Two Reasons to Celebrate this Fall!

Alumnifest 2007
Friday–Saturday, October 5–6

Whether you graduated one year ago or 50 years ago, join us for food, fun, and fellowship including:

- 50th reunion luncheon for the Class of 1957 and all prior classes
- Casino Night with cards, casino games, cocktails, and hors d’oeuvres
- Many Voices, One Vision: a town hall meeting with new president John Anderson. Bring your questions and comments, and join the conversation.

For more information on Alumnifest 2007 visit www.iit.edu/alumni/alumnifest/2007.

Inauguration of President John Anderson
Tuesday, October 30

Join your IIT friends for an inauguration ceremony and full day of events to help welcome the eighth president of IIT as he launches an exciting new era for the university!

Visit www.iit.edu for more information.
Email: rsvpevents@iit.edu
Phone: 312.567.5064
Sustainability

I am confident that I will fit in well at IIT: I am getting rid of one of my cars.

For me, this decision answered questions of both need and want—specifically, do I need two cars in the city, and do I really want the hassle of owning two cars while living downtown?

In academe, issues such as sustainability have a tendency to unite the needs and wants, bringing together those who pursue research for the benefit of society and those who explore the same topics for the benefit of science.

Many of our students and faculty are exploring sustainability through their work because they want to improve the environment. They are now joined by millions of people for whom the term “going green” has become a cultural phenomenon. While improving technology may be a positive residual, theirs is a motivation to ignite change in society, and a mountain of statistics supports the need. Through their efforts, they will educate and persuade others to take part in this movement: the IIT Green Home and Cool Globes projects are two such examples.

On the other end of the spectrum are those who are responding to the shift in the needs of the market and of science. As consumers increasingly demand eco-friendly products—cars, fuels, building materials, food, and clothing—the science behind and design of these goods in many cases require a shift in technology. Having identified a need, these researchers want to be on the cutting edge of advancements, indeed changes, in this exciting area of research. For someone like alumna Susan Solomon, research that may yield environmental ramifications is not a matter of politics but of science.

Ultimately the reasons for the pursuit are not as important as the determination to take on the challenges that this pursuit inevitably presents. The challenges are many: Can greener technologies be made cost effective and thus more widely available? What are the costs versus benefits in the relationships between energy and green technologies? How is the public culture shifted toward greener technologies, for example hybrid-powered vehicles, when the economics are not persuasive in today’s world? How does the United States become a role model for the entire world in sustainability?

At IIT a determination—call it attitude, spirit, or ambition—to explore these questions and others like them is rooted in a strong passion for both learning and seizing challenges. The university is united in its determination to create change, no matter how disparate the reasons for pursuing it may be. IIT’s tenacity is infectious, and certainly played no small part in my decision to go to a one-car household.

On a fundamental level, the want and need to pursue sustainability both lead to the same outcome—to leave the world for our children in the same or better condition than we inherited it. This is an important part of the IIT mission, one that has already affected me and no doubt countless others in both societal and scientific contexts. Thank you for welcoming me into the IIT community and for giving me the opportunity to share this bold mission with you.

Sincerely,

John L. Anderson

To learn more about the exciting things happening at IIT, visit www.iit.edu.
In this Issue

11
President John L. Anderson
IIT’s eighth president shares his background and vision in his first interview for IIT Magazine.

18
The Doctor Is In
Psychology alumnus Andrew “The Poker Ph.D.” Rubin finds poker success by mastering the science of reading tells.

20 Cover Story
Secret Ingredient
IIT physicists are part of the brigade of researchers investigating possible answers to the age-old matter/antimatter mystery.

DEPARTMENTS

2 Campus News
8 Faculty News
9 Research Briefs
24 Alumni News
36 Rewind
The IIT Brand Promise
We are – an academic experience grounded in engineering, science, and technology
We are – exceptional students with an intense work ethic
We are – innovative and entrepreneurial
We are – Chicago, a total urban experience

IIT’s New Branding Campaign Asks, “How Do You Spell ‘Community’?”

In March, during the familiar time of year when the city-wide gray has yet to subside and there’s scant evidence of anything green, rows of new banners brought a bit of color to State Street and the IIT corridor. Against a black background, large white and red letters displayed a series of four words that defined the very pulse and spirit of IIT. Interestingly, each and every word was misspelled. Intentionally.

In a creative strategy that takes a slight poke at the seriousness of academia, while also embedding ‘it’ into words that capture fundamental qualities of IIT’s reputation, the Office of Communications and Marketing (OCA) launched IIT’s new branding campaign. As the banners snapped against the late winter wind, students, staff, faculty, administration, area residents, and commuters learned the basics of a whole new vocabulary: Curiosity, Tenacity, City Life, and Ingenuity. After defining the many unique attributes of IIT, OCA developed this new set of words as a way to boast the university’s academic reputation throughout the Chicago area. In addition to the banners on State, 33rd, and 33rd streets, the campaign has included bus panels and billboards along major expressways; as well as train stations and platforms. Radio ads created for the campaign can be heard on five different Chicago radio stations. Orchestrating comprehensive placement to gain recognition is the key to this marketing strategy; the ridership on the westbound Burlington commuter train alone provides 1.3 million viewers each month. However, it takes more than market saturation to brand a university.

Donna V. Robertson Receives John and Jeanne Rowe Endowed Chair

This September, IIT welcomed a group of new students with a particularly distinguished standing: the first freshman Collins Scholarship Program recipients. The scholarship honors President Emeritus Lew Collins, who retired in May after 17 years as president of IIT. The Collins Scholarship Program provides full-tuition scholarships to Chicago Public School (CPS) graduates who meet the university’s rigorous academic standards and whose families earn less than $40,000 annually. Collins, a lifelong Chicagoan, graduated from Senn High School, a Chicago public school. In May, a dinner honoring Collins for both the scholarship and as the 2007 World Award recipient raised $2 million to begin the campaign, which was announced in November 2006.

“The Collins Scholarship is an expression of the IIT mission to transform lives, and a fitting tribute to Lew, who rescued and transformed John Row, chairman, president, and chief executive officer of Exelon Corporation and chair of IIT’s Board of Trustees, said at the event. “It honors the spirit of Philip Armour, when he founded the Armour Institute to serve children of the city’s working class in 1890. Seventy-three percent of Chicago’s freshmen live in low-income households, where parents have a high school degree but no college education. This initiative is designed to address the very real dilemmas experienced by families struggling to balance rising living expenses and the cost of higher education,” Collins told the audience of IIT alumni, donors, and friends. “This program can make a lasting impact on the growing national crisis in math and science education.” Rufus Williams, president of the Chicago Board of Education, said local universities, students, downtown: ‘an academic experience grounded in engineering, science, and technology’.

Collins Scholarship Program
Provides an IIT Education to CPS Grads

The IIT community is embracing its new identity. New “university” coffee mugs are found on desks throughout the campus, and more than 3,000 T-shirts with words such as “originality,” “personality,” “community,” and “individuality” were distributed to students, faculty, and staff. The campaign also has taken a life of its own. Chicago White Sox game announcers refer to the key play of each game as “the IIT moment of intensity,” and in July, one of the top NASA teams featured the word “velocity” on its racers.

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Global Change
Architecture faculty members Catherine Wettzel and Richard Nelson designed and produced “Globe of Office,” one of 122 bio-foam-tall spheres featured in the public art exhibit Cool Globes. Hot Ideas for a Cooler Planet. The project’s aim is to increase awareness about global climate change. Graduate architecture students John Cantor, Katie Han, Bridget O’Connell, Tyler Waldorf, Andrew Waidman, and Camille Yu assisted in the production of the globes, which features an ocean surface with color-changing, temperature-sensitive paint, continents listing the variety of possible “green” professions, and a rewriting of the preamble to the United States Constitution as the Earth’s equator. Cool Globes runs through September 30. The globes will be auctioned off October 5 at the Auditorium Theater, with proceeds benefiting environmental education programs.

“Changing the Game” Winter 2007
A team of IIT students placed fifth in the inaugural International Formula Hybrid Competition hosted by Dartmouth College in May. Reaching a maximum speed of 45 miles per hour, the vehicle placed third in the acceleration test. The competition marked the first time an IIT team has competed in an intercollegiate auto-racing event. Students from engineering, computer science, and architecture comprised the team, under the supervision of project advisor, Professor Ali Emadi, who was featured last year in People and Places.

“You Can Take It With You”
“The hardest part is getting them to let their guards down,” explains Alfredo Garcia (EE ’08) of the students at John C. Burroughs School, with whom he has worked for the past two years. Part of the Brighton Park Neighborhood Council’s outreach program for elementary school students, young adults from the neighboring neighborhood such as Garcia meet regularly with students to provide counseling and friendship. “These kids need help and advice from someone they can relate to—someone who went to the same school as them and had the same experiences—not some authority figure.” Every other Friday the group meets at the school to talk about problems at school, at home, and in the neighborhood, and to play basketball. With his outgoing personality and warm smile, Garcia puts others immediately at ease, making it easy to see why troubled kids open up to him.

Most of the people from the neighborhood who are successful move away, Garcia says. “They don’t come back to give back to their community. Giving back is important to me.” Garcia uses what he has learned at IIT to show the kids the value of education in terms they can relate to. On one occasion he impressed them by showing how he could fix their video game connection problem using cables he built in IIT’s electrical and computer engineering (ECE) lab. His interest in electronics and video games brought Garcia to IIT’s electrical engineering program, and he feels his experience as a college student can serve as an example. “The best thing for the kids to learn is they don’t have to fall prey to gangs, drugs, and crime like so many others from the neighborhood do. They can be whatever they want to be.”

Active within the IIT community as well, Garcia participates in the Society of Hispanic Professional Engineers and Latinos Involved in Further Education, both of which he was recently elected secretary. For the past three years he has held a work-study position in the ECE department, where he assists a lab engineer and in the ECE department office.

The Grainger Foundation Laboratories, which serve as a focal point of the Electric Power and Engineering Program at IIT. The gift will help recruit highly qualified students and maintain support to the Power Engineering Program at IIT. The gift will help recruit highly qualified students and maintain support to the Power Engineering Program at IIT.

Garcia is also an avid dancer, embracing a variety of Latin-American styles, and his memory for music is impressive, causing his friends to nickname him “the human jukebox.” His favorite styles of dance are cumbia, derived from Colombian folk dancing, and bachata, an import from the Dominican Republic. As he begins his senior year at IIT, Garcia says planning for a career graduation has been looking for internships at companies locally and outside Chicago. He will have to let down some of his own guards—he wants to stay in the city, where his family and community ties are strong, but is willing to go where he can find a job that’s the right fit professionally. Regardless of where new opportunities take him, Garcia says he will remember to take his own good advice and keep his Chicago roots with him.

Major Gift to Benefit Power Engineering Program
In acknowledgment of the crucial place of power in a future increasingly affected by issues of energy and sustainability, The Grainger Foundation of Lake Forest, Ill., has made a $5 million gift to benefit the Power Engineering Program at IIT. The gift will help recruit highly qualified students and maintain The Grainger Foundation Laboratories, which serve as a focal point of the program.

Headed by President David Grainger, The Grainger Foundation has supported power initiatives in the areas of scholarship funding and facility development at the university for more than two decades. Since the opening of the first Grainger Laboratory in 2000, IIT has established the Electric Power and Energy Program Center in the Department of Electrical and Computer Engineering (ECE), and has added additional Grainger laboratories. The Grainger Foundation Laboratories, which help prepare students for work in power systems, power electronics, electric motor drives, special electric machines, and advanced power engineering, serve as a state-of-the-art showcase of the department’s capabilities.

Enrollment figures indicate that ECE students comprise the largest group in Armour College of Engineering, with two-thirds of ECE undergraduates taking at least one power course. While statistics show that enrollment of power students at universities across the United States has dropped since the 1980s, the number of students in the IIT program continues to increase. IIT is the only university in Chicago that offers postgraduate degree programs in electric power engineering.

“The most enduring part of The Grainger Foundation’s support is that it is entirely focused on benefiting the students,” says Mohammad Shahidehpour, Bodine Professor and ECE chair. “By helping to maintain our state-of-the-art power laboratories and fostering excellence in our teaching standards and learning environments, the foundation’s gift will directly affect the education of some of the best future engineers in the industry.”

The Grainger Foundation was established in 1949 by Mr. and Mrs. William Wallace Grainger, and has provided substantial support over the years to a wide range of organizations, including museums and educational, health care, and human services institutions.

William W. Grainger is the founder of W. W. Grainger, Inc., North America’s leading distributor of maintenance, repair, and operating supplies and components.

www.ece.iit.edu
Finding Art Beneath a Tech Surface

To some outside the realm of a university such as IIT, the work of engineers and scientists may be devoid of visual appeal or imagination. But for many of the faculty members and students here, their workverges on the artistic. Think of theperception of the expressed in a mathematical equation, or the incredible complexity and beauty of a microscopic chemical compound.

This natural beauty and wonder are the basis for IIT’s first permanent art exhibit, aptly named art @ IIT. Since its inception in 2004, art @ IIT has brought both the seemingly disparate fields of art, science, and technology to reveal their synergies. Initiated by alumnus Mindy Sherman (SCOM ‘95, M.S. ‘00) while an undergraduate, art @ IIT began as an Interprofessional Projects (IPRO) course to develop a business plan for an art gallery on campus. Professor Robert Krawczyk, director of the undergraduate program for the College of Architecture, was selected as its faculty advisor. The business model was so well received that the university leadership endorsed the creation of a gallery and formed the Art Board, with Krawczyk as its director.

Krawczyk has long been interested in art, describing the natural relationship between art and technology. “A number of scientists and engineers have seen that the results of their investigative processes and procedures, the evidence of their scientific inquiries, produce more than just an equation or documentation of a phenomenon. A scientific phenomenon often has an artistic aesthetic that transcends its ability to explain the world around us,” he says. “Living cells form patterns of incredible complexity and beauty. The thousands of connectors in transistors in a circuit board form a landscape as beautiful as nature.”

A Decade Strong, Architecture Ph.D. Program Contributing to a Better-Built Future

The importance of residential designers is increasing as space-extracted urban settings is one topic that Mahshid Elnimeiri is contemplating during her research into the environmental footprint of the IIT Doctor of Philosophy in Architecture Program. Architects are some of those people who are responsible for shaping the environment, says Elnimeiri, who is program director, architecture professor, and a recognized tall buildings expert. According to Elnimeiri, the Ph.D. program was established, in part, out of concern for the environment, which today is facing issues of global warming, resources management, and densely populated cities. “I’ve always thought—and still think—that architects should work to create a better-built environment for the people.”

Creating a better-built environment for the global community is one aim of students in the program, with its roster of candidates from around the world. Twenty-two students have graduated from the program since its inception in April 1997. While a student, Hatice Sezer (Ph.D. ARCH ’02) had the opportunity to build integrated photovoltaic systems, and has returned to her native Turkey in order to apply the sustainable design principles she learned at IIT. Now an assistant professor at Nalgun University, Sezer is helping to form the institution’s newly established architecture program as well as finding ways to make the campus a green one.

“10 years ago I would say, without reservation, that architects should not be looking into tall buildings, form, structure, and materials. On the contrary, we are pushing the envelope in those areas, but we are keeping our focus toward a better and healthier future,” Sezer says. www.aio.edu/college/art@it/
Expanding and Assessing the IPRO Program

After more than a decade of innovative learning through the Interprofessional Projects (IPRO) program, faculty and staff are taking IPRO to the next level by working to incorporate elements of a renowned service-learning initiative into the university’s signature program.

The Engineering Projects in Community Service, or EPICS, program was founded at Purdue University in 1995. Purdue remains the headquarters, but 30 other schools throughout the country and the world now participate, including Princeton, Notre Dame, Penn State, Dartmouth, Georgia Institute of Technology, and University of Auckland, New Zealand. IPRO has a long history of service learning projects, and the EPICS program allows for its expansion and formalization as well as relationships with other universities dedicated to unique service-learning models. EPICS service-learning initiatives assist nonprofit community organizations with specific problems they are facing and cover four broad areas of service learning: human services, access and abilities, education and outreach, and the environment. IIT is more than just another participant.

The Interprofessional Projects (IPRO) program brings together students from different disciplines to solve real-world challenges. [Above] An IPRO team takes on a project of a Virtual Take-off-and-Landing aircraft.

Last year, IIT was awarded a National Science Foundation grant to review best practices of the program while moving to incorporate it into IPRO. There are three distinct goals for the NSF grant: The first initiative, headed by Director of Interprofessional Studies Tom Jacobs, the project’s principal investigator, is a concerted effort to establish relationships with community partners. While IPRO has successfully engaged community partners in the past (including organizations such as the Holocaust Museum and Engineers Without Borders), Jacobs is working to move from project efforts to lasting relationships. He has already solidified partnerships with Access Health Network, Chicago Public Schools, and the Museum of Science and Industry. These organizations will then benefit from one or more IPRO projects each semester. Additional partnership talks are underway with a number of other groups.

Institute of Psychology Professor Margaret Hoyck, a co-PI on the project, is spearheading an effort to incorporate reflective thinking principals into the EPICS program. This assessment system is intended as a tool for monitoring and managing the projects, student teams, and faculty of the IPRO program through the collection of systematic data with measures that have evidence of reliability and validity, and by providing the data for reports that assess the system performance. There are 12 IPROs already participating in the endeavor this year. Dan Ferguson, senior lecturer at Stuart School of Business, is heading the third effort of the IPRO grant, which is in its first year, and three IPRO Fellows have been chosen. Ferguson is aiming to appoint 10 more next fall. The program already has 10 service learning-oriented projects this semester, and team members have presented their findings at annual EPICS meetings, as well as continuously shared their research with the national EPICS group. http://ipro.iit.edu

Investing in Investing

Stuart School of Business has long espoused real-world learning. Now Stuart is making a smart investment in students and faculty. A new student group called the Stuart Investment (SI) Club has been formed by giving members of the Stuart Investment (SI) Club the ultimate real-world experience—allocating $250,000 of the university’s endowment for them to manage. The group began as a student-run club in January 2007 with the goal of funding a team of students and faculty. It ran for more than a year and earned approximately $6,000 in profits.

Trustee and Center of Financial Markets founder Jack Wing was impressed by the group and was a proponent of the SI proposal to invest a portion of the university’s endowment. Stuart’s Finance and Financial Markets master’s programs have long ranked among the best worldwide, and other top-tier finance programs have similar student groups in place. Stuart faculty member Russell Worley now oversees the group of students and imposes a structure and guidelines but gives students latitude within this framework.

The SI investment policy reflects the group’s thinking, following a growth at a reasonable rate philosophy when selecting equity investments that combine both value and growth investing. The idea is to find healthy but undervalued stocks with a growth rate that exceeds most value stocks. In order for a stock to be selected for consideration, it has to have positive earnings and its PE multiple cannot be twice that of the market.

The money is allocated evenly in five sectors: consumer, finance, health care, technology, and machines and materials. Students are divided into five teams that reflect these areas, each with a sector leader and analyst. A fund manager and executive director sit above the five sector leaders and oversee the group. The team members must conduct thorough research on the stocks being considered for their portfolio and make a formal presentation to the group. SI presents about six to eight new stocks per quarter. SI is still extracurricular but draws approximately 20 students each quarter. Students start out on the analyst level and can move up to be sector leaders after proving themselves to the group. This dynamic promotes teamwork, stock analysis, and verbal and written presentation skills.

Solutions Shields, the current fund manager and financial markets major, believes that SI is beneficial to students on three levels: “The club’s endowment supports scholarships for graduate business students, and the fund allows students the opportunity to put their financial education into practice. SI also provides an assessment of students’ knowledge and the performance of the graduate business program. I participate in SI because I want to support my motivation, test my abilities, and take part in the success of my program.”

http://ipro.iit.edu/
On the Right Track: Dystrophin Research

In the nursery, an infant's eyes trace the circuit of a moth. Already the child's hands are grasping at things, and he has begun incessantly rehearsing the sounds that will eventually blossom into language. The youngster's progress appears on schedule. A chromosomal glitch, however, will soon make itself evident.

This boy was born with a disease known as Duchenne Muscular Dystrophy (DMD). The root of this ailment is a defect in a complex human gene known as dystrophin, and is a focus of research for IIT's Nick Menhart.

The challenges of studying dystrophin, the largest human gene, are formidable. "This gene by itself is 1 percent of the total genetic material," Menhart explains. "So it's 300 times larger than your average gene." In healthy individuals, the dystrophin gene codes for a protein of the same name, one vitally important to muscle cells.

"Most cells just sit there," Menhart says. "They don't change shape." Muscle cells are different. "If you think of a piece of sheet metal bent back and forth, eventually it will break due to metal fatigue. This is what happens to muscle cells when they lack [the protein] dystrophin," Menhart adds.

Duchenne's is one of many so-called X-linked recessive gene diseases. Should a child inherit a defective X chromosome from his mother—one in which the dystrophin gene is damaged—the result is DMD.

But DMD is a peculiar genetic disease in that about 50 percent of cases are not inherited. Rather, they are the result of new mutations occurring--most commonly in sperm, but occasionally in eggs--especially in the mid-20s. Few survive past age 30.

As Menhart explains, "If they can skip some of these defective exons, that person would be cured and start making his own dystrophin again, minus the little defective piece. We can get to the end of the track, and we're fine."

If the theory sounds straightforward, the practice of treating Duchenne by exon skipping is frustratingly complex. Many intricacies of the gene and the affected exons have not been satisfactorily studied. Menhart insists that current attempts to re-engage the train without a more thorough understanding of the segments of track is a strategy largely relying on luck. "Here's the problem: nobody knows what the effects are of putting this thing back together," he says.

Hence, efforts to compensate for the track derailment—to ferry passengers by bus around the accident site, as it were—are usually unsuccessful. The bus driver has no idea where to drop off the passengers. As Menhart puts it, "Sometimes they can see the station and walk to it, sometimes they are way off and they just wander around on a bad part of town until they are mugged."

So Menhart and IIT students are trying to fill in this deficit by researching the detailed structure of the dystrophin gene. "What we're doing is studying all the little pieces, to see which ones go together and how they can work if you remove them. Nobody knows which exons to skip—how to get the train back on track. That's what we're doing."

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Those with Duchenne have considerable cause for hope, according to Menhart. “If we can learn more about the structural consequences of exon skipping, I would be hopeful for a treatment within a decade, maybe sooner.”

—Richard Harth
grade, so they were very proud that my sister and I both were the children of Swedish and German immigrants to find success in higher education, and I really enjoyed Anderson's potential as a researcher.

“Outside of his family, made the case for academe, citing envisioning a career in industry,” he says. “He told me I could do it,” says Anderson, whose position. Almost all my relatives worked at DuPont, and I only one option. “I never thought about an academic hesitance. “It’s a good lesson in keeping your options unexpected. I saw IIT as an appropriately big window—the kind that’s made for looking out, thinking, and collecting thoughts. Anderson grew up in Wilmington, Del. His parents “He received his bachelor’s degree in chemical engineering from the University of Delaware. It was there that he met his wife, Pat. A fellow student in math and physics classes. “In those days it was rare for a woman to be in those classes. She was smart—Phi Beta Kappa—and better at math than I was, and I thought I was pretty good,” he says, smiling proudly. “I really fell for her and worked hard to get that first date.” Pat worked in computer science at DuPont and went on to internships on the days when knowledge of ‘assembly language’ was critical. They married in 1968, and have one son and one daughter, both in their 30s, and two grandchildren.

Anderson earned his master’s and Ph.D. degrees in chemical engineering from the University of Illinois at Urbana-Champaign, where he pioneered the development and use of micro-porous membranes to study biological transport phenomena. He began his academic career as an assistant professor of chemical engineering and of applied mathematics at Cornell University. He has experienced higher education from nearly every vantage point—student, assistant professor, associate professor, professor, center director, department chair, dean (the latter four at Carnegie Mellon University), and provost (at Case Western Reserve). Anderson has held visiting professorships at Massachusetts Institute of Technology, the University of Melbourne (Australia), and the Landbouwuniversiteit Wageningen (The Netherlands), and guest lecturedship throughout the country. He is the author of more than 100 journal articles and book chapters.

many voices, one vision

The conference room in IIT’s Downtown Campus could swallow an elephant—or in this case a massive, 30-person table, meticulously polished, sparkling, and free of fingerprints. John L. Anderson walks directly to a seat at the head of the table, nearest to a window overlooking the city. It’s an appropriately big window—the kind that’s made for looking out, thinking, and collecting thoughts.

It is three weeks before Anderson officially takes office as the eighth president of IIT. Anyone would expect a new university president to be doing a lot of forecasting at this time—and he is—through the usual early-morning quiet of a city on the verge of a downpour offers him a welcome silence for reflection.

“I did not think I would do this,” he says without hesitation. “It’s a good lesson in keeping your options open. You never know what’s going to happen.”

Resent to 1969. The indescribable “this”—a career in higher education—arrived at a crossroads in Anderson’s life. Like many master’s degree candidates, he found himself choosing between entering the workforce and pursuing his doctoral. On top of this, he was about to spend six weeks in a REU summer camp in Kansas, a necessity brought on by the Vietnam War. He had not anticipated a tough decision, because there had been only one option. “I never thought about an academic position. Almost all my relatives worked at DuPont, and I envisioned a career in industry,” he says.

His thesis advisor, the most influential figure in his life Anderson’s potential as a researcher. “Outside of his family, made the case for academe, citing envisioning a career in industry,” he says. “He told me I could do it,” says Anderson, whose position. Almost all my relatives worked at DuPont, and I only one option. “I never thought about an academic position. Almost all my relatives worked at DuPont, and I envisioned a career in industry,” he says.

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Redefining Ownership: Intellectual Property Law at IIT

by Christopher Darnielle

While the term “artificial intelligence” (AI) may conjure up visions of campy ’50s science fiction movies or epic man-versus-machine chess duels, for Chicago-Kent College of Law Professor Mickie Piatt, it has a much more practical application: as an anecdotal case study for the intellectual property (IP) law classes she teaches.

The case study centers on a piece of real-world software, an automated book-authoring program that can be customized to mimic the writing styles of various famous authors via an artificial intelligence engine. The twist? She analyzes the implications of this software, and the mimicked writing it produces, from the perspective of an IP lawyer.

“One of the interesting questions is, who owns the copyright?” asks Piatt, also the executive director of Chicago-Kent’s IP law program. “Is it the computer? Is it the person who programmed the AI? Is it the people whose heads were mined to create the knowledge base? Or is it [the author] whose style they’re stealing? Those are just the obvious questions, but there are a lot more you could explore.” Piatt’s case study is a perfect illustration of the often confusing and contradictory applications of IP law.

In part, these are the kinds of issues that IP law is intended to define—ownership rights inherent in (or exclusive to) creative and innovative works. Broadly defined as copyrights (artistic material and multimedia), trademarks (brand identities), industrial designs (styles of industrial objects), patents (inventions), and trade secrets (proprietary information of a business or process), IP is exactly what the term implies—property. As with any other asset, it can be bought, sold, transferred, and licensed; often it is an extremely lucrative asset for a corporation.

Piatt goes on to explain how her department has restructured the once IP law curriculum in recent years so it will better represent what students will experience as actual practitioners. “What we’re doing is trying to encourage students to take classes that are not perceived as IP classes, but [those] that we think will make them better practitioners if they can apply what they know in a broader context.”

The formula she outlines is unique: adding courses to the core curriculum that are not typically considered IP-related (Evidence, Administrative Law, Remedies, and Anti-Trust), and creating the “capstone experience”—a requirement of all third-year certificate students—designed to make students think more broadly about IP issues.

In Chicago-Kent’s capstone experience, students must participate in one of three programs: a paid externship with a qualified law firm or corporation; a clinical experience known as the IP Law Clinic, in which students work with corporate or faculty entrepreneurs to resolve patent issues related to their inventions, or the Strategies in Intellectual Property course, in which students act as practicing attorneys, tackling issues that integrate the various branches of IP law. “It’s not all just pure litigation,” according to Chicago-Kent’s IP law program Associate Director Tim Holbrook, “it can also have licensing and negotiation aspects to it.”

The approach seems to be working. Although Chicago-Kent’s IP law program has been around for two full decades (an eternity in the IP field) and was one of the first of its kind in the country, it recently received one of its biggest honors to date: U.S. News and World Report tabbed it as one of the Top 10 programs of its kind in the country.

“It’s one of those things we don’t want to put too much weight into, because we’re always afraid of overemphasizing the rankings,” says Brian Havel, director of DePaul’s International and Comparative Law Program. “Global concerns are more and more predominating, so you need to think not just of United States patent law, but also that of Japan and England.”

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Harold Krent, dean, Chicago-Kent College of Law

IP attorney and alumnus Adrienne Naumann (LAW ’84) explains that filling patent applications in multiple countries can be financially prohibitive, even for large corporations. Additionally, “If you file a patent in this country, it can still be kept confidential if you forfeit your rights to file overseas,” she says—but this confidentiality goes out the window once you file outside of the United States. “Then the client has to make a decision whether they want to invest in filing overseas and having their confidential information published, whether or not they ultimately obtain the patent, or whether they just
want to restrict their territory to the United States and have it remain confidential. In other words a mistake or oversight in the patent application process has the potential not only to shut the door on foreign markets, but also to expose the riches of your patents to competitors and others.

Of course, globalization isn’t the only force driving the explosive growth of intellectual property in today’s marketplace. Innovation and advances in biotechnology often dictate how intellectual property is defined—and redefined. “The pace of technological change has increased so much, one needs to continually rebuff one’s assumptions about how copyright or patents should work,” Kent explains. “There was no real way to anticipate the pressures on the copyright system with the advent of life sharing on the Internet.”

With peer-to-peer networking becoming the most valuable IP issue these days, it is, by no means the most controversial; many issues integral to the pharmaceutical and biotechnology industries are bitterly disputed. Perhaps no topic better illustrates the complexities that gene…That is an act of infringement.”

“Patenting an isolated gene allows you to control anyone who wants to do research on that gene…That is an act of infringement.”

Tim Holbrook, Associate Director, Chicago-Kent IP Law Program

“Generally speaking you can’t get a patent on something that already exists—it’s already a product of nature, there’s no patent eligibility.” Although highly controversial, he says that the key to the legal patentability of human genes is “that you can get a patent on something that has been purified and isolated, even if it is in nature.”

“Whatever they’re doing is patenting the sequence of the good DNA, the functional aspect of the gene. So they isolate that genetic sequence, and the idea is that what you’re claiming is a very complex chemical compound.”

Patenting an isolated gene isn’t necessarily profitable—not in itself, anyway. However, “what it allows you to do is to control anyone who wants to do research on that gene, because in the process, you will almost necessarily have to isolate it at some point,” Holbrook says. “That is an act of infringement.”

The implications of infringement are widespread, particularly in areas crucial to medical research. “This is the controversial aspect of patenting an isolated gene allows you to control anyone who wants to do research on that gene…That is an act of infringement.”

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The implications of infringement are widespread, particularly in areas crucial to medical research. “This is the controversial aspect of gene patenting, it will remain legal—which according to Holbrook, is the unequivocal position of the United States Patent Office. In response to controversial issues such as gene patenting, among others, IIT formed two organizations—the Institute for Science, Law, and Technology and the Institute on Biotechnology and the Human Future—to promote discussion and disseminate knowledge on these topics. Both organizations recruit leading scientists, philosophers, and scholars across a broad range of disciplines to analyze the legal and ethical ramifications of the rapidly changing landscape of science and technology.”

Gene patenting is just one example of intellectual property’s central role in the development of new technologies. IP also plays a crucial role in entrepreneurship, which is a cornerstone of IIT’s educational philosophy. Much of IIT’s curriculum—engineering, life sciences, business, and law—has been integrated under this multidisciplinary umbrella.

Nowhere is this lesson of IP more evident than with IIT’s ongoing University Technology Park (UTP)—a project designed to bridge the gap between inventors and entrepreneurs (both private and academic) and the resources needed to turn their inventions into successful businesses. UTP’s most basic function is to provide customized real estate for researchers and start-up companies, particularly those in the technology and life science industries. But Daniel Marselle, associate director of Technology Business/Services, stresses that the park’s purpose is far broader than just “a real estate play.” “We’re trying to build a real environment, an ‘ecosystem here,’” he says, “for hi-tech companies, wherever they are in their life cycle.”

“The Jules F. Knapp Entrepreneurship Program,” explains Dr. Alexander Dudas, “although further upstream in the business cycle, works hand-in-hand with UTP. The Knapp Center was established in a community service vein to help connect budding entrepreneurs (companies, wherever they are in their life cycle) with the university in making technology available to outside entrepreneurs, or licensing it back to the professor himself.”

Anderson cites a $500,000 royalty payment last year as the biggest hit his office has ever garnered, but that sum, and the term “technology commercialization,” can be misleading—this is a program developed to foster synergy between academic research and entrepreneurship, not a profit center. Anderson says that his office, on average, applies for “about a dozen” patents per year, and expects “more than half” to issue. On its surface that may not sound like a lot, but when you consider the glacial pace of the patent application process, that’s actually quite remarkable. “It can take five or more years for a patent to issue.”

“Think about it. The half-life of technology in electronics is about a year. So by the time a patent issues, there would have been six cycles that have basically disabled the capability of electronics. It’s pretty crazy.”

Although that serves in part as a cautionary tale about the lumbering copper of government—and highlights the contrast in efficiency between the public and private sectors—it also illustrates the problem of the Government to grant patents promptly simply has the effect to rob the inventions of the whole of their value.”

At least partially, the United States Patent and Trademark Office’s (USPTO) troubles can be attributed to a rise in the number of patent applications. According to USPTO figures, applications jumped 8.3 percent in 2006. To address this increase, the office hired 1,218 additional patent examiners in 2006, and plans to add another 1,200 this fiscal year. In the USPTO’s official 2006 year-end report, Director Jon Dudas outlines the steps his department has taken to help train—and retain—this huge influx of new employees: new, university-style training for inspectors (previously this had been done on a one-on-one basis); the addition of recruitment bonuses to help lure top-notch scientists and engineers; and the implementation of a “hoteling” program, whereby inspectors are provided equipment and Internet access, and allowed to work remotely.

Additionally, the USPTO has implemented the Electronic Filing System-Web, an online patent application process that Dudas says “has dramatically increased the electronic filing of patent applications from 1.5 percent per month to 33 percent per month.”

(Christopher Darrinelle)
Humans have a startling ability to extract meaning from words. For most, a facility with written and spoken language is second nature by adolescence. Reading people on the other hand—deciphering the non-verbal, often unconscious signals they send out—is a highly specialized talent, one that Andrew Rubin (Ph.D. PSYC ’01) has honed to an uncanny degree.

In the course of his career in clinical psychology, Rubin has become keenly attuned to facial and bodily intimations in his patients, drawing on a silent storehouse of emotional data to help children and adults. Today, his thriving Florida practice assists those with infant and childhood development issues, couples facing relational problems, and those grappling with depression. But don’t expect much empathy should you encounter Rubin across a poker table. There, his reading prowess is likely to be used against you. Indeed, Dr. Drew, “The Poker Ph.D.” (as ESPN announcers dubbed him), has a deadly knack for reading tells—subtle verbal, often unconscious signals they emit subconsciously and those used deliberately to mislead the opponent, what in common parlance are known as bluffs.

“What I study are the autonomic responses when people pick up a hand,” Rubin says. Such signals include dilation of the pupils, increased breathing, perspiration, and other manifestations of anxiety. The technique works in other fields, notably law enforcement, where Rubin insists, “their ability to read other players is a significant factor.”

Rubin’s exploration of poker began during his post-grad days. Rubin has no plans to hit the road hustling his near-clairvoyant ability to read tells eased him into the winner’s circle. “I actually recognized Jennifer’s tell from watching her on television,” he says. Her tell revealed that Harman also had a very strong hand (ace, king) if it turned out and might be entitled to go all in, that is, to bet all of her chips. Having read Harman’s unconscious tell, Rubin responded with a powerful tell designed to imply that he was tentative about his next move. The tactic worked. Confident of her superior strength, Harman pushed all her chips to the center of the table, only to see Dr. Drew uncover pocket aces—his strongest hand in poker. Having relieved Harman of all of her cash in one stunning hand, Rubin went on to the final table and a $264,000 win. Ron Rubens, poker shark and co-founder of World Poker Tour Boot Camp, offered ground for aspiring champs, memories of World Poker Tour Boot Camp, a training school for would-be World Series of Poker players: “always watch people’s hands!”

For those properly attuned, such telltale signs of stress or anxiety may be used to an advantage, particularly in the game of poker.

Four poker tells

• Trending hands: “It’s very difficult to cover up when you hit a big hand,” notes Rubin. “Your blood pressure goes up and the first thing that happens is you try to manipulate the chips is your hand starts trembling.” He instructs novice poker players: “always watch people’s hands!”

• Betting pattern: “Where your opponent places his chips can make a big difference. People do a lot of unconscious things,” Rubin adds. “For instance, he may push those chips far away from him and put them in the middle of the table if he feels they may not be coming back. If he thinks he has a big hand he may not place them as far away.”

• Player glance at chips: When a player casts a glance at his or her chips after looking at their hand, this is usually an inadvertent sign their hand is strong. “Even before I look at my cards, I’m watching everyone else look at their chips,” Rubin says.

• False tells. The most general rule of thumb in reading tells deliberately designed to mislead is that players attempt to look strong when they are weak and weak when they hold a strong hand. “I’ve seen players, who are experts, try to make you aware of their hand, as if they don’t want you to know what they hold,” Rubin says. “This is a standard tactic for drawing players: ‘always watch people’s hands!’

“Reading Minds at Work and Play”

Rubin is fascinated with psychology, iit magazine ventured to IT, where he earned his doctorate in clinical psychology. It was an experience Rubin recalls with deep fondness. “It was a wonderful learning environment, and Robert Schleser was one of the great memory stimulants,” Rubin says, referring to his advisor at the Institute of Psychology. An obsession with poker, however, didn’t blossom until his post-grad days. Rubin found himself at Tulane University, where an old B’’d buddy, Lorenzo Azzi (Ph.D. PSYC ’01), was interning. Amid their academic studies, the two psychologist friends took poker—first casually, soon with ferocious determination. “Drew and I are very competitive,” Azzi says, adding that both were also strong athletes. ‘As we got older, our bodies didn’t allow us to compete at our previous levels. So we gravitated toward another area where we felt we had an edge on our opponents,” he adds with a laugh.

Rubin also was digesting poker books with a near-insatiable appetite, though he found the art and science of reading tells inadequately explored. This was particularly true with respect to his game of choice—Texas Hold ‘Em. A lively poker variant that has recently become a national sensation, “If you look at all the successful players who make it to the final tables over and over again,” Rubin insists, “their ability to read other players is a significant factor.”

Rubin’s supreme attentiveness paid off in spades. “I’m a big fan of World Series of Poker,” Rubin says. “Every single round I want to pick up the tell, he was able to securely set a trap. One read like that in a tournament can make the difference between going home with nothing and going home with several hundred thousand dollars,” he says. “In Drew’s particular case, that’s exactly what happened.”

Not surprisingly, Rubens decided to tap Dr. Drew’s powers of perception, inviting him to play and teach his skills during the championship round of the Spring World Poker Tour in Reno. For three days, The Poker Ph.D. acted as the Boot Camp’s tell-reading expert, wrapping up the exciting event with a third place finish in the WPT Championship.

Happily preoccupied with his clinical practice and busy family life these days, Rubin has no plans to hit the road hustling poker full-time, though his enthrallment with the game is undiminished. “I really like the intellectual challenges of poker. It’s understanding the statistics of the hands that you play, understanding position, being able to read other players—everything in combination makes it fascinating for me,” Rubin says.

Richard Harth is a writer based in New Orleans.

Game Faces

The autonomic nervous system has evolved to protect humans in hostile settings. As Andrew Rubin notes, “in a stressful or dangerous situation your blood pressure increases. Your heart rate increases. You burst of energy, and your eyes dilate to make you more aware of your environment. Without this delicate system, he observes, “humans might have failed to survive as a species.”

For those properly attuned, such telltale signs of stress or anxiety may be used to an advantage, particularly in the game of poker.
By now, the notion of antimatter has become so popularly enshrined, it could as easily show up in a children’s game as in a physics lecture. “I’m matter, you’re antimatter,” one playmate might declare, and we all know the catastrophic results should the pair tempt fate and touch each other.

Theory suggests that nature produced exactly equal amounts of matter and antimatter in the first turbulent microseconds of creation. Following the inevitable annihilations just after the Big Bang, there should have been nothing left—no matter, no antimatter.

But here we are.

The quest for a solution to the puzzle has lured IIT high energy physicists to study a perplexing yet foundational issue known as CP violation. In addition to refining our knowledge of particle behavior, such research may help to explain nature’s preference for matter—a subtle favoritism essential for the universe we inhabit.

How did matter survive the winner-take-all confrontation with antimatter? Physicists at IIT are exploring this question, and the results may open a new chapter in physics.
Cosmic Origins

Like many scientific curiosities—black holes, relativity, or the existence of genes—antimatter was hypothesized before it was actually observed. In 1928, the physicist Paul Dirac attempted to reconcile two conundrums of twentieth century physics: special relativity and quantum theory. His mathematical result implied the existence of an antiworld, how would you know?” The answer is, you wouldn’t. At least, this was the long-cherished assumption. But is the world/antiworld symmetry truly perfect to the last detail? Physicists speak of three fundamental symmetries in the particle domain, cosmologists preoccupied with the origins of the universe

The most exciting consequence of CP violation is that it offers the first solid clue to the puzzling dominance of matter in the cosmos. This tantalizing possibility accounts for the tremendous interest CP asymmetry has generated among scientists working at opposite extremes in terms of scale.

What’s the Matter with Antimatter?

Physicists speak of three fundamental symmetries in the particle world. These are known as Charge (C), Parity (P), and Time (T). Charge symmetry implies that if a particle is changed into its antiparticle (a process called annihilation), its behavior should be identical. Parity symmetry, however, requires that a particle and its antiparticle are mirror images of each other. So, C, P, and T, these fundamental aspects of matter, ought to retain their pleasing symmetry. Kaplan asks, “If you happened to live in an antiworld, how would you know?” The answer, he says, “You wouldn’t. At least. This was the long-cherished assumption. But is the world/antiworld symmetry truly perfect to the last detail? Physicists speak of three fundamental symmetries in the particle domain, cosmologists preoccupied with the origins of the universe.

A New Standard?

ITF physicists have undertaken several grand projects, hoping to shed new light on the mysteries of CP asymmetry in the subatomic realm. At Fermilab, the HyperCP experiment brought the ITF physics team together with physicists from the University of California, Irvine, the University of Washington, and the University of Michigan. Their study involves analyzing short-lived particles built out of three subatomic particles known as quarks.

Today, we know that everything is made of quarks and leptons,” Kaplan says. “They are the building blocks of matter. And some of the most exciting experiments are focused on just this, on learning more about quarks and leptons.”

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The Mirror Shatters

Elegant in its simplicity, the Standard Model has been a triumph for both experimentalists and theorists. It now describes all known interactions and accounts for all known particles. What we lack is a coherent, all-embracing description.

But is the world/antiworld symmetry truly perfect to the last detail? Physicists speak of three fundamental symmetries in the particle domain, cosmologists preoccupied with the origins of the universe.

**Elementary Particles**

**Quarks**

**Leptons**

**Elephants**

**Whales**

**Three Families of Matter**

Neutrinos at a Chinese facility known as Daya Bay. Rather than using accelerators to generate the particles to be studied, both Double Chooz and Daya Bay will examine oscillation properties among antineutrinos streaming from the cores of nuclear power reactors.

The three neutrino flavors exist together, in a mixture of states, as White explains: “One would imagine that if you have an electron-type neutrino that it would have a well-defined mass. It turns out that’s not the case. Instead of this subatomic particle being one thing, it’s really three things at the same time. It’s just one of those wonderfully funny properties of quantum mechanics that you can’t explain.”

Both Double Chooz and Daya Bay hope to measure the degree of neutrino oscillation between the electron- and tau-type neutrinos with high precision—a first step before evaluations of CP asymmetry can be carried out.

Prospects of fresh insight into the neutrino’s peculiar properties as well as early intimations of physics beyond the Standard Model have energized the physics community. ITF scientists are on the leading edge of this research, and the race is now on between Double Chooz’s rapid start-up capability and economic efficiency, and Daya Bay’s superior thermal output (which produces more neutrinos to study)

Rubin speaks enthusiastically of the French project, pointing out that Double Chooz expects to provide a first measurement by 2009. Daya Bay promises to nail down the value with still greater precision, hopefully close enough to determine if a CP violating component can exist. Daya Bay also will be something of a political milestone. As part of the long basic science collaboration between the United States and China in history. The project’s principal U.S. investigator, Kam-Biu Luk, savors the prospect of “—and we hope to have love to be part of the team that finds out why we are here,” he recently told Symmetry Magazine. Considering the elusive riddle of antimatter’s disappearing act, Luis de la Calle, “It’s a good thing, because I don’t have to worry about shaking hands with a friend and being annihilated,” adding, “It’s the reason that everyone and everything exists.”

Back to the Future

Studies of CP violation continue to occupy inquisitive minds and powerful computer pipelines. Soon, the Large Hadron Collider (LHC) will come online, and further down the road a still more awesome device, the International Linear Collider (ILC). ITF researchers are already assisting in the planning stages of this 35 kilometer International Linear Collider. ITF researchers are already assisting in the planning stages of this 35 kilometer International Linear Collider. ITF researchers are already assisting in the planning stages of this 35 kilometer International Linear Collider. ITF researchers are already assisting in the planning stages of this 35 kilometer International Linear Collider.

The ITD Department of Physics benefits not only from an outstanding faculty, but from the school’s proximity to Fermilab’s Tevatron Collider, one of the most powerful accelerators for investigating nature on the largest scale, located in Batavia, Ill.

In 1975, Daniel Kaplan, then an eager graduate student, joined the team of Leon Lederman, who directed Fermilab’s momentum-momentum investigations leading to the discovery of the bottom quark. (In 1988, Lederman won the Nobel prize for earlier work on neutrinos.) More recently, Kaplan teamed up with physicists Burton Ross and Howard Rubin—all now at IIT—forming a strong quartet to collaborate on other experiments, several bearing critically on the behavior of antimatter.

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IIT Alumni and Friends Walk for Life
Latinos involved in Further Education and the Office of Multicultural Student Services sponsored the annual Chapa Scholarship and 10-k walk-a-thon this April. The Chapa Scholarship Fund is named for Fernando Chapa (EE ‘88, M.S. CS ‘91), an IIT alumnus who was killed by a drunk driver in 1992. To honor his memory, a group of IIT alumni and colleagues from Lucent Technologies (AT&T Bell Labs) created the Chapa Scholarship Fund to benefit Latino students at IIT.

Mark Your Calendars:
Alumni Events Near You

Winter 2008 Events
Florida Chapter
- February 19, 2008
  IIT Florida Chapter Gathering, Orlando
- February 21, 2008
  IIT Florida Chapter Gathering, Tampa
- February 23, 2008
  IIT Florida Chapter Gathering, Ft. Lauderdale/Miami.

To sign up for an event or for more information about Alumni Association events, visit www.iit.edu/alumni or contact Marian Quirk, associate director of alumni relations, at quirk@iit.edu or 1.800.IIT.ALUM (448.2586).

ALUMNI: Be a Part of the Next Generation of IIT

The new IIT Admissions Alumni Program seeks alumni to assist the Office of Admission in recruiting tomorrow’s IIT students. Alumni participation includes:

- Serving as a contact for recruited students
- Sending letters and emails to recruited students
- Speaking or greeting at recruitment programs
- Assisting with college fairs
- Hosting events in your home state (if outside Illinois or the United States)

Let your experience as a member of the IIT alumni community benefit tomorrow’s leaders. To join the program or to learn more, contact Al Nunez, associate director of undergraduate admission, at nunez@iit.edu

IIT Career Fair
Thursday, September 27, 2007
noon–5 p.m.
Hermann Hall (HUB), 3241 South Federal Street

The IIT Career Fair is open to alumni as well as current students. With nearly 120 companies in attendance, including Exelon, Grainger, Bloomberg, and more, the Career Fair connects IIT students and alumni with employers in a variety of fields. Alumni are encouraged to bring copies of their resumes for distribution.

While on campus, alumni can visit the Career Management Center (CMC) to receive assistance with their resumes. The CMC is located in the Paul V. Galvin Library, 35 West 33rd Street, phone 312.567.6800.

Parking for the IIT Career Fair is adjacent to Hermann Hall and U.S. Cellular Field (shuttle available). Reservations are not required.

www.cmc.iit.edu

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Gunsaulus Society
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A charitable gift annuity can allow you to:

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Learn more about planned giving at the IIT Legacy Giving Website: www.iit.edu/plannedgiving

To talk with a planned giving representative at IIT, contact Elaine Clay at clay@iit.edu or 312.567.5028.

Gunsaulsus Society member
Susan Mary (M.B.A. ’92) with IIT student Pujafit Santiskultham

Karl Menger Lecture and Awards
More than 100 alumni, faculty, and friends attended the inaugural Karl Menger Lecture and Awards, an event that paid tribute to the former IIT faculty member and renowned mathematician. Karl Sigmund, professor at the University of Vienna, presented the lecture “Menger, Games and Morals,” and a scholarship excellence award was presented to IIT student Mike McCourt (MATH ’07). Information about the 2008 Menger Lecture will be available in September at www.math.iit.edu

[Alumni] During the lecture festivities, guests continued in an IIT classroom for an update on the Department of Applied Mathematics.

[Postscript, left] Beecher Heller, IIT research associate professor (retired) (middle row, left to right) Paul Siew, professor of mechanical, materials, and aerospace engineering; George Byers, IIT professor emeritus and former applied mathematics chair; Abe Sklar, professor emeritus; Martin Barwis (MATHEM S. 87, Ph.D. 70); Roger Nelson, Lewis and Clark College professor of mathematics, retired IIT Professor and Chair of Applied Mathematics Jerry Frank (MATHEM S. 69, Ph.D. 77) (far right) Mary Schoenheider (MST ’70)

[Alumni] During the lecture festivities, guests continued in an IIT classroom for an update on the Department of Applied Mathematics.

[Postscript, left] Beecher Heller, IIT research associate professor (retired) (middle row, left to right) Paul Siew, professor of mechanical, materials, and aerospace engineering; George Byers, IIT professor emeritus and former applied mathematics chair; Abe Sklar, IIT professor emeritus; Martin Barwis (MATHEM S. 87, Ph.D. 70); Roger Nelson, Lewis and Clark College professor of mathematics, retired IIT Professor and Chair of Applied Mathematics Jerry Frank (MATHEM S. 69, Ph.D. 77) (far right) Mary Schoenheider (MST ’70)

You’re never too young to start a lasting legacy.

Gunsaulus Society member
Susan Mary (M.B.A. ’92) with IIT student Pujafit Santiskultham

A charitable gift annuity can allow you to:

- receive fixed payments for the rest of your life
- provide life income to a loved one
- gain immediate tax advantages
- enroll IIT for generations to come

Learn more about planned giving at the IIT Legacy Giving Website: www.iit.edu/plannedgiving

To talk with a planned giving representative at IIT, contact Elaine Clay at clay@iit.edu or 312.567.5028.

Gunsaulus Society
The estate giving society of Illinois Institute of Technology

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Chicago Boys Club in 1938, specializing in aluminum publications. Beginning his studies, James D. Josephs Hill Award from the American CHEM ’49, Ph.D. ’54, Skokie, Ill., received the 2006 Henry The Rocky Mountain News, Wheat Ridge newspaper, world’s oldest lifeguard. the 2004 Colo., was entered into Haywood L. Stewart Life Trustee, married Joan 10s classnotes from June 22–July 7. Erikson also working on the Shanghai 2012. DeStefano + Partners is area, parks, sports facilities, Manufactures power supplies and battery chargers for operation since July 1976, and retired founder of Engineering Roy G. Gignac Senior Games Association. be published by the National To sign up to be a class scribe, or to learn more, contact Marian Quirk at quirk@iit.edu...
Sharon B. Kelly
CHEM '03, Dochteker, Mass., is a member of the female-
fronted symphonic metal band Anirial.

Melissa G. Haldeman
MBA '08, Champaign, Ill., is with
DuKane, a medical student at the
Albert Einstein College
of Medicine in New York, N.Y.

Youngsoon Kim
M.S. '01, Philips Ranch, Calif., has
changed her name to Youngsoon Yu.

One Family—Five IIT Graduate Degrees
Nick and Elaine Thomopoulos and three of their
children all have IIT graduate degrees—and a fourth
child is now taking graduate courses at IIT.
Could this be an IIT record?

In addition to being an alumni, Nick also is a
professor at Sturt School of Business.

Tina J. Smith
M.S. '00, Philippine Ranch, Calif., joined the
staff of Mayo Clinic’s Children’s hospital and is now
employed at Sprit.

Michelle L. Sussman
CPE '04, Bonaire, Ga., is in her seventh
year of graduate school.

In 2006, Townsend graduated from
Dominican University’s
course in Chicago.

Audrey and Katherine, born
in September 2006, Kathleen
has two children, a daughter
and a son.

Brian C. Ingersoll
CPE '00, Vernon Hills, Ill., is a
doctoral student at the University of
Chicago.

Kathleen A. Walls
M.S. CS '98, Vernon, Conn., was
awarded the title of Synopsys
Fellow by Synopsys, Inc., the
company that she co-founded.

PLLC, has been
recognized by Whitman-Walker Clinic
Legal Services (WWCLS) with a
Distinguished Volunteer
Award in appreciation of his
efforts as a member of the
Legal Community AIDS Walk
Taskforce, raising critically
needed funds to provide
pro-bono legal assistance
to persons living with HIV/
AIDS in the Washington
metropolitan community.

By working with fellow volunteer
attorneys to raise funds
from local law firms, Walsh,
who holds a J.D. degree from
The George Washington University,
helped raise over $200,000 to
support the efforts of the
Canada Walk Taskforce.

Emery Jordan
CS '02, Edwardsville, Ill., works as a
data analyst at the University of
Southern Illinois–Edwardsville
and was involved with the planning of the
recent Illinois Residence Hall
Festival and Awards.

Shirley S. Cho
ARCH '06, Chicago, has accepted a
design position as an
intern architect with the
architectural firm WSM.
Prior to her most recent
degree, she completed her
architectural engineering
program at IIT.

In 2005, Townsend
graduated from
Dominican University’s
Graduate School of
Social Service.

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USUAN Salomon (CHEM ’77), one of the world’s top climate-change scientists, walks a mile-and-a-half to work each day and drives a hybrid Toyota Prius that gets up to 55 miles per gallon.

While Salomon is doing her part to reduce heat-trapping gases in the atmosphere, the senior scientist at the National Oceanic and Atmospheric Administration (NOAA) in Boulder, Colorado, says it will take far more to halt the steady rise of global temperatures.

“Everybody wants to do the right things and act prudently, but it’s more important what we as a society want to do,” says Salomon, chief editor of the 900-page report on climate change to do,” says Solomon, chief editor of the IPCC study that in 2002 when the international scientific community elected her to lead the review of scientific literature on climate change. It was a Herculean task, coordinating the contributions of 152 authors and addressing the comments of more than 600 outside experts.

One hundred-and-thirteen governments also approved the study’s 20-page summary.

The report concluded that global warming was “unequivocal,” a term selected carefully by Solomon’s team.

Among those working on the report was Gabrielle Hegerl, professor of earth and ocean sciences at Duke University, who appreciated Solomon’s rigor.

“She is driven uncompromisingly by the science,” says Hegerl. “She is a very strong leader, she asks tough questions, and only a convincing answer will satisfy her, so she pushed us all to give our best.”

Salomon, who grew up in Peterson Park on Chicago’s North Side, became enthralled with atmospheric gases in high school, where she won third place in a national competition for her project that measured oxygen content in gas mixtures. At IIT, she majored in chemistry and became interested in studies of the atmosphere surrounding the planets, particularly Jupiter.

After earning her doctorate at the University of California, Berkeley, Solomon began researching the Earth’s atmosphere.

But Solomon won’t say how she thinks society should act, stressing that it’s not scientists’ duty to decide how our world should cut the production of heat-trapping gases.

“I try to convey the reality of our increasingly warm climate. Those choices, which involve the use of fossil fuels, could have widespread economic consequences,” she says. “Science is an input on this issue, but only one input. It’s up to society as a whole—all of us—to decide what to do, or not to do.”

For Solomon, publication of the IPCC study capped a project that began in 2002 when the international scientific community elected her to lead the review of scientific literature on climate change. It was a Herculean task, coordinating the contributions of 152 authors and addressing the comments of more than 600 outside experts. One hundred-and-thirteen governments also approved the study’s 20-page summary.

The report concluded that global warming was “unequivocal,” a term selected carefully by Solomon’s team.

Eleven of the hottest 12 years have occurred since 1995.

Sea levels have risen about six inches over the past century.

Arctic sea ice has been shrinking steadily over about the past 30 years.

“Science is an input on this issue, but only one input. It’s up to society as a whole—all of us—to decide what to do, or not to do.”

Earth’s atmosphere. When huge holes in the ozone layer opened up over Antarctica in the mid-1980s, Solomon led a research expedition to the planet’s southernmost reaches. The Chicagoan worked from the McMurdo Base, where temperatures dipped to minus-50.0 F, with a minus-100 wind chill.

Solomon says her Chicago upbringing prepared her for the frigid conditions.

“I grew up knowing here’s no such thing as bad weather, just bad clothing,” she says. “When you are in the Antarctic, you need a hat and gloves when you go out. In Chicago, without the proper clothing, you could feel just as cold.”

Her team found high levels of chlorine dioxide in the atmosphere over the Antarctic, which backed theories linking chlorofluorocarbons (CFCs) to ozone depletion.

The findings brought rapid action, with industry working quickly to develop new products to replace CFCs, which were subsequently banned.

“One of the ozone issue, we had well-documented research, and industry found substitutes,” says Solomon. “The same issues hold with climate change. The first step is improving our understanding of the problem.”

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This April the IIT Alumni Association honored recipients of the 2007 Alumni Awards. Outstanding alumni were recognized for their commitment to the university and their community, as well as for their personal and professional achievement.

Nominations for the 2008 Alumni Awards are due October 15, 2007. To nominate an alumnus/a online, visit www.iit.edu/alumni/updates/awards/nomination_form.html.
George Edson Danforth
ARCH ’40, Chicago

While an undergraduate architectural student at Armour Institute of Technology, George Edson Danforth worked as a draftsman in the office of a man he would one day replace as director of the College of Architecture at IIT. Ludwig Mies van der Rohe. When Mies left the directorship, Danforth assumed the role in 1959, leading the program for the next 16 years. Along with serving as the program’s chief administrator, Danforth also was a practicing architect, and with two partners, formed the firm Brenner, Danforth, Rockwell, from which he retired in 1980. Before assuming the directorship, Danforth taught at Armour Institute from 1944–53 and at Western Reserve University for the following three years. In 1967, he was elected to the College of Fellows of the American Institute of Architects. Each year since 2000, one architecture faculty member at IIT is honored with the Danforth Distinguished Teaching Award.

James Y. Oldshue
CHE ’47, M.S ’49, Ph.D. ’51, Sarasota, Fl

Internationally known chemical engineer James Y. Oldshue was a triple alumnus of IIT, having received his bachelor’s degree, master’s degree, and doctorate, all in chemical engineering, from the university. The holder of many patents and the author of more than 100 articles and book chapters, Oldshue wrote the acclaimed textbook Fluid Mixing Technology. President of Oldshue Technologies International, Inc., Oldshue, in his later years, also taught technical seminars and wrote the acclaimed textbook Fluid Mixing Technology.

William P. Mahoney
IE ’57, M.B.A. ’61, Inverness, Ill.

William P. Mahoney spent nearly his entire career in executive roles at major companies in the Chicago area. Upon his graduation from Armour College of Engineering, Mahoney began working at Ford Motor Company then went on to positions at Motorola, Sara Lee, Beatrice Companies, and American appraisal Associates. In 1990, Mahoney founded The Mahoney Group, a consultancy firm, and devoted much of his time and talents to the nonprofit sector, raising funds for and serving on the boards of hospitals, churches, and schools, including IIT, where Mahoney was elected to the Board of Trustees in 1981 and became a Life Trustee in 1987. In 2000, he and his wife, Eileen, established a scholarship to support Armour undergraduates.

In addition to his wife, Mahoney is survived by two daughters, two sons, a sister, and four grandchildren.

Albert Zimmerman
ME ’43, Los Angeles

Albert Zimmerman was the retired principal of Albert Zimmerman & Associates, a practice focusing on engineering design and supervision of construction work for various types of projects. In 2000, he instituted the Albert Zimmerman Endowed Scholarship Fund at IIT, which supports one undergraduate each year in the area of mechanical, materials, and aerospace engineering.

While at IIT, Zimmerman was a member of Phi Tau Sigma academic honor society, the American Society of Mechanical Engineers, and the Co-op Speaker’s Club.

Ralph Zirkind
M.S. PHYS ’46, Silver Spring, Md.

Known to many colleagues as the “physicist’s physicist,” Ralph Zirkind spent a lifetime working on various scientific projects related to nuclear physics and the brain. Notable projects included the Department of Defense Joint Robotics Program, analysis and forecasting of embedded computer processing compatibilities, and studies of nuclear power systems and electro-optical sensors. Additionally, Zirkind helped establish a major infrared astrophysics observatory in Hawaii. Former chief scientist and deputy director of the Advanced Research Projects Agency, Zirkind was most recently a resident consultant at Science and Technology Associates. He also did work for the aeronautics and weapons branch of the United States Navy, which awarded Zirkind the Meritorious Service Medal. In academia, Zirkind served as an adjunct professor of aerospace engineering at Polytechnic University in Brooklyn and as a professor of electrical engineering at the University of Rhode Island.

Zirkind is survived by his wife of 65 years, Ann, three children, four grandchildren, and a great-grandson.
My father worked for the CB&Q Railroad all his life, so as a small child I always knew what an engineer did: he drove the train. Many years later, as a college student, I read Thomas Hardy’s *Tess of the d’Urbervilles* and came away with quite a different image of an engineer: that of a small businessman who owned and operated a steam engine that he traveled around the countryside so he could thresh farmers’ wheat. While this understanding of an “engineer” was different from my image of the train engineer, I could see the connection.

It wasn’t until I came to IIT that my concept of an engineer was really challenged. A mechanical engineer seemed self-evident, but I had to assimilate the concept of an electrical engineer, a civil engineer, or a fire protection engineer. Newer IIT programs in biomedical and computer science engineering have added more options to the mix. The work of professionals in these fields is surely a long way from that of the man who stoked a boiler and fired up a machine so gears, wheels, cogs, and belts could convert steam into miles traveled or separate grain from fodder.

While yesteryears’ engineers may have been apprenticed entirely on the job, our current education system has moved the training of tomorrow’s engineers into lecture halls, classrooms, and laboratories. So in roles as research scientists and teachers, many of today’s engineers are college professors and university administrators. Between preparing lesson plans and grading papers, IIT’s chemical engineer may be conducting experiments in a campus laboratory even as her professional colleague in the private sector is doing product development for clients. An IIT architectural engineer may spend his morning in a departmental curriculum planning session before meeting with a graduate student to check on the progress of his dissertation research. Obviously, IIT’s engineers experience a wide variety of professional activities, but “drive a train” or “operate a steam engine” are not lines you’ll likely find on their resumes.

Which brings me to John L. Anderson—a former engineering student, lecturer, professor, dean, and provost—who has now stepped into the role of university president. He is in good historical company, as several of his predecessors came to occupy IIT’s presidential suite by way of the engineering classroom, administrative office, and laboratory. When we add the names of men who served as CEOs of former schools that have since become part of IIT, we can find educators, jurists, economists, and even one who preceded Anderson on the lecture circuit—preacher Frank W. Gunsaulus. Anderson is indeed in good company.

The IIT Archives extends a sincere welcome to President Anderson. We look forward to his tenure as IIT’s “chief engineer.”

For more information about IIT’s past presidents, see [www.iit.edu/president/past_presidents.html](http://www.iit.edu/president/past_presidents.html).
Letter from the President

Sustainability

I am confident that I will fit in well at IIT: I am getting rid of one of my cars.

For me, this decision answered questions of both need and want—specifically, do I need two cars in the city, and do I really want the hassle of owning two cars while living downtown?

In academe, issues such as sustainability have a tendency to unite the needs and wants, bringing together those who pursue research for the benefit of society and those who explore the same topics for the benefit of science.

Many of our students and faculty are exploring sustainability through their work because they want to improve the environment. They are now joined by millions of people for whom the term “going green” has become a cultural phenomenon. While improving technology may be a positive residual, there is a motivation to ignite change in society, and a mountain of statistics supports the need. Through their work, they will educate and persuade others to take part in this movement; the IIT Green Home [page 6] and Cool Globes [page 4] projects are two such examples.

On the other end of the spectrum are those who are responding to a shift in the needs of the market and of science. As consumers increasingly demand eco-friendly products—cars, fuels, building materials, food, and clothing—the science behind and design of these goods in many cases require a shift in technology. Having identified a need, these researchers want to be on the cutting edge of advancements, indeed changes, in this exciting area of research. For someone like alumna Susan Solomon [page 30], research that may yield environmental ramifications is not a matter of politics but of science.

Ultimately the reasons for the pursuit are not as important as the determination to take on the challenges that this pursuit inevitably presents. The challenges are many. Can greener technologies be more cost effective than current technologies? What are the costs versus benefits in the relationships between energy and green technologies? How is the public culture shifted toward greener technologies, for example hybrid-powered vehicles, when the economics are not persuasive in today’s world? How does the United States become a role model for the entire world in sustainability?

At IIT a determination—call it attitude, spirit, or ambition—to explore these questions and others like them is rooted in a strong passion for both learning and seizing challenges. The university is united in its determination to create change, no matter how disparate the reasons for pursuing it may be. IIT’s tenacity is infectious, and certainly played no small part in my decision to go to a one-car household.

On a fundamental level, the want and need to pursue sustainability both lead to the same outcome—to leave the world for our children in the same or better condition than we inherited it. This is an important part of the IIT mission, one that has already affected me and no doubt countless others in both societal and scientific contexts. Thank you for welcoming me into the IIT community and for giving me the opportunity to share this bold mission with you.

Sincerely,

John L. Anderson

To learn more about the exciting things happening at IIT, visit www.iit.edu.
Two Reasons to Celebrate this Fall!

Alumnifest 2007
Friday–Saturday, October 5–6

Whether you graduated one year ago or 50 years ago, join us for food, fun, and fellowship including:

- 50th reunion luncheon for the Class of 1957 and all prior classes
- Casino Night with cards, casino games, cocktails, and hors d’oeuvres
- Many Voices, One Vision: a town hall meeting with new president John Anderson. Bring your questions and comments, and join the conversation.

For more information on Alumnifest 2007 visit www.iit.edu/alumni/alumnifest/2007.

Inauguration of President John Anderson
Tuesday, October 30

Join your IIT friends for an inauguration ceremony and full day of events to help welcome the eighth president of IIT as he launches an exciting new era for the university!

Visit www.iit.edu for more information.
Email: rsvp.events@iit.edu
Phone: 312.567.5064

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IIT physicists join the international race to find the ingredients of our existence

Tell All: Alumnus Andrew Rubin reveals his psychology behind winning at poker

What Does It Mean To Be An Owner?
Intellectual Property Law program challenges the definition of ownership

Many Voices, One Vision
IIT’s new president John L. Anderson