

# ABSTRACTS

*Sophisticated equipment makes it possible to translate two-dimensional designs into precise 3-D models, prototypes or parts.*

## HOME DELIVERY

NJIT's **FABLAB** recently helped to make a special delivery to the Museum of Modern Art (MoMA) in New York City – one of five prefabricated homes erected next to the museum.

Its name invoking stylized sunbursts in the design, the Burst house was conceived by architects Jeremy Edmiston and Douglas Gauthier. It is part of a 2008 MoMA exhibit titled *Home Delivery: Fabricating the Modern Dwelling*, a comprehensive look at the historic and contemporary significance of factory-produced architecture.

**FABLAB** – convenient shorthand for Fabrication Laboratory – is part of



PHOTO COURTESY OF THE BURST\* PROJECT

*NJSOA's Kevin Field '08 and Scott Nicholl '08 helping to erect the Burst house*

New Jersey School of Architecture (NJSOA). Sophisticated equipment makes it possible to translate two-dimensional designs on paper or computer screens into 3-D models, prototypes or parts. Gauthier, adjunct NJSOA faculty member and long-time acquaintance of FABLAB head Assistant Professor Richard Garber, involved the facility and NJIT architecture students in the BURST\* Project. FABLAB turned out about a third of the structural components, cutting hundreds of plywood and acrylic sheets over six weeks in 12- to 15-hour shifts to meet project deadlines. ■

## SEEING STARS AT JENNY JUMP



Available to both amateur astronomers and NJIT researchers, the largest optical telescope in the U.S. open to the public is at Jenny Jump State Forest in Hope, New Jersey. The Jenny Jump instrument, a 48-inch reflector valued at more than \$1 million, will be used by investigators associated with NJIT's Center for Solar-Terrestrial Research for work that includes a novel investigation of climate-change – studying the effects of urban “heat islands” on the upper atmosphere. NJIT, with the assistance of Penn State, acquired the telescope from the Air Force. The northern Warren County location has minimal “light pollution” and convenient access for all users. NJIT investigators plan to conduct most of their research during the day and will share the telescope with the United Astronomy Clubs of New Jersey, a group that offers the public educational stargazing sessions from April through October. ■

## FINDING FESTO

Three students from India's Heritage Institute of Technology spent their summer at NJIT, in part to work with the Festo system in the Vincent A. Stabile Systems Engineering and Management Laboratories. Soumik Chakrabarty, Saurabh Kumar and Shipon Roy gained hands-on experience with the Festo system, which simulates automated, robotic manufacturing processes. The laboratory complex is a central resource for the Stabile Systems Engineering and Management Program — NCE's flagship master's program emphasizing

innovation, entrepreneurship and management skills for the 21st-century economy. ■



PHOTO: WINNIE YEUNG

*Frank Munoz '08 (left), NJIT graduate student, with Saurabh Kumar, Soumik Chakrabarty and Shipon Roy from India. Munoz is working toward his MS in engineering management as the first Stabile Scholar.*

There's much more on the Web – visit *NJIT Magazine* online at <http://magazine.njit.edu> for links to more information about topics in this issue.



## ALTENKIRCH HONORED

**NJIT President Robert A. Altenkirch**, whose German ancestors settled in Missouri in the 1860s, received a 2008 Ellis Island Medal of Honor in May. The National Ethnic Coalition of Organizations sponsors the award to honor distinguished Americans for exceptional community service, and to recognize America's cultural pluralism. Vincent J. Naimoli MS '62, chair of the Tampa Bay Rays, nominated Altenkirch for the award. Naimoli received the same award in 1999.



Altenkirch was also honored in May as a leading New Jersey educator by the Hispanic American Chamber of Commerce Foundation of Essex County, which presented him with a special Presidents Award at the group's annual banquet. ■

## FEMME FEATURED ON ABC-TV

NJIT's FEMME program was featured July 24 on ABC-TV's *World News Tonight*. ABC-TV science correspondent Ned Potter and producer Diane Mendez interviewed girls participating in FEMME and NJIT program director Suzanne Berliner-Heyman.

Now in its 27th year, the FEMME summer program for girls in the fourth through eighth grades aims to overcome the perennial gender gap in math, science and engineering. Studies show that girls tend to fall behind boys in math and science beginning at the middle-school level. FEMME and other NJIT pre-college initiatives seek to redress the problem by making math and science concepts relevant, memorable and fun, presented by female instructors who are role models. ■

**CORRECTION:** "A Gift to Manufacture the Future" in the spring 2008 issue stated that Vincent Stabile "invented a fastener used in numerous consumer products." The article should have stated that "the manufacturing innovation that Stabile patented simplified the handling and application of retaining rings — industrial fasteners used in innumerable products from automobiles to household appliances."

*The students' achievement is underscored by their selection for the Discovery Channel series.*



*Bill Stoddart, electrical engineering major and DARPA Challenge team leader, about to put OPTIMUS through test paces on the NJIT campus.*

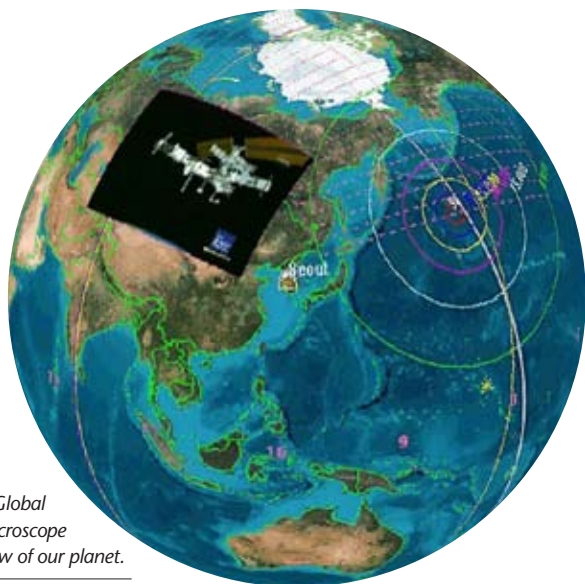
## A STAR IS BORN

NJIT's DARPA Robotic Vehicle

**A Chevy Blazer extensively modified by NJIT students to navigate city streets without a driver was featured by the Discovery Channel in a series on futuristic robotic vehicles. First aired in July, the second show in the series reported on the NJIT students' work. Dubbed OPTIMUS, the vehicle was designed for the 2007 DARPA Urban Challenge. DARPA is the acronym for the U.S. Defense Advanced Research Projects Agency. Representing various departments, 27 students helped ready OPTIMUS for competition. Sponsors including IBM, BAE Systems, GM, Kearfott and L3 Space and Navigation provided funding, equipment and technical support.**

**Although OPTIMUS made it to the second round of the competition, a faulty component took the vehicle off course, keeping the NJIT team from the finals. But the students' achievement is underscored by their selection for the Discovery Channel series, and they plan to press ahead. The students intend to add even more advanced technology to the Blazer and explore commercializing some of their innovations. And there is every likelihood that NJIT will be represented in future DARPA competitions. ■**

The students who helped with the Global Microscope were participants in NJIT's Connections program.



A Global Microscope view of our planet.

## A GLOBAL VIEW COURTESY OF CAPSTONE AND BANDEMAR

BanDeMar Networks, one of 90 companies at NJIT's Enterprise Development Center, marshaled a team of talented high school students to help create innovative educational content for the Global Microscope at New Jersey's Liberty Science Center. Using data from NASA and other sources, the five-foot sphere offers dramatic visualizations of weather patterns, global warming indicators, tsunami propagation and scores of other phenomena.

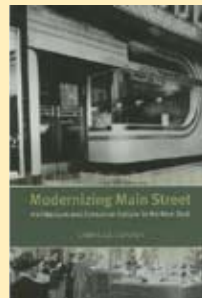
BanDeMar specializes in the implementation of computing, e-learning and other types of information technology. The students who helped with the Global Microscope were participants in NJIT's Connections program. This NJIT program for high school students is part of the Capstone initiative originated by University Senior Lecturer Osama Eljabiri in the College of Computing Sciences. For the Global Microscope, the students worked closely with Dr. Cesar Bandera, president and CEO of BanDeMar Networks. After completing the project, team members described their role in developing software and other media for the Global Microscope before an audience at NASA headquarters in Washington, D.C. ■

PHOTO: COURTESY OF BANDEMAR NETWORKS

## BOOK SHELF



**Fadi P. Deek**, Dean of the College of Science and Liberal Arts, and **James A. McHugh**, professor of computer science, have published *Open Source Technology and Policy* (Cambridge University Press, 2007), a comprehensive view of the worldwide software movement aligned with the spirit of scientific inquiry rather than more restrictive business strategies.



Associate Professor **Gabrielle Esperdy**, architecture, has published *Modernizing Main Street: Architecture and Consumer Culture in the New Deal* (University of Chicago Press, 2008).

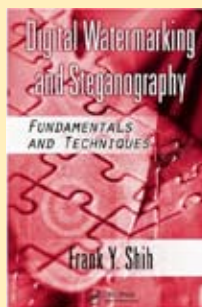


*Nature's New Deal* (Oxford University Press, 2007) by Associate Professor of History **Neil M. Maher** takes a look at the same period — examining the Civilian Conservation Corps, one of President Franklin D. Roosevelt's boldest and most successful national experiments.

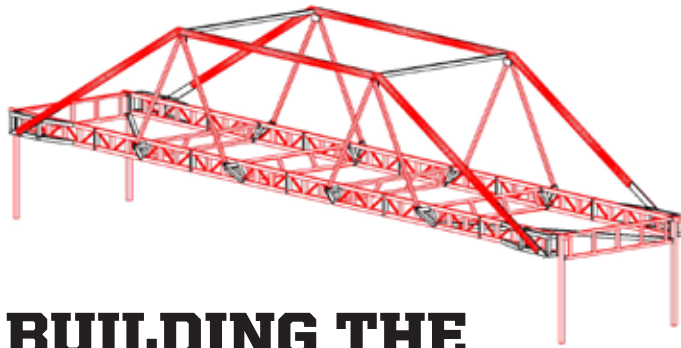


**Rajiv Mehta** is co-author of *Sales Management: Building Customer Relationships and Partnerships* (Houghton Mifflin Company, 2008).

*Thousand Mile Song* (Perseus Publishing, 2008) and an accompanying CD by **David Rothenberg**, professor of humanities, chronicles the author's investigative technique of interacting musically with whales to gain greater understanding of these intriguing mammals.



Professor of Computer Science **Frank Y. Shih** explores the complexities of protecting copyrighted material in *Digital Watermarking and Steganography* (CRC Press, 2007). ■



## BUILDING THE BEST BRIDGE AGAIN

For the third year in a row, a team of NJIT civil engineering students swept all categories in the Metropolitan Regional Steel Bridge Competition. Each team had to design and build a reduced-scale bridge capable of carrying a 2,500 lb. load. This year the NJIT team worked with corporate sponsor Schiavone Constructors and Engineers. ■

## TELECOM PIONEER JOINS NJIT

Dr. Stewart D. Personick, a pioneer in the theory and practical application of new technologies in telecommunications systems and networks, has been named to the Ying Wu Endowed

Chair in Wireless Telecommunications, in NCE's Department of Electrical and Computer Engineering. Personick spent 28 years as a researcher and research manager at Bell Laboratories, TRW and Bell Communications Research. He is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE), a Fellow of the Optical Society of America (OSA) and a member of the U.S. National Academy of Engineering. In 2000, he received the prestigious IEEE/OSA John Tyndall Award.

Personick was the first E. Warren Colehower Endowed Chair Professor at Drexel University, and first director of Drexel's Center for Telecommunications and Information Networking. Since 2003 he has been an independent telecommunications consultant. ■

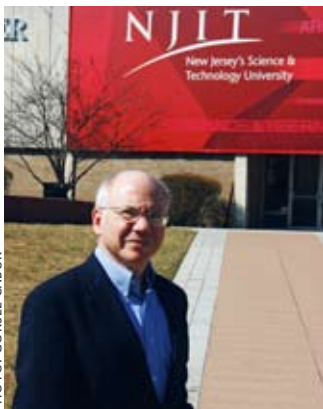
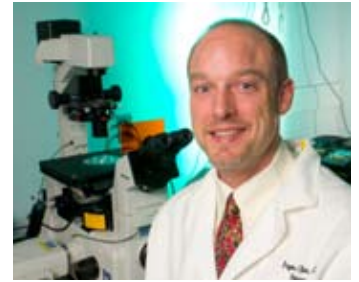


PHOTO: GOKSEL CABUK

## END NOTES

### TOP NSF AWARD FOR TWO

**Edgardo T. Farinas** and **Bryan J. Pfister** have each received a Faculty Early Career Development Award from the National Science Foundation. The CAREER Award recognizes those likely to be the 21st century's leading educators and researchers. Farinas, assistant professor of chemistry and environmental science, is working on innovative approaches to enzyme design and their application to creating new biocatalysts. Pfister, assistant professor of biomedical engineering, is investigating rapid axon stretch growth, a technique for regenerating damaged or diseased nerve cells.



Bryan Pfister



Edgardo Farinas

PHOTOS: KAI CHAN

Professor **Ali Akansu**, electrical and computer engineering, has been elected an IEEE Fellow.

Associate Professor **Tara L. Alvarez**, biomedical engineering, has been named an Outstanding Woman of Science by the New Jersey Association of Biomedical Research.

**Joel Bloom**, Albert Dorman Honors College dean and vice president for academic and student services, received the William U. Harris Award from the Middle States Regional Assembly for educational leadership.

Associate Professor **Bruce Bukiet** received a Distinguished Teaching Award from the New Jersey Section of the Mathematical Association of America.

Professor **Nancy W. Coppola**, English, has been named associate editor of *IEEE Transactions in Professional Communication*.

Assistant Professor **Richard Garber** AIA, New Jersey School of Architecture, has been honored for his firm's state-of-the-art pedestrian walkway in Manhattan by the New York Chapter of the American Institute of Architects and the Architectural League of New York.

**Neil M. Maher**, professor of history, has a \$45,000 three-year grant from NASA to support researching his next book, tentatively titled *Ground Control: An Environmental History of NASA and the Space Race*.

Associate Professor **Annaleena Parhankangas**, School of Management, is the recipient of a 2008 Outstanding Reviewer Award from the *Journal of Business Venturing*.

Professor **Hindy Schachter**, School of Management, will be book editor for *Public Administration Review*.

Two honors have been accorded Professor of History **Karl Schweizer** — becoming a Fellow of the New York Academy of Arts and the British Royal Society of Arts.

Professor of Mechanical Engineering **Pushendra Singh** has been named a Fellow of the American Physical Society.

**David Ullman**, associate provost for information services and technology and chief information officer, is the New Jersey Technology Council's 2008 CIO of the Year in the nonprofit category.

## PARTNERING WITH PANASONIC FOR SCIENCE

Since 1991, NJIT has partnered with Panasonic in the Creative Design Challenge sponsored by the company, which tests many skills as high school teams vie for college scholarships and other

prizes. NJIT student interns help to design the competition, with NJIT faculty and staff serving as judges. For 2008, teams had to design a robotic device capable of retrieving small LEGO® figures and negotiating daunting obstacles, with the final round held at the New Jersey Performing Arts Center. Additional goals are to foster critical thinking, group problem-solving, and communication skills. ■



First-place scholarship winners in the 2008 Panasonic Creative Design Challenge from the Delbarton School: Peter Godart, Bud Peters and Justin Park.

PHOTO: AL KRUPER

# POINT BY POINT

The latest news about NJIT sports:  
[www.njithighlanders.com](http://www.njithighlanders.com)



COLUMBIA SPORTS INFORMATION

Jim Engles

## ENGLES TO COACH MEN'S BASKETBALL

The NJIT men's basketball team has a new head coach — Jim Engles. An assistant Division I coach for 18 years, Engles spent the last five as lead assistant at Columbia University. In his first season at Columbia, the Lions produced a 10-17 overall record, including a 6-8 mark in the Ivy League for the second-best turnaround in Ivy League history.

At Wagner College, Engles was part of the best winning-percentage turnaround in all of Division I basketball. The Seahawks went from four wins in 1990-91 to 16 wins in 1991-92 during his first season as a full-time coach. A year later, Wagner played for the Northeast Conference championship on national television and won a school-record 18 games. His six-year run at Rider University included the 2001-2002 Metro Atlantic Athletic Conference regular season title with a 13-5 conference record and Rider's first-ever berth in the postseason National Invitation Tournament (1998 after an 18-win regular season). ■

## NJIT LOOKS WEST

NJIT is one of six institutions expanding the Great West Conference to form a Division I all-sports league. Great West, previously a football-only league in the NCAA's Division I Football Championship Subdivision, will be an all-sports league with the addition of NJIT, Texas-Pan American, Utah Valley, Houston Baptist, University of North Dakota and University of South Dakota.

Joining Great West formalizes ties with schools in states



where NJIT has competed as an independent since entering Division I. Benefits include conference championship opportunities; student-athlete awards; scheduling stability limiting missed class time; established yearly basketball schedules with guaranteed home games when conference play is in full swing.

The all-sports Great West will offer championships in 14 sports — 11 of which are sponsored by NJIT. These include men's and women's basketball; baseball; women's volleyball and tennis; men's and women's cross country; men's and women's indoor track and field; and men's and women's outdoor track and field. NJIT sports not under the Great West umbrella continue in their current conferences. ■

## STUDENT-ATHLETES STAR AT THE NET AND ON THE DIAMOND

Rodrigo Correa, Leonardo Paludo, Greg Wagner and Eduardo Welter were named to the Eastern Intercollegiate Volleyball Association All-Academic Team for 2008. The four Albert Dorman Honors College students started for teams that made the EIVA Playoff Tournament in each of their last three seasons. To be eligible for the honor, student-athletes need a cumulative GPA of 3.50 or higher, at least sophomore athletic standing and participation in at least 60 percent of the games played.

In baseball, student-athletes Chris Cardone, P. J. Saporito and Miguel Lugo were named to the

## HIGHLANDERS WIN 2008 ARTHUR ASHE HONORS

Six NJIT student-athletes were named 2008 Arthur Ashe Jr. Sports Scholars in the May 29, 2008 issue of *Diverse: Issues in Higher Education* –

**Angelica Sepulveda**, civil engineering major, soccer

**Isha Toor**, business major, tennis

**Robert Herrera**, architecture major, soccer

**Kevin Blanco**, business major, soccer

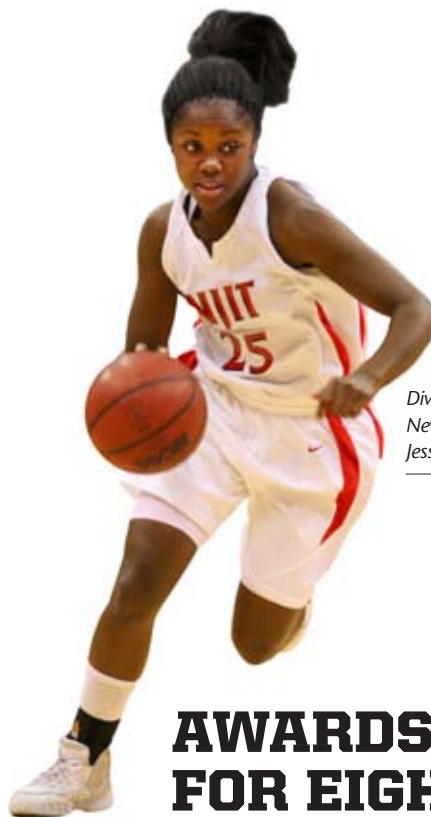
**Rodrigo Correa**, business major, volleyball

**Leonardo Paludo**, business major, volleyball

2008 Division I Independent Baseball All-Academic Team. Cardone, a senior tri-captain from Toms River, New Jersey, shared the team home-run lead with Lugo and fellow senior Mike Turner at three. ■



Eduardo Welter



Division I Independent Newcomer of the Year  
Jessica Gerald

## AWARDS FOR EIGHT

at the First Women's Basketball Banquet

Capping a hard-fought Division I season, the NJIT women's basketball team honored eight Highlanders at its first awards banquet. Freshman **Jessica Gerald** received the Most Valuable Player Award after being selected Division I Independent Women's Basketball Newcomer of the Year. Gerald was the only Highlander to average double figures, with 12.7 points per game, while reaching double figures in 21 out of 29 contests. She exploded for a school-record 37 points on January 11 against California State University, Bakersfield, where she scored the highest single-game total in the 21-season history of NJIT women's basketball.

Point guard **Jackie McCaffrey**, junior, earned the Best Assist Leader Award. McCaffrey, who holds the Division I single-season record with 76 assists, dished out a season-high seven assists in the first round of the national Division I Independent Tournament against Florida Gulf Coast. Sophomore **Taiwo Oyelola** collected the Leading Rebounder Award. Oyelola holds the Division I single-season record (2007-08 season), pulling down 158 rebounds and averaging 5.6 per game. Senior **Erika Velez** was presented with the Steal Leader Award with 61 steals in her final season as a Highlander. Freshman rookie **Ivana Seric** was honored with the Most Inspired Player Award. The native of Croatia played in 15 games, averaging 8.2 points per game and ranking third on the team with 11 blocks. Sophomore and team captain **Katie Piekieski**, junior **Jill Dickinson** and sophomore **Kathryn Wighton** were recognized with the Highest Academic Achievement Award.

The Highlanders finished with a record of 10-19 in their first season under coach Margaret McKeon and their second season of Division I competition, more than doubling their 2006-07 win output of four. NJIT's record of 8-9 after January 8 underlined the young team's improvement as it progressed through its second season at the new level of competition. ■