

# CONNECTIONS

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Dear Johns Hopkins Engineering Alumni,

*While planning* the contents for this issue of *Connections*, I was struck by how many interesting stories we have to tell, the number of alumni events we offer, and how much information there is to share about the school.

But we also want to hear from you about what you're doing, as well as general observations and suggestions about *Connections*. In exchange, we'll send you a Johns Hopkins baseball cap. Simply send your thoughts and new ideas to [engineering@jhu.edu](mailto:engineering@jhu.edu) (and be sure to include your mailing address).

We appreciate the many ways our alumni contribute to the school's success and, as always, encourage you to explore new ways to connect with us.

One example of an alum helping the school is Maria Maroulis '96. Maria, who has been active with the Society of Engineering Alumni and now serves on our National Advisory Council, works for Synthes, a leading biomedical device company.

This year, Maria brought Synthes to campus to recruit potential employees. As a result of Maria's efforts, Michelle Zwernemann, a senior biomedical

engineering major, applied for a very competitive Engineering Rotation position at Synthes. She was offered the job and will begin working for them in August.

If you work for a company that would be interested in considering our students for full-time employment or internships, please let us know. We'd be happy to facilitate this effort by providing appropriate resumes or recruitment opportunities.

Many thanks for all that you do to support the School of Engineering. I look forward to hearing from you or seeing you at one of our events.

Best regards,

Robert Spiller, Associate Dean for Development and Alumni Relations



PROFILE

J.T. VANRENSELAER

## Chris Brown '97 Brown is the New Green

It all started with a straightforward e-mail that contained a simple two-word sentence: "I quit." Once dispatched, the e-mail spiraled through the digital landscape, between the author's and the recipient's computers. Two and a half years later, Chris Brown reflects on the moment the e-mail was sent to his boss. He observes, "Those two words changed my life."

But the e-mail wasn't his.

A 1997 Civil Engineering graduate, Brown had worked for almost a decade managing renovation and construction projects for Whiting-Turner Contracting Company, Kiewit Construction, and Facchina Construction Company. But, in 2005, he wanted a new type of challenge, and Ken Loeber '84, a fellow Hopkins Civil Engineering graduate whom Brown had met through alumni events, convinced him to join him at the real estate development company Trammell Crow

**Chris Brown '97 makes an impact by helping others make less of one. On the environment, that is.**

(now CB Richard Ellis). Joining the firm, Brown stepped over to the "owner's side," to the role of project manager, coordinating the design, permitting, and overall development of large construction projects for the firm's corporate clients.

Brown had been with Trammell Crow for only four months when his boss, Debbie Veltsistas, opened the "I quit" e-mail. Though Brown already had enough projects to keep him busy, many of his suddenly former colleague's projects in Virginia were added to his responsibilities.

And that's when everything changed.

*(continued on page 2)*

(Brown continued from page 1)

Originally, Brown was assigned to oversee the construction of new banking centers in Maryland and Delaware for the firm's client Bank of America, a corporation that was adding 100 new banking centers every year to its existing 6,000 American sites.

There was, however, an important distinction between the projects that Brown was already working on and one of the projects in Virginia he inherited. Bank of America had launched a pilot program in which a handful of its new banking centers would "go green" by adhering to the LEED Green Building Rating System, a collection of regulations established by the U.S. Green Building Council (USGBC) in 2000. One of the "green" centers, located in Centerville, Virginia, was now part of Brown's domain.

Green building is the practice of increasing the efficiency of energy, water, and materials usage while reducing negative impacts on human health and the environment. It involves planning for the entire life cycle of a building, from the siting, design,

down and educated himself about the topic on his own, attending conferences, reading everything he could about sustainable design and construction, and attending workshops sponsored by the USGBC.

"Doing the research, I realized what a strong passion I have for this idea. It's a great combination of my experience in construction and engineering and my personal interest in the environment and enjoying nature."

Applying his natural enthusiasm and newly gained knowledge, Brown began the Bank of America project, pulling together the architects, engineers, and contractors to create a green plan for construction. The result was a fully integrated strategy for the green construction of a 5,000-square-foot one-story banking center.

To achieve green status, the building was sited on "recycled" property instead of a previously untouched parcel of land. Inside the building, many decisions made by Brown and his team made it more ecologically friendly. Water efficiency was increased through the installation of dual flush toilets and waterless urinals. Extra insulation optimized energy efficiency. The team used

concepts at work; he lives them, too.

In 2000, he and his wife bought a 94-year-old rowhouse in Charles Village, near the Homewood campus. It may not appear different from the outside, but, thanks to Brown's knowledge of sustainable design, it is probably the most unusual house on his street.

"The insulation is made from post-industrial recycled blue jeans, we have tubular skylights that decrease energy usage, kitchen countertops made from recycled concrete and glass, and cabinets from a place downtown that sells salvaged architectural products," Brown says. Their flooring is Marmoleum, an all-natural, rapidly renewable material made from flaxseed oil. And, of course, they installed dual flush toilets.

"Every day in the United States, we use 5 billion gallons of clean drinking water to flush our toilets," Brown says. "Yet, only 3 percent of the Earth's water is clean enough to drink. I'm usually a pretty upbeat guy, but the more I learn, the more depressed I get. Our children and grandchildren are going to have to deal with these problems. Two years ago, I would have said we have about 50 years to figure out some solutions. Now, I'd say we have about 30. The more we waste, the less time we have."

Now, as CB Richard Ellis' "green guru," Brown is leading the charge to create training programs for project managers, creating tools to assist the company's clients on ways to pursue green building, and serving as a consultant inside the firm to non-green project managers as they take on more and more green building efforts. "Generally, architects are accustomed to the green movement, but project managers aren't," Brown says. Because of that, he believes that the training program he's created could have a substantial and positive impact on the entire industry.

"Fundamentally, going green is about the whole cost to our health, our environment, the operating costs, and energy costs," Brown says. "Yes, it can mean a slight investment upfront, but by doing this we're decreasing carbon emissions, pollution, and human illness. What kind of price tag do you put on that?" ■

**"Every day in the United States, we use 5 billion gallons of clean drinking water to flush our toilets." — Chris Brown '97**

construction, operation, and maintenance to the building's eventual removal. In 2005, the LEED rating system was still a relatively new concept and one with which Brown was, at that point, almost entirely unfamiliar.

Brown's early experience as a Boy Scout taught him to deeply appreciate nature. His wife, Jenny, who graduated from Johns Hopkins' School of Arts and Sciences in 1997, has an MS in environmental science and is working toward a PhD in oceanography. His brother, Phil, is a sanctuaries manager at the New Hampshire Audubon Society. As Brown explains, his current role as a Scout leader and the experiences of his family members were his only connections to environmentalism.

And with no green guru in the company to turn to for guidance, he hunkered

regionally manufactured materials, such as locally made concrete, to reduce transportation-related pollution and energy usage. And the building's interior was made safer through the use of non-toxic paint.

Since beginning the green Bank of America project in 2005, Brown says he has become "the green guy" at CB Richard Ellis—the "guru" who didn't exist when he embarked on the Centerville bank project. "We have 26,000 employees and 3,000 project managers. I am the only regionally based project manager focused completely on green construction." To further his expertise, he is now enrolled in an online degree program at the Boston Architectural College, earning a master's certificate in sustainable design.

And Brown doesn't just practice these

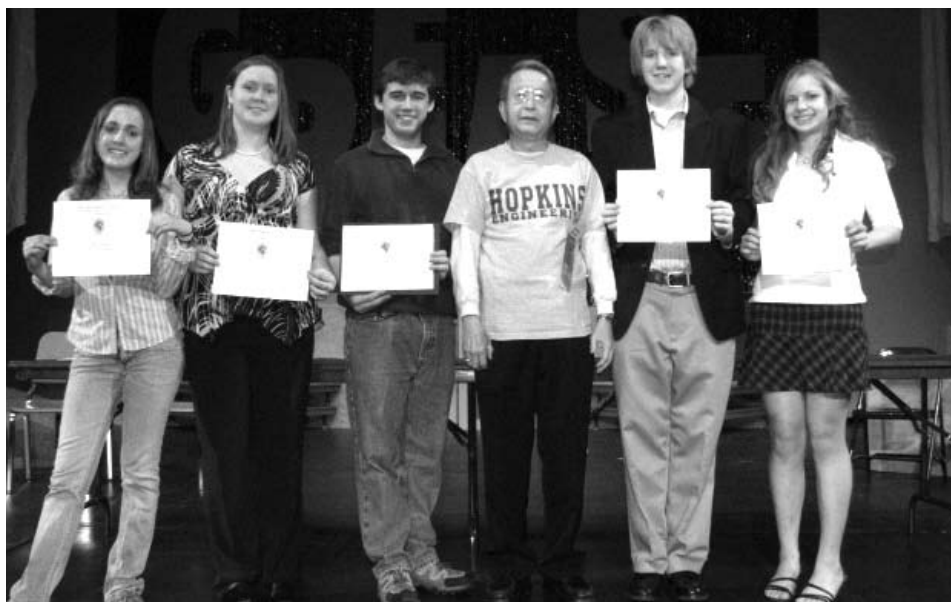
## Celebrating Engineers Week at the Whiting School

by Caroline McEnnis, PhD candidate

Department of Materials Science and Engineering

From February 17 to 23, the Whiting School observed Engineers Week, a nationwide celebration that recognizes engineers' achievements throughout history. At the Whiting School, it provided a terrific opportunity to honor the work of our alumni, faculty, and students through events that spanned from fun, social activities to fascinating lectures on current topics in engineering given by our alumni and faculty.

On Monday, February 17, the festivities kicked off with a pizza party for the Hopkins Engineering community. The event included an undergraduate engineering competition, "The Tower of Power Half-Hour," during



Dick Hu '58 (center) poses with the winners of the Calvert County High School Science and Engineering Fair, who were selected by a team of Hopkins Engineering alumni on behalf of the JHU Society of Engineering Alumni.

which groups of students vied to construct the tallest possible tower made of toothpicks and marshmallows.

After this lively introduction to Engineers Week, Tuesday's focus was practical and informative—an event presented by the Johns Hopkins Career Center, "Engineering Your Job Search," which included workshops on resume writing and job search strategies for current students.

On Wednesday, the Society of Engineering Alumni (SEA) hosted "Behind the Politics of Climate Change: A Lesson in Sustainability," a lecture that addressed global warming and JHU's efforts toward sustainability. The panelists included two Johns Hopkins professors who work in environmental science and sustainability, Darryn Waugh from the Department of Earth and Planetary Sciences and Ben Hobbs from the Department of Geography and Environmental Engineering, as well as Blake Hough '07, a Chemical and Biomolecular Engineering alumnus and co-founder of the Hopkins Energy Action Team (HEAT). Hough is now the sustainability coordinator in the Johns Hopkins Office of Energy Services.

Jim Pitts '73, MS '77, corporate vice president of Northrop Grumman and president of the company's Electronic Systems sector, addressed undergraduates on Thursday. In his lecture, "Engineering Leadership," he

shared his views on the value of an engineering degree and ways his Johns Hopkins education contributed to his role at Northrop Grumman.

Also on Thursday, the Women of Whiting (WoW) hosted a dessert reception for graduate students. The organization was founded in 2005 to foster a sense of community and provide support among women graduate students at the Whiting School. In honor of Engineers Week, the group members invited their male counterparts at the school to their reception!

Engineers Week wrapped with an invitation to all alumni to participate in area high school science and engineering fairs. The Society of Engineering Alumni (SEA) organized teams of alumni who served that day as judges throughout Maryland and Northern Virginia regions.

Overall, the week successfully engaged the Hopkins community, illustrating not only the engineering efforts already existing on campus, but the passion and excitement that is inherent to engineering at Hopkins and beyond.

*Caroline McEnnis is a fifth-year graduate student studying ultrafast laser interactions with materials in the Department of Materials Science and Engineering. She is an active member of the Hopkins Engineering community, a supporter of youth outreach, and member of the planning committee for JHU Engineers Week.*

### JHU inCircle Are you in?

**JHU inCircle** is a new online community designed for secure social and professional networking.

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- Qualified employment candidates
- Official alumni chapter and division groups including the Society of Engineering Alumni

Log in at [alumni.jhu.edu](http://alumni.jhu.edu)  
for **FREE** access  
or for more information.

## Hopkins Alumni, Ice Worlds Apart

This past September, alumnus Steve Naron '70 and his wife, Laura, were enjoying a cruise in Alaska's Glacier Bay National Park when they spotted a surprising natural specimen: the Johns Hopkins Glacier.

Formed by layers of compacted snow, glaciers are long, slow-moving rivers of ice. The Johns Hopkins Glacier is 12 miles long and was discovered and named in 1893 by Harry Fielding Reid, then a professor of geology at Johns Hopkins. A distinguished geologist in his day, Reid is considered a founding father of geophysics. Having earned his bachelor's degree in 1880 and doctorate in 1885 at Johns Hopkins, he returned to the university four years later as a professor of geological physics and devoted his 35-year academic career to studying earthquakes and glaciers throughout the world.

One of 16 glaciers in Glacier Bay, the Johns Hopkins Glacier has pieces that break off and crash into the bay. Because of the potential danger of being hit as the huge ice blocks fall into the water, it is rare to get within a couple of miles of the glacier itself. "We were about four or five miles away," Steve says. "We were told that this was the closest that a cruise ship had ever come."

As they cruised along, the Narons viewed another familiar name: the Daniel Gilman Glacier, which Reid named in honor of Hopkins' first president and, nearby, Reid Glacier, named by the United States Geological Survey.



Steve Naron '70 and his wife, Laura, smile as they cruise past the Johns Hopkins Glacier, in Alaska's Glacier Bay National Park.

However, Steve and Laura were unaware of all this history when their cruise ship glided along the icy waters of the Alaskan wilderness. "It was quite a surprise when the captain pointed the glacier out," Steve reports. "We felt momentarily close to home. We hope to return to Glacier Bay by kayak for even closer views!"

### Harry Fielding Reid, 1859 – 1944

During his career, Reid became the founding father of geophysics when he discovered that the 1906 San Francisco earthquake was a result of forces identified as elastic strain, a term that describes the relationship between fault lines and earthquakes. He dubbed this theory Elastic Rebound, a theory that remains fundamental to modern tectonic studies.



John Muir's Glacier Bay cabin, 1890. Left to right are John Muir, H. P. Cushing, C. A. Adams, H. McBride, Harry F. Reid, and R. L. Casement (on roof).



PROFILE

Andreas Andreou '82, '86

**Degrees:** Electrical Engineering and Computer Science, PhD; Electrical Engineering MS, JHU Undergraduate degree from the Higher Technical Institute in Cyprus

**Advisor:** Roger Westgate

**Current Position:** professor, Department of Electrical and Computer Engineering and Department of Computer Science

## Q&A

### How has the Homewood campus changed since you first arrived in 1981?

There have been some big changes in the way the campus looks. Most recently, Barton Hall got a big sister building right next to it, the Computational Science and Engineering Building. Sadly, the big black walnut tree in front of the library is no more. The Athletic Center has also seen a terrific facelift. Levering Hall has changed because the study tables are now more closely spaced together and hence a little bit noisier, but I have to say that the addition of the Q level cafe in the library is probably the most significant change!

### What professor made the biggest impression on you?

Certainly for me Roger Westgate has been a model to follow. He used to tell his graduate students, "Research is like fishing ... you cast and cast and when you least expect it, you get a fish."

"I love knowing that I am giving students some insight that they did not have before."

— Andreas Andreou '82, '86

### How has the student body changed since you were a student?

They somehow get younger every year! Seriously, the most obvious change is that the ratio of female to male students has increased so that now we have a more balanced student body. And, in general, students have more distractions than they used to. Today, kids in high school get a much more superficial knowledge of technical concepts—it's broader, but it's shallower. The hardest things for students to learn are the unifying principles of physics, chemistry, and mathematics.

### How has technology changed?

We used to have a PDP-11, which is a microcomputer built in the 1970s and '80s. The department connected with a modem line to the ARPANET, the first predecessor to the Internet. Today my pocket pc phone has more than a dozen or so processors at least as powerful as the PDP-11, and I connect to the Internet at speeds higher than the wired connections of 20 years ago. There is no question that microelectronics and Moore's law (which explains that the number of transistors that can be placed on a circuit board doubles each year) have changed the way things are done today. And, of course, could you ever imagine life now without the World Wide Web?

### What was your favorite aspect of being a student?

Studying. Just kidding! As a graduate student it felt like I was on a journey to discover and it all seemed that it would always be a free ride. Well, as a professor I've realized that I can still choose my expeditions (research), but now there is the necessary part of finding the money to do it! And, in recent years that has become more challenging, and writing proposals takes up a lot of time. So, now I can look back and realize what I loved was something I wasn't even aware of then: not worrying about funding! Also, the occasional beer at the graduate club!

### Why did you choose to stay in academia versus going into industry?

I don't want this to sound like a cliché comment, but it is true that I love what I do and academia provides me the freedom to pursue those interests much more than any career in industry would.

### What do you enjoy about teaching?

I love knowing that I am giving students some insight that they did not have before. This is true especially here at Hopkins, where we put so much focus on teaching, not just learning lots of facts but the principles behind them. For instance, we would not just teach that Pi is 3.14. We would teach them how to compute it the way the ancient Greeks did, Archimedes' way, i.e., estimate Pi through the iterative process of area estimation of inscribed and circumscribed polygons of different sides.

Engineering, at its core, is about approximations and tradeoffs. By this I mean that sometimes the answer depends on the perspective and, if the perspective has changed, the answer might. For example, in business, if you are trying to get a product to market, sometimes it's most important to get the product to market as fast as possible, even if it's not the perfect product. Other times, it's more important to wait until the product is perfect. I try to teach my students how to weigh those options.

As a teacher, my main goal is to provide insightful ways to present and re-present knowledge. Often that involves more of a dialogue than a monologue, and many times the answers can't be found in books, videos, or lectures. This is a true strength of Hopkins Engineering.

*In between writing funding proposals, conducting research, and instructing graduate students, Professor Andreou teaches an undergraduate course in the Microfabrication Lab, where students learn to make micro devices.* ■

**Upcoming Events** Check out upcoming events at the Whiting School at [www.engineering.jhu.edu/calendar](http://www.engineering.jhu.edu/calendar)

*Prefer e-mail?* If you would like to receive this newsletter electronically, please let us know by sending an e-mail to [engineering@jhu.edu](mailto:engineering@jhu.edu).

## Volunteer during the Society of Engineering Alumni's fall career events!

### Career Night

This annual event features Hopkins alumni who speak with current engineering students about their experiences in the real world and offer advice on job searching, internships, graduate school, and career paths. Alumni from all different fields, including non-traditional engineering positions, are invited to attend and network with the students.

**Wednesday, September 24, 6 pm**  
**Homewood Campus**



### Mock Interview Night!

Help current students practice their interviewing skills for jobs and internships through one-on-one mock interviews. You'll have the chance to critique the student's performance and offer suggestions for improvement.

**Wednesday, November 19, 6:30 – 8pm**  
**Homewood Campus**

For more information on the SEA's fall career events, or to learn about other ways you can volunteer, please contact the Whiting School Alumni Relations Office at (410) 516-8723 or [HopkinsSEA@jhu.edu](mailto:HopkinsSEA@jhu.edu).

### Stuck on WSE

If you would like us to mail you a Whiting School of Engineering window decal, bumper sticker or "Hopkins Engineering" temporary tattoos, contact the WSE Alumni Relations office at (410) 516-8723 or [engineering@jhu.edu](mailto:engineering@jhu.edu).



## JOHNS HOPKINS ENGINEERING

# CONNECTIONS

NEWS FOR ALUMNI OF THE  
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