

2004-2005 highlights



Rankings and Recognition

In the listings published in June 2005, *Black Issues in Higher Education* once again ranks NJIT among the nation's leading schools for graduating minority students:

- 19th in the United States in graduating minority students with bachelor's degrees in engineering.
- 13th in the nation, 1st in New Jersey in graduating minority students in computer and information sciences.
- 9th in the nation, 1st in New Jersey in awarding engineering degrees to African-American students. The total baccalaureate diplomas awarded to African-Americans increased 50% over the previous year.
- 16th in the United States, 1st in New Jersey in graduating Hispanic students with undergraduate degrees in engineering.
- 27th in the United States for graduating Asian-American students with baccalaureate degrees in engineering.
- 8th in the United States in graduating Asian-American students with baccalaureate degrees in computer and information sciences.

NJIT also ranked 1st in the nation in awarding master's degrees in computing sciences to Asian-American students and 9th in the nation for awarding master's degrees in engineering to African-American students.

- NJIT was named among the top 500 world universities in a study by the Institute of Higher Education, Shanghai Jiao Tong University. Institutions were judged on quality of education, quality of faculty, research output and size; only 170 U.S. institutions were ranked in the top 500.
- New Jersey Institute of Technology received an Educational Visionary Excellence Award from INROADS/ Northern New Jersey, Inc., a non-profit group that helps minority students get internships with major companies. The university has worked with INROADS for nearly ten years, helping 120 NJIT students obtain internships with companies such as Lucent Technologies, Pfizer and PSE&G.
- NJIT's Educational Opportunity Program has received two major awards from the National Action Council for Minorities in Engineering (NACME). The NACME Scholars Award, in recognition of NJIT's success in recruiting and graduating minority students in the technical professions, provided scholarship funding to ten EOP students. The NACME Gala Award, also providing awards for ten students, recognized NJIT's unique and creative academic support programs.

Educational Programs

- NJIT awarded 1,821 bachelor's, master's and doctoral degrees at annual commencement exercises held for the first time at Continental Airlines Arena. The larger venue allowed the university to conduct a single, unified graduation program. In previous years, the university held both winter and spring commencements. Arthur F. Ryan, chairman and chief executive officer of Prudential Financial, Inc., received an honorary doctoral degree for his outstanding professional achievements in the financial industry and for his commitment to academic excellence and community service.



- In cooperation with the Department of Urban Education at Rutgers University-Newark, NJIT initiated a program offering its students an option for elementary and secondary teacher certification in most undergraduate degree programs.
- More than 360 students gained major-related work experience through Cooperative Education, the Kauffman Entrepreneur Internship Program, the Biomedical Engineering Industrial Internship Program, and other internships, representing an increase of 11% over last year. Students obtained professional experience in a host of positions, such as project manager, network administrator, applications engineer, and research associate.

Faculty Honors and Awards

Four NJIT faculty members have received Fulbright awards:

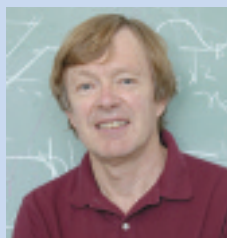
- **Vladimir Briller**, director of outcomes assessment, was named a Senior Fulbright Specialist. He will travel to Kazakhstan to advise administrators there how to reform their country's universities.
- **Nancy Jackson**, associate professor of geography was awarded the Turin Chair as part of the Fulbright Distinguished Chairs Program. She conducted research on coastal and ecosystem management and lectured on International Environmental Policy at the Polytechnic Institute of Turin, Italy during the 2004-2005 academic year.
- **Christopher Funkhouser**, assistant professor of humanities will use his Fulbright Scholarship to study digital literature at Multimedia University in Cyberjaya, Malaysia, a cutting-edge, technological university.
- **Lou Kondic**, associate professor of mathematical sciences, was awarded a Fulbright Fellowship to support his research on "Dynamics of Non-Newtonian Liquid Films involving Contact Lines." He will visit several research locations in Argentina.

An article by a team of NJIT researchers won the Rudolph J. Joenk, Jr. Award for the best article published in *IEEE Transactions on Professional Communications* during 2004. **Nancy Coppola**, associate professor of humanities, **Roxanne Hiltz**, distinguished professor and acting chair of information systems, and **Naomi Rotter**, professor of management, were co-authors of "Swift Trust in Virtual Teams."

Treana Livingston Arinzeh, assistant professor of biomedical engineering, received an NSF Presidential Early Career Award for Scientists and Engineers (PECASE), the highest national honor for young scientists and engineers, for her research with adult stem cells. She also received an Outstanding Women in Research Award from the New Jersey Association for Biomedical Research. Dr. Arinzeh was also named as one of the *Star-Ledger's* "People to Watch in 2005."

Kathy Bialk, director of Student Financial Aid, received the 2005 Educause Award for Excellence in Administration for the Student Employment Management System (SEMS), an online system designed to help match students with on-campus employers. EDUCAUSE is a nonprofit association whose mission is to advance higher education by promoting the intelligent use of information technology.

Mitchell Darer, executive director of the Center for Information Age Technology, received the Hershel Strickland Ambassador of the Year Award for recruitment from Government Management Information Sciences, a networking and educational organization for people who work in government technology.



Philip R. Goode, distinguished professor of physics and executive director of the Center for Solar-Terrestrial Research, which operates the Big Bear Solar Observatory in California, has been named a Fellow of the American Physical Society in recognition of his national and international research leadership in solar astrophysics.



BRIAN CALLAHAN, NJIT's head baseball coach, was named Central Atlantic Collegiate Conference Coach of the Year for the second consecutive season.



COSTAS G. GOGOS, distinguished research professor of chemical engineering, received the Annual International Award from the Society of Plastics Engineers. The honor, the highest accorded by SPE, recognizes a lifetime of accomplishment in polymer processing.

2004-2005 highlights

Laurence Howell, executive director of NJIT's Educational Opportunity Program (EOP), was named chairman of the Board of Directors of the National Association of Minority Engineering Programs Administrators.



Starr Roxanne Hiltz, distinguished professor of information systems, received the Sloan Consortium 2004 Award for Most

Outstanding Achievement in Online Teaching and Learning by an Individual.

Jesse G. Jackson, executive director of the Consortium for Pre-College in Greater Newark at NJIT, received a New Jersey Minority Achievers Award from the Plainfield-Area YMCA and the Metuchen-Edison-Woodbridge YMCAs for his work in educating school children in the Newark area.



Louis J. Lanzerotti, distinguished professor of physics at NJIT, was nominated by President Bush to serve on the National Science Board, the 24-member governing body of the National Science Foundation.

NJIT head men's soccer coach

Pedro Lopes was inducted into the Rutgers University Olympic Sports Hall of Fame in Piscataway.

Kim Bowen Lusk, assistant



athletics director and head coach, set the NJIT record for most coaching victories in women's basketball with a record of 45-38 in three seasons.

Durga Misra, professor of electrical and computer engineering, received the IEEE Regional Activities Board Leadership Award (International).

Demetrius Papageorgiou, associate professor of mathematical sciences, was elected a Fellow of the Institute of Mathematics and its Applications, and was awarded the designation of Chartered Mathematician by the institute.

Hindy Lauer Schachter, professor of management, was inducted as an honorary member of Pi Alpha Alpha, the national honor society for public affairs and administration, which recognizes outstanding scholarship and accomplishment in these fields.

Mirko Schoenitz, research associate professor of mechanical engineering, received the 2005 Frank Carver Bursary Award from the International Pyrotechnics Society. The award was for the paper, "Consolidated Energetic Nanocomposites: Mechanical and Reactive Properties," co-authored with Professor **Edward Dreizin**.

John Schuring, professor of civil and environmental engineering, was recognized for his work with the ACE Mentor Program, designed to help high school students become aware of college and career opportunities in the design and construction field.

Yun Shi, professor of electrical and computer engineering, was elected as a Fellow of the IEEE for his contributions to multidimensional signal processing.

Marilyn Tremaine, professor emeritus of information systems, received the 2005 Lifetime Service Award from the Association for Computing Machinery's Special Interest Group on Computer-Human Interaction (SIGCHI).



Boris Verkhovsky, professor of computer science, has been elected a Fellow of the European Academy of Sciences. He is vice president of that organization.

Mengchu Zhou, professor of electrical and computer engineering and director of the Laboratory for Discrete Event Systems at NJIT, received the Outstanding Contribution Award from IEEE Systems, Man and Cybernetics Society.



Student/Alumni Achievements

NJIT's student chapter of the Society of Plastics Engineers, advised by **Marino Xanthos**, received a 2004 Stretch Award in recognition of their efforts to manage a chapter effectively.

The Graduate Student Association at NJIT received an International Student Support Program Award from the National Association of Graduate and Professional Students. The award is given to graduate/professional student organizations with outstanding local or national programs.

NJIT's student section of the Society of Women Engineers was honored at the 2005 SWE national conference for its growth over the last decade to more than 100 active student members.

Three recent doctoral graduates of NJIT were among the first group of nine New Jersey Technology Fellows named by the New Jersey Commission of Science and Technology. The commission is providing funds to help support post doctoral graduates hired by New Jersey technology-based companies, as a means of encouraging collaborations between business and academe to facilitate converting innovation into commercial products. The NJIT alumni selected are:

Meredith Feins '04 who will be working with Gibbs Energy LLC to produce synthetic liquid fuels. Dr. Feins did her doctoral research on ultrafiltration with Distinguished Professor **Kamalesh Sirkar**.

Adnan Gundel '05 who will be participating in a NASA project at New Jersey Micro systems to design and test a cardiopulmonary sensor system. His doctoral studies at NJIT focused on miniature sensors under the guidance of Professor **William Carr**.

Anamika Patel '98, '03, will work at Energy Photo-voltaics, Inc., to increase the power output of the company's thin film photovoltaic modules designed to

provide economical solar electricity. At NJIT, he worked with Professor **Marek Sosnowski** on research into tantalum coatings.

Six NJIT student-athletes were named Arthur Ashe Jr. Sports Scholars in the most recent issue of *Black Issues in Higher Education* magazine. Each awardee must have had a cumulative grade-point average of at least 3.20, been an active member of an intercollegiate athletics team in 2004-05, and have demonstrated a record of service to his/her university or community. They are: **Jennifer Dorn**, cross-country; **Elizabeth Mayo**, cross-country; **Mario Douglas**, soccer; **Sita Kulkarni**, volleyball; **Deepti Sanjai**, fencing; and **Donelle Small**, swimming.

The Professional Association of the Educational Opportunity Fund Program recognized eight EOP students in the annual EOF Achievement Awards: **Danny Lozano** received the Outstanding Achievement Award recognizing a student who best represents the ideals of EOF. Outstanding Academic Achievement Awards went to **Monojir Ali, Maria Karim, Darshana Patel and William Rodriguez**, and Academic Achievement Awards to **Cesar Avalos, David Gillenta and Melissa Jacobs**.

Naser Chowdhury and **Purushothaman Srinivasan**, both doctoral students in electrical and computer engineering, were awarded first prize in the PhD category for their poster presentation at the Einstein Expo, a student research conference at The City College of New York. Both are students of Professor **Durga Misra**.

Student-athletes **Anthony D'Agosta** and **Austin DeRogatis**, members of the baseball team, and tennis player **Damian Wentzel** were named to the inaugural Central Atlantic Collegiate Conference Spring All-Academic Team. Recipients must have maintained at least a 3.50 cumulative grade-point average, participated in a spring CACC championship or designated sport, and been at least a sophomore academically and athletically.



Two NJIT doctoral candidates won awards in 2005 Student Poster Competition sponsored by the New Jersey Chapter of the International Society for Pharmaceutical Engineers:

- **MAHESH KARWA**, doctoral candidate in chemistry advised by Professor **SOMENATH MITRA**, presented on "Sol-gel Immobilization of Nano/Micro Particles for Microfluidics."
- **GE BAI**, PhD student in chemical engineering, advised by Distinguished Professor **PIERO ARMENANTE**, was cited for his "Hydrodynamic Investigation of the USP Dissolution Testing Apparatus II Using Laser-Doppler Velocimetry and Computational Fluid Dynamics."

2004-2005 highlights

ANGIE CASADO, a first-year communication major, was named Volleyball Newcomer of the Year by the Central Atlantic Collegiate Conference. She was also selected for All-CACC first team. She was top in the conference and third in the nation in kills per game - a kill being an attack that results in an immediate point or side out.



Sibabrata Banerjee, doctoral student in mathematical sciences specializing in probability and statistics, received a Laha Award from the Institute of Mathematical Statistics to present his master's thesis at the 6th Bernoulli World Congress in Barcelona, Spain.

Hilary Debelak and **Michele Fields**, graduate students in professional and technical communication, won merit scholarships in the Go the Distance contest, the first scholarship exclusively for distance learning students.

Zhiqiang Gao, doctoral candidate in electrical and computer engineering advised by Professor **Nirwan Ansari**, was one of four nationwide to receive a Spring Semester 2005 Cisco Systems Information Assurance Scholarship.

David Hawes, a civil engineering technology major, won the Simpson Strongtie Scholarship for academic excellence in structural engineering/architecture.

Freshman **Fatima Kasem** was named Women's Rookie of the Year by the Intercollegiate Tennis Association Division II Northeast Region.

Tias Kundu, doctoral student of Professor **Durga Misra** in electrical and computer engineering, received 1st Prize for Graduate Student Research Presentation for her paper presentation, "Hydrogen and Deuterium Implantation for Si/SiO₂ Interface Passivation," at the IEEE North Jersey Student Presentation competition.

Yuanqiu Luo, doctoral advisee of Professor **Nirwan Ansari**, received the 2005 New Jersey Inventors Hall of Fame Graduate Student Award for her work on "Dynamic Bandwidth Allocation and Service Differentiation over Passive Optical Networks." She also earned 1st Place honors in 2004 Spring IEEE North Jersey Section Student Presentation Contest.



NJIT Catcher **Phil Resciniti** was one of only 12 students named to All-Eastern College Athletic Conference Division II baseball team by a vote of ECAC coaches.

Kim Vierheilig '99 received the Intern Architect of the Year Award from

the American Institute of Architects for her professional and technical accomplishments. She is a project manager at LAN Associates, Engineering, Architecture, Planning, Surveying, Inc.

Shuangquan Wang, doctoral candidate in electrical and computer engineering, has received the 2005 New Jersey Inventors Hall of Fame award in the graduate student category, for his work on MIMO channel estimation. Assistant Professor **Ali Abdi** is his advisor.

Eduardo Welter, first year management major, was an NCAA Division I and II Volleyball National Statistics Leader, ranking second in the country in aces, which are serves that are not passable and result immediately in a point.

Dimitrios Zarkadas, a doctoral candidate in chemical engineering, received a 2004 graduate student research award from the Separations Division of the American Institute of Chemical Engineers (AIChE). **Kamalesh K. Sirkar**, distinguished professor of chemical engineering, was also honored as Zarkadas' dissertation advisor.



Lin Zhou, doctoral candidate in mathematics, was graduate co-winner of the student poster session of the Spring Eastern Sectional Meeting of the American Mathematical Society.

appointments and promotions

Kathleen Wielkopolski, formerly of the Gale Company, was named as the first female chair of the NJIT Board of Trustees. She has been a member of the board since 1998.



Priscilla P. Nelson, an internationally recognized expert in geotechnical engineering, joined NJIT as provost and senior vice president for academic affairs. She was formerly with the National Science Foundation where she served most recently as a senior advisor in the Directorate for Engineering. She has also served on the faculty of the University of Texas at Austin and as a field engineer on major construction projects including the Trans-Alaska Pipeline System.

Donald H. Sebastian was promoted to senior vice president for research and development. In this role, he continues to develop and implement research and development initiatives of an institutional character, provide administrative leadership for the university's research and development programs and serve as spokesperson for those programs. He also oversees investments and physical infrastructure for the research and development community, works to promote scholarship and the research character and accomplishment of the faculty, and provides leadership to the university's research business centers and affiliated entities related to research, technology development, and business assistance.

Fadi Deek '85, '86, '97 was named dean of the College of Science and Liberal Arts. He is a professor of information systems with a joint appointment in mathematical sciences and directed of the Information Technology Program.



Daljit Ahluwalia, professor and chair of the Department of Mathematical Sciences, was appointed acting dean of the College of Computing Sciences.

David L. Hawk, professor of architecture and of management, has been named acting dean of the School of Management.



Khatmeh Osseiran-Hanna has been promoted to assistant vice president of planned giving in the Development Office of University Advancement.

Walter Konan, professor of civil and environmental engineering, has been named acting chair of the Department of Civil and Environmental Engineering.

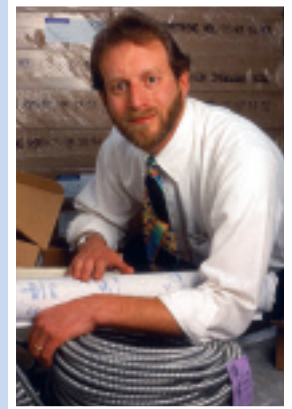
Robert Miura, professor of mathematical sciences and director of the Division of Biological Sciences, was named acting chair of the Department of Mathematical Sciences.

Robert A. Boynton was named executive director of alumni relations. He has held similar positions at Columbia, NYU, Drexel and Stevens.

William McDermott was named director of development for the School of Management. He has fundraising experience with such organizations as Transitional Services for New York and the Seton Foundation.

Eladio Ruiz '87 was named director of special events. He was formerly assistant director of alumni relations.

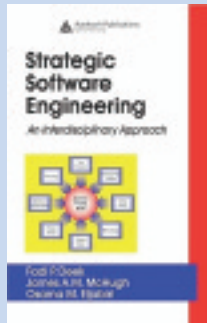
James Wellen was appointed director of development for New Jersey School of Architecture. He has extensive fundraising experience with such organizations as Alexian Brothers Hospital and the Juvenile Diabetes Research Foundation.



MICHAEL BIEBER, associate professor of information systems, has been named acting chair of the Department of Information Systems.

2004-2005 *books published*

Ali Akansu, professor of electrical and computer engineering, is the author of *Data Hiding Fundamentals and Applications: Content Security in Digital Multimedia*, published by Elsevier-Academic Press (2004), which develops a theoretical framework for different data hiding techniques, including watermarking.



Fadi P. Deek, dean of the College of Science and Liberal Arts and professor of information systems, **James A. McHugh**, professor of computer science, and **Osama L. Eljabiri**, special lecturer in computer science, are the authors of *Strategic Software Engineering: An Interdisciplinary Approach*, published June 2005 by Auerbach Publications.

Norbert Elliot, professor of English, is the author of *On a Scale: A Social History of Writing Assessment in America*, an examination of timed writing samples in college admissions, published by Peter Lang USA, May 2005.



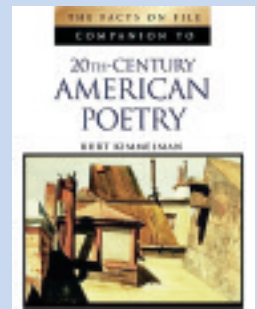
A second edition of *High-Performance School Buildings Resource and Strategy Guide* by **Deane Evans**, director of NJIT's Center for Architecture and Building Science Research at NJIT, was released in February 2005 by the Sustainable Buildings Industry Council

(SBIC). New features include more case studies, current resources, web links and new photographs.

Dale Gary, professor of physics, edited *Solar and Space Weather Radiophysics Current Status and Future Developments*, part of a series about astrophysics and space science, published by Springer Publishing Company.

Starr Roxanne Hiltz, distinguished professor and acting chair of information systems, and **Ricki Goldman**, professor of information systems, are the editors of *Learning Together Online: Research on Asynchronous Learning Networks*, published by Lawrence Erlbaum Associates, January 2005.

Burt Kimmelman, associate professor of English, is the editor of *The Facts on File Companion to 20th-Century American Poetry*, published by Facts on File, January 2005. He is also the author of *Somehow*, a book of poetry published May 2005 by Marsh Hawk Press.



Stephan Kudyba, assistant professor of management, is the editor of *Managing Data Mining: Advice from the Experts*, published by Cybertech Publishing, April 2004.)



David Rothenberg, professor of humanities, is the author of *Why Birds Sing*, published by Basic Books, April 2005.

Marino Xanthos, professor of chemical engineering, is the editor of *Functional Fillers for Plastics*, a comprehensive and up-to-date overview of the major mineral and organic fillers for plastics, their production, structure and properties, as well as their applications in terms of primary and secondary functions, published by John Wiley & Sons, April 2005.

Jason T.L. Wang, professor of computer science, has co-edited *Data Mining in Bioinformatics* which details state-of-the-art techniques in biological data mining and data management.



professional activities



Robert A. Altenkirch, president of NJIT has been named chairman of the Board of Trustees for University Heights Science Park, a 50-acre mixed-use park developing adjacent to the NJIT campus.

Nadine Aubry, Jacobus distinguished professor of mechanical engineering, was appointed vice chair of the U.S. National Committee for Theoretical and Applied Mechanics, a national forum for discussions on research, technology and education of mechanics. She was also elected a member of the congress committee of the International Union of Theoretical and Applied Mathematics, the group charged with organizing the 22nd international congress, scheduled for 2008 in Australia.

Manish Bhattacharjee, professor of mathematical sciences, is a member of the editorial board of *Calcutta Statistical Association Bulletin*.

Michael Bieber, associate professor and acting chair of information systems, was named to the editorial board of the *Journal of Community Informatics*.



Denis Blackmore, professor of mathematical sciences, was appointed to the editorial board of *Mechanics Research Communications*.

Joel Bloom, vice president for academic and student services and dean of Albert Dorman Honors College, was appointed chair of the Council on Student Affairs of the National Association of State Universities and Land-Grant Colleges. He was also appointed to the Governor's Mathematics Task Force.

Mitchell Darer, executive director of the Center for Information Age Technology, was appointed executive director of the New Jersey Chapter of Government Management Information Sciences, a networking and educational organization for people who work in government technology.

Urs Gauchat, dean of architecture, chaired an international conference at the United Nations, "Caring Communities for the 21st Century: Imagining the Possible."

Ernest Geskin, professor of mechanical engineering, was invited to present a series of lectures on Non-Equilibrium thermodynamics and Jet Technology at China Petroleum University.



Michael Gurstein, visiting professor of management, is managing editor of the new peer-reviewed electronic *Journal of Community Informatics*.

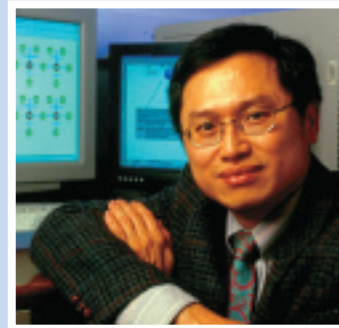
Starr Roxanne Hiltz, distinguished professor of information systems, was co-editor with Sara Czaja of University of Miami of a special issue of *ACM Transactions on Computer-Human Interaction*, on the topic of "Information Systems for an Aging Society."

Wassim Jabi, assistant professor of architecture, was elected president of the Association for Computer-Aided Design in Architecture.

Gregory A. Kriegsmann, professor of mathematical sciences, is vice president of the Society for Industrial and Applied Mathematics (SIAM) publications, and associate editor of the *SIAM Journal on Applied Mathematics*, *Journal of Engineering Mathematics*, the *IMA Journal of Applied Mathematics and Wave Motion*.

Durga Misra, professor of electrical and computer engineering, was selected as the IEEE Electron Device Society Distinguished Lecturer.

Robert Miura, acting chair of the Department of Mathematical Sciences and director of the Division of Biological Sciences, has been elected vice president of the SIAM Activities Group on Life Sciences.



NIRWAN ANSARI was an Overseas Distinguished Speaker at the 2nd Sendai International Workshop on Internet Security and Management and delivered keynote addresses at the IEEE/ACM International Conference on e-Business and Telecommunication Networks and the IEEE International Conference on Information Technology: Research and Education. He is on the editorial board of IEEE Communications Magazine, Computer Communications, the ETRI Journal, and the Journal of Computing and Information Technology.



SANJAY MALHOTRA, assistant professor of chemistry, has been invited to chair the International Conference on Green Chemistry and Sustainability to be held in 2006 in New Delhi, India.

2004-2005 professional activities



MURRAY TUOFF, distinguished professor of information systems and Hurlbert professor of management information systems, has been invited to serve as an advisory member for the Encyclopedia of Information Science and Technology.

Demetrius Papageorgiou, associate professor of mathematical sciences, is co-editor-in-chief of the *IMA Journal of Applied Mathematics*, and a member of the editorial board of *SIAM Journal on Applied Mathematics*.

N.M. Ravindra, professor of physics, was guest editor of a special issue of *JOM – Journal of Materials*, focusing on silicon nanoelectronics and highlighting some of the silicon nanoelectronics work at NJIT. He was also guest editor of a special issue of *Journal of Electronic Materials* focusing on challenges in advance thin films.

Michele Raper Rittenhouse won the Witter Bynner Fellowship Playwright-in-Residence Award at the Abingdon Theatre Company. Her new play, *In the Arms of Baby Jesus*, was presented in a workshop production.

Ronald Rockland, associate professor of engineering technology and of biomedical engineering and associate dean of Newark College of Engineering, was elected chair of the Engineering Technology Division of the American Society of Engineering Education.

Marguerite Schneider, assistant professor of management, was named to the editorial board of *Management Learning*.

Yun-Qing Shi, professor of electrical and computer engineering, has been named a fellow of the Institute of Electrical and Electronics Engineers (IEEE) for his contributions to multidimensional signal processing.

George Widmeyer, associate professor of information systems, served as editor for a special issue of *Decision Support Systems* on the topic of "Decision Support in an Uncertain and Complex World."

MengChu Zhou, professor of electrical and computer



engineering, was named managing editor of *IEEE Transactions on Systems, Man and Cybernetics: Part C*.

community outreach

More than 900 students and staff performed some 48,000 hours of community service through the Division of Career Development Services. Programs included:

- The Wachovia Bank/NJ Department of Community Affairs Housing Scholars Program completed its 16th year in 2004-05. Architecture and Civil Engineering majors from NJIT worked in non-profit and public agencies to assist with revitalization projects throughout the state.
- CDS' participation in the Newark America READS Partnership supported efforts to ensure that every child will be able to read well and independently by the end of the third grade. Twenty-seven federal work-study eligible students and student volunteers provided one-on-one and group tutoring for over 250 children in Newark.
- The Civic Engagement Computer Center (CECC) @ NJIT reinforces the use of technology as a means of improving the quality of life. Twenty-three students participated in virtual volunteer information technology (IT) projects and gained major-related work experience through socially meaningful, technology-based activities.
- CDS recruited and supervised 57 students who worked as Robotics Mentors-Literacy Tutors for 425 Newark students in grades 6 through 12. NJIT students were instrumental in helping 20 middle schools and six high schools build competitive robots for FIRST LEGO League Tournaments and FIRST Robotics Competitions. The university is home to the New York-New Jersey Regional FIRST Office.
- In partnership with Interfaith Health Services, Inc. (IHS), NJIT students pursuing biomedical engineering degrees or public health careers were able to assist with a community-based health service project for the medically underserved in the Greater Newark area.

economic development

NJIT's Division of Continuing Professional Education helps New Jersey businesses to develop their workforce through its Corporate Customized Training Program which provides companies with educational programs especially tailored to their organizational needs at their location. Since the program began 15 years ago, 514 companies have sponsored customized programs for more than 54,000 employees. Some recent successes have included:

- A 16-week course in communications led by Professor **Norbert Elliot** for Cardinal Health Pharmaceutical Technology and Services, to help employees develop the investigation and writing skills to comply with FDA reporting regulations.
- An on-site MBA in Management of Technology program developed in cooperation with the School of Management for Stryker Orthopedics. The program features concepts immediately applicable to the workplace.
- Some 2,000 employees of Burlington Coat Factory have benefited from NJIT-run educational offerings in their workplace or as online learning. Programs are geared to promote productivity and efficiency, and emphasize management training skills such as communications and team dynamics.

With funding from the New Jersey Commission on Science and Technology, NJIT's Enterprise Development Center (EDC) now offers client companies programs to improve the marketing skills and business acumen of company principals. Companies will be able to benefit from interactions with professionals including researchers, technical and grant writers, graphic designers, copy writers and more. Results will include customized branding tools, marketing and sales strategies, customer profiles, brochures, websites and trademarks.

EDC, New Jersey's oldest and largest incubator facility, is home to some 60 technology-focused start-up companies. Tenant companies with notable successes in the past year include:

- Urovalve, a company that invented a device for men who have urination problems, was cited for "most socially conscious technology" by the New Jersey Technology

Council's Venture Fair, received the "Best Presentation Award" from Smart Start Venture Forum, and was named "Company Most Likely to Succeed" by the Bio Life Conference.

- Menssana Research, under the leadership of Michael Phillips, founder and CEO, which developed a breath analysis test, was cited by the *Wall Street Journal* in its 2004 technology innovation awards. The company was second runner-up in the biotechnology and medicine category.



- The New Jersey Commission on Science and Technology awarded Springboard Awards to three EDC firms: CyberExtruder, which does 3D image processing for security and entertainment; Great American Technologies Inc., which designed the first hands-free, infrared earpiece for the hands-free cell phone market; and Noble Device, which provides silicon-based digital imaging chips for short-wave infrared (SWIR) imaging. The awards are designed to support the product development and commercialization activities of small N.J. businesses.
- Four EDC-based firms won Small Business Innovation



Research (SBIR) grants: Noble Device and Silicon Wafer Technologies, which provides silicon-on-insulator starting wafers to the semiconductor industry, each received an SBIR award through the National Science Foundation; Chembrane, which specializes in innovative

membrane separation technology, received an SBIR grant through the U.S. Department of Energy; and Policell, which produces advanced rechargeable batteries using polymer lithium-ion (PLI) technology, received four SBIR grants – Phase I and Phase II awards from both NASA and the U.S. Department of Defense.

2004-2005 *economic development*

NJIT's National Center for Transportation and Industrial Productivity (NCTIP) is conducting several transportation modeling and simulation studies:

- With funding from New Jersey Department of Transportation, the center is developing a state-of-the-art traffic simulation model to test evacuation scenarios from Cape May County in the event of a Level 3 or Level 4 hurricane. Because of Cape May's low-lying terrain, such a storm would cause widespread flooding and necessitate the evacuation of as many as 500,000 residents and visitors during the summer months.
- NCTIP is undertaking the first New Jersey deployment of TRANSIMS, a modeling system for analyzing travel patterns and the impacts of proposed transportation improvement plans and policies. The project, funded by the Federal Highway Administration and in collaboration with Rutgers University Center for Urban Policy Research, is the first large-scale use of TRANSIMS on the East Coast.
- The center is developing a state-of-the-art simulation model to help New Jersey Department of Transportation minimize delays during extensive construction projects. The study will use the upcoming reconstruction of the Route 139 viaduct approach to the Holland Tunnel as a test case.

NJIT's International Intermodal Transportation Center (IITC) has launched a study to gauge the current state of the warehousing and distribution center industry in New Jersey. The study will identify key location decision factors for businesses and make recommendations to state policymakers for maintaining and growing this industry.

TELUS – Transportation, Economic and Land Use System – is an MIS system designed by an NJIT-led research team to help Metropolitan Planning Organizations (MPOs) and state DOTs meet their planning mandates by managing and prioritizing transportation projects. The system, funded through TEA-21, was recently deemed a "Priority Market Ready Technology" by the USDOT.

WebTELUS was recently deployed at Alabama DOT (ALDOT) for use in coordinating transportation projects in the state and among its 13 MPOs. The system, which can be hosted anywhere, allows access to the transportation planning process through the Internet.

NJIT is customizing WebTELUS for the New York Metropolitan Transportation Council (NYMTC), the nation's largest MPO.

Researchers from civil and industrial engineering collaborated to develop a computer optimization model for Greyhound, the nation's largest intercity bus company. Designed to help the company overhaul its national bus route systems for improved system profits, the project designed a flexible computer model that can both simulate the system-wide impacts of potential changes to Greyhound service and develop an optimal profit solution based on various constraints. The model examines both the passenger and package movements across the national system to and from over 1,500 sales locations.