THERE'S SOMETHING ABOUT BOBBY

BOBBY FARRELLY '81 IS HALF OF ONE OF HOLLYWOOD'S HOTTEST BROTHER ACTS
"IT'S NEVER TOO LATE TO GET E-MAIL FOR LIFE"

Isadore Warshaw '23, who turns 100 in December, uses his alumni "E-mail for Life" account to stay informed about Rensselaer, and to keep in touch with friends.*

Izzy wants you to know about the variety of online and face-to-face networking programs available to Rensselaer alumni. Make professional connections, search for job openings, mentor or be mentored, keep informed about significant news from campus, and stay in touch with classmates with programs such as:

- Free E-mail for Life
- Monthly Rensselaer E-mail News Updates
- RenSource—The Online Networking Database
- Online Web Discussions
- Professional Affinity Groups

Visit AlumServ at www.alumni.rpi.edu, and you'll also discover that the network works!

* Izzy loves to make new friends! Say hello by sending him an e-mail at Izzy@alum.rpi.edu.
Features

WHY IS THIS MAN SMILING? 12
From hockey rink to Hollywood: how Bobby Farrelly ’81 became one of the kings of comedy.

MANIFEST DESTINY 16
Dennis Tito’s trajectory from analyst to astronaut.

MYSTERY MAN 20
At 38, Capitals captain Adam Oates ‘85 is on the verge of breaking numerous team and league records, but does anybody really know him?

Departments

PRESIDENT’S VIEW 2
Rensselaer Plan initiatives propel the new academic year

AT RENSSELAER 3
Hawk Talk 5
Making a Difference 6
From the Archives 7
Milestones 10

REUNION 24
CLASS NOTES 26
IN MEMORIAM 45
RAA ANNUAL REPORT 46
STAYING CONNECTED 48
Welcome to Rensselaer’s newest alumni!
PRESIDENT'S VIEW
SHIRLEY ANN JACKSON, PH.D.

ACADEMIC STRENGTH
Rensselaer Plan initiatives propel the new academic year

WE ARE MOVING ON MANY FRONTS TO strengthen the academic endeavor.
For the first time in many years, we are adding significantly to the strength and numbers of our faculty.
Active recruitment is under way for constellation faculty, those scholars and researchers at the height of their disciplines who will build new programs in biotechnology and information technology. The search committees, headed by Professor Georges Belfort for biotechnology and Professor and Dean of Science Joseph Flaherty for information technology, are traveling around the country to meet with peers who may themselves be potential candidates, or who can identify promising candidates for the recruitment pool. At the same time, the committees have launched a lecture series adding significantly to the strength and numbers of our faculty.

WITH VITALITY AND ANTICIPATION, WE BEGIN THE NEW ACADEMIC YEAR COMMITTED TO MAKING IT A REWARDING ONE FOR ALL WHO MAKE UP OUR COMMUNITY.

in both disciplines that brings in high-profile speakers who are educating the campus about these fields and who also can assist in the recruitment process.

Building the faculty extends beyond recruiting for the constellations. This year, Rensselaer will undertake major faculty renewal, hiring 40 new faculty members, including 16 to newly created positions.

We are setting high standards for appointments. I am pleased to report that, in the past two years, 13 of our young faculty members have been named NSF Early Career Award winners. This is a remarkable record in a highly competitive national program.

The performance plans prepared by each of the schools for the new academic year also call for additional measures to strengthen academics. For example, in order to create critical mass and encourage growth in research, the School of Engineering has made several changes to the structure of its departments. Faculty in Environmental Engineering will be combined with faculty in the Department of Civil Engineering to create the new Department of Civil and Environmental Engineering. Nuclear Engineering faculty will be combined with faculty in the former Department of Mechanical Engineering, Aeronautical Engineering and Mechanics to create the new Department of Mechanical, Aerospace, and Nuclear Engineering. Finally, the Department of Electric Power Engineering has merged with the Department of Electrical, Computer, and Systems Engineering.

As the year begins, we welcome a first-year class with extraordinary promise. In recruiting this class, Dean of Enrollment Management Teresa Duffy deliberately set out to enroll a class with ever-stronger academic records, because the academic quality of our students directly impacts the academic excellence of our programs. The Class of 2005 arrives on campus with average SAT scores of 1307, a leap of 25 points. Meanwhile, we again see the excellent value that we deliver to our graduates in our placement statistics. This year, 775 recruiters vied for 993 Rensselaer graduates of the Class of 2001—with each student averaging 10 interviews and seven job offers. Graduates entered the work force with starting salaries that average $53,200 for a bachelor’s degree and $67,000 for new master’s degree recipients.

We welcome the new class with a much enriched student orientation program. One of the priorities of the Rensselaer Plan calls for attention to the first-year experience, those activities and relationships that students build with one another, and with the Institute, as they make the transition from high school to university. Students this year enjoyed options of a wilderness experience, a community service project, or a cultural/historical program that exposed participants to the rich cultural resources of the Capital Region and surrounding areas. Overlaying all these experiences will be an introduction to entrepreneurship, one of Rensselaer’s historical strengths that differentiates it from peer institutions. With the help of a generous $1 million gift from Michael Herman ’62, his wife Karen, and the Herman Family Foundation, we are beginning to infuse the entrepreneurial spirit across the first-year experience.

This brief report would not be complete without mention of progress on our two major building projects, the biotechnology and interdisciplinary studies center, and the electronic media and performing arts center. In this issue of Rensselaer magazine, you can read a full update of progress on these facilities that will transform the campus and the surrounding community.

With vitality and anticipation, we begin the new academic year committed to making it a rewarding one for all who make up our community.
Energizing the Fuel-Cell Industry

The shiny material that makes up the outer coating of an astronaut suit could have very practical implications for those of us on Earth.

Brian Benicewicz, professor of chemistry and director of the New York State Center for Polymer Synthesis at Rensselaer, is employing the material—a polymer called polybenzimidazole (PBI)—in research that could energize the fuel-cell industry.

Fuel cells produce electric power without combustion by taking hydrogen, derived from a fuel such as natural gas, and drawing in oxygen from the air. Polymer membranes play a central role in PEM (proton exchange membrane) fuel cells, such as the ones Plug Power, in Latham, N.Y., plans to market.

Although fuel cells have been used for space shuttles and even schools, the challenge comes in finding cheaper materials and production methods to make them more affordable and efficient for the average consumer.

The polymer membranes now used in PEM fuel cells must remain constantly hydrated in water. Maintaining a constant amount of water in these membranes causes instability, rendering them not 100 percent reliable. Building complex water-control systems to fix the problem would be too cumbersome and costly, says Benicewicz.

To avoid complications of current fuel cells, Benicewicz turned his research toward PBI. Used for high-performance protective apparel such as firemen's turnout coats and astronaut space suits, PBI has fiber characteristics important to building a successful and inexpensive fuel cell. It has no melting point. It is mildew-, age-, and abrasion-resistant. “What's more important,” Benicewicz adds, “PBI requires no water for conductivity.”

Benicewicz is joining efforts with Plug Power and Celanese Ventures, a German chemical company, to market PBI for fuel-cell use. In addition, New York state has provided a half-million dollars to establish a joint research program at Rensselaer with the companies and the university. Celanese has poured $1.5 million into the R&D program for fuel-cell membrane research. After a worldwide search for experts who specialize in polymer research, the company chose Rensselaer as a site for a joint research program in fuel-cell technology.
MATERIALS SCIENCE AND ENGINEERING
EXTENDING THE HORIZONS OF COPPER TECHNOLOGY

Researchers at Rensselaer have discovered a clever new use for ultra-thin molecular structures that could make computers and other microelectronic devices faster and more efficient.

Ganapathiraman Ramanath, assistant professor of materials science and engineering, and his graduate students have, for the first time, successfully used self-assembled molecular layers (SAMs) as barriers to keep copper from diffusing into adjacent insulating layers in microelectronics devices.

This advance, reported in the April 23 issue of Applied Physics Letters, could extend copper technology by allowing cheaper fabrication of smaller and more reliable structures with more than twice the interconnect speed otherwise possible.

Copper, the preferred material for interconnecting devices in a chip, easily diffuses into insulation layers that separate multilevel metal wiring. To prevent diffusion, barrier layers separate the copper from the insulation.

While conventional barriers such as tantalum nitride, which can range from 10 to 30 nanometers thick, are adequate for 180 nanometer structures, smaller device structures cannot have that much space devoted to the barrier, says Ramanath.

A SAM layer, a class of materials whose molecules stand up straight and form a dense continuous layer, can be as thin as 1.5 nanometers to inhibit copper diffusion into silica.

"The advantage of SAMs is that, because of their size, they can be used with current copper technology as well as with future technologies such as carbon nanotube-based molecular electronics," Ramanath says.

The research is supported by funding from Ramanath's recent National Science Foundation CAREER (Faculty Early Career Development) award, IBM, and New York state.

ELECTRONIC ARTS
MY BODY, MY INSTRUMENT: MIXING MOTION AND SOUND

For Japanese-American dancer Tomie Hahn, dance and music are not separate entities—thanks to a new wireless interactive dance system created by her husband, Curtis Bahn, assistant professor of arts at Rensselaer.

Bahn's SSpeaPer (the Sensor-Speaker-Performer) system allows Hahn to create and blend various sounds by using her body motion. As she dances, the actions of her body drive an interactive music algorithm.

"My body initiates and controls all the elements of the available sounds. I can also manipulate the sounds in various ways. I can decide which sounds I want by basically pressing a button," says Hahn, assistant professor of music at Tufts University, where she teaches ethnomusicology. "In this way, there is no difference between music and dance. It is one thing—because my body has become the instrument. That kind of physical immersion in the music is revolutionary. I'm sort of a walking sound machine," she says.

As Hahn dances, gestural information is sent by radio to the interactive computer music system. Electronic sounds are then broadcast back to small speakers mounted on her body. Hahn controls the sounds through sensors in each of her palms that measure finger pressure and the amount of tilt in her arms.

Artists from as far away as Australia and Turkey learned more about SSpeaPer and other artistic technologies during a two-week, international workshop, "Dance and Interactive Technology," held at Ohio State University in late June.
The fast-approaching 2001-02 Rensselaer men’s hockey season will mark the program’s 100th year in action and hockey coach Dan Fridgen’s veteran squad hopes to emulate some of the accomplishments of years gone by.

“We’re certainly looking forward to this year in building from last season’s experiences and past accomplishments,” Fridgen says.

It all began in the 1901-02 school year in Cohoes, N.Y., where Rensselaer played (and lost, 1-0) its first game against Williams College. The program climbed to Division I status in the 1949-50 season. Twice Rensselaer reached the pinnacle of the college hockey world, winning the NCAA National Championship in 1954 and again in 1985.

This year’s team has equally lofty goals, as 21 players return from last year’s squad. Among the returning players are seven National Hockey League draftees, including high-scoring forwards Matt Murley and Marc Cavosie, defensemen Danny Eberly and Francois Senez, and goalie Nathan Marsters. In addition, Steve Munn, a hard-hitting blueliner, is one of eight seniors back to lace them up at the Houston Field House.

Marsters, a sophomore, was Rensselaer’s Most Valuable Player last year after ranking among the top goalies in the United States in several categories. Murley, a senior, also was among the top goal scorers in the nation last year while senior Jim Vickers, Rensselaer’s Most Improved Player Award winner, was listed with the top scoring defensemen in all of U.S. college hockey.

Fridgen, who returns to coach his eighth season, will work to mold his eight seniors, six juniors, seven sophomores, and five freshmen into a team that has set its sights on competing in the Eastern College Athletic Conference Championship and earning another bid to the NCAA Tournament.

See page 48 for news on Big Red Freakout and Satellite hockey.
MAKING A DIFFERENCE
A TECHNOLOGICAL PARTNERSHIP

UNITED TECHNOLOGIES CORPORATION (UTC), one of Rensselaer's strongest and most long-term corporate partners, has expanded its collaborative efforts with Rensselaer through support of joint research efforts in fuel cell technology and simulation-based engineering.

"Fuel cells will usher in a new technological age of 'green,' highly efficient, distributed power. Their impact will be profound in automobiles, homes, and commercial buildings," says Carl Nett '82, director of United Technologies Research Center and a Rensselaer Key Executive.

"As societal standards are raised, existing technologies will become more green—for example, reducing the noise emitted from commercial jet engines. Through application of their research, RPI faculty and students are helping UTC to bring this new age forward, and we are helping them by providing cutting-edge applications for their research that will push it into new frontiers. I think the win-win nature of this arrangement is the key to its success."

Rensselaer faculty involved in this research include David Torrey, associate professor of electric power engineering (pictured with graduate student Ugur Selamogullari), who is developing dynamic models of electric loads powered by fuel cells; Michael Jensen, professor of mechanical engineering, whose research involves modeling and design of the steam generator for fuel processor systems; and Ken Jensen, assistant professor of mechanical engineering, who is working on designing and evaluating noise reduction on jets using simulation-based engineering.

The collaborative efforts between Rensselaer and United Technologies Corporation also include a large investment in education for working professionals. In fact, the company is the largest contributor to education for working professionals at Rensselaer at Hartford. In addition, Rensselaer is a United Technologies Corporation focus university, receiving annual grants for minority scholarships, academic enrichment workshops, and support for the Archer Center for Student Leadership Development.

Nearly 900 Rensselaer alumni are employed at United Technologies Corporation and its subsidiaries, and the corporation maintains an active co-op program for Rensselaer undergraduates.
ARCHITECTURE

AN ARCHITECTURAL JOURNEY THROUGH NEW YORK CITY

In a landmark book on the architecture of New York City, Alan Balfour, dean of architecture, takes us on a journey through the built environment of New York City and then documents the city’s most significant new buildings—and those yet to be completed.

In World Cities: New York (Wiley & Sons), Balfour describes New York as “the quintessential city of the 20th century.” He offers the belief that architecture is “the most permanent residue of the profound culture of a city.”

Balfour’s story of New York begins with its structured grid system, a conscious effort by planners to create order out of the area’s expanding population. The grid formed the personality of the city, making it “the most ideological of cities created by the Enlightenment—created to form a ruthless rational order whose reality would forever be in a state of becoming,” Balfour says.

This “state of becoming” is in evidence today as buildings, most notably in Times Square, are covered with skinlike technology that transforms them into giant television screens. Balfour believes this technology, which can alter a building’s appearance or significance in the blink of an eye, will change the rules of architecture in ways not yet imagined.

FROM THE ARCHIVES

MAKING PURE TITANIUM AT RENSSELAER

Research in materials science has been an institute strength since its earliest days. Monumental advancements in this area by Rensselaer faculty include producing pure titanium for the first time.

In the early 1900s, Matthew Hunter, a New Zealand native, had been working with titanium at General Electric before he took his research to Rensselaer when he was hired as a faculty member in 1908.

Titanium ore was first discovered in 1791 by William Gregor, a clergyman and amateur geologist in Cornwall, England. A few years later, a German chemist, M.H. Klaproth, named the metal after the Titans, the giants of Greek mythology.

In 1910, Hunter was the first to produce pure metallic titanium by heating titanium chloride together with metallic sodium. Because of the violent process, the experiment was done in an airtight steel cylinder. Many of these experiments took place on the ’86 Field. Hunter believed titanium had a high melting point and therefore was a candidate to replace the carbon filaments then used in light bulbs.

Although he was the first to isolate usable amounts of the metal, the melting point turned out to be lower than Hunter expected, making titanium useless for light bulbs. Nevertheless, he showed that the metal had some ductility, and his method of producing it was later commercialized and is known today as the Hunter Process.

In 1933, Rensselaer’s Board of Trustees established the Department of Metallurgical Engineering, which Hunter organized. He became head of the department in 1935 and was named dean of faculty in 1943. The Matthew Albert Hunter Prize in Metallurgical Engineering was established in 1951. The prize is awarded annually to a senior in materials science and engineering who has demonstrated outstanding ability in academic work leading to a career in that field. The Department of Metallurgical Engineering was eventually transformed to what is known today as the Department of Materials Science and Engineering.

Although it is the ninth most abundant element in the Earth’s crust, titanium is expensive but not because it is rare. Titanium is not found in nature in its purest form; it must be extracted from other compounds, requiring a significant amount of energy and labor.
UNDER CONSTRUCTION

AMBITIOUS BUILDING PROJECTS TAKING SHAPE

THE INK ON RENSSELAER'S HISTORY NEVER DRIES. WHAT'S MORE, ONE OF THE MOST EXCITING PERIODS IN THE SCHOOL'S LIFE STORY HAS JUST BEGUN: THE INSTITUTE IS SIGNIFICANTLY INCREASING THE FACULTY. IT IS CREATING SIX CONSTELLATIONS IN BIOTECHNOLOGY AND INFORMATION TECHNOLOGY. IT WILL GREATLY EXPAND FUNDED RESEARCH. IT WILL DOUBLE THE GRADUATE PROGRAM.

TO ADVANCE THESE AND OTHER ASPECTS OF PRESIDENT JACKSON'S RENSSELAER PLAN, THE INSTITUTE IS ABOUT TO BEGIN MAJOR CONSTRUCTION: TWO NEW ACADEMIC BUILDINGS WILL BE ERECTED AT A COST OF MORE THAN $110 MILLION — A CENTER FOR BIOTECHNOLOGY RESEARCH AND A SPECTACULAR VENUE FOR THE ELECTRONIC AND PERFORMING ARTS. A PARKING GARAGE WILL BE BUILT. ADDITIONAL ENERGY PLANTS WILL BE PROVIDED. THERE WILL BE A NEW CAMPUSS ENTRANCE.

CENTER FOR BIOTECHNOLOGY AND INTERDISCIPLINARY STUDIES

To serve the demanding need for advanced research in biotechnology, Rensselaer will erect a $60 million facility along Fifteenth Street, between Academy Hall and the George M. Low '48 Center for Industrial Innovation.

Here Rensselaer researchers will pursue pioneering investigations to advance human health, protect the environment, and improve the quality of life.

Exceeding 200,000 square feet, this research center will rise three stories along Fifteenth Street and then swing to the west in a four-story wing that will form an "L" shape. The Fifteenth Street facade will mirror the classic architecture of the brick and limestone Quadrangle residence halls at the Sage Avenue corner.

On the inside, state-of-the-art laboratories, offices, and meeting rooms will serve some 60 faculty members, 330 researchers, and 35 administrative and technical staff.

Research will encompass such fields as functional tissue engineering, integrative systems biology, biocatalysis and metabolic engineering, computational biology, and bioinformatics.

The design is a joint venture of two architectural firms well experienced in biotechnology design—Burt Hill Kosar Rittelmann of Butler, Pa., and Bohlin Cywinski Jackson of Pittsburgh. The architects include several Rensselaer alumni: Dick Rittelmann '60, Peter Bohlin '58, Jon Jackson '73, Harry Gordon '73, and Michael Maiese '90.

CENTER FOR ELECTRONIC MEDIA AND PERFORMING ARTS

In a few years, as you approach Troy from the west, you will marvel at what will soon become a landmark on the Rensselaer hilltop.

Designed by London's internationally acclaimed firm of Nicholas Grimshaw and Partners, this architectural masterpiece will provide a worthy center for electronic media and performing arts at Rensselaer.

The building will appear to be a "floating wafer" that extends the campus west-
ward beyond the edge of the steep bluff above Eighth Street.

The $50 million structure will hold a 1,200-seat auditorium, a 400-seat recital hall, black-box theaters, studios, exhibition galleries, rehearsal rooms, and accommodations for artists in residence. Performance spaces will provide world-class facilities for concerts, dramatic productions, and other university events. Visitors will enjoy an expansive view of the Hudson and the Capital Region.

This remarkable facility will celebrate, support, and extend Rensselaer's distinctive position in electronic media and communications. It will elevate the quality of intellectual and creative life on campus. It will be a focal point of community pride. And it will serve the world as an incubator for imagined discoveries and vital contributions to technology and the arts.

The south side of campus will be transformed in grand style. A new campus entrance will be created on College Avenue. A 500-car garage will be erected to serve faculty and staff during the workday, and provide parking for Rensselaer and her guests during evening events. A pedestrian pathway will be created from Fifteenth Street, south of the new biotechnology building. The walk will lead past the Science Center, Cogswell, and the Materials Research Center to the new center for electronic media and performing arts.

To meet increased demands on energy systems, Rensselaer will build an electrical substation and a chiller facility alongside the parking garage. A second boiler plant will be set into the hillside at the northern edge of campus near the J Building.

**WORKING TOGETHER**

These plans for a growing Rensselaer are benefiting from review by faculty, staff, students, neighbors, elected officials, and the general public. The proposals had to undergo an extensive New York State Environmental Quality Review. The entire process includes public meetings, neighborhood meetings, campus meetings, a formal public hearing, and a 30-day period for citizen comment.

Such extensive new construction projects will create temporary inconveniences. Some campus roadways will be blocked. Some deliveries may be more difficult. To ease the loss of parking, Rensselaer will provide regular shuttle bus service to and from Houston Field House. Familiar walkways may be re-routed. Plywood will be prominent. A spirit of “Chin up, but watch your step,” will be essential.

**EVER BUILDING, NEVER DONE**

There have been many inspiring advances at Rensselaer in recent years: the building of Barton Hall, the completion of the Mueller Center, the renovation of the Union, the creation of the O.T. Swanson Multidisciplinary Design Lab, the gift of the Rickey Sculpture, the restoration of the Approach, the design of studio classrooms and new athletic fields, the modernization of Troy, Walker, and Pittsburgh Buildings... the list is awesome.

Rensselaer seems always to be under construction. Especially now, as it vigorously embarks upon a path to global reach and global impact as a top-tier research university that challenges its people to change the world. —Bruce Adams

*Competition drawing for the electronic media and performing arts center.*
FOCUS ON... JOSEPH FLAHERTY

A teenager with big dreams when Sputnik launched the Space Race and sparked a revolution in U.S. science education, Joseph Flaherty already knew he would be a scientist while still a student at Brooklyn Technical High School.

Now, as Rensselaer’s new dean of science and with 28 years of teaching and research experience at the university under his belt, Flaherty is reaching for loftier grounds with a more diversified mission.

“This is an exciting time to be dean. So much is happening on campus, and President Jackson has set some very high goals. I’m very pleased to be a part of it,” says Flaherty, the Amos Eaton Professor of Computer Science.

In accordance with the Rensselaer Plan, the mission of the School of Science is being broadened to include the thriving information technology program as well as ambitious new initiatives in biotechnology. Regarding information technology, says Flaherty, “We all have to work hard to preserve the interdisciplinary spirit of both the teaching and research programs, and I intend to ensure that the five schools will have an active and exciting role to play.”

When Flaherty joined the faculty in 1973, Rensselaer had no computer science department, and graduate degrees in computer science were awarded through the mathematics department. Flaherty taught classes in computer science and numerical computing. He bought his first personal computer in 1978.

Like the rest of the world, but with a greater level of understanding and appreciation, he lived through the microcomputer revolution, followed by the proliferation of the Internet.

“I have always thought of computers as very practical tools. I enjoy scientific computation—that blend of physical problems and solving problems on a computer. I like the practical link between the world and the computer,” says Flaherty, citing the work he has done on nuclear safety, biomaterials, and fluid flow problems.

Flaherty graduated from the Polytechnic Institute of Brooklyn with a bachelor’s degree in aeronautical engineering and a master’s degree and doctorate in applied mechanics. In the early 1970s, he taught mathematics at New York University—home of what was probably the most powerful computer in the world at that time.

“It was a CDC (Control Data Corporation) 6600, and it filled up whole rooms. It was enormous, and yet it was capable of doing only a small fraction of what my laptop can do. I was attracted to computer science right from the start,” Flaherty says.

In 1984, he became the founding chair of the Computer Science Department at Rensselaer. Flaherty’s research specialty is the development of automatic adaptive techniques and software for solving partial differential equations, which, he says, “describe many phenomena in science and engineering.”

He has published 13 books and monographs and more than 140 articles in professional journals. Recently, his research has focused on the simulation and modeling of biological materials. Of biotechnology he says, “that is the next revolution.”

Asked how he would advise an incoming freshman who was contemplating a career in science or engineering, Flaherty drew upon the lessons of his own lifetime: “Think broadly about what’s possible. We are now entering an era when tremendous, unimaginable things are going to be possible.”

MILESTONES

Martin Glicksman ’57, John Tod Horton Professor of Materials Engineering, has been awarded the ASM International Gold Medal for 2003. ASM is the professional society for materials engineers and scientists. The Gold Medal, established in 1943, will be presented to Glicksman at the 2003 ASM Awards Dinner for his pioneering work toward “understanding basic solidification processes, especially dendritic growth, scaling laws, and microstructure development in the design of novel and advanced materials.” He is also recognized for a lifetime of mentoring and training students in their pursuit of materials careers.

Joseph Ting, adjunct professor of mechanical engineering, aeronautical engineering, and mechanics, was presented the Public Service Award for Energy Leadership by the United States Energy Association and Johnson Controls. Ting, who is senior mechanical engineer for the New York State Dormitory Authority, was called “the driving force behind the state’s green building initiative.” The citation said that Ting “maximizes his contribution to a broad-based energy efficiency ethic by combining academic knowledge with practical applications.”

Michael O’Rourke, professor of civil engineering, was awarded the 2001 Charles Martin Duke Lifeline Earthquake Engineering Award by the American Society of Civil Engineers. O’Rourke was
recognized for “giving greatly to the interest of earthquake engineering" and “dedication to nurturing students and the public at every opportunity.” He will accept the award at the ASCE National Convention in October. Lifeline earthquake engineering deals with systems upon which communities rely in order to function, such as water, bridges, transportation, roads, and communications.

Ron Eglash, assistant professor of science and technology studies, won the Anthropology Education Commission's “Integrating Anthropology Into Schools” competition. He was honored for his report, curriculum, and corresponding Web site on “SimShoBan: Computer Simulation of Indigenous Knowledge at the Shoshone-Bannock School.” Eglash’s project was created in collaboration with associate mathematics professor Bruce Piper and Shoshone science teacher Ed Galindo. Eglash will receive a $2,500 seed grant and an award at the American Anthropology Association meeting in the fall.

James Zappen, associate professor of language, literature, and communication, received $9,950 from the Rubin Community Fellows Program to develop a youth services database in Troy. The project is part of the larger “Connected Kids Database Testing and Training Program,” on which Zappen is collaborating with Teresa Harrison, professor of language, literature, and communication, and Sibel Adali, assistant professor of computer science. The grant helps the City of Troy and youth-services organizations in Troy and Rensselaer County test the database and train the city's youth services coordinator to manage and use it.

Faye Duchin, dean of humanities and social sciences and professor of economics, participated in two European Union events about the future of Europe. Duchin took part in an expert review of a major modeling initiative of the European Commission’s Information Society Technologies Program, in Brussels, June 26-27. She also participated in the “Modeling Societal Expenditure in Europe” meeting at the European Commission’s Joint Research Center, the Institute for Prospective Technological Studies, in Seville, Spain, May 18.

Mario Emiliani, clinical professor of management at Rensselaer at Hartford and director of the Center for Lean Business Management, was one of 13 participants in the 2001 Japan Study Tour sponsored by the Association to Advance Collegiate Schools of Business International. The purpose of the study tour was to learn about Japanese management methods and to bring this knowledge into the classroom and into the research agenda.

James Gordon, director of community and government relations at Rensselaer at Hartford, was named to the board of advisers for CT Business Magazine, published nine times a year.

Shirley Ann Jackson, president of Rensselaer, has been named to the board of directors of Albany Molecular Research Inc. (AMRI). Albany Molecular is a chemistry-based drug discovery and development company focusing on applications for new small molecule prescription drugs. "Dr. Jackson brings a strong scientific background as a physicist and university administrator, along with extensive experience in industry, academia, and government," said Thomas D’Ambra, chairman and CEO. "She is a visionary leader and driven individual who has instituted significant change and improvement at Rensselaer. Her wisdom and experience will be valuable to AMRI." This is Jackson’s eighth board appointment.

James A.D. Geier, an honorary Rensselaer trustee, died August 2. Geier was the son of Milacron’s long-time CEO, Frederick V. Geier, and grandson of Frederick A. Geier, one of the original founders of the machinery and industrial supplies company, first incorporated in Cincinnati in 1884. Throughout his 40-year career, Geier was an advocate of research and the development of new products. He is credited with Milacron’s bold entry in 1966 into plastics-processing machinery, currently the company’s largest business.

Silver Bay Conference Center on Lake George, where students can experience outdoor and team-building activities in an Adirondack setting. Silver Bay also was home to Rensselaer’s “frosh camp” during the 1950s. We’d like to learn more about that era. If you attended student orientation at Silver Bay, and have stories or photos to share, send them to Rensselaer Magazine, Office of Marketing and Media Relations, Rensselaer Polytechnic Institute, Troy, NY 12180, or e-mail alumni.mag@rpi.edu.
WHY IS THIS MAN

smiling?

From hockey rink to Hollywood: how this Rensselaer grad became one of the kings of comedy

BY TRACEY LEIBACH

The Farrelly brothers are proud to make "movies" and not "films." And their movies are, well, bawdy. (Critics also have described them as "outrageous," "offensive," "irreverent," "scatological," and downright "gross").

But in less than a decade, Bobby Farrelly '81 and older brother Peter Farrelly have struck it rich in Hollywood with their signature brand of outrageous comedy. They've written, directed, and produced some of the biggest comedies in recent years, and are credited with giving a much-needed facelift to the genre. The pair's third picture, There's Something About Mary, earned more than $450 million and catapulted the Farrellys to the top of the Hollywood heap.

The brothers set out to write and direct popular comedies that would appeal to a wide audience. "We're not trying to make any artistic statement. Our movies are just for entertainment value," Bobby Farrelly, 43, told the Boston Globe last year. "In a way we make the movie for our own friends, the people we know and trust. If they like it, we like it. We don't play to the critics, because critics are rough on comedy. But there is a need for comedies at the multiplex, and someone has to make them."

The Farrellys debuted with the 1994 box-office megahit Dumb and Dumber, starring Jim Carrey and Jeff Daniels. They followed up in 1996 with the bowling spoof Kingpin, with Woody Harrelson, Randy Quaid, and Bill Murray.

Then along came Mary in 1998, bolstering the brothers' reputation as a powerful force in Hollywood.

Their most recent effort, Osmosis Jones, a combination of live action and animation, was released in mid-August. "An epic adventure of microscopic proportions," the movie stars Bill Murray, Molly Shannon, and Chris Elliott, and the voices of Chris Rock, Laurence Fishburne, and David Hyde Pierce. The live action takes place outside the body of Murray's character, Frank Detorri. The animation—complete with all sorts of bodily functions and fluids—occurs inside Frank's body, the City of Frank.

Entertainment Weekly's Lisa Schwarzbaum wrote, "If you're any kind of aficionado of phlegm, mucus, pus, and related body waste management—and who among us is not?—you've got to
admir the tenderhearted obsessiveness with which the filmmaking Farrell brothers, Peter and Bobby, pursue grossness as the great social leveler.

"Tenderhearted" and "grossness" aren't often used in the same sentence—but in the case of the Farrellys, this seeming contradiction sets their work apart. Beneath the goofy gags and bathroom humor lies a sweet story; the pursuit of love is a major theme of their movies.

Scene from Dumb and Dumber:
Lloyd (Jim Carrey): "What are the chances of a guy like you and a girl like me ending up together?"

Mary (Lauren Holly): "Not good."
Lloyd: "Not good, like one in a hundred!"
Mary: "I'd say more like one in a million."
Lloyd: "So you're telling me there's a chance!"

OUTSIDE PROVIDENCE

The Farrell brothers grew up in Cumberland, R.I., with three sisters, their physician father, "Docky," and mother Mariann, a nurse. The family was close and remains so today. In fact, no Farrell brothers' movie is complete without an appearance by Docky and Mariann, not to mention sisters, children, nieces, nephews, friends, and old college buddies.

Both parents believed in the importance of education; their strict rules set regular study hours and banned TV on school nights. The three sisters brought home As and Bs; the brothers, however...

"We were classic underachievers," Farrelly says. Hopping to get the boys on the straight and narrow, their parents sent them to private schools (Peter to the Kent School in Connecticut and Bobby to Phillips Academy in Andover, Mass., where he played hockey). Though both graduated, neither brother was anywhere near the top of his class.

It was hockey that led Farrelly to Rensselaer. "I'll admit, the hockey program is probably what interested me more than the curriculum going in. But I knew it was a good school," he says. He entered on a hockey scholarship as a goalie, but in the end he saw little ice time.

Teammate Dino Macaluso '82 recalls Farrelly as "always a little crazy. I remember we watched a lot of Three Stooges together, and we laughed a lot," Macaluso says. The two rekindled their friendship a few years ago, and Farrelly invited Macaluso to the set of Me, Myself & Irene as an extra.

A whole day on set resulted in less than 30 seconds of Macaluso on screen. ("Hey, I fought for those 30 seconds!" Farrelly insists.)

Off the ice at Rensselaer Farrelly majored in geology, a field he has "never used one day in my life. It helps me when the category comes up on Jeopardy!, though."

He chose the major because a job in the oil industry "sounded interesting," but by the time he graduated, "all the oil stuff had gone to hell in a handbasket, and there were no jobs." Farrelly started work on an MBA, but after a year decided to leave school and enter the financial services business.

"I sold insurance, life insurance, some investment products, and I even became a registered stockbroker. But, I was just telling people what the companies wanted me to tell them, because I didn't have any experience with what to do with money. I didn't have any!"

ME, MYSELF, AND WILLIE

The world just might have Willie Stanton to thank for the Farrelly brothers' success.

Stanton, known to generations as "Mr. RPI," worked in the Union kitchen and befriended countless students. He was a familiar face at campus social and sporting events, and in particular was a friend and supporter of the hockey team. During Farrelly's undergraduate years, Stanton acted like a father figure to many on the hockey team.

"I knew him, but wasn't particularly close to him," Farrelly recalls. Stanton died in 1980.

A few years after graduation, Farrelly says he fell asleep on the couch after a long day selling insurance and began to dream. In his dream, he woke up and saw Willie Stanton...
walking up his driveway. "I couldn’t move, couldn’t make a sound. He came right up to
my front door, and said, ‘I just wanted to tell
you to analyze your life. You’re not doing the
right thing with your life. I just want you to
think about that.’ And then he turned and
walked out the door.

“I’d never had a dream like that, and
haven’t since. It really rattled me,” Farrelly
says. “I know it was probably my sub-
conscious talking to me, ‘cause I knew I
didn’t like what I was doing. But it changed
my life. It really did.”

FOLLOW THE SUN TO CALIFORNIA

The dream motivated Farrelly to quit his job
and join with a boyhood friend to launch
a new product—the round beach towel. Mar-
keted as the “Sun Spot,” its concept was sim-
ple: rather than move your towel as the sun
moves, you just move your body.

Farrelly and his partner moved to Cali-
ifornia and worked at the towel business for
several years. “We made the towels and they
were beautiful, but we just struggled at it. We
didn’t have the resources to make it work.”
Along came a big towel company that
convincing the young entrepreneurs to sell them
their product.

“We were kind of naïve,” Farrelly says with
a laugh. “We signed a deal that said we’d make
certain percent when they sold; well, they
never sold any. I think we got had.”

Meanwhile, brother Peter, who’d earned
his undergraduate degree at Providence Col-
lege and a master’s in creative writing at
Columbia University, had relocated to Cali-
fornia to try his hand at writing books. What
started out as Bobby giving feedback on
Peter’s stories has turned into a highly suc-
cessful collaboration between the brothers.

“I would just give him some ideas on how
to make his stories better—you know, more
of this guy, less of that one,” Farrelly says.

“After a while, we started thinking that we
should try to write a screenplay together. We
sat down and wrote one, and we’ve never
stopped.”

Writing as a team has come naturally. “The
thing about comedy is, something’s really not
funny until someone laughs at it. You need
two people to make comedy work; you need
the comedian and you need an audience.”

After nearly a decade of collaboration on
a dozen scripts, the pair had yet to have a movie
made. “The rule of thumb is that the studios
will purchase or try to develop about 30 dif-
ferent screenplays for every one they make,” Farrelly
explains. “And we were one of the 30. We’d have an
idea, get ourselves into the studio and pitch the idea,
and they’d give us enough money to go off and write it.”

In addition to screen-
plays, they sold scripts for television series, including
two episodes of Seinfeld.

In 1994, the brothers
decided to take the plunge
and make Dumb and Dumb-
er into a movie. Part of the
difficulty in getting a picture
made, Farrelly says, is getting either a direc-
tor or a “name” actor to come on board. Once
you have one, it’s easier to attract the other.

So the Farrellys named themselves the
directors. “We’d never made anything—not
a commercial, an MTV video, we never even
made a home movie!” Farrelly laughs. “But
we had written the script, so they couldn’t
take that away from us.”

Perhaps because of their persistence, they
attracted enough financing to create a small
budget. “A lot of good breaks happened right
at that point, not the least of which was that
Jim Carrey read the script and wanted to
make the movie. All of a sudden it went from
a low-budget independent movie to the stu-
dios becoming interested because Jim Car-
rey was getting hot,” Farrelly says.

Dumb and Dumber was a surprise success,
earning more than $340 million.

Scene from Dumb and Dumber (after Lloyd
trades in the duo’s van for a moped):

Harry (Jeff Daniels): “Just when I thought
you couldn’t do anything dumber you do some-
thing like this…and totally redeem yourself!”

SECRET OF SUCCESS

Although the Farrelly brothers are major
players in Hollywood, they both call Mas-
sachusetts home. Bobby lives with his wife, two
children, and a chocolate lab in the seaside
community of Duxbury. The brothers have
managed to avoid movie-biz affectations often
associated with big names and are wide-
ly regarded as “regular guys.”

“We honestly try to have as good a time
as we can have,” Farrelly says.

Their fun-loving, relaxed attitudes, cou-
pied with spectacular box-office success, have
attracted some of the most-sought-after
comic actors to their movies. But what dif-
ferentiates their comedies, Farrelly says, is
the casting of dramatic actors, including Jeff
Daniels, Matt Dillon, and Laurence Fish-
burne.

“A skilled actor new to comedy challenges
comic actors to do some real acting,” Farrel-
ly has said. “When you put really good
comic actors like Ben Stiller and Chris
Elliott against someone like Matt Dillon, they
challenge each other in different directions.”

Their next project, Shallow Hal, stars
Gwyneth Paltrow and Jack Black. Black plays
Hal, a very shallow guy who chases after only
the youngest, prettiest women. After he’s
hypnotized into seeing women for their inner
beauty, he meets an obese woman (played
by a prosthetically enhanced Paltrow) and
falls in love with her inner self.

Already, there’s a positive buzz sur-
rrounding the picture, which is set for a Nov. 9
release.

Twenty years ago, Farrelly—as well as his
parents—could not have envisioned where
his career path would lead.

“I feel like I’m doing what I am supposed
to be doing in life,” Farrelly says. “When I
was in college and right after, I had no idea,
ot one-one-thousandth of a percent, that I
should go to Hollywood and write. It never
occurred to me. But I kept my options open
and I was willing to try a lot of different things.
It was that kind of attitude that got me into
the movie business,” he says.

“My parents had thrown their hands up,
saying things like, ‘you guys just run around
joking all day and you think you can make a
living at that.’

“So now we say, ‘will you admit you were
wrong?’”
MANIFEST DESTINY

Dennis Tito’s trajectory from analyst to astronaut

BY GORDON SACKS

WHEN SIR EDMUND HILLARY RETURNED FROM THE FIRST SUCCESSFUL ASCENT OF MT. EVEREST IN 1953, HE SAID, “We knocked the bastard off.” Dennis Tito, who earned a master’s degree in engineering science from Rensselaer at Hartford, is more contemplative about his achievement of becoming the first civilian space traveler: “It was the greatest experience I ever had. To view the earth from space is truly exhilarating.” On April 28, 2001, Tito was a much-publicized passenger on a Russian Soyuz rocket that blasted off from Baikonur, Kazakhstan, carrying him to an eight-day stay aboard the International Space Station in 240-mile-high orbit.

For Tito, the trip to space was more than just an adventure. As the founder and chief executive of innovative investment analysis company Wilshire Associates, his career was built on helping others assess and manage risk. And Tito sees too much risk in humanity keeping all its eggs in one earthly basket. Instead, he envisions a future in which humans may some day live in “self-sustaining colonies” spread throughout the solar system.

HOUSTON, WE HAVE A PROBLEM

Tito’s flight provoked a storm of controversy. NASA was adamantly against the flight, perhaps remembering the ill-fated Space Shuttle Challenger and the bad press that resulted. In fact, NASA threatened to send Russia a bill for any delays NASA claims were caused by Tito’s visit.

Tito, however, was not deterred by the opposition. “There have been relatively few human space flights that have caught the attention of the general public in recent years. My flight certainly generated a lot of publicity for the International Space Station, and because of NASA’s attitude, probably somewhat of a backlash toward NASA. I think there will be pressure from the public and from Congress” to change their policies regarding civilian passengers.

And there are indications that Tito is right. In August, NASA and the Russian space agency reached an agreement that will allow more “space tourists” to fly to the International Space Station.
Tito experienced weightlessness in the zero-gravity plane Ylyushin-76, specially outfitted by the Russians to train their cosmonauts.

Future paying customers will have to undergo physical training, demonstrate foreign language ability, and meet a "personal suitability" test.

ACHIEVING A LIFELONG GOAL

"I always thought about doing something like this, but it never was within my reach," says Tito, who first broached the issue with the then-Soviet Union more than 10 years ago.

He found the flight itself not difficult at all because of his training. The most difficult part, he says, was the return—via a small capsule—to a parachute landing on land. The landing marked another "first" for Tito, as the first American to ever land in a capsule on land, as opposed to an ocean splashdown.

"Overall, the hardest part was getting there in the first place," says Tito, who reportedly paid the Russians $20 million to be carried as a passenger. "Getting everyone to agree, and going through the training, which was in Russia for eight months, most of it during the Russian winter. Difficult not because the training was that difficult, but just being away from my business and away from my family."

Many people don't have the opportunity to achieve their most overriding goals, and others find anticlimactic aspects to fulfilling a lifelong dream, but Tito deeply savored his achievement. "The euphoria of being in space" surprised him the most about the trip.

"We haven’t heard enough about how enjoyable the experience is, to look down at the earth. I watched the earth go by for hours and hours listening to opera, and found that the eight days went by very quickly. I could have stayed up there for months."

Tito was well-prepared for his trip, and he has concrete ideas for future travelers. "I didn’t have good management of my payload. Every time I opened something up, things would start floating out, and I'd have to chase things around. So I could have managed my physical payload better if I had known. EVERYTHING would have had Velcro on it."

THE MEANING OF SPACE TRAVEL

The different ways people respond to the concept of space travel are key to understanding the furor surrounding Tito’s flight. Tito sees trips to space both as political tools and deeper, more symbolic ventures.

"Both the U.S. and Russia have flown nationals from other countries, and of course the U.S. has flown a lot of astronauts from its alliances. Obviously Syrian people can better identify with seeing a fellow Syrian fly, and see space through that person's eyes. It's of national importance. These people have become national heroes in their own countries."

Tito is also keenly aware of the symbolic importance of his flight. "Not many human beings have been in space. There's a lot of national pride associated with space travel. My flight has affected a lot of private citizens. They can live vicariously to some degree through someone they can identify with as being like themselves."

Tito’s space suit is still in Russia, though he says the Smithsonian National Air and Space Museum has asked to exhibit it.

SUPERCOLLIDER FOR CASH

While starting a large and extremely successful investment advisory company is not the conventional career path for an astronaut, Tito cites his business background as a key element that made his trip achievable. His business background, as an entrepreneur and a businessman, taught him how to make deals and to develop the patience to get a deal closed, essential skills in dealing with the Russians.

In addition to providing consulting, money management services, and analytic software, Wilshire is also renowned as the creator of Alan Greenspan’s favorite market indicator, the broad and inclusive Wilshire 5000. Called a “Total Market Index,” Tito created the Wilshire 5000 in 1974, taking advantage of new technology that allowed him to efficiently collect stock prices and calculate returns for a large number of equities. Today the Wilshire 5000 includes more than 6,500 different stocks.

Wilshire’s portfolio management and analysis software derives most directly from Tito’s engineering background. Like a supercollider for cash, Wilshire’s Quantum software tests portfolios under highly specific conditions, and gives money managers a chance to bring their risk profiles in line with client goals. In a sense it’s a highly analytical, controlled window into the future.

FULL CIRCLE: FROM SPACE PROGRAM TO ANALYST TO ASTRONAUT

Though analyst to astronaut seems like an
unlikely trajectory, there are fundamental similarities.

"You want to basically fill out your risk envelope. You want to take as much risk as you can comfortably tolerate to maximize your return. We call it a stress test—You can stress-test a portfolio under different market scenarios, and you can see if that outcome is tolerable or intolerable. Just like when they put me in a centrifuge and spun me up to 8 G's to see if I could take that kind of stress."

"If you can't evaluate a function analytically, you can simulate it over a wide array of variables, and get some kind of a three- or four-dimensional surface and figure out what's out there. It's based on understanding the concepts and not being intimidated by what analytical approach you use to figure out the solution. That's basically what being an engineer is all about."

IT IS ROCKET SCIENCE

Wilshire was founded in 1972, before the revolution in microcomputing. While the basic principles remain the same, technology has made vast improvements. "We're able to bounce around with different scenarios, and view graphic output instantaneously on the screen. So the cycle time is more in line with the speed at which we can think."

Between earning his M.S. from Rensselaer and starting Wilshire, Tito spent six years working for the Jet Propulsion Laboratory in Pasadena, Calif., where he studied orbital mechanics with a specialty in trajectory design and ballistics, areas he studied at Rensselaer. "Because I was also interested in the stock market, the transition from engineering to investment analysis seemed very natural to me. The mathematics and statistics that I used in engineering could be applied in a systematic way to understand how prices behave in the stock market."

Tito is pragmatic about the role of education. "It was that education that paved the way for a successful business career, which allowed me to afford the space trip. But the education is just the beginning: It's a tool kit for what you're going to do with the rest of your life."

He still remembers some of the coursework that was most influential in shaping his career and his ambitions. "I had a course in calculus and variations, and a course in celestial mechanics, and those were the courses that dealt with flight-path analysis, and it was that aspect of spaceflight that fascinated me. When you analyze orbits, and optimal transfers from one orbit to another, you have to visualize being in orbit. It might be that those early academic experiences helped generate the desire to actually be in orbit."

Tito has straightforward advice for today's Rensselaer students: "You're young. You'll probably live to well over 100 years with advances in medical science. Take care of yourself. Study hard. Think big."

FUTURE OF SPACE TRAVEL

Tito says his interest in space travel reflects his concern for the long-term survival of the human race.

"[Space travel] is an insurance policy because ... if you stand back and think about it, over the next several million years, what's the probability that we'll wipe ourselves out through some environmental change? Global warming could cause climactic changes that might snowball (no pun intended). Ice caps melting, changing of circulation patterns, everything could go awry before we could adapt to it.

"We could have a comet or asteroid impact, we could have a disease, a major superpower confrontation. All these things are probably more likely than less when you look out a couple of million years. If our species was distributed around the solar system and we had self-sustaining colonies, then humanity could be preserved until the Earth became habitable again.

"I hope that the price of civilian space travel will come down. That will only happen if a big demand develops, because with that demand capital would be made available to provide cheaper access to space. I can't say for sure whether there will be a lot of people following me in the near future. I hope there are, and I'll do everything I can to help facilitate it, but we'll just have to see."

LESSONS FROM THE LAUNCH PAD

"It's in our nature to explore," says Tito. "I learned that with proper training, you can feel comfortable in situations you never dreamed you'd be comfortable in. I wasn't at all frightened. Sitting on top of a 100-ton rocket and blasting off was something I was quite calm about. That experience has given me a renewed sense of courage and self-confidence."
MYSTER MAN

AT 38, CAPITALS CAPTAIN ADAM OATES IS ON THE VERGE OF BREAKING NUMEROUS TEAM AND LEAGUE RECORDS, BUT DOES ANYBODY REALLY KNOW HIM?
EDITOR'S NOTE: Adam Oates '85 led one of the most talented hockey lineups in Rensselaer's history, the famed ECAC National Championship team of 1985. In June 1985, Oates left Rensselaer a year short of graduation for a $1 million contract with the Detroit Red Wings. But for six years, he returned to campus each summer to complete his degree requirements. In 1991 he became the proud holder of a bachelor's degree in management from Rensselaer. Today, he is captain of the Washington Capitals and one of the NHL's most respected players. The following article was published in Sports Illustrated, April 9, 2001, Copyright © 2001, Time Inc. All rights reserved.

BY KOSTYA KENNEDY

DAM OATES IS STEERING HIS BLACK MERCEDES THROUGH MORNING TRAFFIC on the Beltway. Dressed in sneakers, jeans, a navy sweatshirt and a yellow baseball cap, he drives much the way he plays for the Washington Capitals, moving opportunistically but unaggressively from lane to lane, occasionally making a smooth, well-calculated pass. He holds a cup of coffee in his right hand.

"So did you hear that some guy gave $360 million to my alma mater?" says Oates, who has a management degree from Rensselaer Polytechnic Institute. "It's the largest donation ever by an individual to a university, but get this...." Oates pauses, sips his drink, and thrusts out his sculpted jaw. He checks the rearview mirror before continuing. "The guy gave the money anonymously. So he sets this record, but nobody knows who he is. Kind of mysterious."

Oates, who is the least recognized of the certain Hall of Famers in the NHL today and who has set or is about to set numerous team and NHL records, knows from mystery. How is it, for example, that Oates, whom RPI coach Mike Addessa once affectionately called "a stumpy, heavy-footed, poor-skating, no-shooting kid," is in his 16th NHL season and through Sunday had 961 career assists (ninth all-time) and 1,277 career points (22nd)? How is it that at 38, Oates, who's still a slow skater, was tied for the league lead with 67 assists—more than any other player his age or older has had in one season?
How could Oates, who Washington coach Ron Wilson calls "the smartest player I've ever seen," have gone undrafted? How does Oates captain the Southeast Division-leading Capitals (39-25-10-4) so effectively without raising his voice? Where does he get the energy, at his age, to center Washington's top line, play more than 21 minutes a night and dominate on face-offs? (He had won 58.6 percent of his draws this year, fifth in the league.) How does he do any of it with that sawed off, misshapen stick he uses? And who, behind that aloof exterior, is Adam Oates, anyway?

"Whenever I go to a new team, a lot of guys ask me what it's like to play with Adam Oates," says Phoenix Coyotes center Joe Juneau, a teammate of Oates' with the Boston Bruins from 1991-92 through '93-94 and in Washington from '96-97 through '98-99. [Juneau also is a Rensselaer hockey standout and 1991 graduate.] "He's quiet and people don't know much about him, but they see what a smart player he is and they want to know what he's like. They really want to know what's up with his sticks. Those things are the ugliest in the league."

Oates runs through four dozen black Sher-Woods a month, and the ones he tosses away after a single heft (about half, simply because he doesn’t like their feel) are spared his indelicate touch. "There's no science to it," Oates says of how he shapes his sticks. "I take each one, go to work on it and hope I can make it feel how I want it to feel."

The way Oates goes to work on his stick would get Bob Vila jazzed. The tools he uses include a handsaw, a jigsaw, a baby hammer, a large hammer, a vise grip, a sander, and a blowtorch. First he chops off the toe of the blade to square it (a unique, superstitious practice he began 10 years ago), then he sands the base of the blade until it’s flat ("When you're in the corner and your stick is against the wall, you can still keep a lot of blade on the ice," Oates explains), and then he saws, bends, twists, massages, and burns the blade until it feels the way he wants it to. The process takes Oates about 15 minutes per stick.

"That's just another example of how he's always trying to do whatever little thing he can to get an edge," says Wilson. "If Adam notices something in a game, he adjusts right away. Even if it's only how somebody is holding his stick. He takes the information, processes it and puts it to use. The thing about Adam is that he assimilates a lot of stuff at once. Most guys might see one or two things, and the rest is a blur." Oates' processing skills, as well as his sure hands, have made him the second-best passer of his time and the player most commonly compared with the best, Wayne Gretzky. Like other on-ice visionaries, Oates changes speeds and uses subtle shifts in movement and positioning to put defenders off balance. He likes to bring the puck to just inside the offensive zone—a spot off the left half-boards is a particular favorite—where he can dish with either his forehand or backhand. The more options the better, which is what makes Oates so dangerous when the Capitals have a man advantage.

"If you take away Oates, you pretty much take away everyone on the ice," says Capitals center Trevor Linden, who had played against Oates for 12 years before Washington acquired Linden from the Montreal Canadiens last month. "It's hard because he's so aware. You shut off one passing lane, and he finds another."

Oates has been working the angles and lines since his earliest youth-league shifts and maintains an unshakable grasp of the geometry around him, an understanding that he describes as innate. What has developed over time is not so much his sense of where to deliver the puck but how and when he'll put it on a teammate's stick. "We're playing the Rangers last month, and I make a move and I'm thinking, Wow, I wish I had the puck right now," says Capitals wing Peter Bondra. "I took down, and Adam's sending it right onto my tape, perfect as usual. Boom! I one-timed it into the net."
Bondra is one of several NHL thoroughbreds to have been fed by Oates, who is the only player to center three 50-goal scorers (Bondra with 52 in 1997-98; Cam Neely with 50 for the '93-94 Bruins; and Brett Hull with 86 in '90-91 and 72 in '89-90 for the St. Louis Blues). Oates is also the only one to center two players who scored 50 goals in 50 games (Neely and Hull, the season he got 86). Oates, who has scored more than 20 goals only five times in his career, has been the unheralded B side to one '90s record after another. "He doesn't get as much publicity as the goal scorers," says Hull, "but he loves to watch you put the puck in the net. I never asked him why he didn't want to score more himself; I was afraid he'd change his mind."

Oates developed his passing fancy while sitting around the dinner table as a boy in Weston, Ont. Adam's father, David, grew up in the northwest of England idolizing soccer star Stanley Matthews, the Wizard of Dribble, who's widely regarded as the best English footballer ever. David told Adam vivid tales of Matthews' feats, all of which pointed up the fact that the soccer star made his name as a divine passer who rarely scored. When Adam started playing hockey and lacrosse, David implored him to "be like Stanley—unselfish."

This year Oates has spread his generosity among a hodgepodge of linemates, and his 80 points—already the second most ever for a player 38 or older—constitute his highest total since he had 92 in 1995-96. Oates takes good care of himself (chicken-and-pasta dinner and an early movie the night before games), but his sustained excellence is attributable in part to Wilson, who recognized his best player's needs and built around them. Last year Wilson implemented an unorthodox forechecking scheme that calls for Washington's centers to hang back while the wingers attack the puck. This enables Oates to conserve energy, and plays to his defensive strengths, which are founded more on positioning than on physical aggressiveness. "All our centers do it, but we devised the system for Adam," Wilson says. "If you get the most out of him, you get the most out of your team. He's 38. I don't want him to get tired chasing the puck and then be compromised when he gets it."

Teammates treat Oates with similar deference, yet few know much more about him than what they've read in the Capitals' media guide: completed his degree from RPI in the 1991 off-season; enjoys golf. A loner—"I don't know what he does in his spare time," says his road roommate Jeff Halpern—Oates, who's single, slips quietly in and out of practices, his mien serious and intimidating. His cleft hunk of a jaw makes the pantheon of the NHL's memorable facial features, a composite that includes, from top to bottom: Mark Messier's domed forehead, Tie Domi's monobrow, Ed Belfour's ice-blue eyes, Mike Ricci's crooked nose, and Ken Daneyko's fangs.

Oates doesn't slap bottoms or organize player lunches or invite the new guys over for a beer. After games he ducks into the shower before the media arrive in the dressing room, leaving the spokesman's role to players such as goalie Olaf Kolzig. "I got named captain before last season because of how I do things," says Oates. "I'm not going to change. I hope younger guys see that I treat this game with a lot of care and attention."

Players can glean lasting lessons simply from Oates' manner in practice, the way he executes each drill, no matter how routine, with meticulousness. One of Oates' best friends is pro golfer Mike Weir, and last summer Oates accompanied Weir to the British Open, where they stayed together in a rented house near St. Andrews.

"We're in the driveway one day, just fooling around, whacking balls into a field across the road," Weir recalls. "The whole time Adam is saying things like, 'Weirsy, how's my grip? How's my pos-

**ATTENTION RENSSELAER HOCKEY FANS!**

The Big Red Freakout is celebrating its 25th year, while Satellite Hockey is turning 10! Two popular hockey nights merge into one on Saturday, Feb. 9, 2002, when RPI takes on Clarkson at the Houston Field House. (See also page 48.)

If you can make it to campus, take part in the popular pre- and post-game activities. If you can't be in Troy, catch the game live at one of the Satellite Hockey telecast sites around the world. For more information, contact Peter Pedone at (518) 276-6061 or pedonp@rpi.edu.
REUNION 2001 brought back 1,167 alumni and their family and guests to visit campus and reunite with former classmates the weekend of June 7 to 10. Members of Reunion class years ending in 1 and 6 and the 50 Year Club were joined by information technology professionals and Lally Graduate School alumni, who were also holding reunions.

The Class of '51, celebrating its 50th Reunion, broke attendance records with 158 alumni attending. A large and dedicated committee of graduates from the class had planned their events over several years and the resulting reunion was special.

"The Class of 1951's 50th Reunion was the largest, the best, the most enjoyable reunion that any class ever had," said Al Harrison '51. "Every event went so smoothly that having fun was everywhere."

The weekend's events included campus tours, bus tours of historic Troy and the Rensselaer Technology Park, an all-class dinner cruise, academic presentations, and the annual class parade and picnic.

The Parade of Classes, following a new route this year, was led across the pedestrian bridge over 15th Street and into the picnic site in the Alumni Sports and Recreation Center (Armory) by Izzy Warsaw '23, the oldest alumnus in attendance and one of the most spry. He danced a jig while waiting for the parade to set off.
Warshaw then took a place among the parade judges as they greeted each class and accepted the usual bribes. The judges declared the Class of '51 "Top Gun," remarking on their "unbelievable participation!" President Jackson presented the State of the Institute address to an overflowing crowd in the Darrin Communications Center, detailing the progress of the Rensselaer Plan, which she said had been jump-started by the $360 million gift from an anonymous donor.

"Dr. Jackson's presentation of the vision and future of RPI was exciting and electrifying," said Art Castro '56. "Made me wish I was 17 again and had a chance to re-up!"

For those interested in professional networking, David Goodman '60, a noted expert in the field of wireless communications, gave a keynote address titled "Wireless Internet: Opportunity and Challenges."

All classes enjoyed their individual class dinners, where classmates had an opportunity to reconnect, reminisce, and revel, from those who'd been away for decades to the most recent graduates.

"Reunion was a blast!" said Hank Carbon '96. "It was a great opportunity to visit with friends and see the changes on campus."

Photos by Martin Benjamin
Class Notes

Class Notes Deleted for Privacy Concerns
As you look back on your two-year term as RAA president, what would you highlight as the biggest accomplishments?

PIRRONG: It's been a productive two years. I've been lucky because I inherited a board of trustees that assumed a focused, businesslike approach to making the current and future alumni experience more positive and valuable. We have taken on initiatives where our experience and interest in the Institute's forward direction are put to use.

One focus has been on the alumni relationship with students. For instance, more than 30 percent of our alumni were involved in fraternities or sororities while they were students at Rensselaer. For many of them, the Greek experience provided great leadership opportunities that they have applied throughout life. Since Greek systems on many campuses across the country are undergoing substantial change, we felt it important to do whatever we could to ensure that students who choose fraternities or sororities will have the same opportunities to grow socially and gain leadership experience on Rensselaer's campus. To that end, the RAA has reaffirmed its partnership with the Alumni Inter-Greek Council, an organization of alumni and students who represent Greeks at Rensselaer.

Additionally, the RAA has begun collaborating with the Rensselaer at Hartford Alumni Association on connecting alumni from our Hartford and distance-education locations. The interests of these alumni groups are complementary, and provide the potential for diverse alumni programs and activities for undergraduate, graduate, and full- and part-time former students. Christine DeCarlo '87, president of the Rensselaer at Hartford Alumni Association, is now a member of the RAA Board of Trustees. We are optimistic about the opportunities that lie ahead.

In what ways does the RAA support specific campus programs?

PIRRONG: Because of a growing investment portfolio, the RAA has been able to provide financial support to a number of key initiatives over the past two years. We helped support the Rensselaer Student Union renovations and became a founding partner of the RPideaLab, a resource center for student entrepreneurs on campus. These programs not only offer opportunities for direct alumni involvement, they also help introduce the RAA to current students, broadening their awareness of the Rensselaer alumni network and the many ways to connect with alumni before graduation. If students are involved with the RAA, their transition to alumni involvement is that much more natural.

The RAA is also open to proposals from alumni chapters that have ideas for increasing the involvement of Rensselaer alumni.

How has the RAA been able to provide this kind of support?

PIRRONG: We have built up our fund balance to nearly $1 million (FY01 ending balance: $969,500) through sound investments and income-generating programs such as the MBNA credit card, our travel program, and beginning this year, an insurance program (major medical, term life, disability, auto, and home owner). These programs offer services to alumni, with part of the proceeds coming back to the RAA.

We used the revenue to support many initiatives, like the ones I mentioned earlier, as well as the Approach stairs renovation, the Walker Lab renovation, an on-campus student-alumni Greek Forum, annual alumni awards, the alumni speakers program, the student-alumni organization called Red & White, and WRPI Webcast capabilities. Our goal is to increase the fund to a point where we
WELCOME NEW RAA BOARD MEMBERS! The RAA has added the following new members to the board of trustees: Jay Webb '61, Christine DeCarlo '87, Robert Forman Jr. '61, Richard Hartt '70, Stephen Levy '74, Sandeep Nandy '94, Shelly Petronis '89, and Marc Schechter '75. Congratulations on your election to the board!

can annually support new alumni and student initiatives. We are currently putting together our next five-year organizational strategy to guide our plans.

What's different about the strategy you are developing now and your previous one?

PIRRONG: When our last long-term strategy was developed in 1995, the Internet was in its infancy and the amazing tools it offers were largely unknown. Today we can reach out to so many more alumni through electronic communications that geographic limitations are much less of a factor. Through new alumni programs such as E-mail for Life, RenSource (an online networking database), online discussion boards, and monthly e-mail news updates, alumni can keep in touch with each other to make business or social connections, and can keep in tune with significant campus news. Also, we are continuing to develop programs that provide face-to-face networking and continuing education opportunities.

The RAA has strengthened its role as a representative of the alumni population to the Rensselaer administration. The RAA was able to provide feedback to President Jackson on drafts of the Rensselaer Plan during on-campus meetings. We meet with the president on a regular basis, and do our best to represent the interests of alumni to her. We appreciate this opportunity, and hope that it's been as valuable for Dr. Jackson as it has been for us.

These factors, as well as a healthy RAA financial outlook and a change on campus in the coordination of regional alumni chapters, will help us form our new long-term strategy.

What sorts of changes will alumni experience in regional chapter coordination?

PIRRONG: The coordination of regional chapters has moved from the Development Office to the Office of Alumni Relations. One benefit of this move is the opportunity for current alumni office programs—affinity (interest) groups, the alumni admissions program, and the new volunteer relations program—to better integrate with the regional chapter activities and to offer more to our alumni in regions around the world.

If alumni want to get involved, how can they do it?

PIRRONG: An easy first step is to become aware of what's happening with the RAA and on campus. Both are very different than they were even 10 years ago. The e-mail news update service is a simple way to get monthly summaries of stories that are relevant and interesting to RPI alumni. The AlumServ Web page, Rensselaer magazine, and mailings from the chapters describe interesting events for alumni of all ages and interests—so go to an event in your area, or in a city you're visiting!

If you want to provide some of your time to help out, the volunteer relations program matches interests and volunteer needs on a case-by-case basis. You can find out more about all this through the AlumServ Web page (www.alumni.rpi.edu) or simply by calling the Alumni Office at (518) 276-6205.

As you leave the RAA presidency, what advice would you give to the incoming president, Lee Bishop '60?

PIRRONG: Because of the time commitment, I have already warned Lee that his golf handicap will go up at least 5 strokes! Seriously, I told Lee that he would be challenged by very creative and loyal alumni who really care about the future of Rensselaer. Every idea is worth consideration, discussion, and action. This volunteer role has been rewarding because I have seen alumni benefit from their connection to Rensselaer, and in turn, I have seen the Institute greatly benefit from the support and involvement of our alumni.
LIFELONG CONNECTIONS
WELCOME RECENT GRADUATES!

Rensselaer's newest alumni—the Class of 2001

AT COMMENCEMENT CEREMONIES IN MAY, more than 1,100 Rensselaer students became Rensselaer alumni. Most are beginning new careers, some are continuing their education, but all will find that Rensselaer offers a variety of programs and services to help along the way.

Like all alumni, members of the Class of 2001 are now part of the Rensselaer Alumni Association. And as such, they can take advantage of career services or network with influential alumni at regional chapter events and at affinity group gatherings around the country. Alumni can stay involved in campus life through volunteer opportunities that include online alumni/student mentoring programs, alumni admissions, class Reunion committees, and phonathons.

To stay in touch and informed, alumni can receive a monthly e-mail news update and get a free e-mail for life account. For traditional mailings, send your current address to address_update@rpi.edu.

Visit AlumServ at www.alumni.rpi.edu to see the full range of products, services, and opportunities available to alumni. If you have questions about alumni programs, write to alumni@rpi.edu or call the Alumni Office at (518) 276-6205.

THE NETWORK WORKS!
The Rensselaer alumni network was in full force at two recent regional events. A technology networking event was held in May in the Washington, D.C., area hosted by Booz, Allen & Hamilton and its senior vice president, Gary Mather '65. Nearly 80 alumni enjoyed a reception, followed by a presentation on "e-government."

"The networking event was an excellent opportunity to meet people working in technology. The RPI tie is a great icebreaker. You can be sure that I will make every effort to attend future events," says Burt Liebowitz '57, telecommunications consultant.

At another in a series of the New York City-based Rensselaer Entrepreneur Network affinity group networking events, over 60 alumni and students attended a panel discussion hosted by Rensselaer trustee and entrepreneur Paul Severino '69 on "Navigating Your Company Through an Economic and Business Downturn." Business plans were shared, mentoring matches were made, and job leads were exchanged by attendees, who enjoyed the event so much that it ran two hours late!

If you are interested in Rensselaer's professional networking groups, contact Kathy Kinsey at kinsek@rpi.edu or (518) 276-2832.

ALUMNI DATEBOOK

NOV. 3
ALUMNI LEGACY RECEPTION
If you are an alum of Rensselaer and have a relative who attends (or attended) Rensselaer, a special evening of hospitality is being planned for you Nov. 3 in conjunction with Family Weekend. Contact Susan Haight for details at haights@rpl.edu or (518) 276-6042.

FEB. 9, 2002
HOCKEY EXTRAVAGANZA
Big Red Freakout meets Satellite Hockey when RPI takes on Clarkson, Sat., Feb. 9, 2002. If you can make it to campus, join us for the popular pre- and post-game Ice House. If you can't be in Troy, catch the game live at one of the Satellite Hockey Telecast sites around the world. If you're looking for more hockey excitement, the annual Alumni Hockey Game will be held earlier that afternoon. For more information, contact Peter Pedone at (518) 276-6061 or pedonep@rpi.edu.

MARK YOUR CALENDAR!
REUNION 2002 — JUNE 6-9
REUNION 2003 — JUNE 12-15

Rensselaer Alumni Hall of Fame Call for Nominations

Nominations are being accepted for the fourth induction class into the Rensselaer Alumni Hall of Fame, which is designed to celebrate and preserve Rensselaer's exceptional heritage. To view the current membership, visit the Web site at www.rpi.edu/dept/NewsComm/sub/fame/. Nominations are due by Feb. 28, 2002. For a form, contact Peter Pedone at (518) 276-6061 or pedonep@rpi.edu.

Moving?
Please let us know your new address.
Update it electronically on AlumServ, e-mail us at alum.mag@rpi.edu, or write to: Rensselaer Magazine, Marketing and Media Relations, Rensselaer Polytechnic Institute, Troy, NY 12180 or call (518) 276-6531.
Partha Dutta, assistant professor of electrical, computer and systems engineering, and Anant Pandey '02, are developing a prototype for groundbreaking technology that combines wireless communications with optoelectronic devices. This technology has both personal and retail applications, from allowing you to use your cell phone to communicate with appliances in your home to speeding your way through the grocery store. Your support makes this possible.

Leave your mark on Rensselaer

Give online today at: www.alumni.rpi.edu/howtogive or contact Stu Stably, director of development, at stabls@rpi.edu or (518) 276-6054.
ENZYMES INSIDE

Just as the microchip changed electronics, the biochip will soon transform the study of biology and chemistry – and Rensselaer is leading the charge.

Under the direction of professor Jonathan Dordick, an interdisciplinary research team is embedding chips with enzymes to study living cell-like reactions at microchip speed.

Learn more.

Jonathan S. Dordick
The Howard P. Isermann '42
Professor of Chemical Engineering

www.rpi.edu/wnctw