



HELLO ALUMNI!



WHETHER YOU GRADUATED FROM NJIT 30 YEARS AGO, 15 YEARS AGO OR YESTERDAY, WE ALL SHARE THE BOND OF BEING ALUMNI OF A GREAT UNIVERSITY. AT NJIT, EDUCATION AND RESEARCH SPAN AN EXCEPTIONAL RANGE, FROM ENGINEERING AND ARCHITECTURE TO BASIC SCIENCE. FOR EXAMPLE, THIS ISSUE FEATURES WORK IN APPLIED MATHEMATICS, BIOMEDICAL ENGINEERING AND THE EFFECTS OF SOLAR FLARES ON TELECOMMUNICATIONS. THESE ARE JUST SEVERAL OF THE NUMEROUS AREAS WHERE NJIT FACULTY AND STUDENTS ARE ENGAGED IN THE DISCOVERY OF NEW KNOWLEDGE AND THE USEFUL APPLICATION OF THAT KNOWLEDGE.

Our university's reputation for excellence has opened doors for NJIT graduates in many fields. This alone is an important reason for alumni to stay in touch after graduation. And that's what the NJIT Alumni Association — *your* alumni association — is here to help you do.

We've all heard about the importance of networking, perhaps more than we want to when the job market becomes difficult. But it's a reality that personal contacts are often the key to a successful career.

As students, most of us networked without realizing it. We joined athletic teams, student government and clubs, or became good friends with roommates. Today, you may wish that you had kept in touch with a roommate who is the CEO of a major company in your field, or with the student senate president who is now an official in state government. In coming months, the NJIT Alumni Association will sponsor formal networking events where you can reestablish contact with people you knew on campus, and who have gone on to diverse careers in industry, government and education.

We're also planning new social and vacation opportunities in response to your feedback on our recent survey. As important as contact with alumni can be when it comes to careers, we want to bring alumni and their families together purely for the sake of friendship enhanced by our special association with NJIT. This relationship will make a trip to a museum, the theater or a sporting event even more enjoyable. Or watch for campus events like the May 9 dinner celebrating the twentieth anniversary of the College of Science and Liberal Arts and hear speakers like Dudley Herschbach, 1986 Nobel laureate in chemistry.

In closing, I would just like to remind you that the NJIT Alumni Association exists because of its membership. The association provides scholarships, awards to graduates and students, and grants for special projects. However, while financial support is important, people are more essential. Become an active member of your alumni association and a friend to NJIT.

Sincerely,

Colin M. Dino '85
President, NJIT Alumni Association

GLOBAL EXPERIENCE AND CONCERN

Erhan Atay thinks globally, both in his profession as an engineer and in his diverse volunteer work. A project director for Washington Group International, Atay is based at the company's Princeton, New Jersey, office. Washington Group International's projects span continents and virtually every type of engineering, including power plants, refineries, railroads, highways, bridges, dams, mines and environmental remediation. Atay also devotes a considerable amount of his own time to professional engineering groups and organizations dedicated to cultural understanding and

to pursue their academic goals. Erhan completed his B.S. and eventually earned a graduate degree. Iclal holds an M.S. in environmental engineering and a Ph.D. in chemical engineering from NJIT. Today, she is the assistant director of the Air Quality Permitting Program of the New Jersey Department of Environmental Protection.

Erhan and Iclal recall that when their son, Atahan, was small he accompanied them to their NJIT offices and labs. Atahan is now a student at the university, majoring in computer engineering. His sister, Selin, is in high school and aspires to study art.

Erhan Atay has maintained a close relationship with NJIT, and he currently chairs the board of visitors of Newark College of Engineering. "I think NJIT provides the best of several worlds," Atay says. "It has grown into a world-class research university that also offers an outstanding engineering education. The diversity of students at NJIT is important as well, because it really prepares you for working in a global economy."

In addition to his professional commitments at Washington Group International, Atay gener-



Erhan Atay (fourth from left) takes a break with other Habitat for Humanity volunteers

"I THINK NJIT PROVIDES THE BEST OF SEVERAL WORLDS. IT HAS GROWN INTO A WORLD-CLASS RESEARCH UNIVERSITY THAT ALSO OFFERS AN OUTSTANDING ENGINEERING EDUCATION."

ously volunteers time with various groups. He is

providing for basic human needs such as housing. With B.S. and M.S. degrees in civil engineering from NJIT, Atay is responsible for projects in Turkey and other countries in the Middle East and Central Asia. He's currently involved with the development of two dams and hydroelectric power plants in Turkey, along with a coal mine to fuel Turkey's largest coal-fired electric-generating plant.

Atay's ties to Turkey are not just professional. He was born there and attended Middle East Technical University in Ankara, where he met his future wife, Iclal, who was also studying to be an engineer. In 1978, they made two important decisions: marrying and traveling to the United States. "It was our honeymoon," Atay says. "But political uncertainties in Turkey at that time led us to stay in the U.S., where we felt our future would be more secure."

NJIT is a family affair for Atay. In Turkey, the couple had heard about NJIT's educational opportunities and they settled in Jersey City, New Jersey,

past national president of the Federation of Turkish American Associations and a representative to the United Nations for two non-governmental organizations. One is the Institute of Turkish Studies and the other is an international group dedicated to promoting effective control of soil erosion, a serious environmental problem in many parts of the world that impacts food and water supplies.

While Atay is responsible for large engineering and construction efforts in distant countries, some of his concerns closer to home are smaller in scale. He is the coordinator for his employer's participation in housing and community development projects sponsored by Habitat for Humanity. Atay and his son have also joined the volunteers working on such projects in New Jersey, helping to improve the quality of life for individuals and communities in a very hands-on way.

The Class of '52 Looks Back on 50 Years

Members of Newark College of Engineering Class of 1952 reunited on October 18, 2002 at NJIT's Newark campus to mark the half-century that has passed since they graduated. Some 40 members of the class of '52, which had about 290 graduates, came to Newark along with family members for a day that included tours of a campus that has grown dramatically over the years.

Walt Smith, who helped to organize the reunion as well as editing and publishing the reunion yearbook, says that more than half of his class were



Then and now: Members of the NCE Class of 1952 Reunion Committee (from left) Marty Gurvitch, Art Coppola, Wells Gow and Walt Smith — their class provided the skills to rebuild nations around the world and pioneer decades of technological breakthroughs

veterans of World War II attending college on the G.I. Bill and that many returned to active service in Korea after graduation. Entering the engineering profession, they helped to rebuild countries devastated by war and play key roles in fast-changing fields such as electronics and aerospace

technology. Today, Walt is impressed by the diversity of NJIT's students and the capabilities they are bringing to new challenges in science and engineering. Whatever the year, each class that graduates from NJIT represents the "greatest generation," he says.

CONNECTED WITH THE CUSTOMER

Irwin Gerszberg knows a lot about digital subscriber line (DSL) and other leading-edge telecom technologies. In fact, he's played such a key role in the field that he's known as "Mr. DSL" in some



"I'VE ALWAYS BEEN INTERESTED IN TECHNOLOGY, IN TAKING GADGETS APART TO SEE HOW THEY WORK."

quarters. But Gerszberg, who's worked for AT&T since 1978, also knows that the ultimate commercial success of any new technology offered to the public depends on keeping the customer in mind — the person willing to pay for innovations that promise to make life easier and even a bit more fun. That's why much of his work has focused on making high-speed DSL access to the Internet and wireless communications services more available and more convenient for average telecom customers.

A life-long resident of New Jersey, many of Gerszberg's childhood experiences were decidedly low-tech. Until the age of seven, he lived on a farm in Monmouth County, where he shared the

chores of milking cows, collecting eggs and feeding animals. But he says, "I've always been interested in technology, in taking gadgets apart to see how they work." He admits that while at NJIT, where he earned a B.S. in electrical engineering, he temporarily removed a badly damaged payphone from a booth near the campus to take a clinical look at how it worked. He then reassembled the phone and returned it to the booth.

In the 1970s, that phone belonged to the Bell System, whose parent company, AT&T, Gerszberg joined after graduation. "To me, technology in New Jersey meant the phone company, the Bell System and Bell Labs," he says. Today, he is division manager of the Advanced Local Network Access Technology Organization for AT&T Local Services in Florham Park, New Jersey.

Gerszberg's inventiveness is clearly reflected in the 65 patents he currently holds related to broadband and wireless technologies and other aspects of telecommunications. The one that stands out for him involves a system that allows a user to activate and program a cell phone through one call rather than having to take the handset to a dealer. Along this career path, Gerszberg has been inducted into the New Jersey Inventors Hall of Fame and cited as New Jersey Inventor of the Year. He has also received an AT&T Science and Technology Medal.

Gerszberg was attracted to the potential of DSL when the technology was in a formative stage. He saw it as the next logical step in the evolution of voice telephony. Now, his technical creativity is helping millions of residential and business customers across the country use conventional copper phone lines, or "twisted pairs," to tap the resources of the Internet with greater efficiency and simultaneously carry voice service.

Gerszberg, his wife Sherry and their two children live in South Brunswick, New Jersey. He has a strong affinity for the New Jersey shore, where he likes to fish. Still, even when casting a fishing line, technological innovation is never far from Gerszberg's mind, including the aesthetic benefits of wireless communications. "It bothers me every time I go to the shore and see all those wires and poles," he says.

ICONS | JOHN F. HOHNHOLT

STAYING AHEAD OF THE CURVE

John Hohnholt is clear about the goals of Valero Energy Corporation, where he's senior vice president for technology, planning and development: "To be a leading supplier of environmentally clean transportation fuels, petrochemicals and electric power for consumers in the U.S. and international markets." This is a formidable set of objectives in today's energy marketplace. "Survival and success in this business," Hohnholt says, "means being a top performer in safety, environmentally proactive, and a low cost producer capable of margin growth through creative application of new technology."

Hohnholt, who graduated from Newark College of Engineering in 1974 with a B.S. in chemical engineering, has been working on these key corporate issues at Valero since 1982. Previously, he gained broad experience in the refining and energy industry in jobs that took him from New Jersey to Pennsylvania, Kansas, Louisiana and, ultimately, to Valero in Texas. Although based at Valero's headquarters in San Antonio, Hohnholt recently reconnected with NJIT. He's now a member of the board of visitors of Albert Dorman Honors College.

In joining Valero, Hohnholt became part of one of the largest independent diversified energy companies in the United States. With some 21,000 employees, Valero has an extensive refining system with a throughput capacity of almost two million barrels per day. The company's refining network stretches from Canada to the U.S. Gulf Coast and West Coast.

Hohnholt's responsibilities encompass short-term and long-term optimization and development of investment strategies to meet increasingly stringent environmental regulations. Hohnholt points out that Valero has been both economically and environmentally successful, in addition to attaining an outstanding safety record. Awards from the federal government and the State of Texas recognize Valero's commitment to safety and environmental compliance, including the first Governor's Award for Environmental Excellence given to a petroleum refiner in Texas. "Safety is our first priority and we recognize that our success can only be achieved through partnering with the community and regulatory agencies," he says.



Although hardly a new cautionary note, growing U.S. dependence on foreign petroleum feedstocks and refined products remains an especially challenging aspect of the domestic refining business for Hohnholt. "The United States has a large, stable, and expanding market for refined products," he says. "But along with the uncertainty of some major international sources, the continuing increase in imports from producers who operate at lower cost because of location and fewer environmental restrictions is intensifying pressure on the profits of U.S. refiners. Air is a global resource and foreign refiners who wish to import their products into the U.S. should comply with our strict regulations. Imports from foreign 'dirty' refineries should be taxed."

Besting this competition, according to Hohnholt, requires making the right decisions in capital investment and achieving operating excellence while keeping plant safety and environmental protection in mind. However, it can be done, and as an example he cites Valero's plans for increased production of low-sulfur diesel fuel.

Federal regulations call for diesel fuel to have 15 parts per million (PPM) of sulfur at the retail pump by June 2006, down from a present level of approximately 500 PPM. Judicious plant upgrades should allow Valero to meet the federal mandate and, at the same time, produce additional marketable products such as jet fuel and naphtha. "U.S. refiners have to work hard and apply creative technology solutions to future environmentally driven regulations to stay ahead of the competitive curve," Hohnholt says, "and that's what we do at Valero."

"U.S. REFINERS HAVE TO WORK HARD AND APPLY CREATIVE TECHNOLOGY SOLUTIONS TO FUTURE ENVIRONMENTALLY DRIVEN REGULATIONS TO STAY AHEAD OF THE COMPETITIVE CURVE, AND THAT'S WHAT WE DO AT VALERO."

A SCIENTIST AMONG THE ENGINEERS

The technology that Rick Mohring is helping to develop could give “gas” an entirely new meaning when it comes to our cars. That’s because Mohring and his colleagues at Millennium Cell in Eatontown, New Jersey, have designed a compact system to produce hydrogen gas safely and efficiently so that it can be used for applications that include powering automobiles through internal combustion or with electricity from fuel cells. A much cleaner fuel than gasoline, hydrogen is also an abundant and renewable energy resource.

Mohring, who is director of the Hydrogen on Demand™ program at Millennium Cell, says

ment of technological breakthroughs. The background that brought him to Millennium Cell includes a B.S. in applied physics with a minor in applied math from the College of Science and Liberal Arts at NJIT. One of the high points of Mohring’s NJIT experience was a NASA fellowship at GE Aerospace in Princeton, where he participated in research involving satellites. Mohring was also an active participant in campus life. For two years, he was the Student Senate’s vice president of student affairs.

After graduating from NJIT in 1993, Mohring went on to the University of Maryland and a Ph.D. in nuclear physics. While completing his doctorate, he co-founded Pixelligent Technologies, a Washington D.C. company specializing in



RICK MOHRING IS WELL ACQUAINTED WITH BASIC RESEARCH AND THE COMMERCIAL DEVELOPMENT OF TECHNOLOGICAL BREAKTHROUGHS.

that using hydrogen to fuel automobiles is the application that gets the most attention in the general news media. DaimlerChrysler has already installed Millennium Cell’s boron-based system for producing and storing hydrogen in a demonstration minivan, the fuel cell powered Natrium. In a fuel cell, hydrogen gas reacts with oxygen from the atmosphere to produce electricity. Fuel cells supply electric power much more efficiently than conventional batteries and can do so almost indefinitely.

“But as exciting as automotive use may be, there are also more immediate commercial applications for hydrogen as a fuel,” Mohring says. “Providing primary and backup power for telecommunications is one that’s especially significant. Marine use, on ships, is another possibility for the near future.”

Mohring is well acquainted with basic scientific research in addition to the commercial develop-

optoelectronic semiconductor technology. Personal ties and the opportunity to join Millennium Cell motivated Mohring’s return to New Jersey in 1999, where he’s now part of a team focused on the commercialization of a promising new power source.

When Mohring entered NJIT, he was undecided about his ultimate academic direction. He did consider engineering but found himself attracted to the programs offered through the College of Science and Liberal Arts. “One of the main reasons I came to NJIT was the range of options that the university offered in a setting that encouraged close mentoring relationships with teachers,” Mohring says. “I had a lot of choices at a university that still had a ‘small school’ feel. NJIT let me choose among many different worlds of science and technology, and I decided to be a scientist among the engineers.”

FROM LAUNCH PADS TO THE LAW

"I was inoculated with the excitement of the space race and wanted to get in on the action as an engineer," says Jeffrey Morris, who graduated from Newark College of Engineering in 1965 with a B.S. in electrical engineering. Today, Morris heads a large staff of attorneys as vice president and chief counsel, intellectual property at Siemens Corporation. He is responsible for all of Siemens' patent activity in the United States, a job that involves managing more than 7,000 current patent families and a stream of new patents generated by thousands of researchers.

In the 1960s, Morris did pursue his goal of being a rocket scientist. He was one of two NCE students selected for a special program, the White House Seminar Series, that took him to the Goddard Space Flight Center in Maryland. There Morris worked on rocket hardware for two summers. "I also met some of my heroes," he says. "I spoke with John Kennedy in the Oval Office. I met Hubert Humphrey and John Glenn."

Morris' career subsequently took a different direction. Although his father was an attorney, Morris had no interest in becoming a lawyer until he graduated from NCE and went on to employment as a patent examiner in the U.S. Patent and Trademark Office, specializing in radar and sonar. "I decided that a law degree, especially if I focused on patent law, would allow me to work in a much larger technical and social arena," he says.

The arena in which Morris now works is indeed large. Siemens is one of the world's most diverse technology companies, with some \$78 billion in global sales last year from fields that include medical equipment, communications, energy, industrial automation and transportation. In the United States, equipment from Siemens processes more than 70 percent of the mail, generates over a third of the nation's electric power and facilitates some 133 million healthcare information transactions each day. The company is the largest U.S. supplier of advanced medical diagnostic systems and more than 40 percent of the cars on the country's roads have components from Siemens.



While the patent activity inherent to this market presence involves great technical diversity, Morris does see an underlying theme in the evolution of technology over the past two decades. "The convergence of semiconductor, computing and telecom technologies has transformed entire enterprises, from medicine to manufacturing," he says. "There is more information-processing power in today's cell phones than in the computers used to guide the Apollo spacecraft to the moon. We can obtain and process medical diagnostic data in ways that would have been impossible just a few years ago. A factory can be efficiently managed from a thousands miles away."

What will the future bring? As a member of the board of directors of Siemens Corporate Research, Morris also works with a wide range of experts to anticipate technological and market trends. "The 9/11 attack on the World Trade Center threw us a curve," he says. "We're now more involved with developing innovative security technology than we thought we'd be. But that's the challenge, to be ready for the unexpected while planning as far ahead as possible."

"THE CONVERGENCE OF SEMICONDUCTOR, COMPUTING AND TELECOM TECHNOLOGIES HAS TRANSFORMED ENTIRE ENTERPRISES, FROM MEDICINE TO MANUFACTURING."