ILLINOIS INSTITUTE OF TECHNOLOGY

iitmagazine

SPRING 2006

weighing the ethics of nano

UNIVERSITY TECHNOLOGY PARK
IIT's new research park is changing the landscape of Chicago's South Side

SNAPSHOTS IIT's unique student-athletes show there's more to life than sports

JOHN T. RETTALIATA
Former IIT president revisits his legacy

UPDATE FROM THE president

Martin Jischke, president of Purdue University and a 1963 graduate of IIT, recently spoke to the Rotary Club of Chicago–Near South at a meeting on our campus. One of the things he said was that he felt very fortunate to have been the beneficiary of the vision and generosity of Philip Danforth Armour. Martin, who grew up in Chicago as the son of a grocer, said he felt that he was the kind of kid that Philip was trying to help when he contributed the money to found IIT in the late nineteenth century.

Martin's story of Philip Armour is a reminder of another person who left a great legacy—John Rettaliata. In this issue of the magazine, John reminisces about his days as president of IIT, including his relationship with Mies van der Rohe, the extensive construction of Main Campus, and his constant role as fundraiser. We are all beneficiaries of the vision and dedication that John brought to the university more than a half century ago.

In many respects, IIT is experiencing a similar transformation today with the addition of University Technology Park At IIT. Through partnerships with the city and state, we are beginning the first phase of a new research park—and we're helping transform our surrounding neighborhood in the process.

Some of the biggest advances on our campuses, however, tend to focus on issues that are somewhat smaller in nature. The work of Dimitri Gidaspow provides you with a big picture view on how nanotechnology is changing our world, while the efforts of IIT's Center on Nanotechnology and Society evaluate those issues from an ethical perspective.

The stories in this issue of *IIT Magazine* just scratch the surface of the kind of work that goes on at IIT each and every day. As we continue to plan for our future, I want to thank many of our alumni and friends who recently provided feedback on our Mission, Vision, and Values statement. Your comments and suggestions will continue to motivate us as we create the 2010 Plan that will shape the programs, services, and direction of the university for the coming five years and beyond.

Sincerely,

Lew Collens
President

iitmagazine

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MANAGING EDITOR
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CONTRIBUTING EDITORS
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Vince LaConte
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Melanie Nimrodi
Linda Packer
Beth Wittbrodt

ART DIRECTOR
Nancy Niequist Schoon

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SEND LETTERS TO

IIT Magazine
Office of Communications
and Marketing
3300 South Federal Street,
Suite 503
Chicago, IL 60616-3793

OR EMAIL iitmagazine@iit.edu.

SEND ALUMNI NEWS TO alumni@iit.edu.

Founded in 1890, Illinois Institute of Technology is a private Ph.D.-granting university that awards degrees in engineering, the sciences, mathematics, architecture, law, design, psychology, and business. IIT takes an interprofessional approach to research and teaching. By reaching across geographic boundaries, academic disciplines, and the professions, IIT prepares students for leadership roles in an increasingly complex global workplace while conducting a substantial program of applied and basic research with the goal of transforming lives and inventing the future.

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inthisissue

ILLINOIS INSTITUTE OF TECHNOLOGY

letters

writeback!

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Alumnus Remembers Professor's Impact

After reading your article, "Irwin Fieldhouse's Research Legacy" [summer 2005], I wanted to express my personal gratitude to Mr. Fieldhouse, who introduced me to a fascinating research program area–thermoelectric cooling/heating technology.

I joined IIT in August 1976 to pursue my Ph.D. in mechanical and aerospace engineering. In December of that year, my research advisor, Dr. Z. Lavan, contacted Mr. Fieldhouse and arranged a part-time job for me at IITRI. My assignment was to "evaluate the promise of thermoelectric (TE) technology for solar-assisted residential heating/cooling." For the first time, I had the opportunity to learn from him how this new and innovative technology worked and the unique benefits of this technology for specific applications. Fieldhouse, Lavan, and I published a paper for the American Power Conference in March 1977. I never thought, then, that I would spend my entire career developing many novel applications employing TE technology or that I would receive U.S. patents, recognition, and awards for those developments, including two R&D 100 Awards.

After graduating from IIT in 1980, I joined Midwest Research Institute (MRI) in Kansas City, Mo. At MRI, I was asked to initiate a whole new research program area, and I chose TE technology. Very quickly, MRI became a world leader in this research area. Federal agencies and private companies signed contracts with MRI to develop new TE products—nearly all of them on a sole-source basis and some with multimillion-dollar funding. A notable example of my research was the development of TE cooling units for NASA space shuttle astronauts who, even today, use the cooling units during the shuttle's launch and reentry.

I want to take this opportunity to think back on Irwin Fieldhouse and his share of contributions to my own personal success in my career.
—Bala Mathiprakasam (Ph.D. ME '80)

IIT Magazine Interactive Feedback: Fall 2005

In the 2005 fall issue article accompanying the story "IIT 2010: An Interview with President Lew Collens," IIT Magazine posed the question: What would you like to ask the president? Here's what a few of you said:

Q: Dear President Collens: I would like to thank you for the great work you've done to improve the quality at IIT. Will you very aggressively target improving IIT in the ranking to be in the Top 30 at least in engineering?

Best regards,
Ismail Al Ramahi (CE '80)

Q: As a law student, I'm excited to be part of a larger institution that in my mind will become as great as MIT or CalTech in the years ahead. But my question is, what does President Collens envision the professional programs (law, business, MPA, design) will be like in 2010? And what are some ways we can get involved to help IIT become greater than it already is?

Arlen Hodinh
(LAW, second-year)

Q: I am quite a new graduate student here. When I compare IIT with other engineering schools, I think that IIT must have a better rank. I want to know if the current ranking is valid, or is it not fair?

Mohammad Mehrmohammadi
(ECE master's degree candidate)

Kudos to the Magazine

I want to compliment you all on a fantastic production of the fall 2005 issue of *IIT Magazine*. Not only the content, but also the presentation was superb. Having spent most of my career in and around the graphic arts industry, I appreciate the print quality as well as the editorial content.

I entered IIT in 1942 but did not graduate until 1949, due to my three-year stint with the U.S. Army in World War II. The changes to the campus are mind-boggling.

Keep up the great work!
—Frederick L. Faulkner (IE '49)

Photos: Renée I.A. Mercuri

BEFORE: Construction underway last summer

IIT Alumnus Heads Wishnick Renovation

When asked about his experience with IIT since graduating in 1995 from the Master of Architecture program, Holabird & Root architect Greg Grunloh replies, "It feels like I never left." The statement is close to the mark: after having worked on The McCormick Tribune Campus Center and Commons building projects from 2000 through 2004, Grunloh is currently overseeing the renovation of Wishnick Hall.

The current phase of Wishnick renovations—primarily focused on bringing the building's mechanical systems up to contemporary standards—is nearly complete, but the process of updating one of Mies van der Rohe's landmark buildings to lead it into the twenty-first century has required some special innovation. "We had perforated metal ceiling tiles custom-made for the auditorium," says Grunloh. "They look virtually identical to the original tiles just outside in the lobby, but they also serve to conceal and provide access for the new mechanical systems without the need for visible access panels."

Grunloh's team used other inventive approaches throughout the renovation process, including a resourceful method of getting return air into the lobby for the mechanical system. "There were two big blowers by the front entry doors, which were authentic to the building but no longer functional," says Grunloh. "We took them down, gutted them, and connected return duct work to them, so not only did we maintain the blowers as historic features of Mies' building, but we also made them part of a functional system."

The next phase of the renovation plans involves replacing all of the building's windows, perhaps as early as this summer, by which point the building's new central air system will be up and running.

Grunloh says that managing three IIT projects has been a great experience. "More than ever, this place feels like home. And as an IIT graduate, it's pretty special to be able to say that I've worked on two Mies buildings."
For more information about the Wishnick renovations, visit www.mies.iit.edu.

AFTER: Finished undergraduate biomedical engineering labs

PSM Programs Prove a Great Success

A decade ago, IIT introduced what has proved to be one of its most successful graduate academic initiatives—the Professional Science Master's (PSM) programs. IIT currently offers PSM degrees in analytical chemistry, materials and chemical synthesis, health physics, and biology. One of approximately 45 universities nationwide to offer PSMs, IIT has a distinct program in that virtually all its courses are offered entirely online and attract students from throughout the country.

In spring 2006, more than 150 students were enrolled—almost triple the number enrolled just two years ago.

In addition to expanding students' knowledge of their professional fields, all of the PSM programs contain a professional component. This approach produces graduates who are not only scientifically literate but who also possess analytical and problem-solving skills essential for careers in technically demanding and scientifically sophisticated fields, including law, teaching, clinical laboratory practice, regulatory affairs, and the Armed Forces. Many prestigious Midwest companies support the programs, including Abbott Labs, Baxter, Eli Lilly, Sherwin-Williams, and Procter & Gamble.

The PSM programs have generated an overwhelmingly positive response from graduates, many of whom sought to expand their employment opportunities. Gabe Kirsch, a recent graduate with a master's degree in materials and chemical synthesis, completed the program while transferring to a new R&D department at Henkel Technologies. "The program broadened my exposure to legal and environmental aspects already existing in my job, as well as introduced me to useful technologies within it," says Kirsch. "After graduating, I feel much more confident approaching both the theoretical and the practical sides of an industrial chemistry career."

PSM programs enroll new students on a revolving basis throughout the year, including the summer term. *If you are interested in learning more, contact Elizabeth Friedman at 312.567.7973 or friedman@iit.edu.*

IIT Day Showcases Top Research Endeavors

Members of Congress, IIT alumni, and others were treated to a taste of IIT when they converged on February 7 at an IIT Day reception on Capitol Hill.

President Lew Collens, Vice President for External Affairs David Baker, and a team of IIT faculty showcased current research for the Illinois Congressional delegation and their staffs. Members Judy Biggert (IL-13) and Melissa Bean (IL-08) attended, along with 60 staff members from several other member offices, D.C. area alumni, and various federal agency representatives.

"The research programs we presented resonated well with the critical issues on the national agenda," says Vice Provost for Research Ali Cinar. Faculty researchers presented exhibits organized along five thematic areas: biomedical engineering and life sciences, energy and sustainability, security, national collaborative efforts, and activities to enhance STEM (science, technology, engineering, and mathematics) education. Specific topics included cancer prevention, neuroengineering, medical imaging, diabetes, drug manufacturing and delivery, renewable energy, batteries and fuel cells, hybrid vehicles, sustainable buildings, recycling, biosensors, sensor networks, power grid security, wireless communications, pharmaceutical technology, manufacturing innovation, integration of research and education, and food defense.

Congresswoman Judy Biggert [left] joins President Lew Collens during IIT Day.

First held in May 2004 and organized by faculty and administrators, IIT Day provides an opportunity for the university to profile various campus research initiatives that are of national relevance. "It was very encouraging to see our representatives and their staffs chatting with our faculty members and spending extended periods of time in front of displays," says Cinar. "We were able to communicate both the technical aspects of our research as well as how the approaches developed at IIT are unique."
www.grad.iit.edu/research

Historic Markers Outline Legendary IIT–Bronzeville Neighborhood

The neighborhood that now defines Main Campus is also part of a larger neighborhood called Bronzeville, at one time a thriving African-American community. From around 1915 to 1930, the heart of Bronzeville was State Street and 35th. From that intersection, stretching north and south along State Street and east along 35th were more than 100 African-American owned and operated businesses, including banks, insurance companies, hospitals, doctors' and dentists' offices, law firms, and many other establishments. This community existed side by side with Armour Institute, one of IIT's precursor institutions, whose original buildings were located along Federal Street, two blocks to the west.

At day's end, nightlife took over, and State Street became "The Stroll." Vaudeville theaters, movie houses with stage shows, music stores, record dealers and record makers, restaurants, cafes, clubs, and cabarets were the creative home for a virtual "who's who" of African-American actors, comedians, musicians, and singers.

To commemorate the large variety of venues that contributed significantly to the vitality of this area in the early part of the twentieth century, eight historic markers—with graphic depictions of the buildings (all but Main Building, the former site of Armour Institute, have been razed)—have been installed around campus.

"The idea for the commemorative markers came from the GAP Community Organization, the homeowner's group representing the community just to the east of IIT," says David Baker, IIT's vice president for external affairs. "IIT worked with a group of GAP members to identify important historic sites, develop descriptions, and locate photographs of the buildings. Taken together, the eight markers capture the history of both Armour Institute and the thriving commercial, residential, and entertainment zone that existed prior to World War II."

For information about tours, call 312.567.3700, 8 a.m.–11 p.m.

HISTORIC MARKER LOCATIONS

1 **Southside Settlement House,** *est. 1919,* 3201 South Wabash Avenue

2 **Vendome Theater,** *est. 1919,* 3145 South State Street

3 ***The Chicago Defender* newspaper,** *est. 1905,* 3159 South State Street and 3435 South Indiana Avenue

4 **Mecca Flats,** *est. 1891,* 3338–3360 South State Street

5 **Binga Bank,** *est. 1908,* and **Binga Arcade,** *est. 1921,* 3452 and 3458 South State Street

6 **Armour Institute,** *est. 1890,* Federal and 33rd streets

7 **Armour Mission,** *est. 1886,* Federal and 33rd streets

8 **Armour Flats,** *est. 1881,* Federal and 33rd streets

ARMOUR FLATS

Federal and 33rd streets
Est: 1881

To house employees of his meat-packing facility, Philip D. Armour Sr. constructed a series of apartments that filled the area bounded by 33rd Street, Armour Street (now Federal), 34th Street, and Dearborn Street.

The building included 194 apartments that Armour expected managers of his company to rent. He used the profits to meet the expenses of Armour Mission. Changing demographics saw a reduced occupancy of the apartments, and by the end of 1919, 131 apartments had been demolished. Of those remaining, Armour Institute acquired 63 for academic purposes, with 48 on the east side of Armour Avenue converted into a unit that later housed its Physics Building and Chapin Hall.

Photo: Melanie Nimroth

Up, Up, and Away *The inaugural student Pumpkin Launching Contest at Keating Field last fall attracted more than 200 students, as well as President Lew Collens, who watched and cheered as participants tested their home-built devices. Sponsored by the Biomedical Engineering Society, the event brought together students of different majors who worked on teams to construct a device that would launch a basketball-sized pumpkin at a target 75 feet away. Although the degree of success varied widely—from catapult to catapult and launch to launch—Collens congratulated the participants for their creativity, and many vowed to hone their catapulting skills for the 2006 competition. The winning team, the 2nd North Artillery Division, received a $200 cash prize.*

New Landscape Architecture Program Takes Root

Beginning fall 2006, IIT—envisioned as a "campus in the park"—will offer the only professional landscape architecture degree program in Chicago, the "city in a garden."

The new Master in Landscape Architecture program, supported by seed funding from the Richard H. Driehaus Foundation, will include courses on

- the history of landscape architecture and architecture
- the study of materials and infrastructure
- the ecological, botanical, and geological processes behind landscapes
- city and regional planning issues
- alternate modes of urban growth
- sustainability and energy-conscious design

Consistent with IIT's interprofessional approach, the new program will be closely aligned with the existing architecture program and will draw on several other IIT disciplines, including civil and environmental engineering and sociology. The program will also include alliances with related institutions, such as the Chicago Botanic Garden, which is developing a joint sponsorship for the degree's curriculum.

"The degree's coursework is framed to reintroduce the technique and art of landscape and gardens as forces for environmental and human progress," says College of Architecture Dean Donna Robertson. "Using Chicago as a laboratory of critical inquiry, students will learn how landscapes and gardens can offer an antidote to the stress-inducing character of urban life, while combating pollution and serving as climate modulators."

As one of the major initiatives included in the university's Strategic Operating Plan, the new program arises out of the recent renaissance of Chicago's landscapes, as exemplified by Millennium Park and the revitalization of IIT's Main Campus and the surrounding Bronzeville neighborhood. The program follows on the heels of a 2005 General Design Award of Honor presented by the American Society of Landscape Architects to landscape architect Peter Lindsay Schaudt for his work on IIT's Main Campus.
www.arch.iit.edu

Photo: Jason Smith

Winter Commencement *On December 17, 2005, 150 bachelor's degree and 600 master's degree and Ph.D. candidates graduated from IIT. The commencement speaker was M. Zia Hassan, dean emeritus and professor at Stuart Graduate School of Business, whose speech focused on the importance of character in the workplace. "You must have the courage of your convictions to succeed. Acting obsequious works only in the short run. In the long run, management rewards independent thought," he said. Among the graduates was Jennifer Tullman (CHE '05) [above, left], pictured with her sister and fellow alumna Danielle Tullman-Ercek (CHE '00). Both Tullman and Tullman-Ercek were Camras scholars at IIT.* To read Hassan's full speech, visit www.iit.edu and click on "Media Room," and then search "News Release Archives."

Stuart Graduate School of Business Receives $500,000 Grant to Collaborate with Mexico's Top Private University

IIT's Stuart Graduate School of Business is one of 46 universities chosen to participate in a $50 million, eight-year collaborative program between the U.S. government and Mexico's educational institutions, funded by the U.S. Agency for International Development's TIES (training, internship, exchange, and scholarship) Program. Stuart Graduate School of Business was awarded $500,000 in 2005 to strengthen its partnership with Tecnológico de Monterrey (Tec de Monterrey), Mexico's top private university. The "Innovative Training for Pollution Reduction and Efficient Energy Use" award will examine mutual development problems in both countries and work with strategic alliances to develop solutions.

"This grant provides momentum to our dual-degree program with Tec de Monterrey and brings considerable visibility for IIT to our government agencies as well as higher education in Mexico," says George Nassos, director of the Environmental Management Program at Stuart. "We are very pleased to be in a situation to assist Mexico in improving its environmental infrastructure."

The relationship between Stuart and Tec de Monterrey was developed in January 2003. Since then, numerous academic exchange programs have been created that allow students from both universities to study abroad, including an option to receive dual degrees from each institution.
www.usaid.gov

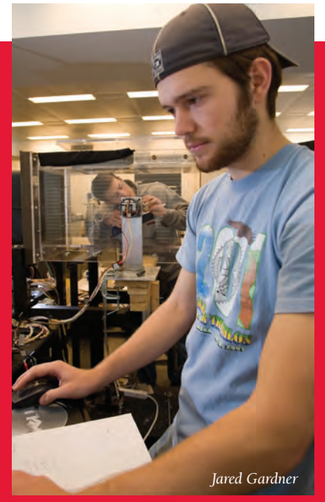
QUOTABLE

"At this latitude [in Chicago], 7 to 9 percent of the population has changes that significantly impact their everyday functioning."

—Michael Young, associate professor of psychology, in the Milwaukee Journal Sentinel, *commenting on the occurrence of seasonal affective disorder*

On the 10th Anniversary of Camras, Student Exemplifies Program's Excellence

Photo: Doug Plummer



Jared Gardner

In 1996, the first Camras scholars entered IIT after the school received a $120 million gift from the Pritzker and Galvin families. The scholarship was named for Marvin Camras, an IIT professor and alumnus (EE '40, M.S. '42), who invented magnetic recording methods. Camras was recognized for his work when he was inducted into the Inventors Hall of Fame in 1985 and, later, awarded the National Medal of Technology by President George H. W. Bush in 1990.

Camras scholarships, ranging from partial to full-tuition, have helped hundreds of students receive an IIT education. "The quality of students entering IIT is definitely enhanced through the Camras program—they tend to have higher GPAs and test scores," says Camras Liaison Mike Rice. "The program was meant to attract the best and the brightest to IIT, and it continues to do so."

Jared Gardner (MMAE '06), a soft-spoken Camras scholar with a ready smile, is quick to explain that coming to Chicago from Alaska five years ago for Camras Interview Weekend was not the first time he'd been to a big city. It was, however, his first time in Chicago. He fell in love with the city and IIT, and says that after being awarded a Camras scholarship his decision to attend IIT was a "no-brainer."

Marvin Camras

Photo: Courtesy IIT Archives

Gardner explains, "One of the real advantages of being at a smaller school is that it's easy to get to know the faculty, and you're able to get involved in research." He is currently working on a research project to measure pressure distribution across the main circumference of a baseball [see above] at different rotational and flow speeds. After putting the baseball cover back on the ball, he and his research partners measure how pressure distribution changes with different surface characteristics to see how stagnation shifts at different speeds.

Active on campus—he is on the cross-country and lacrosse teams—Gardner has enhanced his leadership skills through his Camras program involvement. He's on the Camras Advisory Board, is a member of a volunteer organization, Chicago Cares, and has led a group of fellow students to rebuild homes in Florida with Habitat for Humanity. Having recently returned to campus from an engineering exchange program in Spain, Gardner has also gained valuable cross-cultural experience.

"Jared is one of those students you can always count on, and he does a lot of work for the Camras program. He knows what needs to be done, and he just does it," says Rice, Gardner's supervisor through the work-study program.

Gardner plans to take the LSAT this year, and his aspiration is to study international law after graduating from IIT next winter.

www.iit.edu/admission/undergrad/camras.html

IIT Students Awarded Prestigious ARCS Scholarships

Two IIT undergraduates have been awarded Achievement Rewards for College Scientists (ARCS) scholarships for the 2005–06 academic year. The ARCS Foundation provides scholarships to the best U.S. students in medicine, engineering, and natural sciences. Since its founding in 1977, the Chicago chapter has awarded more than $1 million to students at just four area universities: Loyola University, Northwestern University, University of Chicago, and IIT. The universities are chosen based on strict criteria, including the strength of degree programs, faculty quality, test scores, and research grants. Students must be recommended by a dean or department chair before submitting an application and must maintain at least a 3.5 GPA.

Shravani Pasupneti, a junior in biomedical engineering, is IIT's newest ARCS recipient. She began conducting scientific research in high school, participating in the Special Infectious Disease Laboratory at Children's Memorial Hospital. While at IIT, Pasupneti has been involved in developing a rapid metabolic test to determine the functionality of islet cells prior to clinical transplantation. This research is critical to one of the most promising treatments for patients with Type 1 diabetes.

Pasupneti says, "The ARCS scholarship has allowed me to pursue a number of academic endeavors that I might not otherwise have been able to engage in during the school year, the most rewarding of which has been my research project." Her research mentor considers Pasupneti among the Top 1 percent of her peers.

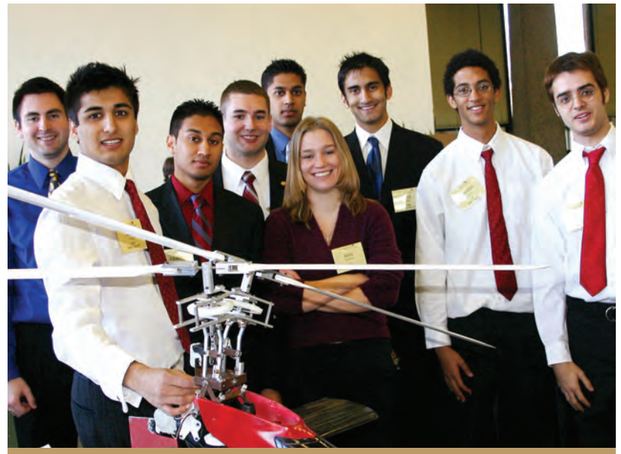
Grace Lin

Grace Lin, a senior biomedical engineering major, is completing her third year as the ARCS Takeda Pharmaceuticals North America Scholar. A member of the Honors Program in Engineering and Medicine, Lin is conducting retinal cell research with the goal of identifying new therapies to treat diseases related to retinal cells, including diabetes and central nervous system disorders. She plans to attend medical school next year.

Looking back, Lin says, "My ARCS scholarship award has been very important to me and my undergraduate career. I am grateful for all the support the foundation has provided me. Someday, I hope to repay the ARCS Foundation for their help."

IPRO DAY

Photo: Melanie Nimtsch



Up, Up, and Away, Part II *The Interprofessional Projects (IPRO) program celebrated a 10-year milestone during this academic year. When IIT's National Commission agreed in 1995 to provide a strong focus on interprofessional learning experiences for undergraduates, the goal was to prepare students better to function as problem solvers in the real world. The resulting IPRO program teaches students how to build a project team and capitalize on the expertise of each partner to achieve forward-looking solutions to real-world challenges. The successes over the past decade have been as impressive as they have been rewarding—from the creation of a computer game to teach students about using credit wisely to the design of a low-cost water purification system for developing countries.* Above, several students from IPRO 317 display their working prototype of a VTOL (vertical take-off and landing) aircraft at IPRO Day in December. *http://ipro.iit.edu.*

QUOTABLE

"I was thrilled. He said the 'A' word."
—Associate Professor Said Al-Hallaj, coordinator of IIT's Renewable Energy Program, in the Daily Herald, *on President Bush's comment in the State of the Union address that Americans are "addicted to oil"*

"There is no right to anonymity in this country."
—Harold Krent, dean of Chicago-Kent College of Law, in the Bucks County Courier Times *[Pa.], cautioning that few laws prevent or limit private investigators from legally obtaining personal information about others on behalf of those who may harm them*

Hidden Dining Gem on Main Campus

Tucked away behind the Founder's Wall in the Welcome Center at The McCormick Tribune Campus Center (MTCC), University Club—or U-Club—is a full-service restaurant that remains a best-kept secret of discriminating diners at IIT. If you blink, you may miss the entrance. Once inside, you'll find a relaxing respite from the bustling activity on campus—and a menu that rivals the quality and selection at any restaurant in the neighborhood.

U-Club features gourmet sandwiches, soups, pastas, salads, and a creative entrée selection that includes daily specials—everything from empanadas and Asian-style salmon teriyaki to coconut curry and steak—as well as wine service. "U-Club prepares each dish with special care," says Head Chef Antonio Castillo. "Our menu is representative of the diversity of IIT's campus, with a variety of items to satisfy everyone."

The dessert selection—whether enjoyed after a meal or as a special treat—is equally enticing. A signature item is what Castillo calls "the chocolate storm": a generous brownie surrounded by apple crisps, topped with a tower of praline ice cream, caramel, and chocolate syrup.

University Club also provides an elegant venue for hosting special events. The restaurant has three private meeting rooms, and its decor benefits from the award-winning designs of the MTCC, including contemporary furnishings and a fireplace. Menus can be customized to meet the scope of a particular event, whether an after-hours conference or workday meeting. Special pricing is available for faculty, staff, alumni, and some giving society members.

Regular University Club hours are Monday through Friday, 11:30 a.m.–2 p.m. For more information about U-Club, including menus and venue rental, phone 312.567.3076 or visit www.ccc.iit.edu.

Photo: J. B. Spector

U-Club Head Chef Antonio Castillo

Photo: J. B. Spector

FAQ facultyFAQ

A Voice for IIT

Greg Pulliam, Professor of Professional and Technical Communication, Director of English as a Second Language, Associate Chair of the Department of Humanities, and Faculty Advisor to Tech News

With responsibilities throughout the spectrum of IIT's communications programs, Greg Pulliam has been helping develop writers and communicators at IIT since 1993. The recipient of the 2004 Excellence in Teaching Award, Pulliam worked alongside Glenn Broadhead, director of the technical communication program, to lead the effort to create a new major—Journalism of Technology, Science, and Business—which began in the 2005–06 academic year.

What prompted you to develop this new major?

For a number of years, people have been talking about how students graduating from journalism schools don't know enough about the subjects they're writing about. By supporting a niche market, we're teaching journalists who have the skills to write about technology. Our professional and technical communication graduates were already getting jobs in the journalism field—for example, at the *Chicago Sun-Times* and as a spokesperson for the City of Chicago—so we knew we could shape a program to teach journalism on a broader basis. I don't know of another program like this in the country.

What will the coursework entail?

We have added new core courses that all journalism schools offer and paired those with intensive coursework in math, science, and business. IIT is a perfect laboratory for these students.

Your media experience has been widespread. Could you describe your work outside the classroom?

At 16, I started working in radio and did that off and on until I moved to Chicago in 1993, in total about 12 years. Then while I was in graduate school, I was an emcee and manager of a comedy club in Columbia, Mo. I also spent one year at both a PBS TV affiliate and an independent commercial TV station in Memphis and played on the road with a cover band for one-and-a-half years, six nights a week.

And now you are called into service at IIT's commencement ceremonies. How did you become the name reader?

My colleague, Jack Snapper, drafted me about six or seven years ago. I'm trained in linguistics, so I'm good with the phonetic alphabet. I get the students' name cards a couple weeks before graduation so I can practice; I separate the names into segments so I can see only two or three syllables at a time. Every time before I announce them I am a bundle of nerves, just like when I was in radio and TV, but I just channel those nerves into energy.

www.iit.edu/departments/humanities/undergrad/jtsb.html

Chicago-Kent Professor Earns National Honor

Joan E. Steinman, Chicago-Kent College of Law Distinguished Professor, was the recipient of the American Academy of Appellate Lawyers' 2005 Howard B. Eisenberg Prize, which celebrates the publication of high-quality articles in the field of appellate practice and procedure. Steinman is the second recipient of the prize, which originated in 2003–04.

Steinman received the prize for her article, "Irregulars: The Appellate Rights of Persons Who Are Not Full-Fledged Parties," published in the winter 2005 *Georgia Law Review.*

"The award helps raise the esteem in which Chicago-Kent and IIT generally are held by other legal scholars, lawyers, parties in the court system, students, prospective faculty members, prospective students, and the public at large," says Steinman.

A member of the Chicago-Kent faculty since 1977, Steinman teaches courses in civil procedure, complex litigation, and appellate courts. She has authored several articles on aspects of appellate jurisdiction, the removal of cases from state to federal court, supplemental jurisdiction, class actions and case consolidations, and other procedural issues. Steinman has ongoing responsibility with the treatise *Federal Practice and Procedure* and is a co-author of the forthcoming course book, *Appellate Courts: Structures, Functions, Processes, and Personnel* (2006).

www.kentlaw.edu

Photo: Chris Kirzuler

Professor Keith McKee [foreground] accepts a gift in honor of his induction into IIT's Sawyier Society. Also pictured are [left to right] Terry Straus, Robert A. Pritzker, and Lew Collens.

IIT Philanthropists Honored at Sawyier Society Induction

This winter, 33 IIT employees were inducted as inaugural members of the Sawyier Society, which recognizes current, former, and retired IIT faculty and staff who have contributed $25,000 or more to the university. The Sawyier Society was established in memory of the late Fay Sawyier, professor emeritus of philosophy, who gave IIT $2 million to help perpetuate the university's philosophy program.

President Lew Collens, Chairman of the Board of Trustees Robert A. Pritzker (IE '46), Provost Allan Myerson, and Sawyier's daughter, Terry Straus, were special guests at the event, which was hosted by Ralph Barnett, professor of mechanical engineering, and Dolores Barnett.

"Faculty and staff in the IIT community care deeply about the university, and the Sawyier Society is a heartfelt 'thank you' to those who contribute not only their time and talent, but also financial resources," says Betsy Hughes, vice president for institutional advancement. "These wonderful donors and friends expand their personal and professional influence into countless other important areas at IIT."

Inaugural members honored: Said Al-Hallaj, Robert F. Anderson, Hamid Arastoopour, Robert Arzbaecher, Ralph Barnett, Charles Bauer, Lew Collens, Richard Conviser, George Danforth, Dirk Denison, Rollin Dix, John Dygdon, Robert Filler, Jay Fisher, Sidney Guralnick, M. Zia Hassan, Serope Kalpakjian, Harold Krent, Chow Lam, Henry Linden, Nancy Marder, Keith McKee, Timothy Morrison, Allan Myerson, Hassan Nagib, Henry Perritt, Dennis Roberson, J. Robert Selman, Mohammad Shahidehpour, Mary Anne Smith, Michael Spak, Candace Wark, and Darsh Wasan.

Susan Feinberg, Lewis Department of Humanities

Susan Feinberg will be honored with the annual Jay R. Gould Award for Excellence in Teaching Technical Communication. The award, presented in May 2006 by the Society for Technical Communication—an 18,000-member international organization—recognizes sustained excellence in post-secondary education and mentorship in the field. Feinberg is the director of IIT's Usability Testing and Evaluation Center, which assesses and evaluates various products and systems, thereby leading to improved design and usability.

www.utec.iit.edu

Ophir Frieder, Department of Computer Science

This January, Ophir Frieder was among 34 Association for Computing Machinery (ACM) members named as fellows of ACM. Frieder was honored for his work on search systems for distributed data. He is director of IIT's Information Retrieval Laboratory and is researching innovative methods in data mining. ACM is an 80,000-member organization of information technology professionals. Other 2006 recipients include representatives from industry giants such as Intel and AT&T Labs as well as faculty from Stanford University, Georgia Tech, and Carnegie Mellon, among other top universities.

www.ir.iit.edu

Vincent Turitto, Department of Biomedical Engineering

Chair of the BME department and Director of the Pritzker Institute of Biomedical Science and Engineering, Vincent Turitto was named to the inaugural class of fellows of the Biomedical Engineering Society (BMES) last September. Turitto was honored for his work in hemodynamics. Formed in 1968, BMES recognizes its fellows for demonstrable achievements in their field.

www.iit.edu/~biomed

Darsh Wasan, Department of Chemical and Environmental Engineering

Last December, Darsh Wasan, vice president for international affairs and Motorola Chair Professor of Chemical Engineering, received an honorary professorship from Beijing Institute of Technology (BIT), one of China's top universities. BIT's chancellor presented the award at a special luncheon at IIT. Wasan has been a member of IIT's faculty since 1964.

www.iit.edu/departments/oia/index.html

facultyhonors&awards

Pritzker Institute Expands Reach Through New Centers and Facilities

In 2005, two new research centers joined the Medical Imaging Research Center (MIRC) under the umbrella of IIT's Pritzker Institute of Biomedical Science and Engineering.

Formed last spring, the Engineering Center for Diabetes Research and Education (ECDRE) is the first engineering center in the United States dedicated to the treatment and cure of diabetes and arrives at a particularly important time, with diagnoses of diabetes reaching an all-time high.

Under the leadership of Director Ali Cinar and Co-director Emmanuel Opara, ECDRE includes IIT faculty members from the biomedical, chemical and environmental, and mechanical, materials, and aerospace engineering departments. Through partnerships with faculty, medical investigators, and clinicians at the University of Chicago and Argonne National Laboratory, ECDRE will focus on the development of new knowledge, techniques, and tools to improve the technologies and procedures for treating patients with Type 1 and Type 2 diabetes, as well as the development of educational and training tools for patients suffering from diabetes and its complications. ECDRE recently received a National Science Foundation grant for undergraduate summer research focused on science and engineering approaches to diabetes.

The Center for Integrative Neuroscience and Neuroengineering Research (CINNR), inaugurated last October, was created to nurture research in systems and behavioral neuroscience at the University of Chicago and in neural engineering at IIT. Led by Philip Ulinski, director, and Vincent Turitto, co-director, the CINNR extends its work from basic science and clinical efforts and stresses an interdisciplinary approach.

"The interaction of engineers from IIT with clinical and basic scientists at the University of Chicago will lead to the better treatment and eventual cure of neurological diseases," says Turitto, who is also chair of the Department of Biomedical Engineering and director of the Pritzker Institute.

Current CINNR research focuses on understanding the neural code, creating brain-machine and tissue-device interfaces such as prosthetic vision, diagnosing and treating epilepsy, developing neuroimaging techniques to understand cognitive behavior, and applying engineering and biomolecular approaches to better understand normal and diseased states. CINNR members include faculty and staff from numerous fields at IIT and the University of Chicago in addition to affiliate members from Argonne Labs.

Neuroengineering faculty members now occupy new laboratory space in the Engineering Research Building (ERB), a facility shared with bioengineering faculty as well as researchers working in the new Incubator at University Technology Park At IIT. This fall, MIRC faculty plan to move into the ERB.

"We're in the process of expanding the role of the institute across the campus," says Turitto. "I want to build upon the prescient vision that Bob Pritzker had in making his original gift to IIT in the biomedical area, so that the institute will become a premier environment for the better understanding of disease processes and the advancement of human health through science and engineering approaches."

The Pritzker Institute was founded in 1982 through an endowment from IIT's Chairman of the Board of Trustees Robert A. Pritzker. The institute is currently linked with a number of engineering departments on campus, the biomedical engineering department in particular.
www.pritzker.iit.edu

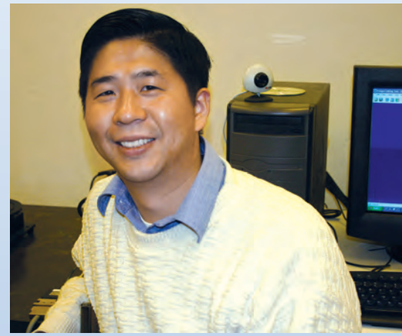
researchspotlight

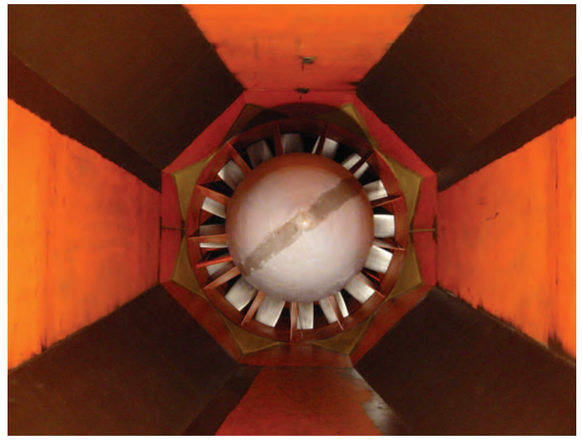
Xiaoping Qian Receives NSF Grant to Develop 3D Computer Modeling System

Shortly after receiving GE's New Innovator award in 2004, Xiaoping Qian joined the ranks of IIT as an assistant professor of mechanical, materials, and aerospace engineering. His work at IIT has focused on computer-aided design and manufacturing and research on a process called "reverse engineering."
He takes an object, scans it, and comes up with a computer-aided design of the object. Currently, manufacturers typically cannot make an exact prototype of a part made by designers, but with reverse engineering, engineers can analyze products more accurately and more reliably before they go to full-scale production, thereby reducing errors and costs.

Although systems with these capabilities do exist, they have a number of limitations. For example, some equipment uses mechanical probes to scan the surface of larger objects, but the process is very slow. Others scan using light. However, surface and light conditions can affect the accuracy of readings. Qian hopes to create technology that integrates the capabilities of each. The applications of his findings will impact manufacturing industries, including aviation, automotive, and consumer products.

In 2005, in recognition for his work, Qian received an internal award on "Direct Fabrication of Sculptured 3D Microstructures by X-ray Milling" from IIT's Educational and Research Initiative Fund, which provides funding to tenure and tenure-track faculty with high-risk or innovative ideas that are expected to receive outside funding. Qian then won a $246,500 National Science Foundation grant for his project. In collaboration with researchers from University of Wisconsin, who were also awarded $452,000 for contributions to this project, Qian will begin work on these 3D computer-modeling systems in May 2006.





The center maintains several wind tunnels and water channels, including the National Diagnostic Facility (NDF), a large wind tunnel with very high quality flow. [Left, the fan that powers the NDF wind tunnel]

Fluid Dynamics Research Center Celebrates 20 Years

The Fluid Dynamics Research Center (FDRC) at IIT was established in 1985 to continue the tradition of innovative research in fluid dynamics begun in the 1960s by professors Mark Morkovin and Andrew Fejer. Selected by the Air Force Office of Scientific Research in 1986 as one of three National Centers of Excellence, the center has gained international recognition due to researchers' use of advanced experimental techniques in areas such as flow control, fluid-structure interaction, turbulence, stability theory, and aeroacoustics. The research facilities are equipped with state-of-the-art wind tunnels, an axial flow compressor for turbomachinery research, and several particle image velocimeter systems.

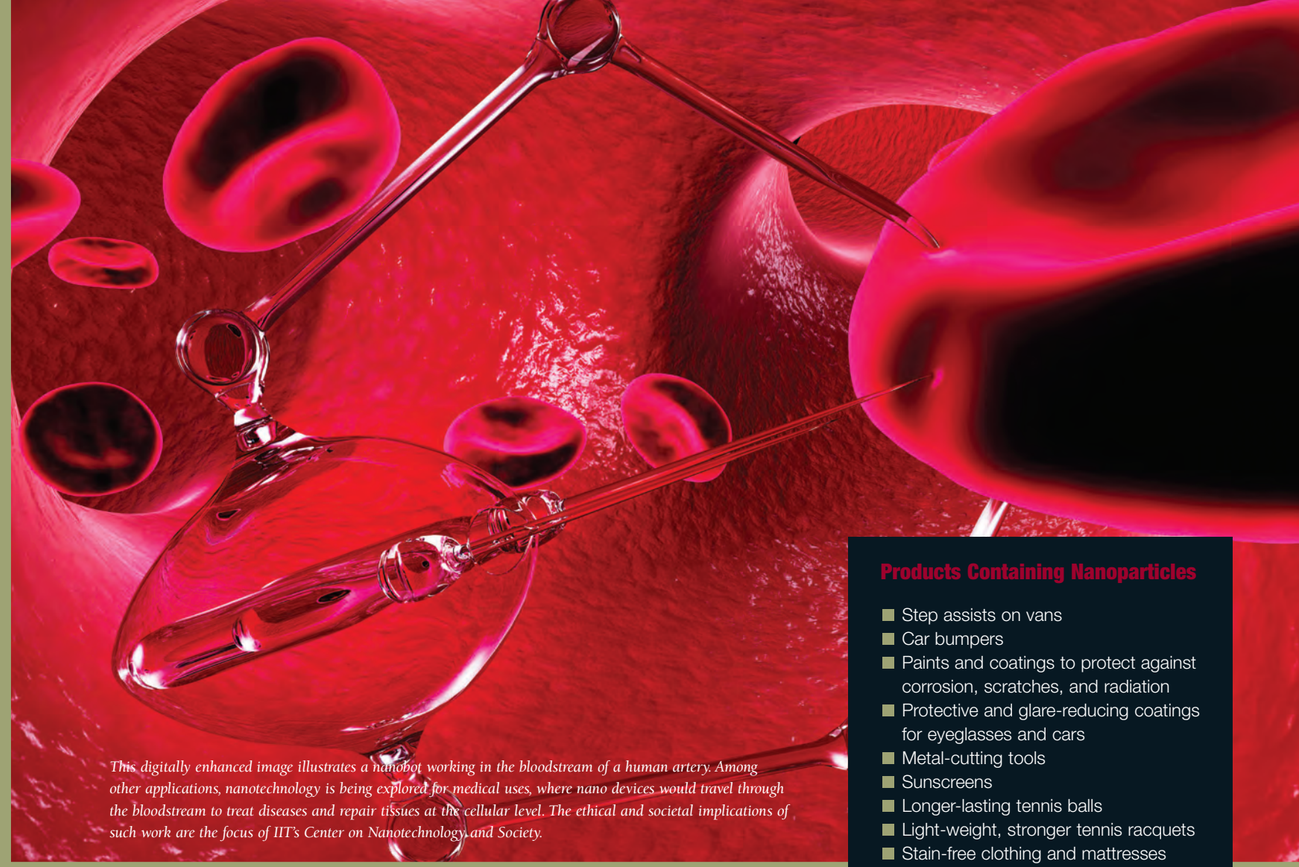
In recent years, the center has established expertise in computational fluid dynamics to complement its strengths in experimental research, and has partnered increasingly with industry—in particular, with Honeywell and Boeing—to augment its traditional base of funding through Department of Defense agencies. FDRC Director David Williams believes that this partnership with industry has contributed to the steady increase in enrollment in IIT's aerospace engineering program over the past nine years. "Our students benefit from direct exposure to industry even at the undergraduate level," says Williams. He notes that this exposure often results in career connections, as it did for two recent IIT graduates hired by Honeywell.

As the center passes the 20-year mark, Williams anticipates that the center's flow control activities will continue to expand as the interface between control theory and fluid dynamics opens new paths in the field.
http://fdrc.iit.edu

matter of scale

Much like genetics, nanotechnology poses difficult questions that extend beyond the laboratory and into our daily lives. The first academic organization in the United States leading the nano ethics debate, IIT's new Center on Nanotechnology and Society is an interdisciplinary collective of faculty, researchers, and thinkers who are weighing the implications of this young but promising technology.

Story: Linda Packer Photos: J. B. Spector



This digitally enhanced image illustrates a nanobot working in the bloodstream of a human artery. Among other applications, nanotechnology is being explored for medical uses, where nano devices would travel through the bloodstream to treat diseases and repair tissues at the cellular level. The ethical and societal implications of such work are the focus of IIT's Center on Nanotechnology and Society.

Products Containing Nanoparticles

- Step assists on vans
- Car bumpers
- Paints and coatings to protect against corrosion, scratches, and radiation
- Protective and glare-reducing coatings for eyeglasses and cars
- Metal-cutting tools
- Sunscreens
- Longer-lasting tennis balls
- Light-weight, stronger tennis racquets
- Stain-free clothing and mattresses
- Dental-bonding agents
- Burn and wound dressings
- Ink
- Catalytic converters

Source: National Nanotechnology Initiative

If researchers have their way, someday we will be able to take an elevator to a space station, marking the end of rockets, or detect cells that are in danger of deforming and stop the process before it begins.

What would make it all possible is nano, which is finding its way, increasingly, into our lives. Nanotechnology is the manipulation and manufacturing of materials at the molecular or atomic level. A nanometer—"nanos" in Greek means "dwarf"—is as small as it gets: one billionth of a meter. Eighty thousand nanos equal the width of a human hair. One hundred thousand are the depth of this sheet of paper.

Some have hailed nanotechnology as the next Industrial Revolution. And while it has already been instrumental in developing dozens of products as diverse as dental-bonding agents and car bumpers [see sidebar, above right]—and holds the promise of giving us clean energy, better disease diagnosis and treatment, improved power transmission, and products that are lighter and stronger—there is more to address than engineering and scientific challenges. Nanotechnology brings with it a host of ethical and societal implications, making the subject one of today's most controversial interdisciplinary topics.

M. Ellen Mitchell, director of IIT's Institute of Psychology, says attention to the new technology's scientific promise hasn't been accompanied by substantive discussion about personal, social, economic, and legal impacts. Individual issues, she says, merge into societal issues; health issues mingle with consumer concerns, and these areas become inextricably intertwined.

The discussions surrounding nano are similar to ones that stemmed from the Human Genome Project, the first large-scale scientific initiative to address ethical, legal, and social implications arising from the potential manipulation of genes. But beyond the ethical considerations are very real physiological ones. Certain substances that are safe in larger quantities assume toxic characteristics at the nano level. There is concern that, because they are so small, nanoparticles can move through the body at will, evading barriers that stop larger particles. Comparisons are being made with asbestos, at one time considered a "miracle mineral" until it was discovered that asbestos posed a health risk.

Taking a cue from the past—including the doomed efforts to bring genetically modified food into Europe, which raised public anxiety about safety issues and the "futuristic flavor of technology"—experts have realized the importance of engaging professionals and the public much earlier in the process.

Catalyzing discussions about the implications of nanotechnology is the work of Nigel M. de S. Cameron, associate dean and research professor of bioethics at Chicago-Kent College of Law. Cameron is director of Chicago-Kent's Center on Nanotechnology and Society (Nano & Society), created in 2005 with a $500,000 Congressional earmark. It speaks to the importance of this burgeoning, but still largely untested, field.

"The ethical implications are huge," Cameron says. "What does it mean for us, for people, for those who value our common humanity, who want medicine to cure disease and restore function, though not at the cost of commodifying our bodies and brains? What does this mean for those who are aware of the final technological paradox, that the more power we attain to determine ourselves and our children, the more we become creatures of our own design?"

"And, of course, while we revel in every new power we gain 'over nature,' technologies in fact give some people power over other people, with 'nature' as an instrument."

Nano & Society was created as a subset of the Institute on Biotechnology and the Human Future (IBHF), a project initiated by Cameron and Chicago-Kent Distinguished Professor of Law Lori Andrews in 2004 to assess the societal and scientific benefits and risks of new developments in biotechnology.

In its efforts to advance discussion, Nano & Society promotes two key initiatives and national events, such as the recent Washington, D.C., conference "NanoWorld: Toward a Policy for the Human Future." One initiative is the Chicago Nano Forum, a formal event that is webcast and open to the public. The other is the Nano Colloquium, a more informal biannual IIT roundtable.

Members of IIT's Nano & Society, Professor Vivian Weil [left] and Associate Director/Legal Fellow Michele Mekel are participants in the growing nano ethics debate.

The thread running through both initiatives is ethics, which makes the IIT approach unique. There are fewer than 100 American universities paying dedicated attention to nanotechnology and none of the others, according to Cameron, is focused on ethics. Ahead of the National Science Foundation's (NSF) own key project, "IIT created the first university-based center on nano and society," he says. "We are on the forefront of the ethics debates."

Professor Vivian Weil focuses on nothing *but* ethics.

"As of yet, we know very little about toxic properties of nanotechnology products," she says. "Sunscreens, for instance—it's the nano compounds that block the sun. But what do these nano compounds do to us? They have not been well tested as far as we know." Are sunscreen nano compounds absorbed by the skin? What are the short- and long-term effects? What effect do discarded bottles and tubes have on disposal sites? Government reports are unlikely, Weil says, since sunscreens are classified as cosmetics and therefore don't fall under the Food and Drug Administration (FDA) jurisdiction.

Another example of an ethical issue is the impact on the workforce. Radically new technologies are disruptive. New manufacturing processes mean that new workers with new skills enter the workforce and formerly valuable workers are no longer needed. Weil says it is essential to look ahead in order to prevent, mitigate, or compensate for harms to current workers, and that discussions should consider which workers get the benefits and which workers bear the burdens of disruptive changes so that benefits and burdens are not unfairly distributed.

Weil, who was recently named to the advisory board of The Nanoethics Group, a non-partisan independent research organization, is currently working with a grant from the NSF to establish NanoEthicsBank. The database will consist of codes of ethics, company policies, precautionary principles, and applicable articles as well as reports on topics such as toxicity. The online database will be available to researchers and the general public. Weil hopes to have something online by September.

"While we revel in every new power we gain 'over nature,' technologies in fact give some people power over other people, with 'nature' as an instrument."

— Nigel M. de S. Cameron

Meanwhile, the legal issues of the new technology are also being discussed. Professor Andrews has been awarded a $100,000 NSF grant to study several aspects of nano legal issues—most specifically, the issue of patents and trademarks. In the case of nanotechnology, the FDA has said if a product is simply a smaller version of something that already exists, it doesn't require testing and is therefore not novel. But at nano scale, a product may exhibit unique or different properties, allowing the U.S. Patent and Trademark Office to come up with a different conclusion.

As education and debate about the ethical, social, and legal implications of this new technology continue, investigators are working to bring the promise of nano to light. IIT researchers, including those at Armour College of Engineering and the College of Science and Letters, are exploring nano's scientific applications.

"In order to have a full-fledged nanotechnology program, a close collaboration between Armour College and CSL is essential," explains Armour College Dean Hamid Arastoopour, who adds that, ultimately, development of the new materials must be a partnership between science and engineering. "Dimitri Gidaspow and I are working with the New Jersey Institute of Technology with a grant from the NSF to apply engineering principles at the level of nano scale. We're trying to understand and come up with governing equations and numerical simulation for flow of nanoparticles."

Arastoopour believes that debate and research must go hand in hand. "On one hand," he says, "science and engineering should join in progress, but on the other hand, what is equally important are the social and legal impacts. We may advance science, but we need society to appreciate and understand the challenges involved in nanotechnology and its impacts on society."

Such is the viewpoint of Chemistry Professor Ishaque Khan, who adds, "The heart and soul of this scientific revolution is nanoscale science. As with anything, ethics has to be considered."

Nigel M. de S. Cameron, director of the Center on Nanotechnology and Society, the first university-based center devoted to the study of the ethics of nano

Khan is leading an active research program focused on the design and synthesis of nanostructured materials, in particular, nanostructured catalytic systems for detection and removal of toxic gases, environmental decontamination, and targeted drug delivery. Since the 1990s, he has given presentations on his research and has been invited to speak at some 50 symposia, conferences, and research universities worldwide. He has also spoken several times at Argonne National Laboratory, with whom he has been collaborating on environmental decontamination and cleanup from automobile and industrial exhaust. In addition to receiving grants from the NSF and the Petroleum Research Fund of the American Chemical Society, he has received funding from Argonne Labs to research the development of materials for the storage and transport of hydrogen, an imperative if we are to look at hydrogen as the future of energy.

Last December, Khan organized the symposium "Transition Metal Oxide-Based Advanced Materials in the Context of Materials and Nanotechnology" for the International Chemical Congress of Pacific Basin Societies. His work has led to his participation on the NSF's nanoscience and engineering panels, roles that include the evaluation of grant requests and advising the NSF on funding initiatives.

The efforts of IIT's researchers, as well as the opportunity for debate, depend on grants. And there is a great deal of competition for every dollar.

"I heard a professor of nano at Oxford say 'nanotechnology is from a Greek word meaning grant,'" says Cameron. His efforts have resulted in several grants from federal funds—$890,000 in 2004–05, a $500,000 grant that helped established Nano & Society in 2005–06, and another promised $500,000 for 2006–07. This most recent grant will be split between Nano & Society and IBHF.

As nanotechnology research advances and the Center on Nanotechnology and Society works to further the nano ethics debate in national and international political and social arenas, Cameron says the center's agenda must remain flexible, as legislatures and leaders continue to wrestle with nano's implications.

"We are hoping for a dual win: technology that is safe and enhances a human future and policies that governments will go for," he says. He just returned from Europe, where he was the only American invited to advise the European Commission's expert group on new technologies. "I think people are listening," says Cameron. "Nano & Society has taken the lead in the great national conversation that will shape our society for the next generation, and we've already begun to make a difference." ■

www.nano-and-society.org
www.thehumanfuture.org
www.nano.gov

IIT Magazine Interactive

Who is responsible for regulating nanotechnology and sharing the implications of it with the public? Visit the interactive portion of *IIT Magazine* online at www.iit.edu/magazine, and send in your thoughts. You can also return your reply in the enclosed reply envelope. Be sure to include your name with your message.

Nano & Society: Connecting the Disciplines

The core membership of the Center on Nanotechnology and Society consists of experts both within and outside of IIT. IIT participants include

- **Nigel M. de S. Cameron**, director of the center and president of the Institute on Biotechnology and the Human Future
- **Ruthanna Gordon**, assistant professor, Institute of Psychology
- **Michele Mekel**, associate director and legal fellow of the center, and executive director and legal fellow of the Institute on Biotechnology and the Human Future
- **M. Ellen Mitchell**, senior fellow of the center and director of the Institute of Psychology
- **Jay Schieber**, professor of chemical engineering and director of the Center of Excellence in Polymer Science and Engineering
- **Ullica Segerstrale**, senior fellow of the center, professor of sociology, and chair of the Department of Social Sciences
- **Carlo Segre**, associate dean in the Graduate College and professor of physics
- **Vivian Weil**, director, Center for the Study of Ethics in the Professions
- **John Zasadzinski**, professor and chair of the Department of Biological, Chemical, and Physical Sciences

Moving Atoms: Then and Now

If you've ever tried to build a toothpick sculpture wearing thick winter mittens, you know how hopeless it is. It's been said that's the way researchers have been moving atoms—creating clumps of toothpicks with no precision. Nanotechnology will let scientists remove the mittens, enabling them to put together building blocks to create such things as a device that could travel through capillaries to repair living cells. It will allow all the information of every library in the world to be stored on a device the size of a credit card.

In 1992, students at the Institute of Design developed an entry for an international competition on the future of plastics. Called "Nanoplastics: A Home System," it demonstrated how nanoplastics will make use of solar and other forms of energy, including sound and motion, to cause a revolution in home design. *Details of the students' award-winning Home of the Future can be found at www.id.iit.edu/profile/gallery/nanoplastics.*

Story: Beth Wittbrodt
Photos: J. B. Spector

A SMALL WORLD

From fuel cells to nanotechnology, Professor Dimitri Gidaspow has built a distinguished career through innovative work at the particle level

Professor Dimitri Gidaspow next to a fluidized bed in his lab in Perlstein Hall

Professor Dimitri Gidaspow is an IIT institution. His work as both a researcher and a lifelong teacher has made him one of the most well-remembered and well-loved faculty members at the university. IIT even awarded him its highest honor: the title of "Distinguished Professor." The university only elevates to this rank those professors who have "achieved preeminence in their field of expertise" and who have amassed "a record of service to the university." Of the nearly 600 instructors on campus, there are only eight active distinguished professors.

Gidaspow has left his mark on IIT, not only in his exhaustive research but through the students he's mentored. His research and teaching spans some of the most critical areas of chemical engineering, including transport phenomena, fluidization, heat transfer, computational techniques, and thermodynamics. Over his years at IIT, Gidaspow has registered for nine patents and authored more than 170 publications. He has served as the principal advisor to more than 50 Ph.D. students, not to mention the hundreds, even thousands, of undergraduate and graduate students who have made their way through his classroom over the past 40 years. And in 2005, he was awarded the IIT/Sigma Xi Research Award in the senior faculty division (only one award is given annually in three divisions: senior faculty, junior faculty, and graduate student).

From Just a Year to Half a Century

A native of the Ukraine, Gidaspow studied in Germany before coming to the United States in 1949 at the age of 15. He attended Seward Park High School in New York, graduating at the top of his class. He earned a bachelor's degree in chemical engineering from City College of New York in 1956 and spent two years as a teaching assistant at Polytechnic Institute of Brooklyn.

Gidaspow came to IIT in 1958 as a work-study student at the Institute of Gas Technology (IGT), which was then affiliated with IIT and allowed its students and employees to complete degrees there. He studied under the famed Ralph Peck, and when the latter went on sabbatical, Gidaspow took over Peck's thermodynamics class. Little did he know then that he would become a part of IIT for nearly half a century. In fact, when Peck offered him the teaching job, he responded, "Fine. But chances are I won't be in Chicago for long—maybe one year."

That one year turned into decades. Gidaspow enjoyed teaching, and although he returned to IGT (after passing up unprecedented offers from DuPont and NASA), he continued to teach night classes to students from both institutions. He also joined one of his former students, Bernie Baker, on pioneering fuel cell research supported by a multimillion dollar grant from United Technologies Corporation. For his work on fuel cells, Gidaspow received two patents and was recognized by NASA with an award from the Marshall Space Flight Center. But in the spirit of a great teacher, Gidaspow says that "the best opportunity at IGT was advising good Ph.D. students and cooperating with Bernie Baker."

Gidaspow officially returned to IIT's Department of Chemical Engineering in 1977 and has taught here ever since. "The students have not changed much in 50 years," says Gidaspow. "But computers have revolutionized engineering. A half a century ago, doing a Ph.D. thesis meant doing lab work, a lot of it useless for an engineer. Today, students have to acquire computer skills that are immediately useful on their first job."

"I think we created a new science."
—Dimitri Gidaspow

Flow and Turbulence

Understanding Gidaspow's research is challenging for the layperson, in part because it is a blend of applied science and fundamental research. It is extraordinarily significant, however, for its potential impact on myriad fields. His work falls under the rubric of computational fluid dynamics, which involves using computer modeling to study the physical behavior of fluids, including calculating their properties, such as density, velocity, temperature, and pressure. His specialization is the mixing of gases and solids, particularly in the fields of energy and coal gasification, though his most fundamental research could ultimately be used in applications as diverse as achieving a better understanding of blood flow or creating safer nuclear reactors.

Gidaspow's most famous work is on multiphase flow and fluidization, a processing technique used in the chemical, petroleum, pharmaceutical, and power generation industries. To understand Gidaspow's research, it is necessary to understand the practical use of fluidization. A fluidized bed is used to suspend solid particles by passing a stream of air through them, thus setting them in motion. This tumbling action works like a bubbling liquid and produces more effective heat transfer and chemical reactions. The technology is extremely flexible and therefore popular; it evolved from efforts to develop cleaner combustion processes, which had the potential to yield fewer pollution emissions. For example, in the coal industry, fluidized bed combustion results in a decreased number of sulfur emissions.

The design of industrial-scale fluidized beds remains challenging, and this is where Gidaspow's work on computational fluid dynamics comes into play. He uses a computer to simulate the behavior of particles in order to relate their behavior to certain process and geometric variables. Gidaspow employed a kinetic theory-based particle image velocity method to illustrate that there are two kinds of turbulence in fluidization: random oscillations of individual particles and turbulence caused by the motion of clusters of particles—a theory that revolutionized the field.

Cleaning Up Coal Technology

Funding for Gidaspow's area of research eventually decreased, an occurrence familiar to scientists who rely in large part on external grant agencies, such as the National Science Foundation, whose research dollar allocation priorities may change more rapidly than it takes to satisfactorily finish research. However, thanks in part to Gidaspow's former Ph.D. student Madhava Syamlal (M.S. CHE '81), now a government employee at the Department of Energy (DOE), and U.S. Secretary of Energy Samuel Bodman, Gidaspow's research is experiencing a renaissance. One of the areas most affected by fluidization technology is the coal industry. Gidaspow recently received a grant from the DOE to work on the FutureGen project, a $1 billion government initiative aimed at creating the first zero-emissions fossil fuel plant—the cleanest fossil-fuel-fired power plant in the world.

Gidaspow will be experimenting with sequestering coal to make hydrogen. All fuels consist of carbon and hydrogen, and coal has a high content of both. When coal is burned, it emits CO_2, which adds to global warming (thus its reputation as a dirty fuel). By reacting coal with oxygen, however, CO_2 can be separated out, thus preventing ozone depletion and creating a highly desirable, clean fuel in the form of hydrogen. The process sounds simple, but according to Gidaspow, "If you gasify coal with oxygen, you're going to get huge bubbles inside. No one is going to build a reactor like that, with oxygen bubbles going out. It's not safe."

Tapping into Nanotech

And that's where nanotechnology comes in. Nanosize particles don't have any bubbles at all, which makes them ideal, and they flow in a unique way. Naturally, fluidization presents a whole new series of challenges on the nanolevel. As the size of particles decreases, fluidization becomes more difficult because the nanoparticles seem to stick together, forming large agglomerates. Gidaspow and Armour College of Engineering Dean Hamid Arastoopour have partnered with New Jersey Institute of Technology on a project to improve nanoparticle fluidization. Gidaspow theorizes that nanoparticles collide with the molecules and oscillate, and therefore the undesirable bubbles don't form. He is currently working to come up with a mathematical description of nanoparticles using silica particles. ■

www.chee.iit.edu

A High Water Mark

According to Gidaspow, his greatest career milestone came in 1985 at the Heat Transfer Conference, where he received the Donald Q. Kern Award for his energy conversion research relating to fuel cells and air conditioning: "I presented my then-current research on the hydrodynamics of fluidization and heat transfer. The lecture hall in Denver was packed. The editor of *Applied Mechanics Reviews* asked me to publish in their journal, and the American Society of Mechanical Engineers asked me to write a book."

That book, *Multiphase Flow and Fluidization: Continuum and Kinetic Theory Descriptions,* appeared in 1994. Groundbreaking in the field when it was published, it remains the seminal text on the subject today and is used in classrooms all over the world. "I think we created a new science," says Gidaspow.

NEW Horizon ON THE South SIDE

The corner of 35th and State streets at the southeast tip of IIT's Main Campus is the locus for observing the future of Chicago's Mid-South Side. With a 360-degree view of new construction and further development approved, activity at this intersection is signaling a neighborhood on the brink of a new era.

IIT's New Research Park AT THE CROSSROADS of South Side REVITALIZATION

Renderings courtesy of Cannon Design Photos: J. B. Spector

Central to this growth is University Technology Park At IIT (UTP), comprised of six pre-existing IIT buildings and three proposed new facilities. IIT's newest contribution to the transformation of the South Side, UTP will provide science and technology companies with economically priced laboratory space, including "incubator" facilities, which are critical to the growth of many start-up ventures. When the project is complete, UTP will boast 1.5 million square feet of rentable space. Although the research park will provide university-wide opportunities, UTP's benefits will extend well beyond IIT.

> "Universities tend to have a bad reputation for dealing with commerce and business. But by creating UTP, IIT is saying that it means business." — *Said Al-Hallaj*

"When completed in 10 years, this will be huge," says David Baker, vice president of external affairs at IIT and interim executive director of UTP, who, along with Dan Marselle (CHE '78), associate director of technology and business services at UTP, is overseeing the project. "This is an unparalleled opportunity to make an indelible mark on the growth of this part of the city."

Vice President of External Affairs David Baker holds a rendering depicting the finished atrium in Technology Business Center 1.

Laying the Groundwork

The largest investment in the area since the 1991 opening of nearby U.S. Cellular Field, UTP is, by design, being built to foster an active mixing of science, commerce, and community. Its promise includes access to jobs and internships at UTP for IIT students and close proximity to company consulting opportunities for IIT faculty. UTP clients will be able to take advantage of a number of IIT resources, including use of laboratory equipment, conference facilities, and library and reference facilities, as well as an affiliation with a research university. The surrounding neighborhood will experience an influx of investment in the form of 2,500 job opportunities that UTP is estimated to generate over the next 10 years. UTP will join Chicago Technology Park, heretofore the only site for the development of biotechnology companies in the region, in promoting the growth and expansion of the life sciences industry in Chicago.

In an ongoing effort to enhance the Mid-South, the City of Chicago moved the Chicago Police Department headquarters to the corner of 35th Street and Michigan Avenue in 2000. At the same time, the city and the Chicago Housing Authority reached the critical decision to dismantle the failed public housing structures just south of Main Campus. Baker says those changes helped to lay the groundwork for UTP.

"If you had asked anybody in 1999 whether we could attract technology start-ups to 35th and State, they would have laughed at you, because in 1999, other than the new police headquarters being under construction, there was no indication of how quickly this neighborhood was going to change. Also in 1999, all the buildings that are part of UTP were owned by IIT Research Institute [IITRI], and the university had no interest in acquiring them," says Baker. The 2002 spin-off of most of IITRI into Alion Science and Technology led to the university gaining control of the future UTP buildings.

Now, market demand is working in tandem with reinvestment in the area to drive the development of UTP.

"The incubator at Chicago Technology Park has been filled for years, and companies were being turned away. As companies have outgrown those facilities, it has been very hard for them to create their next space. A lot of them have left the state," says Baker, adding that UTP also will provide a potential new home for University of Chicago's companies and research endeavors, further enhancing the relationship between IIT and U of C.

To meet this need, UTP is being developed in three phases. Phase I includes the creation of a 30,000-square-feet Incubator in the former Engineering Research Building—originally designed by Mies van der Rohe—co-located with the research laboratories of IIT's biomedical and chemical engineering faculties. The first 6,000 square feet of Incubator space, funded by the State of Illinois, includes room for four companies. The facility features wet and dry labs with adjoining, customizable office spaces and is equipped for clients to add portable natural gas, compressed air, and vacuum systems.

"It doesn't stop with the physical needs," says Vice Provost and Director of the Institute of Business and Interprofessional Studies Dennis Roberson, who has been involved with incubator facilities in South Carolina, Illinois, Malaysia, and Singapore. "Companies that don't go to an incubator will experience a significant investment of time and money to get their business started. There are a whole set of needs that any new business has—business (including accounting, business plan development, financial planning, human resources, taxes, and payroll), legal (including patent filing and other intellectual property support, company formation, contract support, environmental issues, and mergers and acquisition counsel), and technical consulting and support. Incubator resources can provide all sorts of advice to help fledgling companies jump-start their businesses."

Deconstruction commenced on Technology Business Center 1 this winter.

Phase I also includes Technology Business Center 1, previously called the Chemical Research Building, a $50 million, state-of-the-art, build-to-suit facility for companies needing 3,000–15,000 square feet of space. IIT engaged Wexford Science and Technology, LLC, a private developer with strong expertise in research park development, as its partner on the project. Wexford acquired the building from the university and used private-sector financing strategies, city and federal incentives, as well as private equity and debt financing to fund the construction. Work on this facility began in January. The building will be ready for tenant occupancy in summer 2006. Also part of this phase, IITRI Center, now home of IIT Research Institute Life Sciences Group, just completed a $20 million expansion.

In addition, software and information technology companies are now locating in IIT Tower, where affordable space goes hand-in-hand with the availability of skilled IIT computer science students.

Subsequent phases will include renovation of other existing buildings in UTP and expansion to the parking lots on the east side of State Street, once a new parking garage is built.

Enriching the Client Experience

Two clients taking early advantage of UTP are Said Al-Hallaj and J. Robert Selman, professors in IIT's chemical and environmental engineering department. In 2001, Al-Hallaj and Selman formed All Cell Technologies, LLC to develop and commercialize lithium-ion batteries for portable power and electric vehicle applications. Last year, Al-Hallaj and some of his students launched Sun Phocus Technologies, LLC, a company that is working to develop and commercialize solar powered windows for use in generating electricity for office buildings. All Cell and Sun Phocus moved into a new laboratory space in the Incubator in February and began operating there in March.

"Universities tend to have a bad reputation for dealing with commerce and business; they tend to be conservative, sometimes slow, and generally unenthusiastic about entrepreneurship," says Al-Hallaj. "But by creating UTP, IIT is saying that it means business and has the infrastructure."

Al-Hallaj says that his companies' affiliation with UTP is already starting to pay off. "With All Cell, we approached the City of Chicago about working on a 'Plug-In' version of the hybrid Ford Escape. Our affiliation with IIT gave us a lot of credibility. If I had gone to the city on my own, I don't think I would have received the same response."

While UTP is largely being marketed to and suited for biomedical engineering and life-sciences companies, another client, a digital data storage start-up called Cleversafe, is growing steadily thanks in part to a talented workforce: IIT students.

Chris Gladwin, Cleversafe's founder and CEO, says he moved his company into 3424 South State and began hiring IIT students last winter. It started with one part-time student, then two, and now 15 current or recently graduated IIT computer science and design majors are among his 22 employees.

Gladwin says that compared to employees with backgrounds in one area of expertise, students have proven to be more creative and adaptable. "This is my third major start-up; at the previous two, I hired people who had 20 or 30 years

IIT students at work for Cleversafe, one of several companies housed within UTP

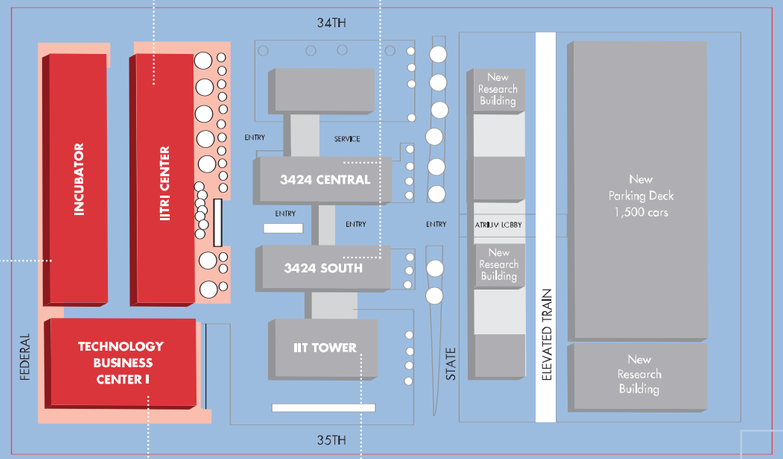
UTP Facilities: THEN AND NOW

The six pre-existing buildings that are part of University Technology Park At IIT have had numerous purposes (and names) since they first arrived on Main Campus.

Courtesy of IIT Archives

Then: Mechanical Engineering Research Building
Also known as: Mechanical and Electrical Engineering Research Building, recently Life Sciences Research Building
Address: 35 West 34th Street
Constructed: southern portion in 1952, northern portion in 1961
Architect: Mies van der Rohe (southern), Schmidt, Garden, and Erikson (northern)
Now: IITRI Center

Illustration: University Technology Park At IIT



Then: Institute of Gas Technology Complex (Central and South Buildings)
Also known as: South Building, IITRI Physics and Electrical Engineering Research Building (PER Building), and previously, the Armour Research Foundation PER
Address: comprised of several buildings at 3424 South State Street (two of which will be part of UTP)
Constructed: Central, 1964–65; South, 1955
Architects: Schmidt, Garden, and Erikson (Central), Mies van der Rohe (South)
Now: 3424 Central and 3424 South
The South Building once housed the UNIVersal Automatic Computer (Univac) 1105 as well as the first industrial nuclear reactor in the United States (it was dismantled in 1977–78).

Courtesy of IIT Archives

Then: Engineering Research Building (ERB)
Also known as: Ceramics Building
Address: 3441 South Federal
Constructed: 1944–46
Architect: Mies van der Rohe
Now: Incubator

Courtesy of IIT Archives

Then: Chemistry Research Building
Address: 3440 South Dearborn
Constructed: 1961
Architect: Schmidt, Garden, and Erikson
Now: Technology Business Center 1

Then: IITRI Tower
Address: 10 West 35th Street
Constructed: 1963–64
Architect: Schmidt, Garden, and Erikson
Now: The Tower
An underground tunnel connects the Tower to the Chemistry Research Building.

of experience," says Gladwin. "IIT students are better for the work we do: it's technology-driven, but creative. It's better suited for smarter, creative people, and these students have what we're looking for."

Cleversafe is benefiting from IIT students in other ways. In March, as part of a contest run by the College of Architecture, two architecture students were selected to design Cleversafe's new office in the Tower, to where the company will expand this summer. Another student won the rights to be project manager.

"That sort of thing would not happen if we weren't at IIT," Gladwin says. "I'll have access to brilliant architects, and I have a great story to tell my clients about why my company is interesting. And because we're on a campus at a major research university, we have a lot more credibility."

Creating a Win-win-win Situation

At the outset of IIT's 1996 Master Plan, created by Trustee Dirk Lohan as part of the National Commission for IIT, the south end of campus was designated for future commercial development. In 2000, President Lew Collens saw an opportunity for an on-campus technology park to give faculty the chance to be more entrepreneurial and to form more companies of their own.

With IIT able to leverage existing buildings on campus, the campaign for UTP began. In October 2005, the City of Chicago, at IIT's request, created a Tax Increment Financing (TIF) district on the south end of campus. This designation enabled Wexford to receive $134 million in tax increment financing, allowing it to renovate the building and still charge affordable rents to technology companies.

The UTP construction timeline now coincides with the creation of IIT's 2010 Plan—the set of university priorities that will capitalize on IIT's strengths in research and academics into the next decade. The university has identified life sciences, energy and sustainability, entrepreneurship, and its continued Interprofessional Projects (IPRO) program as key priorities. Roberson says that UTP will marry well with the initiatives included in the 2010 Plan. As UTP evolves, company employees could propose new IPRO projects and offer the participants appropriate feedback, and students could provide companies with reasonably priced market research, accounting services, and other business assistance—thereby enriching the students' own entrepreneurial experience.

"Since UTP expects to house companies from a variety of areas, it will have very positive impact across IIT. The opportunity for students to engage with firms right on campus is wonderful, and faculty members have the opportunity to be on advisory boards for companies and to act as part-time consultants," says Roberson, who will serve on the board of Cleversafe. "The companies can get experienced people to help support them, while faculty have the opportunity to delve into the 'real-world challenges' associated with the areas they're interested in, all in the context of an entrepreneurial business environment. It's a terrific win-win-win situation."

If UTP is as successful as other university-affiliated research parks, its benefits could extend well beyond the immediate community. Research parks have had a transformative effect on their local economies: Stanford University's research park, and more recently, Research Triangle Park—a collaboration between Duke University, North Carolina State University, and University of North Carolina–Chapel Hill—are two such examples.

> Market demand is working in tandem with reinvestment in the area to drive the development of UTP.

"Ours is a more modest goal focused on trying to create economic growth to complement the residential and commercial activity here now," says Baker. He cautions that while attracting occupants to a park of this size always presents a risk, ultimately, IIT's ownership of UTP is a distinguishing factor when compared to other technology parks within the Chicago area, including Illinois Science + Technology Park in Skokie, which opened in 2005.

"Our selling point," says Baker, "is that we are looking for companies that want to be on a university campus, to employ our students, and to use the academic and research resources that we have here. That's a main difference between what's happening here compared to the more industrial focus of the Skokie facility."

A Broad Effort

As activity at UTP, and UTP itself, continues to advance, so, too, will the area surrounding the park. A variety of amenities planned for the neighborhood are expected to help attract UTP's clients and prospective residents to the neighborhood. This includes a new federally funded Metra stop at 35th and Federal streets, which Baker anticipates will be completed within five years, and commercial and residential development.

A new residential development directly south of the Tower, Park Boulevard, officially broke ground in December 2005. The privately held, 1,300-unit, mixed-use community—which will rise in place of a former public housing site—will include spaces for restaurants and other businesses. At the groundbreaking ceremony, Chicago Mayor Richard M. Daley had strong praise for the complex, referring to Park Boulevard as a place that will "rebuild the souls" of the people who will live there.

With the development of UTP and its surrounding neighborhood underway, a series of projects more than a decade in the making are just beginning to transform what was once a bustling metropolis for music and commerce in Chicago. As the city, state, and IIT work together to realize this goal, the university's commitment through UTP is shaping up to be a bold investment in the neighborhood that once thrived around IIT.

Says Roberson, "It's synergistic: as UTP becomes more successful, it will contribute to the surrounding environment, which will in turn contribute to UTP's success. It's a virtuous cycle." ■

www.universitytechnologypark.com

"We Just Worked Hard"

Former IIT president John Rettaliata reflects on the golden age of IIT

Story: Richard Duncan (AE '05)
Photo: J. B. Spector

He led IIT for more than 20 years, oversaw the construction of a new campus center, and helped bring IIT to national prominence through an innovative approach to education. Many laud his administration as one of the high points for the university, and his fundraising efforts solidified a school otherwise struggling under its own financial weight.

Today, the study in his home looks just as one might expect: numerous achievements and degrees decorate the wall, with mementos of students, faculty, trustees, and friends placed throughout, and files storing annual reports and newspaper clippings chronicle his time in office.

One thing stands out, though—there is no computer. A pioneer from a technical university, and he doesn't even own a computer. But for John Theodore Rettaliata, not needing a computer to keep track of life is somehow fitting.

Rettaliata became president of IIT in 1952 at age 40—the youngest IIT president to date and, at the time, the youngest chief executive of a scientific school in the United States. Chosen from a field of 75 candidates, Rettaliata succeeded Henry Heald and held the position for 21 years. During his tenure, he saw Main Campus built, Chicago-Kent College of Law added, Stuart Graduate School of Business founded, and IIT grow to be the biggest engineering school in the United States. IIT historians call this a "golden age" for the university, and for good reason. Between the innovative cooperative education program—one of the first in the nation—and Rettaliata's national influence as he testified before Congress on numerous occasions, Illinois Tech (the common nickname back then) held a high position in the ranks of the nation's technological universities. While it was Mies van der Rohe's design that made Main Campus the historical landmark it is today, Rettaliata's vision made the university a leader in education.

Most current IIT students, staff, and faculty have never met Rettaliata, and some may have never heard his name. In fact, Rettaliata hasn't been back to IIT since his resignation in 1973. Why has such an influential figure in IIT history stayed away for so long?

"I visited other schools while on accreditation boards, and some of them would have the former president there on campus in an office. The faculty would call and tell the former president what the new guy wasn't doing right," Rettaliata says. "I wanted to let the new guy do his job."

Now 94, Rettaliata reflects on the accomplishments of his professional career, whether as an engineer, educator, or executive. Before coming to IIT, he worked for Allis-Chalmers, a leading manufacturing company in the Midwest. During World War II, he embarked on the first of many roles for the United States government, taking part in the tour of British aeronautical research facilities that enabled America to develop a better jet aircraft. As such, in 1943, he became one of the first people to fly in a jet aircraft. When Nazi Germany fell, the Navy Bureau of Ships sent him to Germany to investigate an innovative hydrogen-peroxide submarine—a project he completed alone and filed a confidential report on. He continued to consult for the Navy after the war, helping with the development of gas turbine applications and, according to a 1953 article in *Popular Science*, other projects for the Air Force that were at the time "still secret."

While president at IIT, Rettaliata held a seat on the National Advisory Council on Aeronautics, and then was appointed to the National Aeronautics and Space Council, the planning body of the newly formed National Aeronautics and Space Administration (NASA). Attending bi-monthly meetings in the White House, Rettaliata says he was most impressed with President Dwight D. Eisenhower, who, despite popular opinion to the contrary, had a good grasp of the highly technical topics being discussed. After leaving the university in 1973, he became chair of the board of Banca di Roma in Chicago and later served on the boards of Admiral, Amsted Industries, Brunswick, DeSoto Chemical, First Federal Savings, Harris Bank, International Harvester, SC Johnson, Kemper Insurance, Peabody Energy, Santa Fe Railway, and Western Electric.

Still, if you heard it from him, you'd think his successes were no big deal. Rettaliata's primary accomplishment at IIT, the construction of Main Campus, was one of necessity, but not for the reasons many believe today, he says. When it came to bringing in faculty, Rettaliata certainly had the connections, but no amount of praise over the phone could keep them here once they arrived for a tour. The problem was IIT's neighborhood, with run-down apartment buildings lining the "L" between State and Wabash. With the help of Mayor Richard J. Daley and the Chicago Land Clearance Commission, things began to change. By the time Rettaliata left IIT, Main Campus was an almost continuous stretch from LaSalle to Michigan between 30th and 35th, and would remain untouched until 1998.

The building of Main Campus and his relationship with Mies, the architect of Main Campus, provided many interesting moments.

"One day," he says, "Mies came into my office and said he wanted to build a building that had never been built before, or at least that he had never built before. The building would be supported all by its roof, and there would be I-beams across the roof to support the weight." Rettaliata went out, as he put it, "to ring some doorbells," and soon had the necessary $700,000 to begin work. Henry Crown's doorbell was one that he rang, and Crown agreed to pay for a substantial amount of the building's construction. As the building was being constructed, Mies said he needed more money to finish the project. Rettaliata says he responded with language he wouldn't repeat, but after he rang a few more doorbells, S. R. Crown Hall opened in 1956.

In one of the more tender moments in the Rettaliata/Mies relationship, at the dedication of Crown Hall, Mies gave Rettaliata a Gold Key to Crown Hall. The key, which now sits in a case hanging over his desk at home, was a sign of gratitude Rettaliata received from Mies, a man he describes as "a good man, a modest man," who was quiet and private and hated giving speeches.

Rettaliata's rapport with IIT's student community also defined his time. From the Black Knights, a secret group of students he formed to serve as conduits regarding student needs (many of whom now visit the campus twice a year as trustees), to a two-hour question and answer session with protesting students shortly after the Kent State riots, Rettaliata knew to keep his ear toward the students. When told that a great deal of the university's success today is the result of his work back then—with alumni and estate gifts from his time as president providing nearly half of all donations to IIT—he seemed genuinely surprised.

When asked how he became such a successful fundraiser, he quips, "Somebody had to do it." And the role wasn't easy, as he describes in the story of how IITRI got its name: "When MIT did something, MIT got the credit. When Armour Research Foundation [ARF] did something, most people did not know of its relationship with IIT. So I thought we should change the name to IIT Research Institute." At the time, ARF was the second largest independent research firm in the United States. As president of IIT, ARF, and the Institute of Gas Technology, Rettaliata held responsibilities to the university and its two major research affiliates. Lester Armour, chair of the Board of Trustees and grandson of Armour Institute founder Philip D. Armour, was less than enthusiastic about the decision. "Here I was, recommending that we remove the Armour name. I don't think he ever forgave me for that."

When asked to comment on the university today, Rettaliata quickly flips open one of his last annual reports as president and stops on a page where the "new" dean of Chicago-Kent College of Law is pictured. He points to a photo of Lew Collens, now IIT's president, and says, "I think Lew is doing a fine job."

It's obvious that Rettaliata still has a great deal of pride in both IIT and his legacy, but in his own role in the accomplishments of the university, his modesty prevails. "There was no silver bullet," he says. "We just worked hard." ■

Richard Duncan (AE '05) is currently an admission counselor in IIT's Office of Undergraduate Admission and is pursuing a Master of Science in Finance at IIT's Stuart Graduate School of Business. A native of eastern Kentucky, he was editor-in-chief of TechNews *and active in the Student Government Association during his undergraduate years at IIT. He also worked for two of IIT's research groups as an undergraduate and spent a summer working for NASA at Kennedy Space Center.*

Rettaliata's Black Knights

Among former IIT President John Rettaliata's relationships with IIT students during his tenure, no group held more prestige, respect—or more secrecy—than the Black Knights, a small collective of student leaders chosen each year to serve as the president's student advisory board. Unbeknownst to the larger student population, the Black Knights never revealed their identities to the public until *Integral* was published at the end of the school year.

The Black Knights disbanded soon after Rettaliata left IIT in 1973. Some members became CEOs, presidents, and vice presidents of corporations across the country. Others continue to influence the direction of the university today—three current members of IIT's Board of Trustees are Black Knights alumni. One in particular, Martin C. Jischke (PHYS '63), took Rettaliata's example about as far as one can. He became a professor of aerospace engineering, head of his department, dean, and president of three major universities.

After graduating from IIT, Jischke attended MIT, receiving an M.S. and Ph.D. in aeronautics, and taught for nearly two decades at the University of Oklahoma. After being interim president at OU, chancellor at University of Missouri-Rolla, and president at Iowa State University, Jischke became president of Purdue University in 2000. In February, President George Bush named Jischke to a seat on the President's Council of Advisors on Science and Technology.

Rettaliata's influence has stayed with Jischke. "I was dazzled by his fundraising. One of the most memorable meetings was shortly after he had returned from a fundraising trip on the West Coast," he recalls. He says Rettaliata's efforts to ensure a balanced budget and strong physical plant have greatly influenced his work at Purdue and other schools. A student group called Iron Key has served the Purdue community for many decades in much the same way as the Black Knights provided IIT students a direct line to the president.

Snapshots:

While keeping a love of sports in their hearts, IIT student-athletes are leading multifaceted lives and representing the best of IIT. For many IIT student-athletes—also known to fans as Scarlet Hawks—commitments extend well beyond academia and sports. They juggle work, community service, IPROs, Camras scholarship responsibilities, and life in a foreign country—any of which can amount to a full-time job outside of school.

Photos: J. B. Spector

The Off-the-court Lives of IIT Student-athletes

Marina Hartung (BA '07)

Hometown: Manhattan, Kan. • **Sport:** Swim team (captain, swims breaststroke)
Stats: President, Kappa Phi Delta; manager, IIT Phonathon; Kaplan Fellow; lifeguard
About her sorority: "IIT is mostly males, so it's great to have a group of girls to interact with and do girly things." As for wild nightlife often associated with Greek life, she laughs. "We're all usually too tired and just go to bed!"

Hartung and her Kappa Phi Delta sisters unwind with a game of "speed Scrabble" in their sorority house.

Zack Hartnett (BA '07)

Hometown: San Diego, Calif. • **Sport:** Soccer (captain, plays center defense)
Stats: NROTC Marine, student ambassador, Pi Kappa Phi fraternity, door guard
About being a Marine: "It's part full-time job, part hobby. I like to think that if I weren't in the military, I'd still get up at 4 or 5 a.m. to train like this."

Hartnett, with (part) of his world in his hands, at IIT's NROTC office. "Between soccer and the military, Sunday is the only day I don't train—that's when I recover."

Polina Ivanova (ITM '07)

Hometown: Pernik, Bulgaria • **Sport:** Basketball (small forward)
Stats: International student and member of IPRO 303
About her IPRO: "We're researching technical communication devices that could help the investment company Calamos get to know its private customer group better."

Ivanova reviews her IPRO team's presentation for Calamos the day before meeting with the company. "The best part about IPRO is sharing ideas with teammates; we learn from one another by seeing things from different sides."

Pedro Lima (BA '07)

Hometown: Rio de Janeiro, Brazil • **Sport:** Soccer (midfielder)
Stats: International student, works at the front desk at Keating Sports Center, referees for IIT intramural soccer
About studying business: "Business is a lot like soccer. It's all about learning to take risks."

Lima checks a student's ID at Keating. Apart from work and soccer, he is taking 18 hours of classes this semester—the maximum allowed. "My favorite class is New Product Development because I'm learning new perspectives from other students."

Kaitlin Streyle (ARCH '08)

Hometown: Mandan, S.D. • **Sport:** Cross-country (She was also a 2006 end-of-season player on the women's basketball team.)
Stats: Camras scholar
About being a Camras scholar: "It was the deciding factor in me attending IIT."

Streyle catches her stride at a drafting table in S. R. Crown Hall. "I knew I wanted to do something that combines math and art. I really love studying architecture."

Making Newspapers into Art

Most of us take newspaper design for granted: there's the main news section, sports, business, travel, fashion, entertainment, each with its own look and feel. But it wasn't always so, and for creating and designing many parts of the modern American newspaper, we can give credit to Louis Silverstein (M.S. DSGN '49).

One of the first generation of Institute of Design graduate students, Silverstein enrolled on the GI Bill in 1947, two years before the school joined IIT. With his BFA from the Pratt Institute in New York, attending ID was his long-dreamt of educational capstone. "Studying at ID gave me incredible confidence in myself as a contemporary graphic designer," he explains. "I had always wanted to be 'good,' and I had always had ambitions, so I can't tell you how important it was to get to 'the New Bauhaus.' The idea of it was like a dream—getting there changed me." He recalls sitting in his first job interview after graduation and noticing one of his ID professor's books (Gyorgy Kepes's *Language of Vision*) on the interviewer's shelf. It turned out to be one of the man's favorites. Silverstein got the job.

Just a few years later, Silverstein became, at age 31, the youngest art director of the promotions department at the New York Times Company. In his first year there, the department won 19 out of the 50 awards given by the American Institute of Graphic Arts, and Silverstein created the well-known "I got my job through the *New York Times*" posters that ran for 20 years on subways and train platforms around the city.

In 1969, with his promotion to corporate art director at the *Times*, Silverstein's vision began to be realized on a large scale. From then until his retirement in 1985, he conceptualized the weekly special sections that we still see today in major dailies around the world: Weekend, Home, Living, Science Times, Sports Monday, and even, together with the paper's editors, the world's first Op-Ed page.

"Television at this time was getting big," Silverstein recalls, "and our readership was changing, from men and business to women, sports and leisure, and the suburbs. The editors consulted me on a lot of these new things. They even used to joke that the publisher [Arthur Sulzberger] used to sneak down the fire escape to avoid the newsroom and come to my office for strategy meetings instead." Indeed, Silverstein is widely credited with increasing the role of the art department in newspapers around the country, moving it from being merely an aspect of production to a key part of editorial direction. Symbolizing this shift, in 1976 he was appointed assistant managing editor of the *Times*, becoming the first person ever promoted from the art department to the editorial staff.

Now retired and living in Brooklyn, Silverstein remains active in publishing. He has been a consulting designer for *Earth Times* (www.earthtimes.org) and executive editor of *Conference News* (www.confnews.com), which is published on-site at the United Nations and at major international conferences.

Regional Chapters The IIT Alumni Association is everywhere! New regional chapters have been formed, and they can provide you more ways to stay connected—and closer—to the IIT community. New chapters are in Naperville, Ill., Los Angeles, San Diego, Boston, and Detroit. *For more information, contact Marian Quirk, associate director of Alumni Relations, at quirk@iit.edu.*

Mark Sexton (ARCH '80)

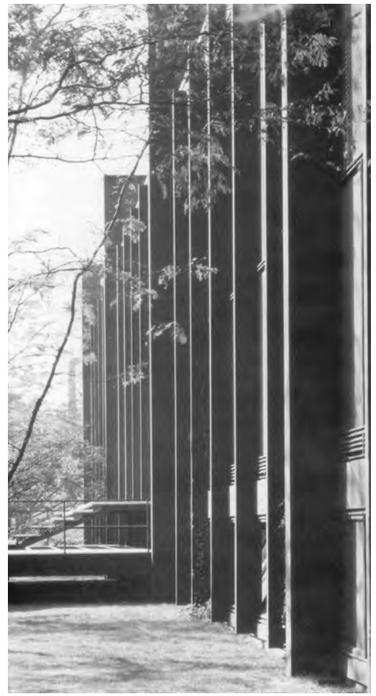
Ronald Krueck (ARCH '70)

IIT Alumni Named Chicagoans of the Year

In the *Chicago Tribune*'s 2005 roundup of notable locals—this year honored for their exceptional "efforts at cultural construction"—the editors named Mark Sexton (ARCH '80) and Ronald Krueck (ARCH '70) Chicagoans of the Year in the field of architecture.

In the review, authored by *Tribune* Architecture Critic Blair Kamin, Krueck and Sexton were lauded for "taking modernism in bold new directions." Cited was their partnership in the development of Jaume Plensa's Crown Fountain in Chicago's Millennium Park as well as their work on the renovation of S. R. Crown Hall, the National Historic Landmark on IIT's Main Campus, which also was honored last fall with the Chicago Landmark Award for Preservation Excellence.

Sexton and Krueck are principals of the firm Krueck & Sexton Architects and are members of IIT's Mies van der Rohe Society, of which Krueck is a board member.



RECENT IIT ALUMNI AND FACULTY PUBLICATIONS

Jazib Frahim
CPE '99, Cary, N.C., coauthored *Cisco ASA: All-in-one Firewall, IPS, and VPN Adaptive Security Appliance* (2005, Cisco Press).

Vasudevan "Raj" Rajaram
LAW '91, Oak Brook, Ill., authored *Sustainable Mining Practices—A Global Perspective* (2005, Taylor and Francis, U.K.).

Leon E. Stover
Retired anthropology professor and noted researcher and writer on science fiction and China, Stover wrote *Imperial China and the State Cult of Confucius* (2004, McFarland & Company).

Ivan Thunder
CE '37, Grayslake, Ill., authored a book, *Her Last Letter,* under the pen name Michael Dalton (2004, Trafford Publishing).

classnotes

1940s

John L. Donoghue
CE '41, Glenview, Ill., was inducted into the Parking Consultants Council Hall of Fame.

1950s

James S. Peters II
M.S. PSYC '52, Storrs Mansfield, Conn., was nominated into the Connecticut Veterans' Hall of Fame.

Gilbert A. Krause Jr.
CHE '59, Milwaukee, Wis., moved to Macha, Zambia, in January 2006 to start a new primary "Innovative School" with an emphasis on computer learning.

1960s

Philip B. Padawer
ARCH '60, Evanston, Ill., has been a commercial and industrial architect for more than 30 years, and is currently working as a façade restoration consultant.

Ira Rohter
PS '60, Honolulu, is a political science professor at University of Hawaii at Manoa.

Richard Chadwick
PS '62, Honolulu, is a political science professor at University of Hawaii in Honolulu.

Roy Coleman
PHYS '64, Chicago, has retired after working for nearly 41 years at Morgan Park High School as a physics teacher. During his tenure he sparked careers that included physics teachers and astronaut Mae Jemison, the first African-American woman to enter space.

Martin C. Jischke
PHYS '63, West Lafayette, Ind., was recently featured in the *Indianapolis Business Journal* for his accomplishments as president of Purdue University.

Bhagavat S. Subbakrishna
M.S. CE '64, Wilmette, Ill., was named the 2005 Volunteer of the Year by the New Trier Democratic Organization.

MAJOR KEY
For a complete list of abbreviations for IIT's academic majors, visit www.iit.edu/magazine.

David A. Lucht

FPSE '65, Shrewsbury, Mass., has been honored by the Society of Fire Protection Engineers with the creation of the David A. Lucht Lamp of Knowledge Award, which will be given annually to individuals or organizations who stand out in their support of fire protection engineering higher education.

Wayne E. Bretl
EE '66, Grayslake, Ill., was a co-recipient of the 2006 IEEE Masaru Ibuka Consumer Electronics Award for contributions to the development of the vestigial sideband (VSB) digital transmission system for digital television broadcasting.

Richard W. Citta
EE '68, Oak Park, Ill., was a co-recipient of the 2006 IEEE Masaru Ibuka Consumer Electronics Award.

Edward L. Erickson
MATH '68, Pipersville, Pa., has been appointed to Barrier Therapeutics' board of directors.

Thomas E. Hirsch, AIA
ARCH '68, Madison, Wis., is a Wisconsin-registered architect and land use planner. He is currently self-employed, performing site and building evaluations for accessibility, capital needs, cost segregation, and designing residential structures.

Paul Morell
CE '68, Sewickley, Pa., has been promoted to the position of vice president, safety and regulatory compliance of U.S. Airways.

The Honorable Russell L. Nekorchuk
MATH '68, Gainesville, Fla., has recently moved with his wife to Gainesville and has been accepted as a graduate student to pursue a Ph.D. in linguistics after retiring from a 30-plus year career in data processing.

Share Your News!
We want to know what's new with you. Send us your class note update—news about births, marriages, career changes, and other events in your life. We'll publish your news on the alumni website and in a future issue of *IIT Magazine.*

Sharing is easy. *To send in your class note, write to alumni@iit.edu, or visit www.iit.edu/alumni and click on "Class Notes." [under "Alumni Community"]*

1970s

The Honorable Edward F. Masters
LAW '72, Joliet, Ill., received the 2005 Distinguished Service Award from IIT's Chicago-Kent College of Law.

Jayendra S. Parikh
M.S. MAE '72, Buffalo Grove, Ill., recently founded and serves as president of Compliance Solutions International, Inc., a management-consulting firm. Previously, he spent 26 years at Underwriters Laboratories, Inc. in Northbrook, Ill.

alumniFAQ

Quam (Boladale) Erogbogbo

Quam Erogbogbo (EE '96, M.S. CE '02) is into defining mobile phone roadmaps; as a global technical marketing manager for Motorola, he creates technological pathways to produce new products based on input from carriers as well as marketing, regional, and product teams. As a volunteer, he also spends a lot of time helping current IIT students develop their own professional roadmaps.

It's a long way from Nigeria to Chicago. How did you end up at IIT?
You could definitely say it's a family affair. My uncle, Lukman Erogbogbo, graduated from IIT in 1974, then returned to Nigeria to work as a chemical engineer. I came to the United States after high school with some of my friends, and four of us attended IIT. I have one cousin who graduated from IIT in 2004, and another cousin currently in his first year. And I met my wife [Alissa Moore, CHE '97] at IIT; she's now doing her obstetrics and gynecology residency in Ohio.

In what ways have you worked with IIT students since graduating?
A few years ago I participated in IIT's Lunch with an Alum series, which gave me an opportunity to share with students the type of work I do today. I have also organized Shadow a Motorolan days, in which IIT students come to our company and are paired up with engineers and business people to learn more about their specific jobs. I've brought graduate and undergraduate students to Motorola University to expose them to the company. Finally, I am working with IIT's multicultural office to promote events and networking, and with IIT Alumni Relations on a possible GOLD alumni evening at Motorola.

What do you find most rewarding about your job?
In addition to the work I do with IIT, I speak on career development and serve as a mentor. I'm a member of two Motorola Diversity Business Councils and co-chair of the Black Business Council Education and Community Partnership Committee. We go out to the community and form alliances with different organizations. Along with promoting Motorola and helping make the company visible in the community, it's also a great way for me to mentor students and youth organizations.

My experience allows me to give back in other ways, as well. For example, I recently participated on an engineering steering committee for a local YMCA that organized a series of educational and interactive workshops for black and Hispanic high school students interested in science.

What's your favorite new gadget?
We recently delivered a mobile phone to a customer called RAZR V3c. It supports video broadband service to allow people to access entertainment-on-demand on their phones. The coolest part about it is the design—it's so thin you can forget it in your pocket.

What's the next thing to watch out for, technology-wise?
I think you will see a lot more music- and video-streaming applications on phones to take advantage of higher network communication speeds. The content is already so rich that some folks are calling it "the device formerly known as the cell phone." We definitely have some exciting times ahead.

Membership Has Its Privileges

Did you know that IIT provides its alumni community with a variety of great benefits? To take advantage, all you have to do is be an alum!

Exclusive services include

- **Career services** Gain special access to IIT's Career Development Center.
- **Free email** Sign up for your own free IIT account.
- **Galvin Library access** Visit the library and check out periodicals, any time.
- **Bookstore discount** Receive 10 percent off when you shop at IIT's campus bookstore.
- **Discount recreation** Benefit from deep alumni discounts at IIT's Keating Sports Center.
- **Tuition discounts** Sign-up for graduate and undergraduate courses at great rates.
- **Alumni address referral** Send us a note, and we'll forward it to a fellow classmate.
- **Application fee waiver** Know a prospective student? Send him or her a certificate for an application fee waiver, free to you.

Visit www.iit.edu/alumni/services/benefits to learn more.

alumniprofile
Dawn Barton

When **Dawn Barton** (CHE '00) isn't managing the development of new products in her role as project manager at Kraft Foods, she moonlights as a tax collector—and her clients love giving her money.

"I take half their pay and they think it's funny," Barton says. Her situation may sound improbable until you meet her "clients"—third-graders enrolled in their school's Junior Achievement program who use "play money" to learn about taxes. During the five years Barton has been volunteering with Junior Achievement, an organization that uses hands-on experiences to help young people understand the economics of life, she has also helped kindergarteners understand basic money concepts and has served as an advisor to high school students who developed a business selling "care packages" for college students.

Outside the workplace and classroom, Barton parlays her IIT cross-country experience into her company's multi-sport team. For the past three years she has participated in sprint triathlons involving a quarter- to half-mile swim, a 15-mile bike ride, and a 3-mile run, and she plans to compete in events this summer in Wisconsin and Indiana.

Barton stays connected to IIT through the Graduates of the Last Decade (GOLD) Committee. She has helped organize GOLD social and networking events, as well as a professional development conference. Barton is engaged to IIT alumnus Jason Novak (CHE '00), who is graduating this May from Chicago-Kent College of Law and has accepted a position at the Chicago law firm of Bell, Boyd and Lloyd.

Frank L. Kudrna Jr.
M.S. CRP '73, Ph.D. '75, Westmont, Ill., was recently appointed to the National Oceanic and Atmospheric Administration Science (NOAA) Advisory Board and was awarded the American Society of Civil Engineers, Illinois Section, Citizen Engineer of the Year Award for his volunteer activities.

Nicholas Iavarone
LAW '74, Glenview, Ill., was recently added to the securities arbitration practice of the law firm SimmonsCooper, LLC.

Walter M. Narajowski
EE '75, Laguna Beach, Calif., was appointed president and chief executive officer and to the board of directors of Pathway Diagnostics Corporation.

Richard B. DeCoster
FPSE '76, Chesterfield, Mo., has been appointed resident managing director of Aon Risk Services of Georgia.

Richard C. Schulte
FPSE '76, Evanston, Ill., wrote a viewpoint published by *Engineering News-Record* on the recommendations included in the National Institute of Standards and Technology's investigation into the World Trade Center towers collapse.

Thomas F. Tushner
CE '76, Beaverton, Ore., has been hired as traffic engineer for Washington County, Ore.

Patrick J. McKay
LAW '77, Anchorage, has been appointed to fill a seat in the Anchorage Superior Court.

Michael B. Skalka
LAW '77, Houston, has been appointed chair of Stewart Information Services Corporation's international group and has also been elected to serve as chair of the board of Stewart Information International, Inc.

Daniel F. Marselle
CHE '78, Chicago, has accepted a position as associate director for technology and business services at University Technology Park At IIT.

James J. Morici Jr.
LAW '79, Chicago, has recently been elected to the Board of Governors of the Illinois State Bar Association for the First Judicial District. He has been named as the Outstanding Businessperson of the Year by the Italian American Chamber of Commerce and is managing partner of Morici, Figlioli, and Associates in Chicago.

Mario H. Romero
CHE '79, M.S.'83, Ann Arbor, Mich., was named president of Energis, LLC in 2003.

1980s

Ben R. Bogner
M.S. CHE '80, Wheaton, Ill., recently joined AOC as a marketing specialist.

Byron A. Dunn
CHE '80, Houston, was elected senior vice president of corporate development for Harvest Natural Resources.

Bill Haushalter
FPSE '80, Columbus, Ohio, has joined Commercial Vehicle Group as the new vice president and general manager of the electrical/mechanical division.

Mathai Varghese
MATH '80, Adelaide, Australia, is a mathematician and an Australian Research Council (ARC) Senior Research Fellow at the University of Adelaide. He was recently awarded a personal chair (full professorship) at the university. His most influential contribution to date is the Mathai-Quillen formalism, which he co-formulated, and which has since found applications in index theory and topological quantum field theory.

Philip J. O'Keefe
ME '81, Lanesboro, Minn., is president of Engineering Expert.net, LLC. He is active in the American Bar Association Intellectual Property Section and currently sits on the Inventor's Committee.

Edward H. Tillinghast
LAW '83, New York, has joined the New York office of Sheppard, Mullin, Richter, and Hampton, LLP as a partner in the finance and bankruptcy practice group.

Jose L. Munoz
MAE '84, Doral, Fla., has been named director in the New York office of leading aviation consultants SH&E, Inc., where he will work in the firm's growing safety, security, and operations practice.

Thomas Albrecht
M.S. ARCH '86, Berlin, is a partner in Hilmer & Sattler & Albrecht, an architecture firm located in Germany.

Scott Carpinelli
BA '86, Arlington Heights, Ill., has been the president of his own insurance and financial service agency with the Farmers Insurance Group of Companies since 1998.

Commander Thomas V. Evanoff II
MAE '87, Vienna, Va., is currently a senior fellow at Harvard University's John F. Kennedy School of Government. His areas of research include national security and global strategy.

Ralph Price
M.S. PA '87, Chicago, is the new commander in Jefferson Park's 16th District.

Brett Bonthron
EE '88, San Francisco, works for Microsoft. Following in the footsteps of his late father, IIT Professor Robert Bonthron (to whom Brett refers as the "real" Professor Bonthron), he is an adjunct professor at University of San Francisco's School of Business and Management.

Ejaz Elahi
M.S. CS '88, Burr Ridge, Ill., will take on the role of vice president at Dresner Investment Services, Inc.

Charles J. Harrison
LAW '88, Chicago, has been promoted to senior vice president of Heartland Partners, LP.

2006alumniawards

The IIT Alumni Association is proud to honor the winners of the 2006 Alumni Awards for their outstanding contributions to the university, the community, or their profession.

Alumni Medal

The Alumni Medal is awarded annually to an individual who has demonstrated an exceptional commitment to society through service and support and who has achieved significant personal and professional success.

Roy E. Coleman
PHYS '64

Roy Coleman began his career as a physics teacher at Morgan Park High School—his alma mater—and taught physics and calculus to thousands of students over the course of his 41-year tenure. He sparked careers that included at least 13 physics teachers across the country, including a woman who now teaches physics through sign language in Rochester, N.Y.

After starting a bridge-building contest at his high school, Coleman enlisted the support of IIT faculty to expand it to a regional event—and later a national and international event. The Chicago Regional Bridge Building Contest has now been held at IIT for more than 30 years, and the national/international contest is over 25 years old. Every year, more than 50 high schools from the Chicago area compete in three regional contests, and the international contest has grown to regularly include more than 50 participants from over a dozen regions throughout the United States. Coleman has participated in the event since its inception.

Coleman also has been a staff member of the SMILE (Science and Mathematics Initiative for Learning Enhancement) continuing education program for teachers at IIT throughout its two decades of operation.

Jamshyd Godrej
MAE '72

Jamshyd Godrej is chair of Godrej and Boyce Manufacturing Company, one of the largest engineering and consumer products companies in India, with a total sales turnover of approximately $1 billion. In 2003, he received India's highest honor, the national medal ("Padma Bhushan"), from the president of India.

Godrej has demonstrated a commitment to society through his work as president of the World Wide Fund for Nature–India, his chairmanship of the Aspen Institute India, and as former president of both the Confederation of Indian Industry and the Indian Machine Tool Manufacturers' Association. He is also a member of the World Economic Forum. In 2005, Godrej received the Bombay Natural History Society's green governance award from India's prime minister in recognition of his company's extensive environmental efforts.

Godrej is a founding member of IIT's Committee of 100 Distinguished International Alumni, which helps fund scholarships for international students. He was founding chair of IIT's Alumni Association in India from 1997 to 2002 and hosted a banquet for the Indian Alumni Association in Bangalore in 2002. He is also a founding member of IIT's International Board of Overseers (since 2001). Godrej has served as a director of IIT's Indian subsidiary since 1997, helping to increase awareness of IIT among prospective Indian students.

Godrej has been active in supporting and speaking in many of the Institute of Design's programs in the United States and abroad.

For more information about the Alumni Awards and recipients, visit www.iit.edu/alumni. [under "Alumni Community"]

Alumni Service Award *The Service Award is given to an individual who has demonstrated selfless commitment to the university through exceptional sustained contributions in the areas of leadership, service, and support.*

Keith McKee (CE '50, M.S. '56, Ph.D. '62) **Hassan Nagib** (MAE '68, M.S. '69, Ph.D. '72)

Alumni Award of Merit *Presented annually to an IIT graduate who has made an outstanding contribution to the university.*

Geoffrey Fear (M.S. MET '51) **Ed Flom** (CHE '54)

International Award of Merit *Presented annually to individuals who have made an outstanding contribution to the university's international initiative.*

Pricha Pantumsinchai (M.S. IE '75, Ph.D. '79)

Lifetime Achievement Award *Awarded in memoriam to an individual who achieved personal success, made an outstanding contribution to his/her chosen field of endeavor, and who achieved recognition among his/her colleagues.*

James Freed (ARCH '53)
James Hartnett (ME '47)
Rolf Jensen (FPSE '51)
Nambury Raju (M.S. MATH '71, Ph.D. '74)
Carroll Simons (ME '33)

Young Alumnus/a Award *Awarded to an alumnus/a who has received an undergraduate degree within the last 10 years and has excelled in the areas of leadership and professional success and/or has selflessly served the community or the university.*

Amie Harvey (CHE '99) **Jenna McGrath** (ME '99)

Professional Achievement Award *This award pays special tribute to alumni who have achieved personal success and made outstanding contributions to their chosen fields, and who are widely recognized and lauded by their colleagues.*

Jimmy Akintonde (ARCH '95)
Sherwin Asrow (CE '44)
William Bodinus (ARSC '35)
John Calamos (BE '63, MAS BA '70)
Walter Ciciora (EE '64, M.S. '66, Ph.D. '69)
Shailesh Godambe (M.S. IE '70, Ph.D. '75)
Marvin Newman (M.S. PHOT '52)
Gintaras (Rex) Reklaitis (CHE '65)
James Stice (M.S. CHE '52, Ph.D. '63)
Lewis Thigpen (M.S. MECH '67, Ph.D. '70)

October 6–8

Alumni*fest* 2006

Mark your calendars. Save the date! The 2006 Alumni*fest,* a weekend of alumni reunions and celebration for the IIT community, will take place at IIT's Main Campus on October 6–8. Classes ending in 1 and 6 will be celebrating milestone reunions.

Everyone is welcome to attend Alumni*fest* 2006, which will coincide with IIT's homecoming weekend. **Visit www.iit.edu/alumni for more details as they become available.**

Save the Date!

Lucille S. Hynes
EE '88, Naperville, Ill., was recently promoted to distribution manager of the Department of Public Utilities–Electric.

Carl R. Smith
M.S. BA '88, Cary, Ill., was appointed vice president of engineering and manufacturing at Northrop Grumman Corporation.

1990s

Akshaykumar V. Patel
M.S. CE '90, Round Lake, Ill., was recently promoted to Highway Engineer IV at the Cook County Highway Department. He will be working at the Permit Division of the Highway Department. Prior to this assignment, he worked at the Transportation and Planning Bureau for more than 10 years.

David Greenberg
LAW '91, Chicago, has been appointed to the board of directors of New Delhi, India's Scandent Solutions Corporation, Ltd.

Sherry Leckrone
LAW '91, Phoenix, Ariz., has been hired by the firm Jones, Skelton, and Hochuli, PLC.

George Schutter
ACCT '92, Washington, D.C., was recently appointed chief financial officer of the Peace Corps. He and his wife, Susie, live in Washington, D.C., with their 1-year-old daughter, Ava. Prior to the Peace Corps, Schutter served in the United States Marine Corps until he received an honorable discharge with the rank of major.

Janis Stih
LAW '92, Louiseville, Colo., was hired as an associate at Furman Kerns and Bauer, LLC.

Catherine A. O'Connor
M.S. ENVE '93, Ph.D. '03, Chicago, gave birth to a daughter, Nora. She is a managing research scientist at the Metropolitan Water Reclamation District.

Stelios Symeonides
AE '94, Chicago, was married in 2005, and is expecting his first son in April 2006.

Thomas A. Miller
LAW '95, Lakewood, Ill., recently opened his own law firm, Miller, Matthias, and Hull, after several years as a partner with Marshall, Gerstein, and Borun, LLP in Chicago.

Lieutenant Commander Nathan A. Ballou, U.S.N.
ME '96, Japan, is currently serving with VFA-192, the World Famous Golden Dragons, as part of Carrier Air Wing Five, the only permanently forward-deployed airwing, in Naval Air Facility, Atsugi, near Tokyo. He recently returned from fall deployment and spent more than half of 2005 deployed at sea aboard the oldest U.S. commissioned warship, the USS Kitty Hawk. He was promoted in January 2006 to lieutenant commander, and he and his wife, Beth, recently celebrated the first birthday of their third child, Nathan Jr.

Nicole A. Biskup
CHE '96, Chicago, has been in private pediatric practice for a few years and recently opened her own pediatric practice in Frankfort, Ill.

Jeremy R. Lewis
MET '96, Rineyville, Ky., is currently preparing to deploy to Iraq to serve as an advisor/trainer to the Iraqi Army. This will be his second tour in Iraq.

Elaine C. Pena
ACCT '96, Chicago, gave birth to a daughter, Gabrielle Elaine, on November 22, 2005.

Patrick Funck
M.B.A. FIN '97, Winfield, Ill., has been named chief information officer of Broadspire, a Platinum Equity company.

Amie Harvey
CHE '99, Waupaca, Wis., completed her nuclear training and was certified as a Nuclear Engineering Officer for the Navy in August of 2004. She spent two years on board the USS Harry S. Truman and was deployed during the start of the Iraq war in 2003. She married Lieutenant Commander Scott Harvey in August 2003, and has a daughter, Keira Harvey, born in May 2004.

2000s

Danielle Tullman-Ercek
CHE '00, Henderson, Nev., is on track to graduate this spring or August with her Ph.D. from University of Texas–Austin in the area of protein engineering. Her current research is focused on understanding and utilizing the Twin Arginine Translocation (Tat) pathway in bacteria.

Blanca Aranda
CE '03, Tinley Park, Ill., is working for Midwest Engineering Services in Soils and Project Engineering.

Katherine A. Pothier
ME '04, Duluth, Ga., welcomed a baby boy into her family in November 2005.

CLASS SCRIBES WANTED!

A great way to get involved with IIT is to be a class scribe. Class scribes help IIT and their graduating class to stay connected by sharing news about fellow classmates with one another and with the rest of the university. *To sign up to be a class scribe, or to learn more, contact Marian Quirk at quirk@iit.edu.*

IIT Loses Two Trustees

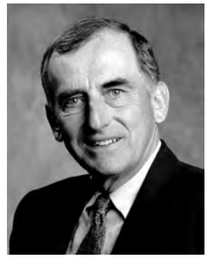
IIT mourns the recent loss of trustees Robert Janowiak and Charles Shaw.

Janowiak (M.S. EE '61) served as a trustee for more than 20 years and was a strong advocate for the university's Interprofessional Projects program. He served on the IIT Research Institute Board and the Technology Commercialization Committee and as president of the IIT Alumni Board. Through his work as president of the International Engineering Consortium and executive director of the Electrical and Computer Engineering Department Heads Association, Janowiak provided wise counsel on matters of university programs and positioning in the engineering marketplace.

Janowiak served on the University of Illinois College of Engineering Advisory Board; he graduated from U of I with a B.S. in electrical engineering and was a member of Tau Beta Pi, Eta Kappa Nu, and IEEE.

Shaw was first elected to the board in 1980 and became a Life Trustee in 1997. He served with great distinction on the 1996 National Commission for IIT and on IIT's Facilities Committee. He also held many other important volunteer roles on the board over the past 25 years.

Shaw was one of the country's leading private developers, and in that role, chaired the Urban Land Institute in 1994–95. He was active in numerous civic, educational, and health-care organizations, serving on the boards of Northwestern University and Rush University Medical Center. One of his greatest civic contributions was the development of Homan Square, a mixed-income residential community on the site of the former Sears headquarters on Chicago's West Side.



Robert Janowiak (M.S. EE '61)

Charles Shaw

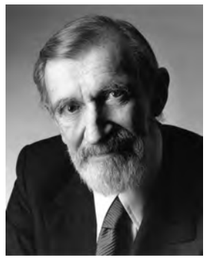


Photo: Ingbet Grutzner

James Ingo Freed, Former Dean of the College of Architecture

ARCH '53, New York

Born in 1930, Freed studied with Mies van der Rohe and worked with Mies on the Seagram Building before moving to the office of I. M. Pei. Freed then formed a partnership with Pei and Henry N. Cobb as I. M. Pei & Partners (later becoming Pei, Cobb, Freed, & Partners), which became the premier architecture firm in the nation through the second half of the twentieth century. In 1968, the American Institute of Architects awarded the firm its highest honor, Firm of the Year.

Freed succeeded George Danforth as IIT's dean of architecture (1975–78), and his term in academia resulted in many improvements to the college, including the 1975 restoration of S. R. Crown Hall.

Freed received an honorary doctorate from IIT in 1998, the year he served as a juror for the IIT campus center competition that selected the Rem Koolhaas design for The McCormick Tribune Campus Center. "Jim was a devoted alumnus who cared deeply about architectural education," says College of Architecture Dean Donna Robertson. "He also was a monumental architect, bringing us a lifetime of significant architecture." Freed's work includes the United States Holocaust Memorial Museum, the Ronald Reagan Building and International Trade Center, the Jacob K. Javits Convention Center, and the Wall Street Plaza at 88 Pine Street in New York, where Pei, Cobb, Freed, & Partners is located. At the time of his death, Freed was working on the design of the United States Air Force Memorial in Arlington, Va.

A scholarship in Freed's memory has been established in the College of Architecture. For more information, contact Jane Ellis at 312.567.3279 or ellis@iit.edu.

Nambury Raju, Distinguished Professor of Psychology

M.S. MATH '71, Ph.D. '74, Hinsdale, Ill.

An IIT alumnus, Nambury Raju joined the IIT faculty in 1978 as an assistant professor. He was promoted to associate professor and full professor on the basis of his work in the area of psychometric theory and test development. In 1993, he went to Georgia Tech as full professor of psychology and in 1996 returned to IIT, where he was named Distinguished Professor and senior scientific advisor of the Center for Research and Service.

Author of more than 150 publications and presentations, member of more than eight professional organizations, and editor or reviewer of more than 24 professional journals, Raju contributed substantially to the development of methods to evaluate and reduce bias in tests used in employment and educational settings. He served on the Department of Defense Advisory Committee on Military Personnel Testing from 1989–92 and on the National Academy of Sciences committee charged with evaluating the National Assessment of Educational Progress from 1996–98. He supervised more than 35 doctoral dissertations and 20 master's theses.

Raju's work has been recognized by the American Psychological Association and the Society for Industrial and Organizational Psychology, where he was honored as fellow. He received the Outstanding Achievement Award from the IIT I/O graduate students and the Lewis College Excellence in Teaching Award. Colleagues and students will remember Raju for his warm heart, strong intellect, and unflagging integrity.

As a testament to Dr. Nambury Raju's integral role in the development of the Industrial Organizational Psychology program at IIT, the I/O faculty endowment will be renamed the Dr. Nambury S. Raju Chair in Psychology. Memorial gifts for Dr. Raju should be directed to the I/O Faculty Endowment, IIT Institute of Psychology, 252LS, 3101 South Dearborn, Chicago, IL 60616.

inmemoriam

Edward Cartotto
EE '33, Roseville, Calif.

Robert R. Dahl
ME '47, Lexington, Va.

John Denman
PHYS '98, Westerville, Ohio

Rueben V. Eck
ME '43, Oak Lawn, Ill.

Urban Florin
MECH '43, Ashland, Ore.

James P. Hartnett
ME '47, Chicago

Floyd Boberg Harman
CHE '37, Armour Institute, LAW '48, Crystal Lake, Ill.

Joseph Ivaska
Attendee, Western Springs, Ill.

Darryl Janowicz
EG '66, Plainwell, Mich.

Max R. Kargman
LAW '29, Belmont, Mass.

Robert A. Keane
PA '75, North Chelmsford, Mass.

Robert Kostka
DSGN '52, '56, Ashland, Ore.

John J. Koza
CE '50, Berwyn, Ill.

Mervin W. La Rue Jr.
ME '43, Wauconda, Ill.

Alan O. Plait
MATH '51, Sarasota, Fla.

Paul F. Rolsch
IE '51, Moline, Ill.

John Scapin
CE '51, Prospect Heights, Ill.

Phillip Schneider
ME '48, Miami

Robert Schneller
ME '44, La Habra Heights, Calif.

Berthold H. Schreiber
LAW '60, Chicago

Charles L. Thompson
EE '68, Willow Springs, Ill.

Robert E. Whelan
EE '48, Centerville, Ohio

Earle Woods
ME '34, Miami

rewind

Story: Catherine Bruck, University Archivist
Photos: Courtesy of IIT Archives

From Suits and Ties to "Trucker Caps and Cowboy Hats": IIT's Campus Radio Station

Unidentified DJ with "Beach Boys' Party!" LP album cover, perhaps in Student Union (formerly, the Armour Mission building; non-extant), ca. 1965

WIIT staffers, perhaps celebrating the recently granted FM antenna and license, ca. 1975-1976; far right may be station manager Dave Dickson; far left may be business manager John Casey

IIT's campus radio station, heard on 88.9 FM, began as Armour Institute of Technology's experimental radio station and has been in operation since 1931. Now prominently located in The McCormick Tribune Campus Center (MTCC) with the call letters WIIT, the station has moved locations six times (Chapin Hall, Brown Hall, the Mission Building, HUB, Main Building, MTCC), changed its call letters an equal number of times (W9NV, W9YW, WIIT, WIIU, WOUI, and back to WIIT), and switched from AM (640) to FM (88.9) over its history. Early DJs included faculty and students. Today's volunteer DJs cover the spectrum of sounds and topics—from rock and rap to country; IIT librarians Matt Cook and John Dorr host a Monday noontime country and western program, "Trucker Caps and Cowboy Hats."

Another transformation is the way people listen to the music and speech broadcast over radio waves. While radio is the earliest form of electronic mass communication, WIIT's broadcast booth sits within ear- and eyeshot of MTCC's bank of broadband computer stations, representing one of the newest forms of electronic mass communication. Students can sit at computer terminals a few yards from where the campus radio programs originate and listen to WIIT radio programs over the Internet. Of course, the sound first converts instantaneously from analog radio waves to digital electrical impulses.

While WIIT generally can be heard the "old-fashioned way" within a two-mile radius of MTCC, the best way to hear it away from Main Campus is via the Internet. Newer still, WIIT has begun Podcasting its shows via iTunes. *To hear the broadcasts online and for instructions on how to hear Podcasts of shows, visit WIIT's website, http://radio.iit.edu.*

Sharing History

Do you have interesting materials from IIT's past—books or manuscripts from Armour Institute, Lewis Institute, or IIT and its schools—that you would like to donate to the university's archives? *To find out if your IIT treasure could help chart history at the university, contact IIT Archivist Catherine Bruck at archives@iit.edu or 312.567.6840.*

THE INTERNET CONTAINS MORE THAN 200 TERABYTES OF INFORMATION—APPROXIMATELY THE SIZE OF THE ENTIRE PRINT COLLECTION OF THE LIBRARY OF CONGRESS. SO FAR, HOWEVER, SEARCH TECHNOLOGY FOR THIS INFORMATION HASN'T KEPT UP WITH OUR INCREASED ABILITY TO ACCESS IT.

At IIT, faculty-led student teams are working to make search technology more effective by designing methods to capture and process data from multiple sources in both English and foreign languages.

Search technology developed by IIT's Information Retrieval Laboratory has already been successfully transferred to a number of organizations that rely heavily on high volumes of information—including the National Institutes of Health, AOL, and Harris Corporation.

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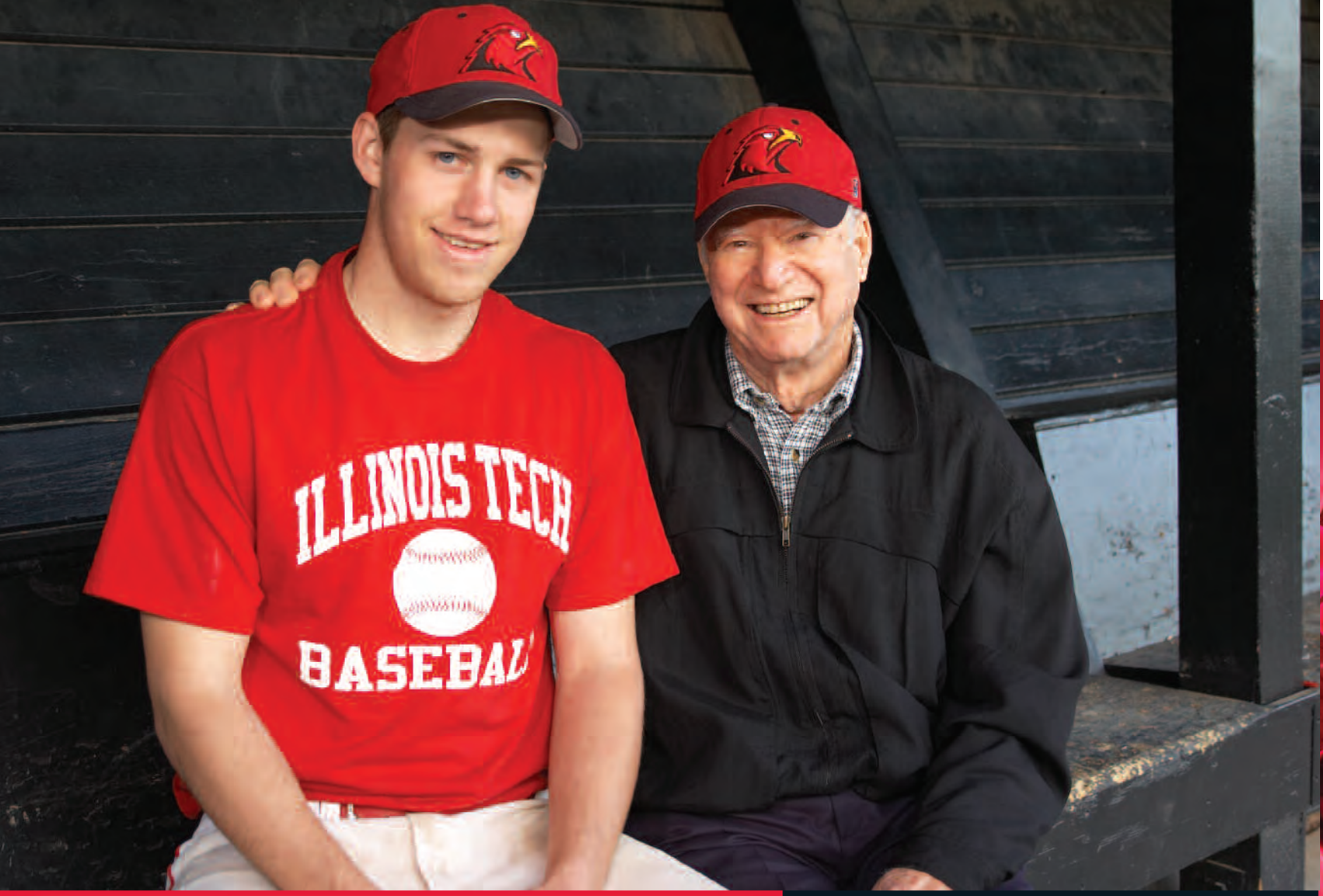

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Find out what else Irving Burg (ME '38) and Greg Albright (MMAE '06) have in common. To read about them and other IIT alumni and students who are sharing the path—and to learn how you can join them—visit *www.iit.edu/alumni/sharethepath.*

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