Although women have begun to compete more equitably in traditionally male-dominated professional and managerial positions in state agencies over recent years, significant gender discrepancies remain in highway and transportation agencies. These agencies have in turn faced two gender problems in their attempts to deal with this disproportion: how to increase the hiring of entry-level female professionals, and how to develop female professionals so that the most talented move into the elite section of the official/administration ranks. As agencies move to increase the number of women leaders, they must understand the experiences of professional women during this era so that they can create programs that address these women's needs and support their contributions.

In research recently funded by the National Center for Transportation and Industrial Productivity (NCTIP) at the New Jersey Institute of Technology (NJIT), Dr. Hindy Lauer Schachter, NJIT Professor of Management, has examined some successful career patterns women have followed to become leaders in state transportation agencies. This study uses evidence from the careers of successful transportation women to suggest ways for recruiting, retaining and developing women.

**Methodology**

Ten women who have served in senior management ranks in state transportation agencies, authorities or commuter transit organizations, and who constitute a key information source for developing female personnel, were interviewed and their strategies for success analyzed. Their careers progressed within the New Jersey and Delaware departments of transportation (DOT), NJ Transit, the South Jersey Transportation Authority, Port Authority of New York and New Jersey (PANYNJ), Niagara Frontier Transportation Authority, Massachusetts Executive Office of Transportation and Construction, Massachusetts Department of Public Works, and Massachusetts Turnpike Authority, among others, and have included DOT positions at the assistant commissioner level or higher, authority positions as senior executives, facilities managers or chief engineers, and a commuter transit position as program manager.

Relatively unstructured sessions lasted from one to two hours, with participants emphasizing those aspects of their careers that they thought were most important. Agency managers spoke about their educational backgrounds, career paths, mentors, networks, family life, and the gender climate in their organizations - areas that prior studies had suggested influenced career success.

**Educational Background**

Although most managers have been traditionally civil engineers, a gradual shift has taken place over the last decade to include other types of engineers and non-engineering generalists, indicating recognition that non-technical backgrounds also produce people with good management skills.

Nine of the women interviewed have non-engineering undergraduate degrees, a majority of them in liberal arts of the social sciences. Eight women have masters' degrees, most in professional disciplines: transportation management, business administration, public management, etc. Very few of the women expected to go into transportation when they were in college. Several women used the word "serendipitous" and one used the word "circuitous" to describe the functional trajectory of their careers.

The non-engineers were often surprised and relieved to learn that their backgrounds were not considered problematic. One woman was offered a project manager's job at NJ Transit. When she noted that she was not an engineer, her boss said, "It's a management job." Another explained that her employer saw her lack of technical background as a plus because she was able to view issues differently. Several women stressed that their value to the organization lay in their strategic mindset, problem-solving ability and skill in translating for engineers what customers and agency officials wanted. Women with a liberal-arts background often enriched their technical and managerial skills with an in-career master's degree.

**Career Paths**

Transportation women affirm the importance of taking risks - moving to new...
NCTIP is an integral part of the overall transportation effort that was envisioned, brought to fruition and nurtured through the years by Dr. Saul K. Fenster, president of NJIT. With Dr. Fenster's retirement at the end of this semester, he will leave behind him a legacy of quality transportation education and research, solid relationships with federal, state and local transportation agencies, and a university transformed from a small engineering school into the nationally known public research university it is today.

Many others are speaking to his long list of accomplishments as his term of office draws to a close, but I'd like to focus here on some of the solid transportation successes at NJIT that trace their origins to his vision.

On Dr. Fenster's watch, 206 masters and 10 doctoral degrees in transportation have been awarded. Three transportation research centers have been established: the National Center for Transportation and Industrial Productivity (NCTIP), funded by USDOT at approximately $750,000 per year, is in its 10th year. The International Intermodal Transportation Center (IITC), supported by a $2,000,000 multi-year grant by the Federal Highway Association, closely partners with NCTIP to provide a unique blend of policy-oriented research and counsel based on technical studies grounded in pragmatic work that assists state and regional agencies in addressing their mandated responsibilities. And the Transportation Information and Decision Engineering (TIDE) Center, funded under the New Jersey Commission on Science and Technology, a $700,000 per year, five year grant, partners NJIT with Princeton and Rutgers Universities and City College of New York to develop technologies to help individuals and commercial enterprises make better transportation-related decisions.

Additionally, the North Jersey Transportation Planning Authority (NJTPA) - the local municipal planning organization (MPO) - is resident on the NJIT campus, and with NJIT, is currently exploring ways to channel new or expanded freight-related businesses into the region's numerous abandoned or idled industrial brownfields. The Brownfields Redevelopment Project is funded at $1,400,000 for its first two phases. As part of NJTPA's Unified Planning Work Program, $250,000 has been allocated for NJIT to assist NJTPA with a comprehensive freight planning initiative. In addition, TELUS - the Transportation Economic and Land Use Program, initially a NCTIP/NJTPA research project, continues its mandate to help MPOs nationwide meet their legislative mandates as a six-year, $1,000,000 per year project funded under TEA-21. Transportation at NJIT was further broadened with the recent establishment of a Global Positioning CORS (Continuously Operating Reference Station) station, which, incidentally, played a key role in the Twin Tower's recovery effort, helping the government monitor and map the disaster site.

On May 14, 2002, Dr. Fenster was honored as "Transportation Person of the Year" at the Regional Business Partnership's Transportation Awards Breakfast.

A half day development session will spotlight career patterns women have followed to reach executive positions in state and national transportation agencies. Participants will learn how these women attained their high-level positions and which management and decision-making strategies they use in their jobs. The session will offer transportation managers greater understanding regarding how to develop female professionals, and will show how to empower women to take their careers to the next level.

Issues to be explored will include career trajectories, mentoring, networking outside the agency, gender in the workplace environment, and family and work-life synergies. Discussion of career trajectories will involve analysis of unconventional pipelines for bringing women into transportation agencies. Discussion on mentoring will include analysis of the career and social supports mentors provide, exploration of the value of female mentors for female protégés, and the role of formal mentoring programs. The entire session will be geared to public-sector experiences.

The program will include a keynote speech from a woman who has senior executive status in a major transportation agency; a roundtable with five executive-status women, who will take turns answering career-related questions put to them by a training coordinator; and a discussion session the goal of which will be to articulate concrete strategies based on insights gleaned from the keynote speech and roundtable.

Further information on date and time will be available shortly at http://www.transportation.njit.edu/nctip.
Dr. Rongfang (Rachel) Liu, who received her Ph.D. in Civil Engineering from the University of South Florida in 1996, has joined the NJIT faculty as an assistant professor of civil and environmental engineering with a joint appointment to the transportation faculty as of September 2001. Prior to accepting the position with NJIT, she was a project manager and senior supervising engineer with PB Transit and Rail Systems, Inc.

Dr. Liu has extensive experience in the area of intermodal transportation planning and engineering, environmental impact and major investment studies (EIS and MIS), and travel demand forecasting and simulation modeling. She has managed/conducted long-range transportation plans for different federal, state, and local government agencies and developed traffic engineering designs for various public and private sector clients. She has gained this broad-based experience through her various positions with consulting firms, research institutes, and government agencies as well as her extensive involvement with Transportation Research Board committees and modeling development task forces.

Combining her advanced educational background and diversified project experiences, Dr. Liu has a firm grasp of theoretical framework and principles of transportation engineering and planning. She also demonstrated her capability of implementing ideas and theories into real world projects through her consulting engineering positions for a number of private and public clients. She has presented and published a number of technical papers for renowned transportation journals such as Transportation Research Board. She is also respected throughout the industry for her modeling skills and intermodal research.

At NJIT, Professor Liu teaches graduate level courses in Mass Transportation Systems and Urban Transportation Planning. Her research interests are intermodal transportation planning, travel behavior and demand forecast modeling, operation research and network simulations, and GIS and GPS applications in transportation. She is a registered professional engineer in Ohio, and is registered with the American Institute of Certified Planners.

Dr. Liu is principal investigator for The Future of Transportation Models project, funded under an NJIT separately budgeted research (SBR) grant, which evaluates the function and implementation of next generation travel demand models such as TRANSIMS. She is also involved in NCTIP's Effectiveness of Bus Nubs for Bus Stops [http://www.transportation.njit.edu/nctip/research.htm]

Gender Issues

Continued from page 1

positions, particularly across the line manager/staff manager divide. Episodes where they learned new skills were often mentioned. Two women said they took pay cuts to move from policy to operating jobs - "moving down to move up." Both eventually did use their new, more technical, operating skills to move into higher-level posts.

A unilateral transfer might provide useful visibility. One DOT planning engineer left her technical position to answer citizen inquiries in the commissioner's office. She remembers the surprise of colleagues at the shift that she believes jump-started her career. Because she lost her tag as "assistant engineer-planning," an assistant commissioner offered her a position as executive assistant for interagency cooperation; this offer led to a job as manager of a DOT interagency cooperation bureau. Had she remained one engineer among many, the assistant commissioner would not have thought to offer her the executive assistant slot.

Lateral moves between organizations appear to have become part of the career paths followed by most state agency executives in contrast to past practice where employees increased their value by gaining greater experience of one organization's needs. Many of the women interviewed started their careers with exploration periods that included a variety of short-term jobs outside transportation, which included related volunteer work. Transition to transportation came at various stages. Seven of the women entered transportation agencies in low to intermediate positions; three at relatively high positions. Most of the women soon established a set of geographically proximate agencies (e.g., NJDOT, NJ Transit) in which the bulk of their career trajectories occurred. Learning new skills remained the motivation. Along the way, some had to change jobs when elections brought in new governors or agency heads from different parties.

Not all positions shifts were at the state level. Several of the most successful women moved between the United States DOT and state agencies. Four (including the two who attained the most responsible state level positions) went into the private sector for a portion of their careers. Women moved between government levels and in and out of the public sector itself when they considered such moves useful. Most of the women entered transportation in staff jobs rather than in operations. Over the years they worked to gain operating experience but for some women a line placement came only after several years of trying to secure one. In the 1970s and 1980s, staff placements may have reflected a reluctance to put women in line jobs.

Mentors

The management literature contains ample evidence that mentors facilitate successful
organizational careers, one survey showing that respondents who had mentors tended to have higher incomes and more promotions.

Eight of the women interviewed had from one to several mentors, almost always people who had been their superiors in early positions. Encouragement to take risks and possibly make mistakes was invaluable. The majority of mentors were male, a circumstance one would expect in the male-dominated transportation field. Only four women reported having had female mentors. These tended to be peers with somewhat more experience rather than supervisors. One respondent who worked for a woman on her first job noted that it was wonderful to have a female guide who could model how successful women should behave in the transportation arena.

Professional Networks Outside the Organization

All of the women noted the importance of external professional associations. Initially, associations served as a locus for learning skills and bringing people into contact with others. As careers progressed, associations gave women recognition and attendant visibility through their yearly awards. The most frequently cited organization was the Women’s Transportation Seminar (WTS), seen as key for exchanging ideas, hearing stories about other women’s accomplishments, and giving members a chance to present ideas to a national audience and hold leadership positions. One person said, “I would never be here today if I didn't have its leadership opportunities.” The American Public Transportation Association (APTA) was mentioned as supportive by several women. One woman praised its leadership program. She said when her organization selected her as one of 25 professionals to attend the program, she made 24 friends and gained visibility in APTA. Her comment highlights the year-round nature of networking contacts that are often maintained through telephone and e-mail.

Several women noted that employer cutbacks restricted their participation in professional networks. If agencies reduced reimbursement for association membership or travel, women sometimes reduced participation in such groups even though they believed participating benefited their development. The problem was exacerbated where travel cutbacks occurred simultaneously with downsizing that destroyed internal networking ability. In 1978, for example, women at PANYNJ created an internal networking opportunity called “Women’s Equity” which offered training programs and raised the visibility of gender issues. During the 1995 downsizing, the leaders of the group left and the organization died. Women at PANYNJ had to deal with loss of internal networking opportunities and curtailment on travel at the same time. The agency had blocked opportunities to learn from women either inside or outside the organization.

Gender and Work

All of the transportation women believed their gender had affected concrete work relations at some point during their careers. Two women endured blatant, overt sex discrimination and harassment. Other women simply observed that they were regarded with a sense of difference. Several women noted that they often had to establish credibility as they moved from job to job, rather than simply inheriting it with the new title, although lack of engineering degrees rather than gender may have played a part here. They found that the best antidotes were humor and a job well done.

The women saw themselves as very visible in the male-dominated transportation world, which had positive and negative implications. Three women believed that at least some administrators explicitly wanted to bring more women into senior positions, and that when a qualified woman was the only representative of her sex in a committee or board meeting, she had an excellent chance of getting an offer for a better position. One woman noted, however, that high-visibility meant women were kept to a higher standard. The women who succeeded were the ones who were able to stand the heightened scrutiny.

Family Life

While marriage clearly influences these women’s lives and hence careers, it is hard to discern a particular pattern. Among the women I interviewed, eight are married; one is divorced and one is divorced and remarried. Five of the women are childless; one had her sole pregnancy after she was already managing a facility.

The affect of childbearing and rearing seems more clearly problematic in relation to career success. Schwartz (1992) divides women into “career primary” and “career and family” categories. Career primary women make the same trades as men traditionally made in terms of careers versus child-care responsibilities; they do it either by remaining childless or by having someone else handle the day-to-day tasks of raising their children. Career and family women want to have careers while participating actively in day-to-day child care. Transportation agencies seem to be able to promote outstanding career primary women to the highest levels. Scenarios for career and family women are more problematic. All the childless women interviewed said that it would have been much more difficult to have a career.
Jakub Rowinski was selected by NCTIP as 2001 Outstanding Student of the Year. Rowinski received his award certificate at the 81st Annual Meeting of the Transportation Research Board (TRB) in January 2002, in Washington D.C., along with a $1,000 award from NCTIP.

Mr. Rowinski began his graduate studies at NJIT in the fall of 1998. He received an M.S. in Transportation in August of 1999 and is continuing studies toward his Ph.D. degree. Concurrently, he has been employed since May 2001 as a transportation engineer with NJIT’s International Intermodal Transportation Center (IITC).

Travel demand modeling, geographical information systems (GIS) and intermodal freight transportation are some of the areas that have been investigated by Mr. Rowinski. His research results have been presented at major international and national conferences including TRB, the Transportation Research Forum (TRF), Institute for Operations Research and the Management Sciences (INFORMS), and the National Conference for Undergraduate Research. He has co-authored several papers, including a significant NCTIP study, Mobility and the Costs of Congestion in New Jersey, which was widely distributed and has been used to further public policy debate in New Jersey. At IITC he has been involved with the joint NCTIP/IITC Ten Year Plan to Remove Barrier Tolls on the Garden State Parkway project as well as various transportation analyses in the area of Port Newark/Elizabeth.

An active member of TRF, Rowinski has also served as president of the Institute of Transportation Engineers Student Chapter and the Graduate Student Association’s transportation program representative. Mr. Rowinski received a B.S. in Civil Engineering from Lafayette College in 1998.

University of California Student Wins NCTIP 2001 Student Paper Competition

Chad Harden, of the University of California at Irvine, has been chosen winner of NCTIP's 2001 Annual Student Paper Competition. Mr. Harden received a $1,000 award for his entry, System Analysis for Harden 3 Trucking. His student advisor was Dr. Amelia Regan.

Mr. Harden, a 23-year old native of Torrance, California, is currently studying for a Master's degree in structural engineering. He received a B.S. in civil engineering from the University of California, Irvine, in June 2001 with an emphasis in both structures and transportation.

After completion of his master's degree, Mr. Harden plans to work as an engineer for a company designing and managing public works projects. Downroad, he hopes to start an engineering company of his own that will design such projects for both the public sector and private companies, as well as provide non-profit design services to religious and other non-profit organizations.

Mr. Harden lives in Yorba Linda, California with his wife, Heather, whom he married in August 2001.

The national student paper competition, held each year at the end of the spring semester, is open to students enrolled in a transportation or transportation-related academic program or those who are conducting associated research. The winning paper is chosen using a refereed process. For further information, please visit our web site.
The 81st Annual Meeting of the Transportation Research Board was once again a time for sharing research and camaraderie for NCTIP faculty, students and staff. Presentations were made, papers presented, and discussions held, representing countless hours of hard work by all. Participation was enthusiastic.

For the fourth consecutive year, NJIT transportation students hosted a hospitality suite designed to enhance the visibility of transportation academic and research programs available at NJIT. The hospitality suite provided an informal setting for students and their academic advisors to interact with faculty members and fellow students from academic institutions around the country, as well as with visitors from public and private arenas. The numerous attendees talked transportation, shared their views, discussed career objectives and identified common goals in a friendly environment.

The following papers were presented:

- Dynamic Travel Time Prediction with Real-time and Historical Data, by Steven I.J. Chien and Chandra Mouly Kuchipudi.

- Evaluation of Truck Crashes on the National Network, by Janice Daniel, Rajat Rajbhandari and Steven Chien.

- Factors Influencing Truck Crashes on Roadways with Intersections, by Janice Daniel, Chuck Tsai and Steven Chien.

- GIS-Based Truck Accident Information and Management System for New Jersey Roadways, by Steven, Chien, Guangcheng Li, and Janice Daniel.

- Methodology for Defining Rational and Defensible Highway Occupancy Charges, by Dimitrios G. Goulias, I-Jy Steven Chien and Schmuel Yahalom

- Matching GPS Observations to Locations on a Digital Map, by Joshua Greenfeld.


NJIT doctoral candidate Alex Sideris presenting on marine terminal operations. His co-authors for the paper were Maria Boilé of Rutgers University, and Lazar Spasovic, NJIT.

Transportation students, faculty and guests mingled at the NCTIP Hospitality Suite, which provides an annual forum for alumni, colleagues and potential students to share information or just have fun.

NCTIP welcomed a contingent from the New Jersey Department of Transportation: (l-r) Fred Schrenk, Nancy Ciaruffoli, William Hoffman, and Edward Kondrath.
Since receiving his B.S. degree in civil engineering from NJIT magna cum laude in 1977, Dr. Martin T. Pietrucha has spent over twenty five years in the transportation engineering field, specializing in highway traffic operations, highway safety, and human factors issues for a variety of public and private institutions.

Currently an associate professor with the department of civil and environmental engineering at Pennsylvania State University (PSU), and director of PSU's Science, Technology, and Society Program, Dr. Pietrucha's research interests are in the areas of highway safety, ergonomics (human factors), and traffic operations and control. He teaches courses in transportation systems engineering, human factors in transportation, sustainability issues in transportation, and road safety analysis.

Dr. Pietrucha has been principal investigator or co-principal investigator on several research projects for the Federal Highway Administration, the National Cooperative Highway Research Program, and the Pennsylvania Department of Transportation, dealing with topics such as safety of older drivers and pedestrians, traffic control devices, commercial signing, highway geometric design, and safety audits.

Previously he was a program officer for the National Research Council's Transportation Research Board, a senior staff engineer for human factors consulting firms, a senior engineer with a civil engineering consulting firm, a faculty research assistant for the Transportation Studies Center at the University of Maryland, and a senior engineer with a New Jersey regional planning agency, the Hackensack Meadowlands Development Commission.

Dr. Pietrucha holds a master's degree in civil engineering from the University of California at Berkeley, and a Ph.D. in civil engineering from the University of Maryland. A member of Chi Epsilon, Tau Beta Pi, Sigma Xi, the Institute of Transportation Engineers, the Transportation Research Board, ITS America, and the American Society of Civil Engineers, he is also a licensed Professional Engineer in New Jersey.

"I have nothing but fine memories of NCE/NJIT. The institution played a large part in who I am and what I do today," said Dr. Pietrucha.

Currently employed by the New Jersey Department of Transportation (NJDOT) as a project manager within their Division of Research and Technology, Dr. Nazhat Aboobaker received her Ph.D. in civil and environmental engineering from NJIT in Spring 2001. She was granted a Presidential Fellowship for the entirety of her program, one of a limited number of fellowships awarded to outstanding doctoral students by the university. Dr. Aboobaker had previously received a master's degree in environmental engineering from NJIT, accomplishing both degrees while maintaining a perfect 4.0 GPA in each as a full-time student. Her dissertation was entitled "Fractionation and Segregation of Suspended Particles Using Acoustic and Flow Fields."

What attracted her to NJDOT, according to Aboobaker, were not only the diverse occupational opportunities that the department offered, but also the opportunity and flexibility in utilizing her educational skills in practical ways in transportation project management. She feels she has found the best of both worlds at NJDOT, overseeing research projects from problem statement to implementation, and working with faculty and students not only from NJIT but from other transportation research and educational institutions.

"NJIT provided me with the right tools, educational experience and academic support to enable me to make a seamless transition from student to transportation professional," says Aboobaker. "The acknowledgement that I have received not only from the department but from other transportation professionals, has made it all worthwhile," she says. "I hope that my achievements will inspire other women who are considering furthering their education in the field of transportation."

New Research Awards

Alternate Performance Measures for Evaluating Congestion, Lazar N. Spasovic. Funding: NJDOT/USDOT.


Computerized Modeling/Simulation of New Jersey Signalized Highways, Steven I-Jy Chien. Funding: NJDOT/USDOT.

Development of a Simulation/Assignment Model for an ITS Priority Corridor, Steven I-Jy Chien. Funding: NJDOT/USDOT.

Economic and Quality of Life Impacts of Route 21 Freeway Construction, Robert Dresnack. Funding: NJDOT/USDOT.

Effectiveness of Bus Nets for Bus Stops, Janice Daniel. Funding: NJDOT/USDOT.

E-Stations for Newark - Phase I, Darius Sollohub. Funding: NJDOT/USDOT.

Estimation of Truck Volumes and Flows, George Hausman. Funding: NJDOT/USDOT.

Fatigue Management, Rail Operations Personnel, One-Jang Jeng. Funding: NJDOT/USDOT.

Good Neighbor Privacy Fence, Walter Konon. Funding: NJDOT/USDOT.

Ironbound Research Project, Darius Sollohub, Funding: NJDOT/USDOT.

Pedestrian Safety and Mobility Aids for Crossings and Access to Bus Stops, One-Jang Jeng. Funding: NJDOT/USDOT.

ProMPTS (Project Management and Progress Tracking System) - Maintenance and Improvement Contract, Chi Tang. Funding: NJDOT/USDOT.

Survey of Driver Perceptions of Railroad and Light Rail Warning Devices, One-Jang Jeng. Funding: NJDOT/USDOT.

Use of Neural Network/Dynamic Learning Algorithms to Predict Bus Travel Times Under Congestion Conditions, Steven I-Jy Chien, Funding: NJDOT/USDOT.
if they had had children when they were in their twenties. The major concern was time. Many women described transportation as a 24/7 job. Several women cited situations where they had to stay in the office until 7:30 or later. With such protracted hours they believed that being a mother would have been difficult at the early stages of their careers. Schwartz calls women who want to have careers while participating actively in raising their children "a precious resource that has yet to be mined." Transportation agencies are not mining this resource.

Analysis/Recommendations

The last decade was difficult for many transportation agencies in terms of reconciling diminishing staff resources and workloads. An era of downsizing and cost cutting may have had a particularly hard impact on female careers by restricting the resources available for networking and by exacerbating the heavy time demands transportation work requires, demands particularly difficult to fulfill for women with young children.

Efforts to attract women to transportation have usually focused on civil engineers, neglecting liberal arts graduates, although analytic and strategic skills and abilities to define issues in ways that agencies can deal with them are capabilities fostered in many academic settings. Agencies need to expand recruitment of liberal-arts graduates for management posts and to explicitly relate transportation jobs to social concerns. Social science faculty and student awareness of how transportation issues impact on social functioning need to be increased.

Mentors may encourage employees to leave safe harbors and seek new jobs to attain additional skills and show faith in a protégé's ability to succeed. Agencies should try to impress on managers the benefits mentoring brings to the organization and to their own careers in terms of connecting to the next generation and broadening interpersonal skills. Agencies might consider making mentoring a criterion for advancement. Female managers should be explicit targets of any campaign to increase mentoring.

Agencies should facilitate and encourage employee participation in professional networks. Most of the women considered professional conferences important for skill building and attaining national visibility.

Increasing the number of women in policy positions will eventually dim the heightened scrutiny that successful DOT and authority women currently undergo. Widespread mentoring and network participation may provide opportunities for those women who are uncomfortable with the rigors of high visibility to discuss their concerns and learn how others handle them. Agencies must be scrupulous to not reinforce perceptions that high-level women constitute an anomaly, even to taking precautions that their own manuals are gender inclusive.

The relatively high percentage of successful transportation women who do not have children suggests that agencies are missing out on the talents of people who become mothers before 35. A strategy that may enable them to engage more "career and family" women who need some flexibility for the years when they have small children at home is to consider flexible hours for jobs where this prerogative will not diminish job performance. Flexible hours can mean the right to do some work at home, part-time employment or job sharing. While these options may not be appropriate in all transportation jobs, some variant may be useful in selected situations.

### 4th Annual NJDOT Research Showcase to be held at Rowan University

The New Jersey Department of Transportation Division of Research and Technology will host its 4th Annual Research Showcase on Friday, October 11, 2002 at Rowan University in Glassboro, NJ.

Topics for the Showcase will include ITS, Safety and Security, the Environment, Infrastructure, and TEA-21.

Further information will be available by summer 2002.

Please visit our website for descriptions of the activities sponsored by NCTIP. Current and recent research projects are detailed, and final reports are available. Information is also available on the interdisciplinary graduate program in transportation.

http://www.transportation.njit.edu