estimated based on the number of trucks and the EPA Tier 1 Emissions Standard for idling heavy vehicles. Concentrations were determined at four receptor locations in the New York City area: Hunts Point (Bronx, NY), Midtown (Manhattan, NY), Forest Hills (Queens, NY), and Riverdale (Bronx, NY). These locations were chosen arbitrarily to represent different areas of the city. The model has a user-specified domain that allows both the detail of the project to be captured, as well as the extent of its impact.

## Transportation and Land Use in the NYMTC Region: Strengthening Urban-Suburban Coordination

Sponsor: NYMTC, Performed by: The Rudin Center for Transportation Policy and Management at the NYU Wagner School and the University Transportation Research Center.



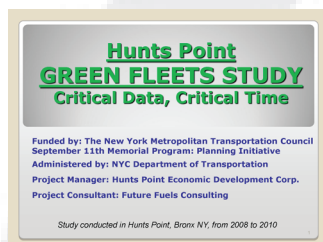
This project resulted in the publication in January 2009 of "Strengthening Inter-jurisdictional Coordination on Transportation and Related Land Use – A Guidebook for Practitioners." The Guidebook builds on lessons learned from a representative sample of case studies, including the Air Train JFK project; the Route 202/35/6/Bear Mountain Parkway Sustainable Development Study, Westchester County; Route 303 Sustainable Development Study, Rockland County; the Staten Island Transportation Task Force; and, the Sustainable East End Strategies (SEEDS).

The Guidebook is intended to facilitate better integration of land use planning

and transportation planning. It serves as a tool for thinking through the key issues involved with inter-jurisdictional coordination and integrated transportation planning and land use planning, and may be used by individual practitioners or as the basis for a facilitated workshop. The Guidebook is drawn from research on the jurisdictional barriers that have had an impact on greater integration of land use planning and transportation planning in a variety of recent planning studies. It provides training matrices, including on key success factors for inter-jurisdictional coordination.

## Hunts Point Green Fleets Study

Sponsor: New York City Department of Transportation, Project Managers: Jeremie Sautter, Hunts Point Economic Development Corporation (HPEDC) and Art Vatsky, Future Fuels Consulting (FFC)



The Hunts Point Green Fleets Study was completed in August 2010. Its purpose was to inventory the Hunts Point truck fleets and to produce actionable plans that would result in reduced truck emissions and lower greenhouse gases that would help put Hunts Point on track to meet the environmental goals of PlaNYC 2030. The project had both short-and longer-term goals, including development of a five year Hunts Point Green Fleets Plan, as well as a longer-range plan for emissions criteria.

A survey of fleets among the businesses of the Hunts Point was conducted, which included many transportation and vocational firms in addition to the businesses within the Hunts Point Market, which is located on 690 acres and has an estimated 15,000 truck trips per day. Additional data was also obtained from secondary sources such as Department of Motor Vehicle records. Based on this information, findings were compiled and recommendations were made.

The key findings indicated that there was an interest on the part of owners of large vehicle fleets in alternative fuels:

87 percent of Hunts Point fleet managers surveyed were found to be open to the prospect of conversion to alternative fuels and technologies if a three-year return on investment is available. In addition, virtually all alternative fuels/technologies were found to be cost effective in terms of energy cost savings for the vehicle operator and some also provide maintenance cost savings.

Recommendations included an immediate reduction in Hunts Point fleet-wide emissions by improving vehicle operations – notably driver training and bio-diesel fuel use – in the existing fleet vehicles. Further reductions were called for by retrofitting fleet vehicles with advanced after-treatment devices. Other recommendations included purchase of new vehicles with regenerative braking; upgrading truck refrigeration technology; and the organization of a Hunts Point Green Fleets Council comprised of fleet operators to oversee improvements such as training, incentives design, public relations, fuel use, etc.

## Program Retrospective: Academic Initiative



**T**he Academic Initiative of the September 11th Memorial Program for Regional Transportation Planning is co-sponsored by NYMTC and UTRC. Through the Academic Initiative, internships have been available at NYMTC's office and with several NYMTC member agencies including NYCDOT; MTA; the Port Authority of New York & New Jersey; and the Department of Public Works and Transportation and Department of Planning in Westchester County. Independent research topics have also been available for students, who work with professional advisors from NYMTC staff, NYSDOT, Westchester County, NYCDOT, and MTA. Each of the students also has an academic advisor from their respective schools.

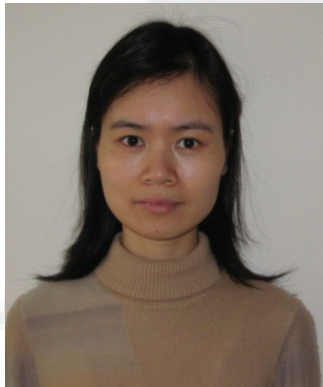
Through the fifth year of the Program, twenty two students have been selected through a rigorous application process to perform internships or independent research, out of a total of sixty five applicants. The process has

become increasingly more competitive over the years. Selected students receive a stipend through the September 11th Memorial Program, and tuition reimbursement from UTRC. Topics to-date have included pedestrian safety; traffic studies and parking; freight logistics and delivery issues; fare policy and pricing; Transit-Oriented Development; and air quality and emissions.

The following pages summarize the achievements of all of the student participants in the first five years of the Program and when available, provide an update on their professional progress. Many of the participants remain in the transportation field and are still serving the New York region. Further detail on each student's project can be found on the UTRC website. <http://utrc2.org/education/911memorial.php>.

### Li Chen

Civil Engineering, The City College of New York,



Through the Academic Initiative, Li Chen worked on the West Side Manhattan Traffic and Transportation Study at NYCDOT, where she was supervised by Michael Griffith. This study examined traffic, pedestrian, bicycle and goods movement, safety, and land use issues in a rapidly evolving area on the edge of the region's central business district. She was involved in many different aspects of this project, including organizing public outreach meetings and data collection activities, and analyzing changes in the area's demography, traffic, and land uses. Her methodology was to assess existing (2006) and future (2016) conditions, identify issues and define transportation problems and deficiencies, and to develop short-term (1-3 years), medium-term (5-7 years) and long-term (8-10 years) improvement measures through consultation with communities.

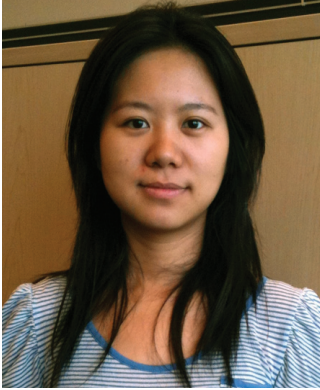
#### Update

Currently, Li Chen is pursuing her Ph.D. degree in Civil Engineering at The City College, City University of New York. Her doctoral research topics include cost estimation and risk analysis of transpor-

tation capital projects, and evaluation of safety countermeasures and traffic calming measures. She wrote a paper entitled "Incorporating Risk of Cost Overruns into Transportation Capital Projects Decision-Making," with Professor Joseph Berechman; it was published in the Journal of Transport Economics and Policy (JTEP) in January, 2011. During the 2009-2010 academic year, she worked on the project "Effectiveness of Traffic Calming Measures," sponsored by the New York City Department of Transportation; her major task was the statistical analysis of the effectiveness of the various traffic calming measures and safety countermeasures in New York City. Her paper "Evaluating the Safety Impact of Bike Lanes in New York City" has been accepted by the American Journal of Public Health, and she is also working on other papers evaluating safety countermeasures in reducing pedestrian and vehicle crashes.

### Wei Li

Civil Engineering, The City College of New York, CUNY



For her independent research project, Wei Li studied transportation services for the region's aging population. She gathered data on the characteristics of transit services for seniors in Westchester County through interviews and data analysis. Her research was supervised by her academic advisor, Professor Cynthia Chen, and by Joel Ettinger, Executive Director of NYMTC, who also served as her professional advisor. Her report was titled: "A Typology of Senior Transportation Services in Westchester County."

The research objectives and tasks of this study were to identify all the services available for the senior population within Westchester County; select and describe the essential supply characteristics of these services; identify limitations and obstacles of existing services; and identify innovative senior transportation programs and possible directions for future efforts. The methodology utilized a survey which was conducted in 35 Westchester County municipalities.

Wei Li's analysis showed that all the existing programs (fixed route public transit, paratransit, and community transportation services) played important roles in seniors' daily travel, but that there were limitations and obstacles to each. Recommendations were based on overcoming or minimizing these obstacles. It was advised that efforts for public transit service should focus on attracting more senior riders by diverting them from driving to public transit, modifying routes or adding stops favored by seniors, and educating

non-users on bus use. For paratransit, simplification of the procedures for eligibility was recommended as well as providing door-to-door or curb-to-curb service. For community programs, an expansion of programs was recommended.

#### Update

Wei Li has reported that her experiences in the September 11th Memorial Program have greatly encouraged her to pursue transportation forecasting using more systematic tools and statistical methodologies. She is now a fifth-year Ph.D. student in the Department of Statistics and Biostatistics at Rutgers University and has been involved in various types of inter-disciplinary research projects with statistical tools. These projects include conducting violation and crash recidivism analysis among drivers in New Jersey; building predictive modeling for safe landings of aircrafts; longitudinal study on treatment effects for patients with depression/anxiety disorders; and methodology development on non-parametric statistical testing. She has also served as a consultant in the Office of Statistical Consulting at Rutgers, helping and collaborating with clients from different fields. Wei hopes to pursue more study in solving inter-disciplinary problems via statistical analysis in the future, and also to contribute in the development of theories and methodologies.

### Jeevanjot Singh

Civil Engineering, Rutgers, The State University of New Jersey



Through the Academic Initiative, Jeevanjot Singh conducted research on time-of-day pricing strategies for the Westchester County Bee-Line System transit network. Her study's purpose was to produce realistic demand and cost functions that could be used by Westchester County to develop better transit policies for elderly and disabled populations. Her report, "Variable Fares for Elderly and Handicapped Transit Riders: An Analysis of Westches-

ter County," explored alternatives with variable fare options for peak and off peak periods. Her analysis compared various fare levels, as well as a comparison of price elasticities at other transit agencies around the country. Ms. Singh's research was supervised by her academic advisor, Dr. Kaan Ozbay, and by a professional advisor, Patricia Chemka, now Deputy Commissioner, Westchester County Department of Public Works and Transportation.

### David Dayu Zhang

Urban Planning, Columbia University



David Dayu Zhang worked with NYMTC staff to research key transportation issues facing the region and to plan regional conferences to address these issues. Under the guidance of NYMTC Executive Director Joel Ettinger, he examined four critical areas related to NYMTC's shared regional vision: Bus Rapid Transit; safe routes to school; Transit-Oriented Development; and transit for older adults. He helped NYMTC plan the first in a series of policy conferences to provide a forum at which the region's stakeholders could discuss specific issues and learn more about what other regions are doing to address them. The conference, entitled Good to Go, highlighted transportation options for older adults; it was held on September 26, 2007 at NYU. Mr. Zhang collaborated with NYMTC staff, AARP, and the Rudin Center for Transportation Policy and Management at the NYU Wagner School to help organize this event.

#### Update

About his experiences in the September 11th Memorial Program, David wrote, "During the program at NYMTC, I developed myself professionally to better understand the mechanisms of the public

sector, and the role of the metropolitan planning organization in this region. I was able to attend meetings at different levels, and meet with different groups of visitors and delegations from the region and even around the world. Besides my work on emerging transportation challenges, I was also able to learn from working with different groups within NYMTC. I worked with the Technical Group, for example, on land use model development and evaluation, which benefited me a lot. This project involved helping evaluate three existing models and developing an RFP for land use model enhancements. This program has been enormously helpful for me both educationally and professionally."

After he completed the September 11th Memorial Program and graduated from Columbia University with a Master of Science in Urban Planning, Mr. Zhang worked for the New York City Office of Management and Budget as a senior analyst for two years. In 2008, Mr. Zhang returned to his home country of China, and is currently working as a vice president for CITIC Securities in Beijing.

## Amit Arora

Urban Planning, Rutgers, The State University of New Jersey



As her independent research topic, Amit Arora studied parking regulations and supply/demand issues in and around NYMTC's planning area. This research topic was proposed by the Metropolitan Mobility Network, an advisory working group which advises NYMTC on transportation demand management (TDM) issues in the New York-NewJersey-Connecticut metropolitan region. Amit examined 22 municipalities to understand how parking requirements and policies vary across the region, and gathered information about innovative practices in the region and around the country. She received guidance on her project from two advisors, Dr. Dan Chatman of Rutgers University, and Jan Khan, Regional Planning Manager for NYMTC.

Amit's research created an inventory of existing parking regulations and ordinances, analyzed policies and identified innovative parking practices from case studies primar-

ily in the New York metropolitan region, but also elsewhere in the United States. Her research also examined planners' and developers' perspectives on parking. Amit's interviews with planners indicated that parking supply was inadequate and also found a shortage in supply of spaces in commuter lots and downtown areas, possibly because commuter lots are either free or are relatively inexpensive. Amit also found that some municipalities have adopted innovative parking practices in their ordinances, which can be implemented and replicated in other municipalities.

### Update

Amit Arora is presently working as a National Professional Officer with the World Health Organization (WHO) in the area of road safety and injury prevention and is based out of WHO's India Country Office in New Delhi, India.

## Richard Barone

Urban Planning, Columbia University



Through the Academic Initiative, Richard Barone worked with Munnesh Patel and Kuo-Ann Chiao of NYMTC's Technical Group to develop a five part strategy to formalize data management practices at NYMTC. He analyzed data handling practices and developed recommendations for improvements. The end-goal of this project was to develop a regional transportation data repository that could be used by agencies, civic groups and citizens.

Richard examined various data needs and issues associated with the use of these data for NYMTC's planning processes and developed strategies to improve its data handling capabilities. His paper addressed data management concerns by reviewing and critically evaluating NYMTC's data

practices, while taking into consideration the additional data collection and visualization requirements that had been set forth by federal regulations and developing a long-term strategy to utilize state-of-the-art tools and emerging technology.

Richard also examined NYMTC's website and suggested the use of various emerging technologies and ways to improve accessibility and organization of information within the website.

### Update

After completing the September 11th Memorial Program in 2007, Richard Barone began working for Regional Plan Association (RPA) as a research and policy planner for transportation.

## **Richard Barone** *continued*

His work at RPA has been multi-modal, spanning urban transit systems, highways (specifically goods movement), seaports and airports. Richard's primary task has included multi-year research assignments to plan for the infrastructure needs of the region, and then engaging in advocacy to promote recommendations. Over the years, Richard has also acted as facilitator at numerous working sessions with the public on transportation projects and other planning topics. He recently co-authored "Upgrading to World Class: The Future of the New York Region's Airports," which included forecasting future demand for

the New York-New Jersey airport system, researching various options to increase airport capacity and/or manage demand, and then recommending what must be done to accommodate the projected growth in air travel. He has remained connected to UTRC, particularly as a member of the team studying multimodal goods movement on the I-278 Corridor. Richard recently became the Director of Transportation Programs at RPA.

## **Jason Chen**

Civil Engineering, The City College of New York, CUNY



For his independent research topic, Xiao-qiang (Jason) Chen examined the relationship between the built environment and time-of-day ridership patterns at subway stations in New York City. He analyzed how these daily activity patterns vary from station to station, and the relationship between these patterns and land uses surrounding the stations. He then developed a method to forecast the time-of-day ridership patterns for subway stations in New York City. His advisors were Dr. Cynthia Chen of The City College of New York, and James Barry of MTA New York City Transit.

Jason's research examined how subway ridership evolved over a 24 hour day, developed a methodology to classify the station's time-of-day ridership pattern and to forecast the time-of-day ridership patterns for subway stations in New York City. He

focused on several key research questions, including:

- How does ridership distribution differ over a 24 hour period for different stations and can any patterns be identified?
- What is the connection between the time-of-day ridership pattern and local features such as population, employment, and land use, and what are some network position effects such as general travel cost to Central Business District (CBD)?
- How can time-of-day ridership patterns for a particular station be reliably predicted?

The project also investigated the spatial distribution of subway station ridership in New York City on weekdays and weekends.

### Michael Silas

Civil Engineering, Rensselaer Polytechnic Institute



For his independent research topic, Michael Silas conducted research into the effectiveness of policies to shift freight deliveries to the off-peak hours of the day. The objective of his research was to gain a better understanding of how to increase the participation in off-peak deliveries through the use of behavioral simulation and economic incentives. Secondary goals were to understand how different characteristics and market segments of receivers and carriers influence the participation of off-peak deliveries, and to understand how receivers and carriers interact when agreeing on the scheduling of deliveries in congested urban areas.

He developed a micro-simulation optimization framework to look at how sensitive delivery behavior is to economic incentives, using stated preference data from receivers and carriers in the New York City area. His advisors were Dr. José Holguín Veras of Rensselaer Polytechnic Institute, and Nathan Erlbaum of NYS-DOT.

#### Update

Michael Silas earned his Ph.D. in the summer of 2009 at Rensselaer Polytechnic Institute, in the Department of

Civil and Environmental Engineering. Michael's dissertation was titled "An Investigation on Off-Hour Delivery Policy Design using Optimal Incentives and a Behavioral Micro-Simulation Approach." He has extensive research experience in operations research, applied mathematics, statistics, economics, and freight transportation – all centered on policy analysis. Michael also worked on time-of-day tolls and off-hour delivery research projects funded by the New Jersey DOT, the Port Authority, NYSDOT, and the United States DOT. Michael co-authored the UTRC's Region 2's Best Transportation Paper in 2007.

Michael was awarded UTRC Student of the Year in January 2010. Currently, he works in Washington, DC, as a research analyst, adjunct professor, and transportation consultant. He supports the Department of Homeland Security, the Transportation Security Administration, and the Department of Transportation with risk analyses related to critical infrastructure.

### Nancy Mahadeo

City and Regional Planning, Rutgers, The State University of New Jersey



Through the Academic Initiative, Nancy Mahadeo interned with NYMTC's staff. Her work focused on Mobile Source Emissions Reduction Strategies under the guidance of Larry McAuliffe, NYMTC's Sustainability Manager. Nancy analyzed four mobile source emission reduction strategies to encourage use of hybrid vehicles, plug-in hybrid vehicles, and hydrogen and clean diesel technologies. She found that plug-in hybrid electric vehicle technology was the most cost-effective strategy; hydrogen technology was too costly; and clean diesel involved the production of higher emissions of nitrogen oxides.

#### Update

Nancy Mahadeo is currently a program consultant at MaGrann Associates where she is helping to support home energy audits for existing residential programs. She also researches and evaluates software programs for state and utility program management and helps assess future lines of business. Prior to this position, she was an energy planning analyst for the Association for Energy Affordability, Inc. in the Bronx where she created a performance tracking system for the Weatherization Assistance Program in the downstate New York region.

### Gitakrishnan Ramadurai

Civil Engineering, Rensselaer Polytechnic Institute



Gitakrishnan Ramadurai conducted an independent research project titled "Identification and Modeling of Next Generation Traveler Guidance Systems." His advisors were Professor Satish Ukkusuri of Rensselaer Polytechnic Institute (now at Purdue University), and Todd Westhuis of NYS-DOT. The objectives of the research were 1) to identify the characteristics and architecture of next generation traveler guidance systems; and 2) to develop modeling and algorithmic techniques to operationalize the identified architecture. The research from the study was developed into three independent research papers, each addressing an objective mentioned above. The final report represented a compilation of the three independent papers.

#### Update

After receiving his Ph.D. in Civil Engineering from Rensselaer Polytechnic Institute in 2009, Gita Ramadurai accepted a position as Assistant Professor in Transportation Engineering in the Department of Civil Engineering, Indian Institute of Technology, Madras, India. He is a co-investigator

in a project titled "Advanced Traveler Information Systems for Indian Cities – a first generation ATIS implementation for Indian traffic conditions." He also indicated that his experience in the research project is helping him define solutions for a real world implementation in Chennai, India.

He reported that the September 11th Memorial Program helped him develop as a researcher and academician. He indicated that "The support from the program provided me the financial freedom to explore a research problem of my interest – Modeling for Next Generation Traveler Guidance Systems." About his professional advisor, Gita indicated that "He provided me unique perspectives to the problem which I would not have realized if I had remained within an academic setting. Equally satisfying was the result that two academic research papers were published in journals from the work I had done as part of the program. I thank NYMTC and UTRC for implementing this program. I feel the cause behind the program was also inspiring and brought out the best from the participants. I hope

## Gitakrishnan Ramadurai *continued*

the program continues in the future too.”

Of note is that Gita’s doctoral work was recognized at the 2009 Annual INFORMS conference in San Diego on October 10,

2009, when he received the Best Dissertation Award from the Transportation Science and Logistics Society.

## Matthew Roe

Urban Planning, Columbia University



Through the Academic Initiative, Matthew Roe participated in an internship with NYCDOT, studying “Spatial Analysis and GIS Support for Sustainable Pedestrian Safety in New York City,” under the guidance of Seth Berman and Ann Marie Doherty. Matthew’s study was a GIS-driven investigation into the geography of pedestrian safety, especially related to seniors, and the causes of pedestrian-vehicular crashes in New York City. Several major GIS tools and database-querying techniques were used for the analysis, including 1) spatial analysis, most usefully kernel-density analysis, which was used at the planning stages of the Safe Streets for Seniors project; 2) crash factor analysis and related investigations; and 3) enhancing data accessibility for project managers. Particular attention was paid to pedestrians over the age of 65, who comprise 40 percent of pedestrian deaths in New York City.

Matthew helped produce maps of the density of all senior pedestrian severe injuries and fatalities in New York City over a five-year period, which identified ‘hotspots’ with high concentrations of crashes, including several neighborhoods that had not previously been identified as problematic. While other techniques were applied to the senior pedestrian crash data, kernel density analysis provided the most consistent and applicable criteria, leading to the identification of twenty five high-priority areas for the Safe Streets for Seniors program. Five of these areas were investigated together with NYCDOT staff. This work and associated research laid the groundwork for broader

pedestrian safety planning in New York City and helped to point the way to further research. Some of the resulting design treatments to address pedestrian safety include the installation of pedestrian refuge islands and neckdowns; leading pedestrian intervals for traffic signals; and (universally within the designated areas) pedestrian “Don’t Walk” clearance phases timed for a three-foot-per-second walking speed, the average for pedestrians over 65. As of 2011, improvements have been made at 13 of the 25 Safe Streets for Seniors locations.

### Update

After graduation from Columbia University, Matthew Roe accepted a full-time position with NYCDOT as Planning and Research Manager in the agency’s Safety Office, where he continues to contribute to safety issues and needs. He is responsible for citywide safety planning, research, and data management, serving as project manager for the 2010 New York City Pedestrian Safety Study and Action Plan. His work also includes street design, project planning, and large-scale traffic monitoring, and he has managed two UTRC-funded studies undertaken on behalf of NYCDOT: “Pedestrian Fatality and Severe Injury Accidents in New York City;” and the “Effectiveness of Traffic Calming Measures.” In addition, his September 11th Memorial Program work was showcased in the June 2009 issue of UTC Spotlight, published by the University Transportation Centers Program within the Research and Innovative Technology Administration of the United States DOT.

### Brian Ross

Urban Planning, New York University



Brian Ross interned with NYMTC's staff through the Academic Initiative, researching the Federal Transit Administration's New Freedom grant program under the guidance of Nancy O'Connell, then Manager of Program Development for NYMTC. The New Freedom Program (Section 5317) is designed to improve transportation services for individuals with disabilities by providing them with alternatives to public transportation outside of what the Americans with Disabilities Act of 1990 requires.

Brian's research identified a total of seven cities across the country that have had relative success with the New Freedom Program and interviewed representatives from each city to provide guidance to NYMTC on how best to proceed with its subsequent grant solicitation effort. Three overall themes – outreach/education, funding, and oversight – surfaced from these conversations.

#### Update

Currently, Brian Ross serves as Operations Analyst at MTA Bridges and Tunnels, focusing on performance, administration and budget for the Operations Department – the largest in the agency. In this role, he gathers and analyzes data for management reports, operational

studies and special projects, helping improve operating and budget performance for the agency.

Prior to this position, Brian worked as Community Initiatives Manager, MillionTreesNYC for the New York Restoration Project (NYRP). Brian administered the MillionTreesNYC Tree Giveaway Grant program, which under his guidance gave away 4,200 trees – the largest annual number to date. Brian also managed several stewardship grants, and served as co-chair on the MillionTreesNYC Stewardship subcommittee, helping strategize those efforts citywide in conjunction with the New York City Department of Parks and Recreation and other non-profit partners.

Brian is also working for UTRC, serving as a Research Assistant on a study funded through the New York State Energy Research and Development Authority and NYSDOT. He is helping explore the feasibility of reducing the use of garbage trucks in New York City through the use of pneumatic-tube technology.

### Timon Stasko

Civil Engineering, Cornell University



Timon Stasko conducted an independent research project entitled “School Bus Emission Reduction in New York City.” His advisors were Dr. Oliver Gao of Cornell University and Mark Simon of NYCDOT. This project analyzed the cost effectiveness of Diesel Oxidation Catalysts (DOCs), Passive Diesel Particulate Filters (PDPFs) and Active Diesel Particulate Filters (ADPFs) in reducing vehicular emissions, as well as early vehicle retirement. Due to a lack of sufficient data to accomplish the original plan to model fleet owner behavior for each of New York City’s school bus fleets, Timon developed a detailed cost effectiveness study instead. Factors influencing cost effectiveness, such as bus age and previous retrofits were examined, a sample fleet was assembled to resemble the combined New York City school bus fleet, and the potential for reducing its emissions was evaluated.

#### Update

Timon Stasko is a Ph.D. candidate, studying Transportation Systems Engineering in the School of Civil and Environmental Engineering at Cornell University. He has contributed to several research projects and has submitted a report to NYSDOT to inform their diesel retrofit strategy since

they are facing clean diesel regulation similar to that which was implemented in New York City. Timon was able to draw upon the knowledge gained while working on the topic in the September 11th Memorial Program.

Timon’s other research projects include locating bioenergy facilities, and supply chain optimization. He also recently worked with Ithaca Carshare to assess their impacts on vehicle ownership, parking demand, and mobility. In general, his research involves the application of mathematical optimization and statistics to transportation problems, with a focus on minimizing both financial costs and emissions. After he graduates, he would like to continue to work on similar problems. Timon was awarded UTRC Student of the Year (Council of University Transportation Centers Award) at the Transportation Research Board (TRB) Annual Meeting in January 2011.

## Evan Bialostozky

Geography, Hunter College, CUNY



Through his internship under the Academic Initiative with the NYMTC Technical Group, Evan Bialostozky developed an algorithm that detects transportation modes based on data from Global Positioning System (GPS)-based personal travel surveys. The algorithm determines mode of travel based on the input of a series of data for date, time, latitude and longitude records. This data was generated by GPS loggers which were carried by survey respondents during their travels. In ad-

dition, Evan assisted the Technical Group in preparations for its Regional Household Travel Survey, a portion of which utilizes GPS-based personal travel surveys. Evan's supervisor at NYMTC was Jorge Argote, Survey Manager.

### Update

Evan Bialostozky received his Master's Degree from Hunter College in 2009 and currently works in the Operations Planning Department of MTA Bus.

## Peter Feroe

Urban Planning, New York University



Peter Feroe participated in an internship under the Academic Initiative with the Westchester County Department of Planning, focusing on Transit-Oriented Development (TOD) opportunities in the I-287 Corridor. He was supervised by then Deputy Commissioner (now Commissioner) Ed Burroughs of Westchester County's Department of Planning. His academic advisor was Professor Ingrid Gould Ellen of New York University's Robert F. Wagner Graduate School of Public Service.

In his internship, Peter assisted the communities of Westchester in advancing the principles of TOD in the I-287 corridor in anticipation of the construction of a new Bus Rapid Transit (BRT) route within the corridor as part of a potential major investment involving the replacement of the Tappan Zee Bridge. This effort included developing and making presentations to municipal officials on the subjects of BRT and TOD; launching a website; and creating an interactive catalog of route and station alternatives. Peter worked closely with the Tappan Zee Bridge project team,

including representatives from NYSDOT; MTA Metro-North Railroad; the NYS Thruway Authority; Project for Public Spaces; Regional Plan Association; and ReConnecting America.

### Update

After graduating with a Master of Urban Planning degree from NYU's Wagner School in 2009, Peter Feroe took a position with MTA Bus as a Sustainability Analyst. In his position, Peter works on the development, collection, analysis, organization and presentation of data and information related to sustainability in all aspects of bus operations (including fuels, vehicles, facilities, training and recycling). Through this work, he continues to contribute to regional transportation needs as well as helps to advance the United States DOT's new livability goals.

Peter indicated that his experience in the September 11th Memorial Program helped him gain a more in-depth knowledge of the issues involved with transit operations and

## Peter Feroe *continued*

service delivery. He feels that it also helped him to develop a better understanding of the interactions between a community and their transit systems, and has benefited his current work in advancing the livability goals.

Peter also noted that he takes pride in the work he performed as part of his September 11th Memorial Program. He felt that his project sponsor supported his project's goals and integrated the work that he was

doing into the other work of the department. "I truly felt like I was part of a team and was contributing not only to the completion of my project, but to the overall body of work of the department. In fact, much of my work is still being used on the department's website, [www.westchester.gov/bmt](http://www.westchester.gov/bmt), in order to further educate the public." He feels that his experience exceeded his expectations.

## Jennifer Lozano

Urban Planning, New York University



Through the Academic Initiative, Jennifer Lozano participated in an internship with MTA Capital Construction (MTA CC) to evaluate the outcome of workforce development initiatives and measure their success. Her supervisor was Regina Gramola of MTA CC. Jennifer was actively involved with the issue of workforce development and contributed to the development of several initiatives including technical lessons learned, mentoring, and professional development and training. She participated in designing evaluation and measurement techniques of the workforce development initiatives. Some of her responsibilities included interviewing MTA CC executive management regarding their objectives and proposed goals of each initiative; designing measurement techniques; and conducting the analysis.

### Update

Currently Jennifer Lozano works with project executives, engineers, construction managers, architects, and consultants to

guarantee the success of the #7 Subway Line Extension for MTA CC. She feels that this major investment will vastly change the footprint of New York City public transportation and "feels blessed to be a part of it." Jennifer believes that the September 11th Memorial Program was the key gateway in this career opportunity, having given her the foundation and skills necessary to work on a project of such a large magnitude. She wrote, "As a young woman embarking on my career path in the transportation profession, I am committed to carrying on the memory of Ignatius Adanga, Charles Lesperance, and See Wong Shum through my work ethic, dedication to public transportation, and leadership skills."

### Darrell Sonntag

Civil Engineering, Cornell University



Darrell Sonntag conducted independent research on the topic “Modeling the Temporal and Size Distributions of Diesel Particulate Matter Emissions.” His academic advisor was Dr. Oliver Gao of Cornell University and his professional advisor was Larry McAuliffe, NYMTC’s Sustainability Manager. Diesel particulate matter emissions are a serious health threat in the NYMTC region. However, little is known about important characteristics of particle emissions, including the size-distribution of fine and ultrafine particles. For his September 11th Memorial Program research, Darrell analyzed the size-distribution of particulate matter emissions from diesel transit buses and alternative fueled passenger cars. This research will help better understand the health risks from current and future transportation-source emissions in the NYMTC region.

#### Update

Darrell Sonntag graduated with his Ph.D. in February of 2010, and after a short post-doctoral appointment at Cornell University, took a position as an AAAS Science & Technology Policy Fellow and began work with the US Environmental Protection Agency’s Office of Transportation and Air Quality in Washington DC. He is currently in this position and is conducting policy-focused research on the impact of potential emissions regulations on public health and the environment. Darrell indicated, “The memorial aspect of the internship helped me

to appreciate my opportunities to study and apply knowledge to build a better and safer world. It gave me a stronger desire to do my best with the awarded funds to make a meaningful difference in the world. I’m also grateful for the opportunity to present my research at NYMTC headquarters. I felt that NYMTC really honored our work and was interested in what we had accomplished.”

Darrell feels that his professional advisor, Larry McAuliffe, provided valued assistance on conducting research and helped with his choice to conduct research that could influence “real-world decisions.” He conveyed that his opportunity gave him a broader perspective on the role of public transportation agencies in overcoming environmental challenges.

A review of his research conducted with September 11th Memorial Program funds appeared in the following journal article: Diane U. Keogh and Darrell Sonntag, Challenges and Approaches for Developing Ultrafine Particle Emission Inventories for Motor Vehicle and Bus Fleets, *Atmosphere* 2011, 2(2), 36-56. Darrell also had the opportunity to make several presentations which were at least partially based on his September 11th Memorial Program work at various conferences.

## 2008-2009 PARTICIPANTS

### Nicholas Tulach

Urban Planning and Public Policy, Rutgers, The State University of New Jersey



Nicholas Tulach conducted independent research on the topic “The Tyranny of the Shovel: Exploring Changes in the Planning Process During Periods of Economic Crisis.” His academic advisor was Dr. Daniel Chatman of Rutgers and his professional advisor was Michael Flynn of NYCDOT. This research explored the lessons learned by local agencies from past financial crises in the 1970s, 1980s, and 1990s. The research addressed the following questions: What happens to decision making in periods of economic crises? Do these crises mark significant shifts in the local practice of planning? If so, in what ways?

Through a variety of primary and secondary sources reflecting New York City data, this research explored the themes of crisis, devolution, privatization, and public-private partnerships in terms of how they fluctuate under the effects of periodic economic crisis. Placing these crises in a political economic context allows an understanding of how privatization, public-private partnerships, and project prioritization are implemented as part of the transportation planning process, and how those changes connect to other scales of policy formulation such as the federal transportation reauthorization or the economic recovery plan.

## 2009-2010 PARTICIPANTS

### Haiyun Lin

Civil Engineering, The City College of New York, CUNY



Haiyun Lin participated in the Academic Initiative with independent research on the topic of “Keeping Up with the Trend – Improving the Residential Location Model for the New York Metropolitan Region.”

A residential location model is an essential element in integrated land use and transportation models because the urban landscape is shaped by the location decisions of countless households. Haiyun’s project focused on how to improve the residential location model by incorporating factors that are typically ignored in current models. More specifically, it analyzed how people’s past residential location experiences influence their current residential location choice preferences, and sought insights from the search process involved in making residential location choices. These findings can lead to proposed improvements on the existing residential location choice model as well as recommendations of additional questions to be asked within NYMTC’s current household travel survey framework.

To improve upon existing residential models, Haiyun’s research addressed the following questions: How does a person’s past location experience affect their preferences in the current location decision? How does the search process impact the location decision?

#### Update

Haiyun Lin is finishing her Ph.D. dissertation in the Engineering Department of The City College of New York. She co-authored two research papers partially containing results from her September 11th Memorial Program projects. One of these two papers has been accepted for publication by the journal *Environment and Planning*; and the other is currently under second round review by *Housing Studies*. Haiyun also made several presentations at conferences based on research that had been at least partially funded through the September 11th Memorial Program.

## Sandra Rothbard

Urban Planning, New York University



Sandra Rothbard participated in the Academic Initiative by working at the Port Authority of New York & New Jersey promoting community involvement in freight decision-making. Sandra's supervisor at PANYNJ was Vince Mantero.

Freight movement is beginning to take its place as a lead issue for transportation planners. Like other transportation areas, freight deals with its own public involvement issues. Due to different levels of education and knowledge of goods movement (amongst the general public, public agencies and freight industry), there is a great deal of misunderstanding when plans and projects are proposed. Transparent and effective community involvement processes are few and far between, while physical plans for freight transportation often lack creativity and amenities for a surrounding community. As a complement to its Goods Movement

Plan, the Planning and Regional Development Department within the Port Authority of New York & New Jersey requested research on the problems facing local communities with respect to freight planning and management. Sandra's research led to a resource guide for the general public, public agencies and the freight industry that highlights ways to prevent and mitigate conflict.

### Update

Sandra Rothbard graduated with a Master of Urban Planning degree from the Robert F. Wagner Graduate School of Public Service at New York University in 2010. Currently she is a Fellow in the Mayor's Office of Long-Term Planning and Sustainability, where she is working on solid waste issues.

## Judd Schechtman

Urban Planning and Public Policy, Rutgers, The State University of New Jersey



Judd Schechtman participated in the Academic Initiative by undertaking independent research on the topic of "Is Sprawl Still the Law? Linking Smart Growth to Transportation Capacity." His faculty advisor was Robert Burchell and his professional advisor was Ed Burroughs, Commissioner of the Westchester County Department of Planning.

Judd's project investigated the hypothesis that local land use laws and policies create barriers to intensification of land uses around existing infrastructure, and therefore impede climate stabilization and sustainability goals. The zoning laws and local plans for land use within a half mile of all MTA Metro-North Railroad commuter stations in Westchester County were analyzed for their

compliance with sustainability and smart growth principles. They were measured and indexed according to newly developed and existing measures. Results indicate that zoning and other barriers do limit development in Transit-Oriented Developments, though the extent to which they do so varies widely. Although growing through transit-supportive land uses is an essential means to reduce congestion and greenhouse gas emissions, substantial urban form changes cannot likely be achieved without reform to the legal and incentive structure driving municipal land use decisions.

### Update

Judd Schechtman is a Ph.D. candidate at the Bloustein School for Planning and Public Policy at Rutgers. He reported

## Judd Schechtman *continued*

that he was very grateful to have been a part of the September 11th Memorial Program. He noted that, "It meant a lot to me to participate in a program honoring the lives of the NYMTC staff lost in the attacks. As a born-and-bred New Yorker, the attacks impacted me in an especially poignant way. I am particularly moved by being able to give something back in the spirit of those lost."

He also indicated that the September 11th Memorial Program inspired him to focus his dissertation research on the New York metropolitan area, and helped make his work on transportation and land use theory relevant to practice. Judd enjoyed being a part of the professional and research community and participating in NYMTC and UTRC proceedings and conferences.

## Alexander Wolk

Urban Planning and Public Service, New York University



Through the Academic Initiative, Alexander Wolk participated as an intern in the NYCDOT Division of Planning and Sustainability and worked on a Bus Management Plan for Lower Manhattan.

Curb space is a valuable commodity throughout New York City. Lower Manhattan, a tourist and business district known for its congested streets, is no exception. With a daily influx of over a thousand MTA, commuter, intercity and tour buses, the availability of curbs for these vehicles is at a premium. With the impending opening of the World Trade Center Memorial and the gradual build-out of the East River Waterfront, competition for curb space will increase dramatically unless actions are taken to accommodate both increased demand for parking – particularly among tour bus operators – and a decreasing supply of parking due to area developments. The Bus Management Plan for Lower Manhattan included analysis on pricing strategies and payment options, procuring

off-street lots, and considered broader integration challenges moving forward.

### Update

Alex noted, "The September 11th Memorial Program for Regional Transportation Planning provided an invaluable experience working at the NYC Department of Transportation (DOT) while offering a rare opportunity to directly contribute to research that shed light on transportation issues related to accessing the September 11th Memorial itself, and overall parking challenges in Lower Manhattan. My time at the DOT inspired me to pursue a career in public service and to continue to work on issues of vital importance to all New Yorkers. Currently, I am a project manager at the NYC Department of Environmental Protection working on initiatives to restore the health of the city's most polluted waterways through innovative stormwater management programs."

## Supervisors and Professional Advisors

---

**Jorge Argote**, *New York Metropolitan Transportation Council*  
**James Barry**, *Metropolitan Transportation Authority*  
**Seth Berman**, *New York City Department of Transportation*  
**Ed Buroughs**, *Westchester County Department of Planning*  
**Patricia Chemka**, *Westchester County Department of Public Works and Transportation*  
**Kuo-Ann Chiao**, *New York Metropolitan Transportation Council*  
**Ann Marie Doherty**, *New York City Department of Transportation*  
**Nathan Erlbaum**, *New York State Department of Transportation*  
**Joel Ettinger**, *New York Metropolitan Transportation Council*  
**Michael Flynn**, *New York City Department of Transportation*  
**Regina Gramola**, *MTA Capital Construction*  
**Michael Griffith**, *New York City Department of Transportation*  
**Jan Khan**, *New York Metropolitan Transportation Council*  
**Larry McAuliffe**, *New York Metropolitan Transportation Council*  
**Vince Mantero**, *Port Authority of New York and New Jersey*  
**Nancy O'Connell**, *New York Metropolitan Transportation Council*  
**Munnesh Patel**, *New York Metropolitan Transportation Council*  
**Mark Simon**, *New York City Department of Transportation*  
**David Stein**, *New York City Department of Transportation*  
**Todd Westhuis**, *New York State Department of Transportation*

## Faculty Advisors

---

**Robert Burchell**, *Rutgers, The State University of New Jersey*  
**Daniel Chatman**, *formerly of Rutgers, The State University of New Jersey*  
**Cynthia Chen**, *formerly of The City College of New York, CUNY*  
**Ingrid Gould Ellen**, *New York University*  
**Oliver Gao**, *Cornell University*  
**Hongmian Gong**, *Hunter College, CUNY*  
**Kaan Ozbay**, *Rutgers, The State University of New Jersey*  
**Robert Paaswell**, *The City College of New York, CUNY*  
**Satish Ukkusuri**, *formerly of Rensselaer Polytechnic Institute*

# ABOUT THE SEPTEMBER 11TH MEMORIAL PROGRAM SPONSORS

## About the University Transportation Research Center (UTRC)



**T**he University Transportation Research Center, Region 2 is a USDOT Regional Transportation Center addressing surface transportation operations, management, design, economics, and planning. UTRC is one of ten original national centers established in 1987, in recognition that transportation plays a key role in the nation's economy and in the quality of people's lives. The theme of the Center is "Planning and Management of Regional Transportation Systems in a Changing World" and UTRC's primary focus is the stewardship, management, and future evolution of a mature transportation system in the face of emerging policy challenges. In this regard, the center works closely with transportation agencies as they must continually adjust to the nature

of the economy and its evolving transportation requirements; their emerging understanding of what is required to protect public safety and security; new challenges, such as global climate change and how they define their missions, serve the public, conduct routine business and become more dynamic in approaches to the management of information and technology.

Located at The City College of New York, the Center is a consortium of 16 major academic institutions in New York, New Jersey and Puerto Rico. Through support from a USDOT grant, UTRC's mission incorporates research, education and the transfer of technology in the field of transportation.

## About the New York Metropolitan Transportation Council



**T**he New York Metropolitan Transportation Council is a regional council of governments that is the metropolitan planning organization for New York City, Long Island and the lower Hudson Valley. NYMTC provides a collaborative planning forum to address transportation-related issues from a regional perspective; undertakes studies for transportation improvements; forecasts future conditions and needs; pools the resources and expertise of its member agencies to plan for transportation and development in the region; and makes decisions on the use of federal transportation funds.

The NYMTC planning area covers 2,440 square miles and a population of 12.4 million, which was approximately 64% of New York State's population based on 2010 Census counts.

Together with an interested and active community, NYMTC works to keep the region moving in the right direction in order to improve air quality, increase mobility, reduce congestion and preserve our high quality of life. To respond to local needs, NYMTC is comprised of three Transportation Coordinating Committees (TCC): New York City TCC, Mid-Hudson South TCC and Nassau/Suffolk TCC. These committees recommend sub-regional transportation priorities and provide opportunities for the private sector, general public, local government and interested stakeholders to become involved in the planning process on a more local level.



**University Transportation Research Center, Region 2**

Marshak Hall - Science Building, Suite 910

The City College of New York

138th Street & Convent Avenue

New York, NY 10031

[WWW.UTRC2.ORG](http://WWW.UTRC2.ORG)



**New York Metropolitan Transportation Council**

199 Water Street 22nd floor

New York, NY 10038

[WWW.NYMTC.ORG](http://WWW.NYMTC.ORG)