



iit ILLINOIS INSTITUTE OF TECHNOLOGY **magazine**

WINTER 2007

innovation by design

COVER STORY: How to Get Ahead in Business? Tap into Innovation

A SERIES OF MIRACLES
IIT Students and Faculty Help Rebuild After Katrina

TUNNEL VISION Professor's Wind Tunnel Research Defines a 40-Year Connection with IIT

ROBERT PRITZKER AND JOHN ROWE
The Former and New Board of Trustees Chairs Weigh in on the Future of IIT

LETTER FROM THE

president



Last month the first real snow of the winter started to fall...and fall, and fall on the Chicago area. It was December 1, and schools were closing, trains were running behind schedule, and the “City that Works” kicked into high gear to clear expressways and shovel us out from under the blanket. And while students on a typical college campus might hope for a “snow day” on such an occasion, the students of IIT had another focus in mind—IPRO Day.

Nearly 400 students set their alarms even earlier to ensure they were ready to battle the snow and present their projects—from hybrid electric school bus designs to an analysis of public perceptions of nanotechnology—before a group of eager faculty, project sponsors, fellow students, alumni, and friends. So while the weather was not on our side, the quality and the scope of the IPRO presentations, as well as the enthusiasm of our students, could not be dampened.

The innovative spirit of the IPRO program, now officially housed in Stuart School of Business, is being bolstered by a new joint-degree program between the Stuart School and the Institute of Design. This issue’s lead story, “Innovation By Design,” describes ID’s focus on a “user-centered” approach to design, a direction used by companies to develop the hugely successful iPods and RAZR cell phones. As ID Director Patrick Whitney notes, most companies know *how* to make something, but not necessarily *what* to make. This new joint program will be an important part of Dean Harvey Kahalas’s focus on strategic competitiveness.

And university business is yet another major topic in this magazine issue with “Yesterday, Today, and Tomorrow,” an article on the transition of Board of Trustees leadership from outgoing Chairman Robert Pritzker to new Chairman John Rowe. You also will learn more about world-class wind tunnels and the lifetime commitment to teaching of Hassan Nagib, the father of the IPRO program, as well as get a taste of the compelling civic-mindedness of our students in “A Series of Miracles,” a story about a group of IIT architecture students—led by Professor Frank Flury—who used a design/build approach to rebuild a new community center in Gulfport, Miss., an area devastated by Hurricane Katrina.

I guess the old adage, “neither snow, nor rain, nor gloom of night...” certainly holds true for the commitment of our students, faculty, and staff, who are as steadfast as ever in their pursuit of education—even while in the midst of another Chicago winter.

A handwritten signature in black ink that reads "Lew Collens". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Lew Collens
President

iitmagazine

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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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**A SERIES OF
MIRACLES**

One year ago, Gulfport, Miss., residents were only beginning to deal with the aftermath of

Hurricane Katrina. With the unexpected help of strangers from IIT, Gulfport has a new community center—and a few new friends.

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**YESTERDAY, TODAY,
AND TOMORROW**

With the retirement of Robert A. Pritzker as chairman of the IIT Board of Trustees, incoming Chairman John W. Rowe says he's got big shoes to fill. According to Pritzker, the shoes are a perfect fit.



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A MIGHTY WIND

A world-class wind tunnel and commitment to teaching have elevated the career of alumnus and Distinguished Professor Hassan Nagib.

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Magazine Letter Prompts Alumnus to Write In

On page two of the magazine [fall 2006] I saw a note from a fellow graduate from the class of 1949. I decided to write and bring my relevant past to date to the school.

I started my mechanical engineering education in 1937 at Cooper Union in New York City but had to stop because I was employed in an essential capacity relative to the wartime activities. Thus, I only received about one-third of the required engineering education.

In 1942, having joined the United States Corps of Engineers, I was stationed at Fort Belvoir as a combat engineer. After basic training, I was interviewed by a Naval Commander, presumably because of my extremely high marks in both the Army General Classification Test and the Mechanical Aptitude Test.

Just as I was called to go on maneuvers, I was advised to get ready to travel to Chicago. I was given a phone number to call on arrival. I called asking for the commanding officer and was told to wait in the railroad terminal building holding a magazine or newspaper in my left hand, and

I would be approached by someone who would take care of me. This really was secretive stuff.

Some time later, a person in civilian clothes approached me and asked me to follow him out to a waiting car with a driver. I, of course, was in Army uniform. We drove along Lake Michigan with the gentleman pointing out sites of interest. Eventually, he dropped me off at a hotel on the South Side of Chicago, giving me a room number to call. I had to obtain civilian clothes.

Sometime later, I obtained civilian clothes and went to work at the University of Chicago assisting brilliant scientists in the development of the atomic bomb. Many times I walked up and down the first nuclear reactor called the “West Stands Pile.” I worked with men like Enrico Fermi, Leo Szilard, and Arthur Compton. I did not know until after the war that these men were Nobel Prize winners. I have certificates of commendation from General Leslie Groves, Secretary of War Henry Stimson, and others.

In 1946, rather than continuing to work at the University of Chicago as a civilian, I decided to continue in the consulting engineering field and entered Illinois Institute of Technology studying mechanical engineering. In January 1949, I received my bachelor of science in mechanical engineering. I also took a graduate course in air conditioning and have used the knowledge most of my life. I owe a great deal to the instructor whose name I may not recall. In any event, I owe so much to IIT.

I worked abroad primarily in the electric generating field as the supervisor of engineering and construction. I worked in New Delhi, Talcher, and Calcutta in India and Milan, Italy. Then in the last 40 years, I specialized in HVAC and plumbing. I was in the mechanical contracting business for a number of years.

I am 87 years old and still working as a construction estimator and as the registered professional engineer inspecting and writing reports of new construction at the Dulles International Airport outside of Washington, D.C.

I have been registered in nine states, including Illinois, but now only in Maryland, Virginia, and the District of Columbia, where I work. I am still playing golf and breaking 90—even though my game is shorter.

—Harris H. Levee, ME '49



QUOTABLE

“The man pitched eight solid innings, and he cleaned his hands after the first one.” —Physics Professor Porter Johnson in USA Today, explaining how it was likely low temperature, high air pressure, and humidity—not ball doctoring—that worked in favor of Detroit Tigers pitcher Kenny Rogers in Game 2 of the World Series.

Letter from Former Black Knight Sparks Response

Regarding the letter from Marshall B. Taylor M.D. [fall 2006]:

I was a member of the Black Knights in 1942. Dr. Heald [former president Henry Heald] was concerned about a number of problems at that time and met with this elite student group to obtain its input.

For instance, State Street was lined with shabby stores in the shadows of the El tracks. Prostitutes would entice the men walking from the station. We worked to get rid of this.

There was little social life, so we, the Black Knights, organized a dance at the Medinah Country Club, and I retained Alvino Rey and the King Sisters. It was a great affair.

There were complaints about the food in the cafeteria. We organized a strike, which resulted in the hiring of a dietician and a much-improved menu.

I don't know the origin of the name, but it was a secret (black) society and knights were supposed to do good.

—Warren E. Spitz, ARCH '42, MCRP '68

Another Black Knight Recalls Purpose of Group

I read Mr. Taylor's letter on the Black Knights, and it brought back many memories of good times and fellowship with fellow students. It was amazing, as no one knew or would tell how you became a member. The secrecy really taught us to work with our rivals from other organizations. I had forgotten completely about the organization until I read his letter. Dr. Rettaliata had a good idea. I learned much about organizational relationships. I thought the origin of Black Knights referred to putting IIT's needs ahead of our own organization's needs.

Kenneth J. Peterson, BE '57
Pi Kappa Phi



Photo: Bonnie Robinson

Editor's note: IIT Magazine has received much correspondence regarding the story on John T. Rettaliata, former university president, and the accompanying piece on the Black Knights [spring 2006]. We are pleased to note that Rettaliata was inducted into IIT's Hall of Fame during a special induction ceremony in October during Alumnifest 2006. WTTW-11 "Chicago Tonight" host Phil Ponce moderated a discussion between Rettaliata [right] and current IIT President Lew Collens regarding IIT past and present. To view more photos of the event, see the Alumnifest photo spread on pages 32–33.

IIT Outlines Institutional Planning Initiatives

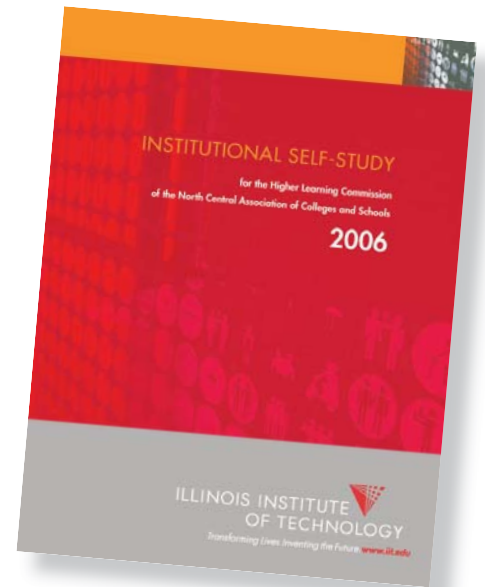
This summer, IIT successfully completed two institutional assessment and planning initiatives, the NCA Self-Study and the 2010 Plan.

IIT submitted its decennial self-assessment and institutional review for the North Central Association (NCA) of Colleges and Schools in August. IIT's NCA Self-Study included a discussion of the process of revising the university's mission, vision, and values as well as both an overview of the departmental and administrative highlights of the past 10 years and recommendations for future growth. The NCA held its standard site visit in October, where NCA representatives met with IIT administrators, faculty, and staff. The results of the NCA findings are expected this spring. *IIT's NCA Self-Study is available in its entirety online at www.iit.edu/nca.*

The NCA Self-Study was a springboard for the completion of the 2010 Plan, the set of academic and university-wide platform priorities that will

guide IIT through the end of the decade. The university academic initiatives include energy and sustainability, the life sciences, innovation and entrepreneurship, mathematics and science teacher education, and collaborations and external alliances. The platform initiatives, which more broadly

apply to each of IIT's administrative levels, include enrollment strategy, the student experience, interprofessional education, facilities and student housing, and information technology. *The 2010 Plan appears online at www.iit.edu/president/2010.*



2010 PLAN

ILLINOIS INSTITUTE OF TECHNOLOGY

Photos: Jack Spanni



PSYCHOLOGY LOOKS BACK WITH 80/10— During 2006, the Institute of Psychology hosted several events in celebration of the institute's 10th anniversary as well as the 80-year history of the psychology program at IIT. *[Left]* Psychology alumni Don Paull (PSYC '54) and Camilla Ross, surviving spouse of former faculty member George Ross, both members of the institute's History Committee, are working to archive the institute's past. *[Right]* In October, alumni and friends attended a special event hosted by Fifth Third Bank to announce the collaboration among the Illinois Holocaust Museum and Education Center, the Institute of Psychology, and IIT's Galvin Library. David Boder, an IIT Psychology faculty member for 27 years, went to Europe in 1946, and using a wire recorder invented by engineering faculty member Marvin Camras, recorded the only known interviews at that time with survivors. The recorder and Boder's book are being placed on permanent loan in the museum, which is scheduled to open in 2008. Attendees included *[left to right]* Howard Ackerman, Bryan Dunn, Ralphael Juss, Arch Pounian, Audrey Mivelaz, J. B. Pritzker, Rick Hirschhaut, M. Ellen Mitchell, Sam Harris, David Baker, Christopher Stewart [partially obstructed], and Bethany Fleming.

UTP Watch

Important recent progress at University Technology Park At IIT (UTP) includes:

- Technology Business Center (TBC) opened on November 29, after a complete renovation of a 1960s lab building. TBC will house science and technology companies needing 2,500–30,000 square feet of rentable space.
- Incubator II, a 28,000-square-foot expansion in the Engineering Research Building, started construction on November 1, 2006. When completed next fall, it will house up to 30 companies in wet and dry labs measuring from 500–1,500 square feet.
- A 1,600-square-foot furnished office and cubicle space opened in IIT Tower to accommodate very early stage company start-ups. Two companies have moved in already.
- UTP now has 11 company and research institute tenants in less than one year of operation.

www.universitytechnologypark.com



Attendees of the opening of UTP [left to right] included Mayor Richard M. Daley, IIT Board of Trustees Chairman John Rowe, President Lew Collens, Alderman Dorothy Tillman, and Congressman Bobby Rush.

Using Applied Mathematics to Meet Challenges in Ocean Flow Modeling

Miles beneath the ocean surface, an earthquake displaced a massive volume of water, creating powerful, fast-moving waves. These waves struck 11 countries bordering the Indian Ocean, killing more than 200,000 people. The tsunami of December 2004 was a devastating example of the ocean's power and the need to predict what it will do.

But small-scale ocean processes—like tiny eddies, ripples, and minute mixing of water beneath the ocean surface—also interest researchers. Knowing about them will help researchers understand large-scale processes like hurricanes and tsunamis, and processes like long-term global climate. However, the physical realities of the ocean make this difficult.

Vertical mixing is a good example. “The ocean consists of layers of water masses with a very small amount of vertical mixing across the layers,” says Jinqiao “Jeffrey” Duan, Applied Mathematics professor and director of IIT’s Laboratory for Stochastics and Dynamics. The ocean is the world’s largest heat reservoir. Without vertical mixing, it would be too hot to live in some places near the equator. Others in the north would be too cold. “Small-scale vertical mixing helps drive large-scale ocean circulations that redistribute heat energy around the globe, and thus affects the climate in a fundamental way,” says Duan. But vertical mixing is difficult to model or describe. “The vertical mixing process is small and fast moving,” Duan says. “The range of turbulent scales for oceanic flows is enormous. Despite the increase in computational power, not all scales in the ocean circulation can yet be resolved simultaneously.”

Duan recently secured a \$500,000 collaborative grant from

the National Science Foundation to help fill in the blanks. “A New Modeling Framework for Nonhydrostatic Simulations of Small-Scale Oceanic Processes” will develop a new way to model small- and fast-scale geophysical processes like those of oceans. This will improve researchers’ ability to predict many things, particularly climate and weather. In addition, because climate is one of the earth’s most complex systems, the algorithms, tools, and paradigms created through this research may one day be applied in research of other complex systems (such as chemical, material, and life).

Duan and collaborators at Argonne National Laboratory, the University of Miami, and Virginia Polytechnic will develop their new modeling framework guided by improved understanding of physical mechanisms for these processes, new descriptions of some processes, and highly accurate numerical simulations, further justified by mathematical research on random behavior of these processes. This latter mathematical research benefits from recent advances in stochastic dynamical systems.

The project exemplifies Duan’s love of using mathematics to solve complex problems. “I started to like math as a child, became more interested in ‘math you can use,’ and then got involved with applied mathematics for dynamical systems while a Ph.D. student at Cornell University,” says Duan. After completing his post-doc at Caltech, he became a mathematics professor at Clemson University, but moved to IIT because of its focus on interdisciplinary applied mathematics. His specialty is applied mathematics for stochastic dynamical systems—complex systems under the influences of noise and uncertainty—of which the current research will make great use.

www.math.iit.edu





New graduate Tim Winter (CE '06) had been warned: when you leave Port-au-Prince Airport in Haiti's capital, you will be bombarded. "It was overwhelming," he recalls. "At first it felt as if half the country was bearing down on us, like we were under attack. In reality, the local people were looking to work for tips by carrying our luggage. It's amazing



"EWB formed out of a desire to help communities in such abject poverty that their residents are not able to pursue projects that will better their lives."



Student Heads Effort a World Away

what people are willing to do to make money just to buy food for the day."

Winter visited Haiti last August with four student members of IIT's chapter of Engineers Without Borders (EWB), a group he co-founded two years ago. In partnership with Rotary International, which funded part of the trip, and the non-governmental organization Haiti Outreach, the students were researching ways to partner with locals to support initiatives that would benefit those living in poverty.

Haiti is the poorest country in the western hemisphere. Eighty percent of its residents live in poverty, and deforestation and illiteracy are rampant. Its central government is essentially limited to the borders of Port-au-Prince, and gangs control most of the slums within the capital. Outside the city, United Nations peacekeepers are the only evidence of authority. However, there are no rebel factions, making it safe for relief groups to work and travel freely.

"Haiti is a one-hour airplane ride from Miami, but it's a world apart," Winter observes.

Soft-spoken and articulate, he counts his own blessings as reason for his commitment to public service. "I've been fortunate in my upbringing. I've had the opportunity to come to IIT and get a great education. In other countries, there's an abundance of resources—such as in Haiti, where they have plenty of water—but there's no access." At IIT, he has worked as a service-learning intern



Tim Winter (CE '06)

helping to coordinate service-learning projects on campus, volunteered for Friends of the Parks, participated in Habitat for Humanity, and co-founded the Catholic Campus Ministry.

Winter and colleague Nate Godfrey (ME '05) were inspired to start IIT's EWB chapter after working on an Interprofessional Projects (IPRO) course that analyzed the needs of Southeast Asia following the 2004 tsunami that struck there. "EWB formed out of a desire to help communities in such abject poverty that their residents are not able to pursue projects that will better their lives. Our goal is to help people develop solutions for real problems they have identified for themselves."

Compared to other organizations in which Winter has participated, EWB has allowed him to give back to society through his chosen career field. "I've started to see how our work as engineers, scientists, and architects is important. We have the ability to help these people physically construct better lives for themselves. We can do so much more than just build a shelter."

Determining which projects may benefit a community more than others requires an understanding of the local social structure

[Above, center] A photo from the EWB scoping trip to Haiti reveals a water distribution system in disrepair.

as well as a willingness to look outside the boundaries of traditional engineering and science.

"Sometimes the culture of engineering is simply to design something to be efficient. This works for most cultures in the West, but this approach doesn't necessarily work with other countries," he says. "When we first arrived in Haiti, we thought that the first thing we should do is fix the roads. But in time we

Celebrations Ring In New Academic and Research Facilities

Last summer and fall, IIT dedicated four new labs, a studio, and a lounge during several events that recognized both the lead benefactors as well as the faculties and programs that will be supported by these venues.

In August, events were held to commemorate the opening of the Grainger Foundation Laboratories in Siegel Hall and the Snap-On Incorporated Lobby in Wishnick Hall. The Grainger Lab houses undergraduate teaching labs where students conduct hands-on experiments in power electronics, power systems, electric machines, electric motor drives, and renewable energy. It also is home to IIT's Electric Power and Power Electronics Center, which sponsors research projects, short courses, conferences, and seminars. The laboratory space was completely renovated and re-equipped with the best electrical engineering equipment available. The Snap-On Incorporated Lobby, funded by Snap-On Incorporated, received new east/west doors and refinished floors and walls.

"We now have the best power electronics and motor drive labs in the United States," Professor Ali Emadi says of the Grainger facility. "No other university can come close."

The opening included a jazz band, which led donors, industry representatives, and faculty from Siegel to Wishnick for a lunch honoring IIT Trustee Bob Cornog (MET '61), the former chairman of Snap-On Incorporated who facilitated the gift of the lounge.

On a second occasion, IIT honored the generosity of IIT Trustee Ed Kaplan and Peter Cherry, who contributed significantly toward the renovation of the Kaplan Foundation/Carol and Ed Kaplan (BSME '65) Computer Engineering Laboratories suite and the Walter L. and Virginia B. Cherry Electronics Laboratory, respectively, both in Siegel. The Kaplan

Lab supports very large-scale integration design and testing, microcomputers, embedded system design, and computer communication networks. These labs were renovated and equipped with workstations from SUN Microsystems, Inc., DELL PCs, Cisco routers and server units, Xilinx FPGA development boards, and high-end oscilloscopes.

Students in the Cherry Lab study engineering electronics, including electronic circuits and analog and digital systems. The original laboratory was established by Walter L. Cherry (a longtime IIT trustee) and Virginia B. Cherry, and was re-equipped and renovated with a generous donation from their son, Peter.

"With help from Ed and Carol Kaplan, the Cherry family, the Grainger Foundation, and many other alumni and friends, the ECE department has improved its facilities tremendously," says ECE Professor and Department Chair Mohammad Shahidehpour. "Our current and future students are the true beneficiaries of their generosity."

Two additional labs were dedicated last fall. The Fazlur Rahman Khan Master's Studio was dedicated on September 27. The late Khan, a former Architecture faculty member, was known as the "Einstein of Structural Engineering." His many projects contributed to the Chicago skyline, and include the John Hancock Center and Sears Tower. A jazz band led guests from 3410 South State Street to S. R. Crown Hall for the reception and other planned events. This studio is under the purview of the College of Architecture.

The Edward W. Ross (BSME '43) Bio-Fluid Mechanics Laboratory was dedicated on October 20. The dedication was followed by a luncheon with Ross's four student scholars, guests, and select faculty. The lab is part of the Biomedical Engineering department.

realized that people walk everywhere, and that works for them."

Last year, EWB and the newly formed student chapter of Haiti-IIT voted to support two projects in Pignon, a small town 50 miles from the capital: a water system and a school. Beginning in fall 2006, the students researched technologies, equipment, and delivery methods for the water system, and traveled to Pignon over the holiday break to map the city. An IPRO team will format mapping data this spring, and EWB will work with the Water Environment

Federation to implement the water system this summer. EWB also began working last fall with Architecture That Matters—an IIT group that provided relief to hurricane-damaged Gulfport, Miss.—to assess site plans for the construction of additions to a public high school in Pignon. The students are working with locals to develop the school's master plan and to assess other building projects in Pignon and the surrounding area.

"Many government agencies and NGOs have provided Haitian communities with great projects like bridges, water systems, and roads.

The problem is that things break, and often after only a few months or years," says Winter. "All too frequently, there is no one in the community who knows how to fix whatever broke, so things return to the same state as before the project. In everything we do, our goal is to make solutions sustainable, and so we are committed to helping Haitians initiate projects built, owned, and maintained by Haitians."

www.iit.edu/~ewb-iit



[Top] A jazz band was on hand for the dedication; [center] the newly renovated Cherry Electronics Laboratory; [above] the Grainger Foundation Laboratory after renovations

Professor Leads IPRO to Provide Orthotics and Prosthetics Training in Colombia

When IIT Professor Kevin Meade began facilitating an Interprofessional Projects (IPRO) Program course in 2002, he wasn't aware that he was on the verge of an interprofessional education of his own.

Over the course of his career teaching biomechanics, Meade had become increasingly fascinated by the field of orthotics. During the fall 2002 and spring 2003 semesters, he and his IPRO students created an educational short course on how to use orthotic devices to treat spinal deformities. At the end of the spring 2003 semester, Meade and the IPRO team traveled to Universidad Don Bosco, a Roman Catholic university run by the Salesian Order, located just outside San Salvador, El Salvador, to present the course. "Students from both universities not only learned a lot about orthotics, but they also learned that these truly are global issues, not just things they deal with in their own backyards," says Meade.

After the spring 2003 IPRO, Meade began entertaining the idea of adding clinical orthotics to his repertoire. "I knew it would help me relate better to people in the field who weren't researchers or engineers," says Meade. When he was granted a sabbatical in 2003, he enrolled in an 18-week, full-time, master's level certificate program at the Northwestern University Prosthetics and Orthotics Center. "Going through that program was like trying to drink water out of a fire hose every day," laughs Meade. "I'd have three Starbucks a day and still fall asleep at night as soon as my head hit the pillow."

In order to complete the program, Meade was required to perform 250 hours of supervised clinical training, which he did in Bogotá, Colombia, in 2004. During that time, he gave 22 invited talks in five months, and in the process saw many of the area's major institutions and hospitals. "There's a broad spectrum of



Photo: Michael Gross

Professor Kevin Meade [left] and Jared Gardner (ME '06) look at one of the orthotic devices that they use in their clinical work. Gardner, who recently graduated, will be returning to Colombia this year to continue work initiated there.

pathologies and conditions there—much more than you see here," says Meade. "On a given day, I might see a child who had a major stroke at age nine, a soldier who lost a limb, and an elderly person with osteoporosis."

While in Bogotá, Meade met faculty from Centro Don Bosco, a 4,400-student Roman Catholic technical high school also run by the Salesian Order, and persuaded them to plan a new curriculum in orthotics and prosthetics that would prepare students for entry-level technician positions. Meade returned to IIT the following year with a plan for a new IPRO, and in May 2006, he and his students traveled to Bogotá to present at a conference the portion of new curriculum they had spent the semester developing.

Approximately 170 people attended the conference, including representatives from several other educational institutions located in Colombia. According to Meade, such a high level of interest was not purely academic. "There are plenty of doctors and physical therapists in Colombia," he explains. "But they are lacking people who have the knowledge and skills to build these devices. By helping them to develop a curriculum, we're giving them the tools to train

their own practitioners." Scheduled to begin in fall 2007, the program at Centro Don Bosco will represent the first orthotics and prosthetics program in Colombia, and one of only a handful in all of Latin America.

Meade's transcontinental IPRO is also reaping benefits closer to home. Joliet Junior College, located in Joliet, Ill., is developing a new curriculum similar to that of Centro Don Bosco. "All of the work we did in the spring, as well as the work we'll be doing this fall and in the future, can be applied to the program in Joliet," says Meade, who is serving on an oversight committee for the program. "We're getting double the value from it."

Ultimately, Meade hopes that educational partnerships in the field of orthotics and prosthetics will expand to other areas of Latin America, as well as to non-industrialized countries where the need for such devices is great, due to disabilities caused by accidents, illness, or war. "Over the years that I've been involved with this, I've tried to plant a seed with students from other areas of the world," says Meade. "This program could be expanded anywhere. It starts with the right person who can make things happen."

DONOR WALL—A new addition to the award-winning McCormick Tribune Campus Center (MTCC) is the IIT Challenge Campaign Donor Wall. "These generous friends and alumni were the engine for IIT's renaissance," says Betsy Hughes, vice president for Institutional Advancement. "The Donor Wall is a way for us to thank perpetually those donors who have been integral to the university's exceptional progress and current success." Designed by Michael Rock of 2x4, Inc., the same firm that developed the IIT icons that dot the entrance and Founder's Wall of the MTCC, the Donor Wall is a stark yet elegant interpretation of honorific structures. The Donor Wall recognizes the more than 200 donors who contributed to IIT's Challenge Campaign.





Lori Andrews tours the National Museum of Health and Medicine, one of the settings in her genetics thriller, *Sequence*. She is in front of a bone from the leg of Union General Dan Sickles, who used to visit it on the anniversary of the Battle of Gettysburg, where it was shot during combat and amputated.

Gene Expression

Lori Andrews
Associate Vice President, Distinguished Professor of Law, and Director for Science, Law, and Technology

As an internationally renowned genetics expert, Chicago-Kent College of Law Professor Lori Andrews has made a name for herself in many professional circles, including law, technology, public policy, and ethics. With the June 2006 release of her first novel, *Sequence*, she has added mystery writing to the list.

What is your book about?

The main character, Alexandra “Alex” Blake, is a young biologist who has just taken a two-year post at the Armed Forces Institute of Pathology in Washington, D.C., to sequence the 1918 Spanish Flu. Her boss pulls her away from her work and into forensics. Alex finds herself tracking a serial killer, and that’s just the beginning of her adventure.

What inspired you to try your hand at fiction writing?

In 1995, I chaired a working group on the ethical, legal, and social implications of the Human Genome Project for the National Institutes of Health. In the process, I became more and more interested in the impact of genetic technologies on individuals and how to protect the rights of individuals. I decided that a mystery series would be a way in which I could bring some of those issues to the larger public.

When did you find time to write?

I wrote *Sequence* a few years ago while I was a visiting professor at Princeton and had no administrative responsibilities. My second novel, *The Silent Assassin*, which will be coming out in the spring, was easier, because I had already created a setting and knew the characters very well. I love writing, so I fit it in wherever I can—on planes, for example, and in the nooks and crannies of life.

What did you find most challenging about writing this novel?

Although I’d written a number of nonfiction books, after the first draft of *Sequence* I realized that I had no sense of physicality. For example, someone can’t get shot and talk normally five seconds later. That was the biggest issue—leading an academic life of the mind, and then writing about very physical, tangible things.

Are any of the characters autobiographical?

The interesting thing about making up characters is that you can give pieces of yourself to each of them. Barbara, the focused lawyer in the novel who shows up completely prepared for meetings, certainly reflects a part of me, but Alex—who’s the type to jot all of her notes on the back of cash station receipts—is part of me, too.

How has the experience of writing this novel changed you?

It’s brought more nuance to my ethical analyses. For example, in the novel, Alex secretly tests her boyfriend’s DNA because she suspects that he might be the killer. In real life, I would completely fight against that, but now I can better understand how people get into these situations, and I think my policy work is better for it.

What do you hope your readers take away from the book?

I hope they have a fun read, but I also hope they think about the fact that genetic technologies raise some profound challenges for our society. We’re going to be the generation that decides things like whether an employer can use genetic tests to determine the potential cost of hiring someone with a predisposition to cancer, for example, or whether children can be genetically enhanced.

Sequence is due out in paperback in April 2007 and *The Silent Assassin* will be published in May 2007.
www.kentlaw.edu
www.loriandrews.com

faculty Q&A

QUOTABLE

“We cannot wait for the system to have a major catastrophe before we start worrying about it.”
—Professor Mohammad Shahidehpour on the “Dallas Morning News,” explaining why the federal government should force power companies to complete system overhauls.

Searching for a Powerful Solution



Photo: Jason Smith

Associate Professor Alex Flueck

A lot can happen in 10 years. Whether talking about technological advancement, pop culture, or the price of gas, a decade seems roughly the equivalent of a light year. But when it comes to building enough power lines and generating stations to meet the 19 percent increase in United States demand projected to occur within the next 10 years, as predicted by a recent North American Electric Reliability Council (NERC) report, “10 years might give us just enough time,” says IIT Professor Alex Flueck.

“In just about any other industry, 10 years would be more than enough lead time to develop and implement a major capacity expansion plan,” says Flueck, associate professor of Electrical and Computer Engineering, who is taking a sabbatical to work with local industry on new technologies for robust power delivery systems. “But it takes a long time to build new generation—and an even longer time to build transmission lines.” The primary challenge, Flueck explains, is the siting process. “People don’t want power lines running near their homes or businesses—especially high voltage transmission lines. And building that kind of infrastructure is incredibly difficult.” He adds, “It’s particularly difficult when you consider that transmission lines that would help the Mid-Atlantic might best be built in the Ohio Valley, for example—and that’s at the heart of state regulation on siting new facilities. Given these complex factors, the NERC report is a fairly urgent call for action.”

Over the past decade, Flueck’s research has focused on another area of significant concern: power grid stability—an issue that has remained center stage since the blackout of 2003 plunged 50 million customers of the Northeast, Midwest, and Ontario into darkness. Currently, Flueck’s research group is developing new computational tools

for Voltage Security Assessment, including an online, Web-based diagnostic tool, as well as high-performance computing solutions for the complicated modeling and simulation tasks associated with large-scale electric power systems. “Stability limits and transfer capabilities of power grids are currently very difficult to characterize and analyze,” says Flueck. “Reliable diagnostic tools would be of great value to industry in predicting and avoiding cascading overloads and blackouts.”

Will the U.S. experience more blackouts? “There’s no question,” acknowledges Flueck. “We just don’t know when, or for how long. But we’re in better shape since 2003 because everyone knows that a major outage is possible.” Flueck’s primary concern is that those seeking the solutions remain proactive. “Our challenge as a society is to invest in the power grid even when the lights are on,” he says.

As for the issue of security, Flueck believes that it has improved dramatically at generating plants, and at nuclear stations in particular. “The next security piece involves the transmission grid,” says Flueck, “and there’s not a whole lot you can do unless you want to bury new transmission, which is eight to 10 times more expensive than putting it overhead on towers.”

A more reliable and secure power system is the vision of IIT Regent Bob Galvin. In 2005, he launched the Galvin Electricity Initiative, which aims to provide residential and commercial customers with an affordable, environmentally sound, and, above all, perfectly reliable power system. IIT and Flueck will collaborate in this effort.

www.ece.iit.edu
www.galvinpower.org

faculty honors & awards

Douglas Cork

Biological, Chemical, and Physical Sciences

Cork was reappointed to the editorial board of *Applied Bioinformatics*. The quarterly, peer-reviewed journal focuses on bioinformatics in the fields of medicine and health care.

Ronald W. Staudt

Chicago-Kent College of Law

Staudt was appointed to the College of Law Practice Management (COLPM) board of trustees. The COLPM was established in 1994 to recognize professionals in the field of law practice management, to set professional standards, and to help fund projects that enhance quality in the field. Staudt was inducted as a fellow of COLPM in 2004. He has been IIT's associate vice president for Law, Business, and Technology since 1998.



[Above, left to right] Faculty members Paul Pettigrew, Kathleen Nagle, and Catherine Wetzel were recently honored for course development and teaching at the College of Architecture. [Below] First-year architecture students address design issues in a fresh, innovative way as they join with professors in transforming Main Campus into a large laboratory.



Architecture Faculty Recognized

Three College of Architecture faculty members—Assistant Professor Catherine Wetzel, and Studio Associate Professors Kathleen Nagle and Paul Pettigrew—were awarded the American Institute of Architects 2006 Education Honor Award for excellence in course development and teaching. Commenting on their presentation, titled “Architecture I, II,” the jury said, “This program allows students to become immersed in many critical issues they have to think about as an architect, in a foundation course, including scale, materiality, landscape, and working collaboratively. First year design issues are addressed in a fresh, innovative way. The professors transform the campus into a large laboratory. Students understand scale better through full-scale mockups rather than just drawing a human figure in their project. Relationships between plan, section, and axonometric are learned through presenting these drawings simultaneously.”



Changing the Game

Professor Ali Emadi Looks to Change the Way We Drive, One Hybrid at a Time

Statistics show that while 700 million cars are in use worldwide today, as many as 1 billion cars will traverse the world's streets and highways by 2025. The potential economic and environmental outcomes may be costly, but with hybrid sales currently accounting for only 1.2 percent of vehicle sales in the United States, this also means there is great opportunity to "change the game," says Electrical Engineering Professor Ali Emadi.

Emadi, director of IIT's Electric Power and Power Electronics Center (EPPEC) and an expert in power electronics and motor drives, is leading students and faculty in several research initiatives that illustrate why IIT is a leader in electric-hybrid vehicular research. These projects include everything from retrofitting U.S. Army high mobility multi-purpose wheeled vehicles (HMMWV) with electric hybrid systems to hybridizing auto rickshaws.

The founder of the Industry/Multi-university Consortium on Advanced Automotive Systems, a cross-disciplinary group of industry and multi-university organizations working to improve auto fuel efficiency, Emadi joined IIT in 2000 following an international search for the director of the Grainger Foundation Power Electronics and Motor Drive Laboratories. IIT has a rich history in electrical power systems, and hired Emadi to build a successful power electronics program at the university. He has succeeded, receiving numerous awards and recognition along the way, including the 2003 Eta Kappa Nu Outstanding Young Electrical Engineer of Year award, given by the Electrical Engineering Honor Society.

His outlook on hybrid systems involves following a "well to wheel" mantra. Emadi says that IIT's hybrid vehicle systems, which focus on vehicle conversions as opposed to hybrid compacts, lend efficiency to the sum driving process—from the time oil is pumped to the time the car hits the road. "Electric systems are highly efficient and can be controlled effectively to achieve better performance. I firmly believe that integrating engines with electric systems gives us the best of both worlds," he says.



Professor Ali Emadi

IIT's research in hybrid systems is two-fold. It currently includes using off-the-shelf components to transform traditional vehicles into hybrid versions, a process that could double fuel economy without sacrificing performance. The second facet of the center's research is the creation of unique components that comprise hybrid electric conversion kits, a project in concert with Emadi's IIT startup company, Hybrid Electric Vehicle Technologies, Inc. Kits would enable any existing car to be retrofitted for hybrid capability within two to three hours, improving fuel efficiency by 30 to 100 percent. Emadi's group has successfully executed a hybrid conversion, and Emadi says the conversion kits will be ready for the market following two more years of product development. Long-term plans include creating entirely new, advanced components that will replace existing mechanisms used in converting vehicles.

In most cars, engines dictate how energy is used during operation. Engines don't like to sit idle; designed to function best at optimum torque/speed region, most are not efficient at managing energy expended, hence the difference in gas mileage during city versus highway driving. Conversely, hybrid vehicles are "smart," says Emadi. The "brains" of the hybrid vehicle,

the controller, determines how energy is shared between the engine and the electric counterpart. In a hybrid configuration, the energy is bi-directional, meaning the energy can shift in one of two directions. The controller tells the vehicle to use energy from either the engine, the stored energy in the energy storage device, or both. When the controller senses that the stored energy in the vehicle's electrical system is low, it operates the engine at a higher rate, storing any excess energy in the recharged battery.

The author of five books on vehicular power systems, Emadi acknowledges common misconceptions about hybrid vehicles—that they are made for the eco-friendly market, or that they don't perform as well as standard cars. And while he cares deeply about the impact of vehicles on the environment—"we are experiencing a crisis and consuming too much oil," he says—Emadi says the economic benefits and performance qualities of hybrids are indisputable. And performance sells.

"I'm pragmatic regarding the business side. If we can make it clear that the average driver will see an economic benefit from hybrid vehicles, we can make a huge impact. If we put performance above all, we may have a bigger impact on a larger segment of the community," he says.

researchspotlight

Hybrid Electric Vehicle Projects at IIT's Electric Power and Power Electronics Center (EPPEC)

- U.S. Army HMMWV conversion: With \$1 million in congressional support, EPPEC will help the Army improve on fuel costs through lower gas consumption.
- Hybridizing auto rickshaws: A five-year project sponsored by an IIT alumnus
- Developing a hybrid bus for Asian markets
- Building a hybrid formula racecar from the ground up: This project currently involves 50 Armour College of Engineering students. The race will take place in New Hampshire this May.
- Developing an electric go-kart
- Working with IIT Research Associate Professor Said Al-Hallaj and his IIT startup company All Cell Technologies, LLC to convert a City of Chicago hybrid Ford Escape SUV into a plug-in hybrid. The team also collaborates with ComEd.
- Converting school and transit buses: A potential project for the CTA, converting the CTA fleet into hybrid buses, could increase fuel efficiency and reduce consumption by 30+ percent, saving the CTA 30+ percent in fuel costs.
- Developing electric conversion kits through Emadi's startup company, Hybrid Electric Vehicle Technologies, Inc.

And communities worldwide are waiting. The center's work has generated the interest of collaborators in China, India, and Thailand. This fall, Emadi's group completed work on its first diesel-electric hybrid bus for an Asian market. The hybrid conversion is expected to save a major metro transit system there millions of dollars annually. Such conversions would have equal or greater impact on the United States markets, given the higher price of fuel. And Emadi says, "Market research shows that once we start selling conversion kits, it will be difficult to keep up with the demand."

According to Emadi, U.S. automakers have been slow to recognize the benefits of hybridization, but they are catching on—a positive for consumers and electrical engineering majors entering the job market. "There aren't many universities with electrical engineering programs focused on applications in the auto industry, and there is a real lack of experts in automotive electrical and electronic systems at auto companies," he says. "My students are finding jobs six months before they graduate."

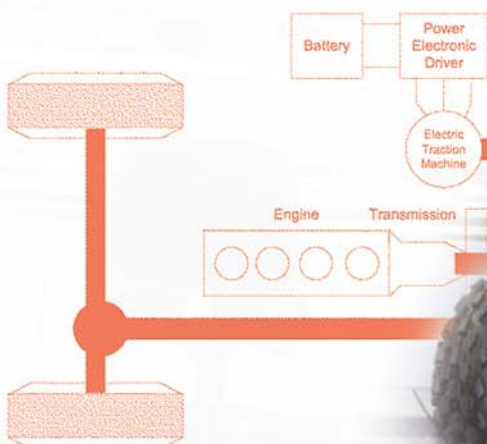
He cites graduate students Fernando Rodriguez, Sanjaka Wirasingha, and Srdjan Lukic as the future of this industry, and proudly notes that 50 undergraduates and graduate students are involved with work at the center. More than 50 are involved with a new project to build a hybrid racecar that will compete in a racing challenge this May in New Hampshire.

"I am confident that we will win," he says.

In addition to the auto industry, Emadi's work could be applied to a broad range of machine applications. With more than 15 million electric machines built every day—ranging from vacuum cleaners to refrigerators—the potential of this work to make its way into each of our homes is profound.

Or as Emadi puts it, "It's fun, and it's very exciting."

<http://power.iit.edu>



Hybrid electric go-kart

Five particularly important regions of the collagen electron density map are shown here [Below] Professor Joseph Orgel

Building Up by Tearing Down

As a young boy, Professor Joseph Orgel had trouble making things connect. “I wasn’t able to read until I was 9 or 10 years old because I was dyslexic,” he says. “I overcame it, and ever since I’ve been motivated by a desire to understand complexity by unweaving things.”

Now Orgel, who draws parallels between his research and cryptography, is using X-ray diffraction to decode the molecular structure of collagen. His work has provided a three-dimensional picture of how this long researched but less structurally understood protein grows and regenerates, and it is expected to help scientists learn more about how cancer and heart disease develop in the human body.

Collagen is the most abundant protein in the animal kingdom, as Orgel puts it, “the principal scaffolding structure in our bodies,” forming bones, teeth, tendons, and other connective tissues. When cancer metastasizes, it employs a special enzyme to recognize the three-dimensional structure of connective tissue, which cancer uses as a vehicle to break into blood vessels and colonize the rest of the body.

While the potential of Orgel’s work to benefit cancer research is both impressive and promising, the determination of collagen’s structural arrangements is itself a truly significant milestone. X-ray diffraction images of collagen were first collected in 1935, within a decade or two of the development of the diffraction method, which creates images by measuring the scattering of X-rays by the electrons inside objects. Despite the prevalence of collagen in the human body—there are 23 or 24 different types—Orgel’s work focuses on the most common, Type 1. Until now, scientists have been unable to gather images with enough detail to show how collagen molecules are arranged in relationship to one another.

Using special X-ray beams at Argonne National Laboratory and fiber-crystallography, Orgel was able to capture highly brilliant images of collagen fibers in rat-tail tendons. These fibers are more closely aligned to one another and therefore more crystalline and effective for imaging than human collagen. Along with colleagues at the University of Stirling and Cardiff University in the United Kingdom, and Rosalind Franklin University of Medicine and Science, and working alongside IIT’s Professor Thomas Irving, he devised custom algorithms to unweave the complex X-ray data and to determine how and where the collagen molecules interact with one another. This contribution allowed the researchers to reassemble the collagen fibers (made up of collagen molecules), strand by strand, at their points of intersection, ultimately leading to a three-dimensional image of the structure of the whole collagen fiber with all its molecules. Knowing collagen’s structure and how collagen binds with itself is key to understanding how and at which

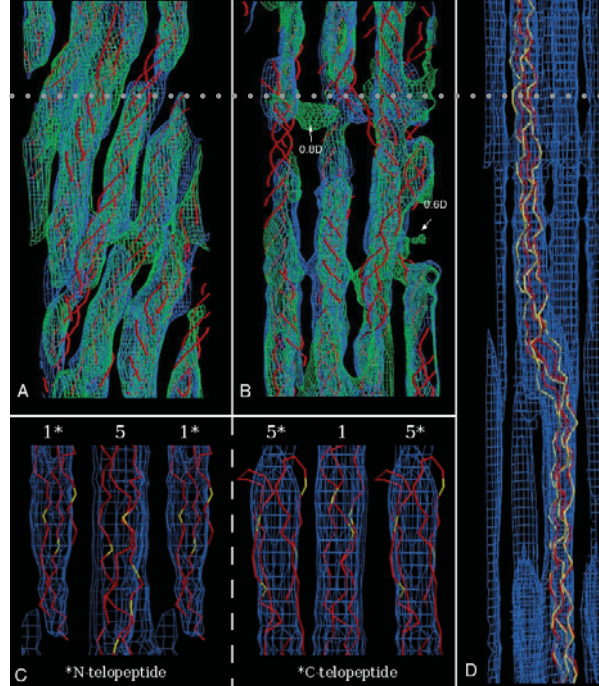


Photo: Bonnie Robinson

points other cells—including cancer and diseases—bind with collagen and spread throughout the body.

The findings of Orgel and his colleagues appeared in the journal *Proceedings of the National Academy of Sciences of the United States of America* in June.

“Working out the structure has long been regarded as ‘impossible’ to solve due to the technical and high-brow science needed to determine it,” he says. “Throughout my scientific career, various scientists have scoffed at the possibility of determining the structure in the manner we have. Suffice it to say, we are pleased to have published the structure of this ‘impossible’ problem.”

Orgel’s next steps include improving the level of detail that the collagen structure describes, determining what the structure of collagen means in health and disease, and learning how other components of connective tissue work with collagen. He says that this new structural biology technique could be applied to research ranging from Alzheimer’s Disease to the strength of spider webs.

Orgel’s paper is available in its entirety at www.pnas.org www.iit.edu/~bcps



In the days leading up to August 29, 2005, Hurricane Katrina began to unwind like a watch spring, swelling to fill the Gulf of Mexico as it cycled landward. In the Big Easy, mounting unease seized the public, as meteorological predictions began pointing the storm's destination at the heart of New Orleans. Closer to the moment of landfall, however, a slight perturbation readjusted Katrina's probable path east, to the Mississippi/Louisiana border.

By the time it had left, 98,000 square miles of terrain had been affected, with some of the hardest hit areas along the Mississippi Gulf Coast. In his synopsis of Katrina, *The Great Deluge*, Douglas Brinkley likened the horror to the Civil War landscape of the South after William Tecumseh Sherman's apocalyptic destruction. "Not since Atlanta had been burned to the ground had a swath of Dixie looked so wretchedly barren," he wrote.

A SERIES OF MIRACLES

Story: Richard Harth

In the city of Gulfport, Miss., Katrina unleashed unprecedented devastation. Officials reported that buildings downtown "imploded" during the morning hours under the combined impact of raging wind and catastrophic flooding.

The Man With the Plan

Shortly after the storm's passing and some 880 miles to the northwest of Gulfport, IIT Professor of Architecture Frank Flury followed the stories of destruction with the rest of the nation. The news hit Flury hard, especially the devastation along the Mississippi Gulf Coast, where he'd spent many good times and had developed a deep affection for the people and unique Southern culture there.

Flury hoped to take a more personal approach to the recovery effort, and he planned to include IIT—in particular, his architecture students—in his ambitious vision. The idea was simple: use his talents and resources to rebuild just one structure Hurricane Katrina had pitilessly demolished.

The first person Flury enlisted in the undertaking was Dean Donna Robertson, who pledged her fundraising, public relations, and institutional support. The path to rebuilding was now paved, though the project's challenges had just begun.

Despite urgent need across the broad stretch of the storm's path, finding a client for a rebuilding effort was not as easy as one might expect. As Flury, a native of Germany, recalls: "Well, we couldn't just have this strange guy with a German accent call and say, 'I want to send you a building!'"

After researching the devastation, Flury was put in contact with the

"It is powerful for a student to gain a sensual understanding of building by cutting and crafting a piece of wood or feeling the heat, weight, and odor involved in welding steel, and the astonishment of opening concrete formwork."

Lynn Meadows Discovery Center, a unique facility whose award-winning interactive children's museum opened in 1998. With Katrina, the school and exhibition space had fallen drearily silent. The Artist Studio and office were reduced to rubble and the grounds littered with the mangled remnants of homes, cars, trees, and power lines.

Lynn Meadows Executive Director Betsy Grant recalls a serendipitous meeting with the Gulfport superintendent of schools: "He told me some guy from Chicago wants to come and make a building in Gulfport, asking if I wanted to meet him. 'A building?' I asked. You better believe it!"

the astonishment of opening concrete formwork," he explained in a Chicago symposium devoted to design/build theory.

Following Katrina, Flury established three separate teams devoted to design, construction, and fund-raising efforts. That each of the students involved participated without college credit—contributing to a worthy cause and gaining valuable experience—is testament to their dedication.

Obtaining necessary funding for the complicated undertaking was a challenge. As David Baker, IIT vice president for External Affairs, who coordinated the fundraising, explains, there was a danger of Katrina fatigue among potential donors, and local resources in the Gulfport region were already massively overextended as the struggling community attempted to cope with the storm's aftermath. Thus began a series of miracles as contributors appeared, often seemingly out of thin air, to offer money, materials, manpower, expertise, and equipment.

The House That IIT Built

The design phase of the project began to take shape in Chicago, with Flury and 10 students batting around possibilities before poring over architectural sketches the students had rendered of the future structure. The creative process was tempered not only by financial constraints, but also by climate considerations, client needs, and an aggressive time frame that allowed the students only 10 days in Gulfport to complete the structure.

Various designs were explored, including a domed building able to withstand high winds. The final choice was for a vernacular schoolhouse of elegant, weather-resistant cedar. It would feature a large, 24x16 room suitable for a variety of activities, as well as a screened porch so that the children could enjoy

learning outside, safe from the region's notorious insect life.

Flury also stresses the energy-efficiency of the design: "The building is very highly insulated, with 2x6 rather than 2x4 walls and lots of cross-ventilation, reducing the need for air conditioning."

After pre-fabrication of the structure, a task involving 25 IIT students, the materials were trucked to Mississippi in a tractor-trailer donated through the Rotary Club of Darien, Ill. Meeting the truck, Flury and a nine-member construction team immediately set to work. Most of the building of the outer structure was completed in a lightning-speed two days of intense labor.

— Frank Flury



Students on site, constructing the new community center in Gulfport, Miss., that they designed and pre-fabricated in Chicago; [far right] the ribbon cutting

Thus, a perfect architect-client relationship was born.

Flury's plan was to design a new multi-purpose community center remotely with his IIT students, fabricate the sections, ship the entire structure to the site in Mississippi, and build it.

Flury has long been dedicated to the design/build ethos, which stresses both sides of the architecture experience: "It is powerful for a student to gain a sensual understanding of building by cutting and crafting a piece of wood or feeling the heat, weight, and odor involved in welding steel, and

The students started each day before dawn, hauling tools and supplies onsite before the Delta heat forced the crew indoors for a couple hours. As the afternoon cooled off slightly, the students returned to work, continuing until nightfall. Their dedication as well as good natured and positive attitude was an inspiration to Flury, who in turn kept them focused and upbeat, offering jokes and encouragement during long hours and exhausting heat.

"If you're doing a project with Frank, he's going to keep you working pretty hard," says Nate Hollister (ARCH 3rd year), who participated in the planning, design, and construction phases for Lynn Meadows. "At the same time, Frank is so personable. He doesn't just watch and advise, he really works with you."

Frank Flury [center, seated] with architecture students [clockwise from top] Mark Stephen Taylor (master's candidate, president of Architecture That Matters), Marc Couillais (3rd year), and Joe Kirsch (3rd year)

After a vigorous 10 days, the structure was almost complete. It was time for the students to return home. Flury stayed on in Gulfport to see the project through to completion, a little nervous about the daunting task ahead: "Less than 10 percent was left to do, but that's a lot. It's a little like standing next to a mountain with a shovel, and you have to move it!" he laughs.

But new miracles were afoot as the Gulfport community, inspired by the efforts of the strangers from Illinois, contributed on multiple levels to get the job done. Volunteers from both AmeriCorps and Hands On joined individual community members. As part of the Rotary connection, Long Beach, Miss., Rotary President Robert D. Kranz secured a free air conditioning unit, surprising Flury with it one day. Gulfport's Mandal Roofing sent a team of 20 to crown the finished center with the gift of a first-class roof, ideally suited to the Mississippi climate.

The IIT community responded as well. Ten alumni, trustees, and friends joined three corporations in their support of the project, donating everything from financial contributions to construction and electrical supplies toward the completion of the structure.

Design/Build It, and They Will Come

The center was completed just in time for a gala opening ceremony, which took place on July 1. Two IIT students, Kaitlin Streyle (ARCH 3rd year) and Hollister, were fortunate enough to be part of the emotional event, a time of looking back and of gratification. "Everyone gave 100 percent to the project," Streyle recalls, adding, "It was amazing to see the finished building and to see Betsy and everyone at Lynn Meadows again."

Hollister, who had been involved with the project since its inception, stresses the cohesiveness of the effort: "One of the most important things was the attitude of everybody down there," he says. Both students agreed that despite the long, hot days and sore muscles, the experience was deeply rewarding. "It was the first time I'd been involved in construction," says Streyle. "It was a great learning experience. I'd do it again in a heartbeat."

The Lynn Meadows facility was the first rebuilding effort along this stricken area of Mississippi coast, a beacon of rejuvenation. As Director Betsy Grant notes: "When people are living in a FEMA trailer with four kids, they really need a place to go!"

Today, innovative programs at Lynn Meadows are again inspiring children and their parents, with lively, interactive museum displays, theater workshops, dance classes, and more. The new 1,000-square-foot



building donated and assembled by Flury and his students has proven remarkably versatile for the school's needs.

"All of us were hell-bent and determined. And we got it done," says Grant.

Back at IIT, architecture students inspired by their work in Gulfport have formed a new group, Architecture That Matters, which will pursue other design/build efforts useful to the community and informed by social consciousness. ■

www.iit.edu/colleges/arch

Richard Harth is a writer based in New Orleans.



THE CORNERSTONE OF DESIGN/BUILD

IIT's Frank Flury teaches design/build architecture, which encourages students to explore the synergistic relationship between the mind that conceptualizes and the hands that make things. The process itself dates from man's earliest architectural efforts, such as the dwellings of mammoth bone and animal hide found in the Central Russian Plain. Later, Renaissance architects were intimately involved with all phases of construction of their cathedrals and other structures.

Specialization, however, eventually drew the fields of design and building apart, and many architects began to lose their intimate familiarity with materials and techniques of construction. A resurgence of the design/build approach took off in the late twentieth century, as new attempts were made to reintegrate conceptualization with a tactile awareness of materials and building techniques. Advantages of the design-build approach include:

- Instilling sensitivity to material costs and constructability
- Establishing of a seamless, end-to-end process, limiting miscommunication between designer and builder, and reducing downtime for project completion
- Balancing beauty and utility—traditionally, a central concern for the architect
- Fostering continual learning and refinement through a circular process leading from idea to built structure and back to idea

At IIT, a comprehensive approach—one that identifies architectural design as but a first step in the process of a building's creation—is encouraged and taught. Flury and students have applied this model in various environments, including a design/build island sculpture pavilion and a rural housing project for the disadvantaged in Alabama. Plans also are underway for a design/build studio and exhibition space in Pass Christian, Miss. Meanwhile, a new student organization, Architecture That Matters, seeks to explore other design/build opportunities of benefit to communities in need.

Yesterday, Today,

Story: Jeff Kelly Lowenstein
Photos: Bonnie Robinson

and Tomorrow

Outgoing and Incoming IIT Board of Trustees Chairs Review the University's Past and Future—and Why Each of Them Was Right for the Job



Robert A. Pritzker

Robert A. Pritzker (IE '46)

In 1944, a fresh-faced 18 year old named Robert A. Pritzker enrolled at IIT for what he thought would be a semester or two break from California Institute of Technology.

He's been here ever since.

Pritzker has done just about every job possible at IIT during the past 62 years, earning a degree, returning to teach night classes to undergraduates, joining the Board of Trustees in 1962, and heading the board since 1990. That is to say nothing about the \$60 million he and Robert Galvin each gave to the university in 1996—at the time, the largest charitable pledge ever made to a single institution in the Chicago metropolitan area.

Incoming Board Chair and Exelon Corporation Chief Executive Officer John W. Rowe invokes a lofty comparison when asked to evaluate Pritzker's contributions to IIT.

"That's like asking, 'How do you assess George Washington?'" says Rowe, citing Pritzker's years of service and judicious actions in stabilizing the university.

The foundation of Pritzker's passion for the university was laid during his undergraduate career.

One of his highlights during that time was studying under Professor Herbert A. Simon, a 1978 Nobel Prize winner in economics. Pritzker always arrived early for classes with Simon, and often would be the last student to leave the classroom. "He got a kick out of me," the soft-spoken Pritzker says, chuckling at the memory of his former professor.

More generally, Pritzker found that IIT was an excellent match for his ambition of going into manufacturing. "If you wanted to run a factory, you got a good education," says Pritzker, who still works full time as chief executive officer of Colson Associates, Inc., a company that manages an international group of manufacturing and service companies. He has served as president of Colson since 1954.

After graduating from IIT in 1946, Pritzker taught evening courses for a few years in such subjects as statistical quality control. After being affiliated with other universities, he joined IIT's Board of Trustees in early 1962.

Pritzker points with pride to the increased safety, the revamped and more attractive exterior of buildings, and the higher quality of students attending IIT during his tenure on the board. Despite taking pleasure in the gains the university has made, Pritzker feels strongly that more work remains to be done. He cites the need to upgrade the facilities inside the buildings, to recruit more star faculty members, and to boost IIT's endowment.



John W. Rowe

Speaking at a tribute dinner in September, President Lew Collens said that Pritzker and Galvin's challenge gift has had multiple positive consequences for IIT, including the establishment of the Camras Scholars program and several faculty chair programs, and the forging of a partnership with Chicago Mayor Richard M. Daley to invest in the neighborhood.

Collens also praised Pritzker's "fierce commitment" to IIT, which was never more on display than in May 1995, when Pritzker taught a class at Oxford University, flew back to Chicago for a vital board meeting, and then immediately returned to Oxford in time for his next class.

Although relieved not to be spending quite as many evenings at IIT as he had during the past four decades, Pritzker says that he will miss the pleasure of interacting with professors and working with Collens. And, while he is glad to be passing the board chairmanship on to a man he sees as a worthy successor, Pritzker also made it clear that his commitment to his alma mater will not end anytime soon.

"I'm on the search committee for the new president, so they've already fixed that up," he says, a broad smile creasing his face. "I had a meeting yesterday for about three hours, and I've got one next week, and there will be a dinner tomorrow...."

"So far, it hasn't been a problem," says Pritzker.

John W. Rowe

Incoming Board Chair John W. Rowe sees himself as a catalyst to help IIT move to its next stage of development.

"IIT is an institution with a stable educational core thanks to the leadership of Lew Collens," says Rowe, chairman, president, and chief executive officer of Exelon Corporation, one of the nation's largest utility companies. "This school is at a point where it needs some fresh vision from a leader who can start with the base that Lew built rather than the crisis Lew inherited."

"Getting a higher sense of activity, participation, and meaning is one of the things that a board chair can do...I have lots of conversations," Rowe says.

But Rowe does a lot more than talk.

One of Chicago's most successful businessmen and renowned for his philanthropy, the 61 year old brings extensive professional and civic qualification to his new post.

Rowe's leadership at Exelon has been widely recognized. In 2004, the company was named the top utility in *Forbes* magazine's list of "The World's 2,000 Leading Companies," and in 2005 the magazine gave Exelon the same rank on its list of best-managed companies.

In addition to running the utility giant, Rowe has served on the board of trustees of more than a dozen prominent institutions, ranging from Northwestern University to the Art Institute of Chicago to the Northern Trust Company. He currently serves as chair of the Chicago History Museum.

Rowe also has a history of involvement with IIT.

Although he is not an IIT alumnus, Rowe worked with former Governor James R. Thompson as the vice chairman of the Mies van der Rohe Society, and then chaired the same group before joining the Board of Trustees.

Rowe's blend of experiences attracted the attention of Collens and Pritzker, who asked Rowe to serve on IIT's board more than two years ago, with an eye toward eventually asking him to assume the role of chair.

"He is somebody who has very broad intellectual interests—a very accomplished corporate leader who is extraordinarily well regarded in the Chicago community," Collens says. "City leaders and philanthropists will all tell you that he is somebody very special."

Rowe points out that he likes what he sees at IIT. "The College of Architecture is a great school, and Chicago-Kent College of Law has carved out a very productive niche for itself," he says.

He adds that engineering and fields like physics and chemistry at IIT do not have a clear understanding of where they fit in the national research landscape: "Engineering and hard sciences are looking to say, 'How do we compare to famous universities like MIT or Caltech? What is the IIT niche compared to, say, the University of Illinois?'"

"Getting a higher sense of activity, participation, and meaning is one of the things that a board chair can do...I have lots of conversations."

—John W. Rowe

"I think one of my tasks is to help IIT define the niche for its hard technology core," Rowe says. This clarification process will not be conducted in isolation, he explains. Rather, it will happen through conversations with faculty, other board members, and Collens' successor, whom Rowe will play a large role in helping to select—a task he says will be his "biggest contribution" to the university.

"The role of the chair is to help make certain we get a successor with vision," says Rowe, who expects a replacement to be in place by the end of the academic year. "It's the president who sets the vision. [I can] help to make [sure] that the executive committee and other board members can contribute to that vision."

Rowe has the confidence of his predecessor as he begins an undertaking that will impact IIT for decades to come.

"To say that he's very intelligent would be kind of obvious, but I believe he thinks deeply about things," says Pritzker. "He's an outstanding leader—very forceful, and correctly so."

"I think we really lucked out on this one," says Pritzker. ■

Story: Vincent LaConte



Around the globe, design is making a splash in the development of better business.

Innovation by





Design

“Like an old Cadillac.” That’s how a member of a market-research focus group described Motorola’s cell phones, circa 2001. And their competitors’ phones? “Like a BMW or an Audi.”

Ouch. This unflattering comparison—and its presumable connection to Motorola’s then stagnant 14 percent worldwide market share to Nokia’s then 36 percent—helped prompt the company to focus more on design. It restructured its design team and moved it to a sparkling new downtown Chicago office. After taking the helm in 2004, CEO Ed Zander began routinely dropping by the design department to participate in product decisions, and says he expects design to be a main driver of product development.

Five years later, the downtown office, dubbed “Moto City,” has the feeling of a corporate nerve center—access to sensitive areas denied to all but a handful of employees—and the company’s market position has been nothing short of transformed: by mid-2006, Motorola had 22 percent of the global market and was on track to sell 200 million phones for the year, led by the iconic success of the sleek, fashionable, and nearly impossibly thin RAZR (“razor”).

Jim Wicks, head of Motorola’s consumer product design group, explains the strategy behind the new phones. “The intent was to start with the basic

silhouette, and then get deeper into the character, attributes, and lines of the device,” says Wicks. “[As you get closer] you see the aluminum and magnesium keypad, [and] feel the signature soft touch. Then you see the way the user interface works, how it directly connects to Yahoo! or Google, how it plays music. The result is that whether you’re three meters away or it’s in the palm of your hand, it stands for Motorola.”

Motorola’s recent innovations are about more than simply a cooler-looking phone; they’re about designing an entire user experience of seamless connectivity. While the word “innovation” usually conjures up associations of R&D labs, new high-tech gadgets, and scientists with cartoon light bulbs turning on over their heads, it can also include more abstract things—a new business idea, a new service or brand, or a combination of the above into a seamless new experience.

The continued prominence of Harvard b-school innovation guru Clayton Christenson, author of 1997’s remarkably successful *The Innovator’s Dilemma*, and new publications like *BusinessWeek’s* “INSide Innovation” suggest that innovation is more than a passing corporate fad. And yet, despite its popularity, innovation continues to be an almost entirely unplanned activity. “[Almost] all firms are plumb lousy at it,” says Larry Keeley, president of innovation strategy firm Doblin and a part-time

instructor at IIT's Institute of Design (ID). "Some facts can help here. The average firm succeeds at innovation a mere 4 percent of the time." This is symptomatic of an activity Keeley says has reached "about the same state as medicine had when leeches were a primary form of treatment."

So where do managers turn when they want their organizations to innovate reliably? Keeley,

"Companies know how to make just about anything...but they often lack a framework for determining what should be made."

—Patrick Whitney

and his students and fellow faculty at IIT, offer one possible answer: the world of design.

Design—the creation and shaping of the products, communications, services, and environments of society—has been around for a long time. Its present form can be traced back to the drafting tables of early-twentieth century manufacturers, where the designer's role was to style products, advertising, and packaging to appeal to mass markets. In the interim years, however, as the global economy has shifted from mass markets to ever-more segmented local ones, the designer's role has shifted as well. No longer content with styling existing products, a growing number of designers are applying their skills to a more fundamental problem: figuring out *what to make* in the first place.

For Patrick Whitney, ID director and Steelcase/Robert C. Pew Professor, this "what to make gap" [see sidebar] is a primary *raison-d'être* of the modern design profession. Whitney often treats visitors to ID to an impromptu lecture on the concept. "Companies know *how* to make just about anything," he says, sketching the gap diagram on the nearest whiteboard, "but they often lack a framework for determining *what* should be made." According to Whitney, this

gap between what producers know how to make and what consumers actually need and like, is exactly what design can fill.

The skill-set of trained designers—analyzing problems from a human-centered point of view, developing solutions through successive prototypes, and conveying messages with maximum clarity and effectiveness—is essentially an approach to creative problem

solving. Design thinking applied to the problem of making music portable, for example, led Apple not only to a successful product—the iPod—but also to a piece of software, iTunes, and the first viable business model for selling music legally online.

This kind of strategic design is nothing new. In the 1950s and 1960s, ID, under then-director Jay Doblin, helped pioneer this application of design to business problems. And a few smart companies have used design strategically at least since Josiah Wedgwood industrialized the nineteenth-century London pottery business, bringing mass production to what had been, literally, a cottage industry. Until recently, though, strategic design was not a common industry practice; but there are signs this is beginning to change.

"The emergence of China and India [as global economic powers]," wrote a 2005 *BusinessWeek* editorial, "will force every single major corporation in [the West] to choose between offering ever lower-cost, lower-value goods, or innovating to create new, higher-cost, higher-value goods." It went on,

"[But] how do you generate profitable innovation? [We've] been hard at work for decades churning out numbers-oriented, metric-measuring, linear-focused executives who are much better at managing costs than managing imagination. So where should executives go to learn how to turn themselves and their companies into great innovators?"

Six months later, *BusinessWeek* answered its own question, coining a new term—"d-schools"—to describe a small group of design schools offering innovation managers a serious alternative to traditional M.B.A.s. Among them were IIT's Institute of Design and Stanford's newly formed Hasso Plattner Institute of Design; several others have since joined the list. And a barrage of press coverage in *BusinessWeek*, *Fast Company*, *Newsweek* and elsewhere has led many managers of innovation

to discover strategic design.

One of those managers is Doug Look (M.D.M. '06), a product manager who got an early taste for user research while working for AutoDesk, Inc., maker of AutoCAD and

other leading design automation software. "We were out there speaking to customers, understanding their needs, helping refine

Institute of Design Strategy Conference

Want to learn more about strategic design and how it's being used in global business today? Attend the third annual Institute of Design Strategy Conference, May 17–18 in Chicago. Speakers will include Chris Anderson, editor of *WIRED* magazine and author of *The Long Tail*; Ron Johnson, senior vice president of retail for Apple; and many more. www.id.iit.edu/events/strategyconference/2007

How They Do It

Strategic designers call on a number of practical methods to develop new ideas that are grounded in both user needs and business realities. Here are a few examples from ID's master's curriculum:

Disposable Camera Studies and Ethnographic Interviews

Disposable cameras are given to selected users, along with guidelines for photographing their own daily activities in a given area of interest. The photos are organized according to the 'POEMS' framework [at right]. Later, designers conduct ethnographic interviews with the users about the photographs, taking carefully structured notes that reveal insights about areas where new offerings could add value.

POEMS Framework

'POEMS' stands for People, Objects, Environments, Messages/Media, and Services. It's an easy-to-remember framework for organizing user research data, such as photographs. POEMS is particularly useful when comparing research about users from different locations and cultures—for example, people hosting a party at home in Chicago versus Shanghai—and designing tailored products and services for different markets.



Alumnus Brad Nemer with a RAZR phone outside Motorola's "Moto City"

new products," recalls Look. But the company's methods were focused on validating existing concepts, not generating new ones. "Then I read some articles in *BusinessWeek* and thought, 'Wow, that sounds a lot like what we're doing, but it's taking it another step.'"

ID's Master of Design Methods (M.D.M.) degree was created in 2003, partly as a way of teaching design thinking to the large number of innovation professionals who, like Look, aren't in traditional design roles. It's a two-semester crash course in design methods for business, and enrollment has doubled annually since it was created.

In 2006, ID launched another program combining business and design: a three-year Master of Design/M.B.A. dual degree, offered with IIT's Stuart School of Business. Harvey Kahalas, Stuart's dean, says the program addresses a growing need. "Many recruiters have said to me, 'I know where to get traditional M.B.A.s. I know the top schools,'" says Kahalas. "But those schools are educating people to practice continuous improvement in what they're *already* doing—nobody is educating prospective managers in how to think *differently*.' That's exactly what we can do."

Experience Scenarios

Experience Scenarios enhance a new business concept by vividly demonstrating its user experience. Producing a compelling representation of the new experience is especially important when it's an intangible good like a service. Experience Scenarios create a story that captures the end product/service in use over time. By visualizing these scenarios, clients are better able to evaluate concepts in terms of cost and time for implementation.

As the traditional M.B.A. becomes a commodity degree and employers seek experts in the fuzzy practice of innovation, many young professionals are turning to design (or design-flavored) education to advance their careers.

Back at Moto City, Brad Nemer (M.Des./M.B.A. '04) swipes his corporate keycard and enters the restricted access area. Although he has a backstage pass of sorts to the top-secret design department, Nemer, despite his degree, doesn't consider himself a designer. A product portfolio manager, he works "upstream" from design in the product development process. Still, Nemer sees himself as a catalyst for good design at Motorola. "I can influence the life or death of a product in a way I couldn't from the design department," he points out. "Part of it is business thinking, like how many customers are there, how many can we reach, how much will it cost to reach them. But the other part is that what makes a great phone is 80 percent design. Design is so important [because] the user experience is so important."

Nemer is blunt, however. Without the M.B.A., he wouldn't have the job. "The baseline [for working here] is a business background. But it

"Nobody is educating prospective managers in how to think *differently*. That's exactly what we can do."

—Harvey Kahalas

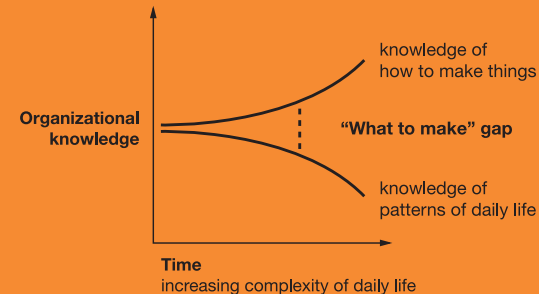
is a huge edge to be conversant in design and be sensitive to those issues." As global competition for the hearts and minds of consumers continues to grow, businesses are starting to recognize the value of user-centered design strategy, and the new breed of professionals who know how to practice it. ■

www.id.iit.edu
www.stuart.iit.edu

User-Centered Case

The User-Centered Case is a framework for teams facing complex problems to keep their efforts focused on the user's perspective. At its most basic level, it is a looping process of 1) making factual observations about user behavior, 2) making judgments that illustrate the problems of the current situation and how users are being "harmed", and 3) establishing a link between the harm and the users' value(s) in order to generate success criteria for new designs.

The Innovation Gap— What Every Business Should Know



Institute of Design Director Patrick Whitney's idea of the innovation gap is based on several conversations with corporate executives who told him, "My company knows how to make anything; we just don't know *what* to make." As businesses have become more sophisticated with technology and management processes, they have indeed become able to make almost anything—toasters that connect to the Internet, cell phones with 101 different features. But, as daily life becomes saturated with technology, which of these things do customers actually want? This, according to Whitney, is the strength of design: bridging the "what to make" gap by discovering users' needs and translating them effectively into new offerings.

Here are just a few ways design thinking can help businesses innovate:

- Discovering what users value and linking it to business value
- Illustrating new value with compelling stories and scenarios about user experience
- Communicating and visualizing complex information
- Exploring innovation options quickly and cheaply through rapid prototyping
- Integrating physical products, information technology, services, and environments into holistic user experiences

Story: Jeff Kelly Lowenstein
Photo: Michael Goss



A Mighty WIND

On January 28, 1967, two days after one of the heaviest blizzards in Chicago history, 20-year-old Hassan Nagib met Engineering Professor Andrew Fejer for the first time.

Fresh off of work and study stints in multiple European countries, Nagib (MAE '68, M.S. '69, Ph.D. '72) did not know that he was looking at the man who would become a towering influence in his career. Nor did the Cairo native know that he had entered the university where he would spend the next 40 years.

But Nagib did know that he was unsure if Chicago was a city where he wanted to stay.

"I remember looking out the window and saying, 'Is this really a place where I want to live?'" recalls Nagib, John T. Rettaliata Distinguished Professor of Mechanical and Aerospace Engineering.

Urged repeatedly by Fejer to remain on campus, despite the infamous Chicago winters, Nagib has done just that—and IIT has reaped tremendous benefits from his decision. In addition to earning all of his degrees here, Nagib has had an extraordinarily productive career as a researcher, teacher, administrator, and facilities builder, and has made a substantial local and international impact.

“He has great passion for his work and sets exceptionally high standards for all of us in the university community,” says President Lew Collens.

A key factor in Nagib’s decision to stay on for graduate studies at IIT was the freewheeling intellectual environment—cultivated by professors like Fejer and turbulence expert Mark V. Morkovin—where Nagib was allowed to pursue his own research and to play a significant role in building several of the university’s wind tunnels and the first world-class wind tunnel, the National Diagnostic Facility (NDF).

In addition to his work on the NDF, Nagib’s early work centered on hydrodynamic stability. But it is in the area of flow quality of wind tunnels that he has made his largest professional mark. Nagib explains that turbulence can be either a positive or a negative force, depending on the context, and he has focused on reducing areas of resistance.

The financial stakes are enormous.

For example, a 7 percent reduction in resistance on the body of an airplane would equal the fuel savings that would occur if all automobiles increased their gas mileage from five miles per gallon to 60 miles per gallon.

An important element in obtaining meaningful results is having a testing site with a sufficiently large Reynolds number. Named for Osborne Reynolds, the number is the ratio of inertial forces to viscous forces. Small Reynolds numbers indicate

Nagib’s work also has resulted in academic programming that benefits students and distinguishes the university—namely, the Interprofessional Projects (IPRO) Program, a signature component of the undergraduate experience. “He’s the guy that drove the creation of IPRO, and did it with great passion, energy, and vigor,” Collens says.

A former dean and department chair, Nagib has taken pride simultaneously in helping to improve the caliber of students at IIT, serving as academic vice president (mid- to late 1990s) and becoming the founding director of IIT’s Fluid Dynamics Research Center, which the United States Department of Defense recognized in the 1980s as a Center of Excellence.

Perhaps foremost as a dedicated teacher, Nagib has helped to create a supportive climate at IIT in which students are unafraid to make mistakes while receiving opportunities to advance their budding careers. Nagib says he tells students not to be defensive about errors, but rather to admit them, accept them, show that they understand the mistake, and move on to the next part of the problem.

He also has tried to pass to his graduates the standard of knowledge that he received from Morkovin and Fejer. “When you start your Ph.D. work with me, I better know more about the subject than you do,” Nagib says. “But when you leave, you

“He has great passion for his work and sets exceptionally high standards for all of us in the university community.” —President Lew Collens

that a fluid’s viscosity is dominant. Large Reynolds numbers, however, mean that viscosity is minimal and inertial effects are ascendant.

During the 1980s, Nagib oversaw the construction of the larger NDF that would be an effective testing ground to make some of those advances. The tunnel contains several revolutionary design features, including the installation of a cooling system that did not add any new parts to the tunnel. The facility has become an intermediate testing ground that is larger than those in many universities, but smaller and less expensive to operate than tunnels at companies such as Boeing, Lockheed Martin, or Bell Helicopter.

Completed in 1992, the tunnel was funded primarily through a government grant of about \$2 million. Now valued at close to \$10 million, the facility has yielded multiple benefits for IIT. In addition to drawing scholars and graduate students from across the country, it has helped to boost undergraduate student recruitment. “They see the opportunity [and ask], ‘You mean, one day I could work here?’” Nagib says.

better know more about your subject than I.”

According to Candace Wark (MAE ’88), former doctoral student and a current colleague of Nagib, he allowed her a lot of independence during her doctoral work and provided travel funds that enabled her to present at scholarly conferences.

The reputation and facilities of the Fluid Dynamics Research Center that Nagib directed were the reasons why Wark joined the faculty after completing her doctorate.

And as a young faculty member, she continued to receive support from Nagib.

“He provided the tools and motivation for me to teach, secure funding, and publish so that I could become a successful faculty member,” says Wark, now associate dean of Armour College of Engineering. ■

www.mmae.iit.edu

Jeff Kelly Lowenstein is a writer based in Evanston, Ill.

The Constant Factor

Hassan Nagib is rapidly approaching the 40th anniversary of his first visit to IIT, but his passion for research, teaching, and tackling knotty issues remains undimmed.

He continues to travel widely, visiting more than a dozen countries during a recent three-month stint, and serves as co-adviser to students in some of the very same countries where he worked and studied in his youth. Last year he was elected as a fellow of the American Institute of Aeronautics and Astronautics, an honor bestowed upon the most respected individuals in the aerospace industry.

Nagib also co-directs an ambitious effort to answer an unresolved question. The answer—the universality of the von Kármán Constant—could have substantial consequences for all turbulent flows adjacent to surfaces. The constant value of the logarithmic wind profile in the surface layer, the von Kármán Constant has long been held to have a value of .40, plus or minus .01.

Because Nagib is not convinced, he is heading the Center for International Cooperation in Long Pipe Experiments, or CICLoPE, project in Bologna, Italy, to crack the problem.

Working with a team of scholars from Italy, Sweden, Switzerland, England, Germany, Australia, Japan, and the United States, Nagib will record detailed turbulence measurements in combination with computational efforts to provide a focus of activity for leading international researchers in the field of wall-bounded turbulent flows.

Occurring in long tunnels built during the period between World War I and II, his research could have industrial applications and facilitate confirmation of the von Kármán Constant’s validity.

The quest has scientific and personal dimensions for Nagib, who calls von Kármán his intellectual grandfather. One of Theodore von Kármán’s students at California Institute of Technology was the late Andrew Fejer. Fejer, in turn, mentored Nagib during his undergraduate and graduate career at IIT as well as during his years as a fledgling scholar.

Unearthing and proving the answer could take five years, Nagib says, while understanding and modeling the correct information could last another decade.

Nagib is confident that by that time he will have left the university. “I’ll be out of this business,” he says, smiling. “I’ll just watch the young guys do it.”

The thought of putting six children through college is enough to give any parent nightmares, so no one would blame Roy Gignac (EE '52) if, having accomplished that feat, he never wanted to lay eyes on another college bill. But he's not only helping to fund the educations of eight more "kids"—he's also showing no signs of slowing down.

THE PIED PIPER OF IIT

For the past 34 years, Gignac and his wife have lived, worked, and raised their four daughters and five sons in the small industrial town of Danville, Va. After moving to Danville from Chicago in 1972 and starting a power supply division for a new company for which he was working, Gignac decided to go into business for himself. He founded Engineering Design and Sales, Inc. (E.D.S.), a transformer and power supply business, in the basement of his home. "The kids were all 'in the business' back then," jokes Gignac. E.D.S.'s focus on a niche market—businesses needing low-volume, highly technical products—proved to be successful.

The amiable young business and family man soon began making connections within the Danville community. He became a member of his church finance committee, served as president of the United Way, and spent 20 years as a member—10 of them as chairman—of the Danville Industrial Development Authority, a public/private partnership that provides resources and financial incentives to encourage industry to relocate to the region.

While volunteering with a local high school's technical program in the mid-1990s, Gignac

found himself thinking about the choices that the high school students would soon be facing. "I felt that there were an awful lot of kids who had good talent but no easy access to a good technical education," he says. "When I was their age, all I had to do to get to IIT was hop on the California Avenue bus or the 35th Avenue streetcar."

and then went to every high school in the area and talked to them about IIT. Now we have kids from four different schools attending IIT on the scholarships."

With six of his own children being graduates of Virginia Tech, it may come as a surprise to some that Gignac didn't direct his philanthropy

"I felt that there were an awful lot of kids who had good talent but no easy access to a good technical education." Roy Gignac (EE '52)

Gignac created a scholarship fund specifically for Danville students who were interested in attending IIT. The next step was to generate student interest in a small university, which they had never heard of, located 700 miles away. Gignac gives IIT Admission Counselor Brent Benner much of the credit for that accomplishment. "When Brent heard that I was interested in getting kids there, he met with me

closer to home. "I just felt that the close student-faculty relationship at IIT was really important, and that students would receive a better education at a smaller school," says Gignac. "I wasn't a top-rated student at IIT, but I had all the help I needed when I needed it."

Currently, eight students from Danville are enrolled at IIT. While all have received some form of IIT scholarship based on merit, the Gignac Foundation pays for a significant portion of the balance of their educational expenses. But unlike many benefactor/recipient relationships, Gignac's connection with the scholarship recipients extends far beyond a review of their applications. "I email them on a regular basis, and they email me and tell me what's happening," says Gignac. "And we all get together for dinner about twice a year."

Despite his own loyalty to the community, Gignac says that he has no expectations that the students will return to Danville after graduation. "It would be nice for them to come back and help build the community," admits Gignac. "But when I graduated from IIT, I got a great opportunity in Philadelphia, and I went after it. I'd like to see them do what's going to make them happy."



Roy Gignac [back row, fourth from right] and his wife Joan [front row, left] hosted a dinner for Gignac Scholars.

Thoughtful Dedication

At a November 11 IIT basketball game, the Athletics department held a special event honoring 14 members of the Bergstrom family, as well as other IIT Athletics alumni, for their recent contributions to the university. After Carl Bergstrom (ME '49) passed away last summer, his son Eric had the idea to ask friends and family members to remember his father not with flowers, but with gifts to IIT Athletics, one of Carl's greatest loves. Due in great part to the donations made in memory of Carl, IIT Athletics was able to purchase the new scoreboard shown in the background. The men's basketball team won the game, defeating Ashford 71–63. Pictured are [left to right] Carl's son Eric, Carl's wife Beverly Bergstrom, their daughter Marsha Georgiopoulos, and her husband George Georgiopoulos.



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!

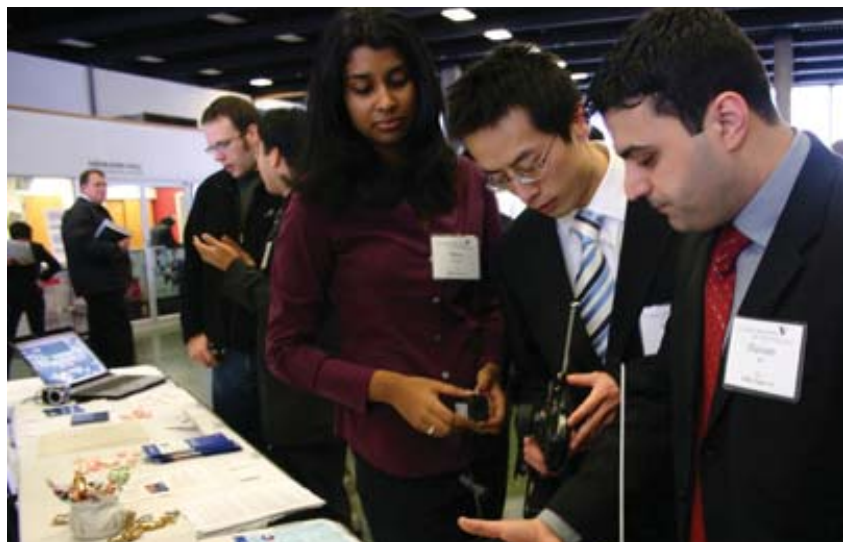
Exclusive services include:

- **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.



Together again...
ALUMNI AWARDS & IPROs
April 27, 2007



class**notes**

Bhakta B. Rath

(Ph.D. MME) received the United States Department of Defense (DoD) Distinguished Civilian Service Award in November. Rath was recognized for his innovations in materials science and engineering that have contributed to the ability of the DoD to provide the military with superior fighting capabilities.

1930s

Walter H. Sobel

ARCH '35, Wilmette, Ill., and his son Richard attended the 49th Reunion of the U.S.S. New Mexico Association in St. Louis in September 2006. During World War II, Sobel was a lieutenant (junior grade) on the New Mexico from 1943–45. Because Sobel was in the hospital when his promotion to full lieutenant (senior grade) came through in 1945, he never received formal notification of his promotion. With the help of Congressman Mark Kirk's office, Sobel recently received the official confirmation of the promotion as well as the rest of his medals, besides the Purple Heart, that he had earned during his service. Sobel is a faculty member of IIT's College of Architecture and a fellow of the American Institute of Architects.

1950s

Elmer E. Foote

DSGN '51, Phoenix, N.Y., has five children, 10 grandchildren, and four great-grandchildren. He retired from Syracuse University in 1987 after 15 years as manager of the university's printing services/plant manager.

William T. O'Sullivan

EE '51, Henderson, Nev., retired from Westinghouse Electric Corporation after 35 years of employment.

Frederick Forsyth

EE '56, Chapin, S.C., retired and relocated from California to South Carolina in 2005. He enjoys a life of relaxation, fun, and recreation in his lakefront home.

George M. Nichols

Ph.D. CHEM '57, Wilmette, Ill., a consultant for Engineered Glass Products, hired IIT students as summer interns to study coating solution synthesis and to conduct analysis and testing.

Herbert E. Koke

EE '59, Garland, Texas, is retired from both the U.S. Navy and Raytheon Company.

MAJOR KEY

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

1960s

Jack A. Greenspan

PHYS '60, Quincy, Calif., recently retired as professor of mathematics and physics at Feather River College and was named professor emeritus. He was previously a research physicist with IITRI's Astro Sciences Center.

Barnabas Urbonas

CE '61, Denver, was awarded the Lifetime Achievement Award by the Environment and Water Resources Institute of ASCE for his contribution to the field of urban water resources over the last 30 years, which included: co-

authorship of two technical books, contributions to several others, more than 100 technical papers, development of more than 130 watershed major storm water and flood management master plans, organization of many national and international technical conferences, chairmanship of the Urban Water Resources Research Council, and service on various boards and commissions in a leadership capacity.

Col. J. Randall Johnson

ME '63, Wheaton, Ill., recently completed more than 13 years of service as director of Ministry Support, Glen Ellyn Evangelical Covenant Church, and also retired as a self-employed management consultant. He concluded a nearly 28-year Air Force career in 1990. He resides in Wheaton with his wife, Judy.

Richard A. Swanson

MATH '64, Liverpool, N.Y., authored a series of six practice workbooks for the New York State Mathematics Assessments, grades 3 through 8 (2005–06, Topical Review Book Co.).

Patrick A. Nevins

EE '68, Sanibel Island, Fla., recently retired. While at IIT he served as president of Delta Tau Delta (1967–68).

James R. Gagnard

EE '69, Lisle, Ill., is the president and CEO of SmartSignal Corporation, a company that uses its EPI*Center software solution to identify potential equipment and process problems and to improve operations for client companies. Prior to joining SmartSignal, he was the CEO of Questra Corporation, a leading provider of device management solutions to

healthcare and production printing equipment manufacturers.

1970s

Robert T. Knight

PHYS '70, El Cerrito, Calif., is the Evan Rauch Professor of Neuroscience and director of the Helen Wills Neuroscience Center at the University of California–Berkeley.

Larry A. Hoeksema

ARCH '71, San Diego, and his wife celebrated their 35th wedding anniversary in June.

George J. Butvilas

M.B.A. '73, Houghton, Mich., was elected chairman of the Board of Directors of The Veterans Corporation. Butvilas is vice chairman of the Board of Republic Bancorp, Inc. in Ann Arbor. He also is chairman of the board of the Michigan Technological University Fund.

Jeffrey C. Marienthal

DSGN '73, Homewood, Ill., was awarded a Master of Arts degree in Digital Imaging from Governors State University in June 2006. He continues to be creative director of CommuniGraphics, Inc. in Homewood while teaching part-time in the Design Institute of Robert Morris College in Waukegan, Ill.

Eduard A. Schummer

EE '75, San Francisco, was recently appointed to president of Via Licensing Corporation, a wholly owned subsidiary of Dolby Laboratories. Via Licensing is a provider of patent licensing technologies and services for third-party intellectual property owners.

Terry L. Bowie

MGT '77, Silver Spring, Md., is the deputy chief financial officer of NASA.

Mario H. Romero

CHE '79, M.S. '84, Ann Arbor, Mich., has joined Wow Energy, Inc. as its president/CEO. Romero co-founded the technology company in 2003. Wow Energy has developed and patented its Cascading Closed Loop Cycle technology to generate power from waste heat and renewable energy sources.

Amy L. Segami

ME '79, Chicago, accepted the Outstanding Immigrants recognition from The American Immigration Law Foundation in April 2006 at the Fourth Annual Chicago Immigrant Achievement Awards for her accomplishments as an American immigrant. Past honorees include tenor Placido Domingo, author Bette Bao Lord,

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"]

actress Maureen O'Hara, Nobel Prize-winning physicist Daniel Tsui, former Chairman of the Joint Chiefs of Staff General John M. Shalikashvili, baseball player Sammy Sosa, and therapist Ruth Westheimer.

Manu Vora

M.S. CHE '70, Ph.D. '75, Naperville, Ill., was recently awarded the E. Jack Lancaster Medal at the American Society for Quality's 60th World Conference for Quality and Improvement in Milwaukee, Wis. Vora is chairman and president of Business Excellence, Inc., a global quality management consulting firm, and an adjunct professor at Stuart School of Business. He is a past recipient of both IIT's Professional Achievement Award and International Alumni Leadership Award.



1980s

Walter H. Augustin

EE '80, Altamonte Springs, Fla., is currently the program manager for Marine Corps Training Systems in the Central Florida Research Park. He and his college sweetheart, Maria-Elena, celebrated their 25th wedding anniversary in October 2005.

Margaret A. Marek

M.B.A. '80, Naperville, Ill., is chief operating officer of the Adler Planetarium in Chicago.

Mary Ann A. Latko Groetsema

M.S. ENVE '81, Fairfax, Va., her husband John, and sons Joel (14) and Aaron (12) live in the Washington, D.C. area. Latko Groetsema is the director of scientific

and technical initiatives for the American Industrial Hygiene Association.

Paul E. Doman

FPSE '82, Chicago, was recently named loss control manager for Harleysville Insurance's Midwest region.

Steven W. Mihelich

ARCH '82, Downers Grove, Ill., a principal with Williams Architects in Carol Stream, Ill., served as president of the Northeast Illinois Chapter of the American Institute of Architects (AIA/NEI) for the 2006 calendar year. He has served the AIA/NEI as secretary, vice president, and second vice president, and received the Chapter's Architects in Action Service Award for Outstanding Professional Member in 2000.

Raymond E. Buck

ME '85, Ankeny, Iowa, is chairman and chief executive officer of an engineering, software, and technology firm that specializes in technological innovations and inventions.

Craig T. Fillion

EE '86, Naperville, Ill., is a product quality assurance engineer for Sears Holdings Corp. He has one 15-year-old son.

David Bishop

Ph.D. PSYC '89, Decorah, Iowa, is professor of psychology at Luther College in Decorah, where he has taught at the college since 1986.



Praveen K. Gupta

M.S. EE '89, Lisle, Ill., is president of Accelper Consulting (www.accelper.com) and has been extensively researching management principles in knowledge

economy. He has developed a new business scorecard, the Six Sigma Business Scorecard, which has been widely recognized for being holistic and predictive for ensuring corporate growth and profitability. He also has developed a new framework of innovation called Brinnovation™. He writes a monthly column for *Quality Digest* online and is a lecturer in the DePaul University College of Commerce Department of Management.

Gina M. Ribeiro

PSYC '89, Kissimmee, Fla., has more than 20 years of experience working for companies such as MCI, American Express, Bank One, and Walt Disney World as an internal organization development consultant. She is currently working in an operations project manager role at Disney. She and her husband, who works for NASA at the Kennedy Space Center, have a 2-year-old son, Jordi.

1990s

Tyler L. Duvall

M.B.A. '90, J.D. '91, Henderson, Nev., and his wife, Donna, welcomed their first child, Paris Dominica, in November 2005. Tyler is general counsel for a Las Vegas real estate development firm.

Paul L. Giamarusti

EE '90, Chicago, is currently enrolled at Northwestern University's Kellogg School of Management and will receive his master of business administration in June 2007.

Odin Jurkowski

STH '92, Warrensburg, Mo., and his wife celebrated the birth of their sixth child, Valen, last January. Their other children are Kalina, Byron, Acacia, Amelia, and

Cordelia. Jurkowski also was recently elected president of the Faculty Senate at Central Missouri State University.

Dae-hong Minn

M.S. ARCH '95, Chicago, was recently named principal of DeStefano and Partners, a leading international architecture, interior design, and planning firm.

2000s

Biju Nair

M.S. CS '01, Long Grove, Ill., was appointed vice president and general manager of the Mobility Solutions Group at PCTEL, Inc. and celebrated the birth of a son in December 2005.

Andrew S. Rubin

Ph.D. PSYC '01, Hollywood, Fla., recently won \$226,579 plus \$38,000 in endorsements at the World Series of Poker. Rubin's trip to the final table aired on October 4, 2006. An ESPN reporter and other players nicknamed Rubin "The Poker Ph.D." or "Dr. Drew" for his ability to spot and interpret the subtle responses of his competitors during play. Currently he is a licensed psychologist with a general therapy practice in Plantation, Fla., and also treats children at Nova Southeastern University's Mailman Segal Institute in Fort Lauderdale, Fla. He offers a newsletter through his website, www.pokerphd.com.

Alexander Sperfeld

ARCH '01, Chicago, is working as a project architect for HDR. He received his Illinois license in April 2006.

Lisa A. Van Veen

ARCH '01, Pasadena, Calif., was featured in a career profile in the book *Becoming an Architect* by Lee Waldrep (March 2006).



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.

Robert Cao

M.B.A. '02, Beijing, is working on a start up called Eskalate (www.eskalate.com), a software/IT company in Beijing.

Claudette Soto

ARCH '02, Chicago, hosted an architecture workshop at IIT last summer for Latino high school students sponsored by a Little Village Arts Grant.

“Engineering has been really good to me.”



—Bob Schmidt (ME '36)

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significant role in preparing you to pursue your life's work. Your charitable gift annuity to IIT can strengthen the university while ensuring that your gift works for you and your family.

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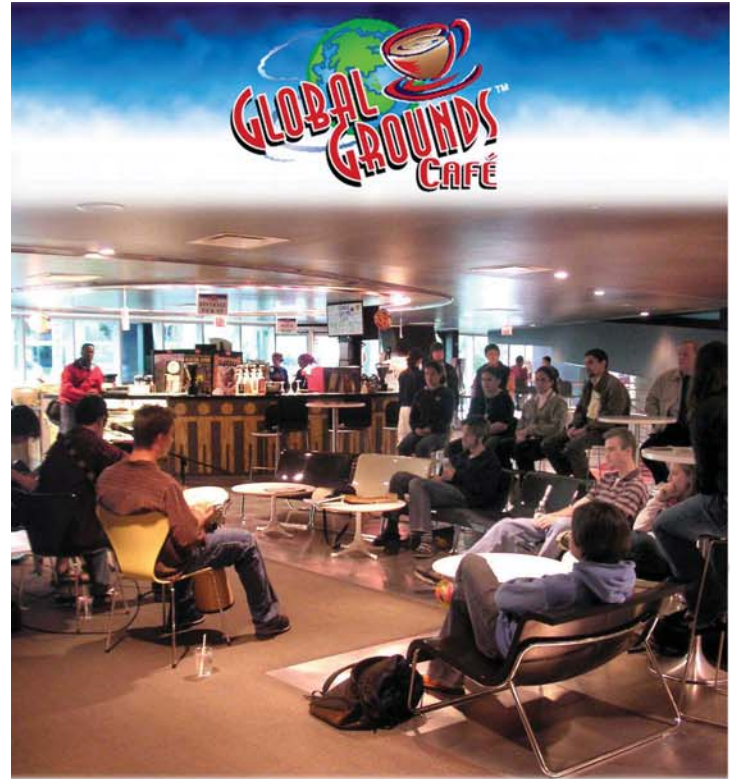
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Paul Smith



A few years ago, IIT alumnus Paul Smith (ECE '96)—then a Ph.D. student in engineering at Georgia Institute of Technology—was weighing his options: to immediately pursue a career in teaching and research, or to first obtain experience in industry. His decision was made easier after he and two of his classmates received funding to market an innovative analog signal processing technology that they developed, with primary applications in the portable consumer electronic products market. Today, Smith is a co-founder of GTronix, a semiconductor design and development company headquartered in Fremont, Calif., which recently celebrated its third anniversary.

What need is this company addressing?

Many user-interface sensory applications—cell phones and iPods, for example—use a digital signal converter that requires data to be offloaded to a computer. That's inefficient from the perspectives of both time and cost. Our company is moving the computational capability directly into the sensor, which will conserve time and power. That's a huge deal when you're talking about portable electronics.

What are the potential applications of this technology?

Right now our primary target is the portable consumer electronics market, which includes cell phones, laptops, and audio/visual personal electronics. The technology also has biomedical applications such as EKG monitors and blood sensors.

What was the biggest challenge in starting up a new company?

Defining the market and the customers. If we could do it over again, I think we'd be a lot clearer from the beginning about which markets we were targeting. We started off focusing so much on the technology that we got ahead of ourselves, and found that we were having trouble articulating our technology with existing applications. We should have focused 120 percent on the market and on the actual products that we were going to sell, because those are the hardest things to nail down. Without revenue, you're still a research project.

Do you consider yourself primarily an engineer or an entrepreneur?

I wear many different hats, but right now I'm more in the engineering mode because I'm part of the GTronix team working on technology—and now we've got capable people driving things forward on the business side.

What do you envision as your next step, professionally?

In five to 10 years I see myself moving more into a direct executive role within the semiconductor field, preferably with another start-up. In the more immediate future, I plan to get my M.B.A., because I want to round out my skills so that I can transition into executive roles. Eventually I want to work in an incubator at a university—which is how GTronix got started—so that I can start to share my experience and help other entrepreneurs.

alumniQ&A

Photos: Bonnie Robinson



Luncheon Reunion classes and retired faculty reconnected in the Paul V. Galvin Library.



Homecoming The homecoming "IIT Pride" pep rally got students and alumni in the mood, and kicked off the weekend in style.

ILLINOIS INSTITUTE OF TECHNOLOGY

Alumnifest 2006

OCTOBER 6-8



Trolley Tour Alumni took a trolley tour of campus to see the growth and beautification up close. Other tours included a Bronzeville Art Trolley Tour and a Mies Society Architectural Tour.



Kilpatrick Lecture The auditorium was full as alumni and students gathered for the Kilpatrick Lecture by Rice University Professor Naomi Halas, who talked about nanotechnology and her research and development of nano-sized pH meters.



Mad Science Families enjoyed a Mad Science Fair and learned about physics and other sciences from faculty, retired faculty, and alumni. [Right] Professor Emeritus Earl Zwicker (M.S. PHYS '52, Ph.D. '59)



Oktoberfest A traditional Oompah band joined alumni and students at a tailgate preceding the men's and women's soccer matches.

Lunch with Friends Alumni from many different years took advantage of the opportunity to meet and share stories during Alumnifest.



Hall of Fame IIT President Emeritus John T. Rettaliata [above, right] was recognized for his significant contributions to IIT by being inducted into the IIT Hall of Fame. After the induction of Rettaliata, Phil Ponce, host of WTTW's "Chicago Tonight," [right, center] moderated a discussion with Rettaliata and retiring President Lew Collens [right, left] about their presidencies at IIT.



Tech Park Tour David Baker, vice president for External Affairs [third from right], gave alumni a behind-the-scenes tour of University Technology Park At IIT before its official unveiling in November 2006.



Dinner Class of '56 The Class of 1956 posed for photos as it celebrated its 50th Reunion at Alumnifest in style.



Reunion Dinner Dancing After the Reunion Dinner, the reunion classes danced the night away.

obituaries



Robert W. Bergstrom

LAW '40, Chicago

Robert W. Bergstrom was a respected, successful anti-trust attorney who represented the entertainment industry in more than 300 winning cases. For his 75th birthday, the Motion Picture Association honored him with a star on Hollywood's Walk of Fame.

A Chicago native, he served in World War II in Naval intelligence with Admiral Chester Nimitz, and in 1992 he returned to his base in Pearl Harbor, where he was received with honors.

Bergstrom was a longtime member of the Public Affairs Committee of the Union League Club of Chicago (ULC). He was president of the ULC in 1971 and received the organization's Distinguished Public Service Award in 1981. He also was president of the Village of Glenview Caucus, board member of the Sarah Siddons Society, an elder of the Winnetka Presbyterian Church, and a stalwart member of both the Glenview Community Church and Fourth Presbyterian Church in Chicago.

Bergstrom is survived by his wife Betty, five children, three grandchildren, and his brother, Richard.



Isaac Ginsburg

Department of Mechanical, Materials, and Aerospace Engineering

Professor Isaac Ginsburg completed his B.S. in mechanical engineering (1958) at Kharkov Polytechnic Institute (Ukraine), his M.S. in Applied Mathematics (1968) at Kharkov State University, and a Ph.D. in applied mathematics (1968) at the Engineering Academy at Kharkov. He had been a part-time lecturer for the MMAE department since 1992, specializing in the areas of mechanics, statics and dynamics, mechanics of solids, and mechanical vibrations. Ginsburg was the recipient of the MMAE Ralph L. Barnett Excellence in Teaching Award during the 2001–02 academic year. He was highly respected by both students and colleagues, and will be greatly missed.

Hugh Goodman Story Sr.

ME '43, San Diego

Hugh Goodman Story Sr. enjoyed a vibrant life as a dedicated Naval commander, engineer, and active community member. He enlisted in the Navy one month after Pearl Harbor. While attending IIT, he was elected to the honorary societies Pi Tau Sigma and Tau Beta Pi. After graduation, he attended Submarine School at Groton, Conn., and served on the crew of the U.S.S. Bluegill in the Pacific. He went on to earn the rank of commander in the Naval Reserve.

Story spent most of his professional career working as an engineer overseas, building and managing oil refineries for Caltex and its subsidiaries. He was named general manager of Bahrain Petroleum Company in the 1960s during a period of unrest in that country and was credited for building a strong relationship with Bahrain's government leaders.

Story was well noted for his community involvement. He served as a docent for the Maritime Museum; president and founder of the Point Loma Association, which planted more than 700 trees around the Point Loma neighborhood of San Diego; president of the Friends of the Point Loma Branch of the San Diego Public Library; and artifacts chair of the San Diego Chapter of the United States Submarine Veterans of World War II. In 2000, California Congressman Brian Bilbray nominated him for the Blue Cross Blue Shield Association's Ageless Hero Award.

Story is survived by his wife, Marilyn, their five children, six grandchildren, and two great-grandchildren.

inmemoriam

Milton Alex
BE '71, Park Ridge, Ill.

Robert J. Alheid
MAE '69, Roscoe, Ill.

John L. Anderson
ME '50, Rockford, Ill.

Robert H. Anderson
ME '44, Minnetonka, Minn.

Aloysius J. Arko
PHYS '62, Denver

Nicholas C. Avgerin
FNS '97, Lake Bluff, Ill.

Winifred M. Ayers
HE '58, Chicago

William C. Bachtel
EE '46, Spring Valley, Calif.

Irving Backinoff
EE '48, Monroe Township, N.J.

Dana B. Berg
CHE '43, La Grange Park, Ill.

Folger H. Bigelow
EE '30, Goode, Va.

Frederick W. Bollinger
Ph.D. CHEM '51, Westfield, N.J.

Howard P. Bonheimer
M.S. BEA '61, Western Springs, Ill.

John D. Bornberg
'55, Dacula, Ga.

Roger D. Brelin
MATH '77, Glenview, Ill.

Elisabeth S. Brett
ARSC '38, Birmingham, Ala.

Michael E. Carlson
LAW '49, Mamaroneck, N.Y.

Thomas A. Carter
ARCH '31, Burbank, Calif.

Richard P. Colbert
EE '50, East Meadow, N.Y.

Thomas J. Connell
CHE '51, Sugar Land, Texas

John A. Cordes
MET '50, Whittier, Calif.

David F. Dal Porto
MET '88, Chicago

Joseph R. Devane
PSYC '50, Chicago

John C. Dinou
CE '49, Arlington, Texas

Antone L. Donna
LAW '61, La Crosse, Wisc.

William F. Donovan
ME '48, Aberdeen, Md.

Edward S. Erhardt
ARCH '83, Oak Park, Ill.

Timothy M. Fisher
LAW '78, Oak Park, Ill.

Robert S. France
LAW '77, Tucson, Ariz.

Richard C. Frankenberg
BE '51, Woodstock, Ga.

Ernest Freireich
CHE '36, Los Angeles

Robert N. Friend
M.S. PSYC '53, Chicago

Raymond C. Gardner
CHE '79, Lake Charles, La.

Walter R. Gesell
ME '60, Palos Park, Ill.

John P. Graves
LAW '61, Sarasota, Fla.

Nathaniel P. Halperin
ARSC '37, Minneapolis

Ian C. Hamilton
ME '48, Troy, Ohio

Charles F. Hendershot
LAW '82, Naperville, Ill.

Paul F. Henriksen
ME '39, La Grange, Ill.

Daniel Hernandez
M.S. DSGN '83, Celina, Ohio

Albert A. Hess
M.S. MECH '50, Western Springs, Ill.

Perry A. Holman
MAE '80, Normal, Ill.

Arwin W. Hothan
CE '57, Mount Pleasant, Iowa

Norbert B. Lessner
ME '64, Westmont, Ill.

Hugh I. Knobeloch
ME '44, Madison, Wisc.

William E. Konrath
PSYC '63, Randolph, N.J.

Raymond W. Kosley
ME '41, Morristown, N.J.

Larry J. Kurtz
MET '51, Akron, Ohio

Ronald M. Lake
LAW '73, Rolling Meadows, Ill.

Harry R. Leiser
ME '51, Oak Lawn, Ill.

Henry M. Lenz
CE '51, Palos Heights, Ill.

Louis P. Lindeman
CHEM '52, El Sobrante, Calif.

Ernest G. Lindgren
ARCH '42, Waupaca, Wisc.

Harold E. Little
CHE '37, Tega Cay, S.C.

David I. Long
CHE '48, Lenexa, Kan.

Bert J. Mallinger
PSYC '52, Las Vegas

James A. Marshall
CE '55, Roselle, Ill.

Henry O. Miller
ME '43, Carol Stream, Ill.

Julius Nemirow
MATH '70, Yountville, Calif.

Lloyd W. Norkus
CHE '41, Hilton Head Island, S.C.

Nikunj R. Panchal
EE '05, Lusaka, Zambia

Veikko K. Peltola
EE '47, Chicago

Edward M. Petrie
CHE '50, Greenville, N.C.

Robert J. Ranieri
ENGL '64, Huntley, Ill.

Joseph A. Ransel
ARCH '30, Indianapolis

Albert Rosendahl
LAW '72, Tinley Park, Ill.

Kenneth W. Seidler
FPSE '56, Morris, Ill.

William C. Silva
ME '49, Santa Rosa, Calif.

Joseph W. Smith
CHE '41, Richardson, Texas

John T. Stenvall
IE '52, Palm Desert, Calif.

Nels O. Swanson
ARCH '30, Rockford, Ill.

Susan B. Swanson
ARSC '36, San Jose, Calif.

Robert Talman
CE '49, Deerfield, Ill.

Richard R. Taylor
FPSE '42, Greenbrae, Calif.

Robert P. Tully
EE '49, Libertyville, Ill.

David Vander Weide
CHE '49, Zeeland, Mich.

Gordon A. Zwissler
CE '36, Rancho Cucamonga, Calif.



Officers of the IIT Woman's [sic] Club Faculty visit with pupils of the Ada S. McKinley Community Services project at 100 South 34th Street, Chicago. With the unidentified children are [left to right] Margaret Ryan, Mrs. Raymond J. Spaeth, and Marjorie K. Davis. ca. 1968

IIT's current mission statement pledges us institutionally to continue a long-standing practice of service to society, a practice that IIT individuals have done voluntarily through the years, particularly for our Bronzeville neighbors. Today's efforts at community service are a combination of grass-roots activities, such as individual staff members donating school supplies for area school children, and institutional initiatives that involve the cooperation of public and private sectors, and employ financial incentives to foster economic growth, community re-development, and cultural preservation. Leroy Kennedy and IIT's Office of Community Development, working with such organizations as Grand Boulevard Federation, Stateway Community Partners, Pershing West Elementary School, and the City of Chicago, support projects occurring at this level. Professor Frank Flury's volunteer project with 10 students to build an activity center in flood-ravaged Gulfport, Miss. [see story page 15] provides an example of how IIT's premier academic program in Architecture can both educate students and serve society

simultaneously, even well beyond our state borders.

Historically, IIT's community outreach focused on two area institutions—the Ada S. McKinley Community Service, Inc. agency and St. James Church. Originally known as the South Side Settlement House and later commonly called the McKinley House, the former institution was started in 1919 by Ada McKinley (1868–1952) to assist returning WWI African-American veterans. By the post-WWII era, the organization was failing financially and in danger of closing. With the help of a group then known as the IIT Woman's [sic] Faculty Club, the struggling organization was not only able to survive, but to broaden its service activities and even to build a new building. Flury, without knowing it, was following the lead of one of

his predecessors: a member of the IIT architecture faculty originally designed the McKinley House for the agency. The structure (still extant) was dedicated to McKinley in a cornerstone-laying ceremony on August 25, 1952, just hours before McKinley passed away. For the next 20 years, IIT women, sometimes with the help of the Greek students, collected toys, hosted holiday parties, held teas and fashion show fundraisers in S. R. Crown Hall, and served as volunteers for the organization.

IIT's relationship with St. James Church is one of mutual service, as this is the Catholic parish that serves the IIT campus and much of the surrounding neighborhood. Students attend Mass at the church and on occasion, the parish's priests venture to campus to conduct services here. Community service activities provided to St. James by IIT students included hosting parties for parish school children in the 1950s (the parish no longer has a school) and helping to paint the church hall in 1971. Unfortunately, the church experienced a fire only 12 months later, which gave IIT students another community service opportunity as they helped to clean up after the blaze.

All of us at IIT can be proud that our "service to society" directive is practiced at two levels—both from across the spectrum of the IIT community of staff, students, faculty, and institutional offices, and to the local and distant geographic communities we seek to assist.

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.



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Find out what else Mark Bilitz (ID '79) and his daughter Liz Bilitz (MSE '07) have in common. To read about them and other members of the IIT family who are sharing the path—and to learn how to you can join them—visit www.iit.edu/alumni/sharethepath.

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