

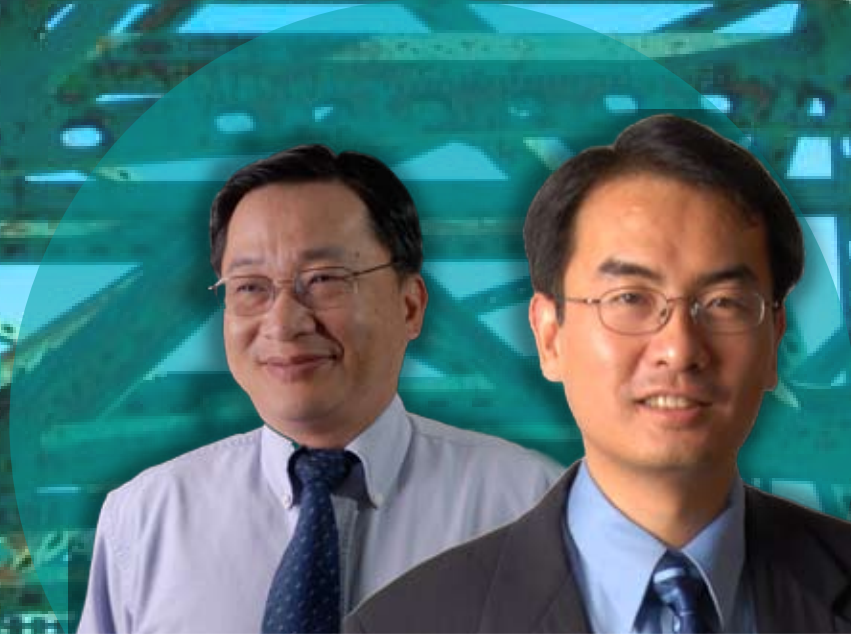


# CIVILReMARKS

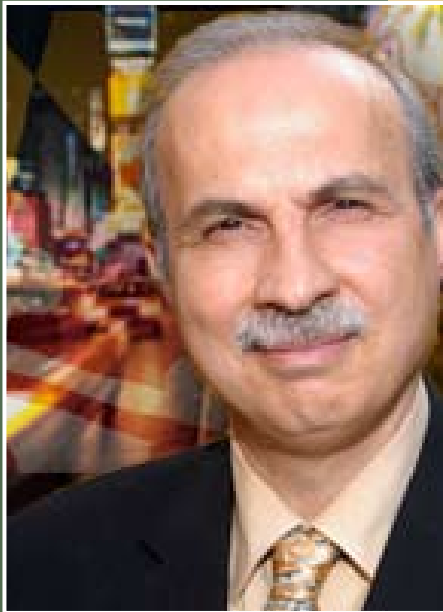
CIVIL AND ENVIRONMENTAL ENGINEERING [ [civil.umd.edu](http://civil.umd.edu) ]

A newsletter for the alumni and friends of the Department of Civil and Environmental Engineering

Fall 2011  
Vol. 11, No. 1



Faculty Members Awarded  
\$2.6 million to Participate in  
**RITA Research Project**



# CHAIR'S MESSAGE

Welcome readers to our latest issue of Civil Remarks.

I begin my message to you with exciting news. Two of our faculty members, **Professors Chung C. Fu** and **Yunfeng Zhang**, have been awarded \$2.6 million to participate in a RITA research project. The project team members also include North Carolina State University and URS Corporation, an engineering company. According to Professors Fu and Zhang, the project aims to develop a smart bridge condition monitoring system termed ISHM system, which features a number of technology innovations, including remote sensing capability, piezo paint acoustic emission sensors, wind and solar based energy harvesting devices to power sensor network, high-speed wireless sensing ability and advanced data analysis methods for remaining life estimation of aging bridges.

This is a much-needed project as the infrastructure within our nation begins to show the strain of many years. As Professor Fu puts it, "With many bridges plagued with fatigue cracking problems, the current system will be focused on fatigue condition assessment of highway steel bridges with a potential for monitoring other types of structural damages, such as corrosion. The proposed system will integrate recent advancements in civil, aerospace, and electrical disciplines to develop a transformational system that will have high-rewards in reducing the operating and maintenance costs by providing an accurate quantification of damage and degradation at an early stage.

We take great pride in being part of this very important project and what it will mean to the many who travel across our nation day to day. I look forward to keeping you, our readers, informed on the work taking place by Professor Fu and Zhang as they bring their experience and expertise to this issue.

Of course, there is also other news as well. There is much taking place here at CEE. We are a busy department, and glad to be so.

Our faculty profile features our new assistant professor, **Baoxia Mi**. Highly regarded for her research, she is currently involved with three projects funded by the National Science Foundation and is establishing a Membrane Innovation Lab here. She says that her long-term goal is to make our university a leader in research and education on next-generation membrane science and technology. We are eager to see what she will bring with her in regards to her talent and ambition. I have no doubt her future will be quite bright here at CEE.

And speaking of bright futures, we are also eager to introduce you to one of our best and brightest. **Shana Weisberg** is our student profile in this issue. She is one of our students who take the best of what the university and engineering program have to offer. She has been president of ASCE and project manager of the Concrete Canoe team. A talented and dedicated student, she has also been a figure skater since she was a small girl, and remains involved with the activity. As we have with so many in the past, I think we have found a young woman that readers will find very interesting to learn more about.

I often mention the importance of everyone here at CEE and that certainly includes our staff. In this issue you will be introduced to **Charity McGee**, an account clerk III. She

CHAIR'S MESSAGE (cont. on adjacent page)

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## CIVILREMARKS PRODUCTION TEAM

Dr. Ali Haghani: Chairman

Lisa Gregory: Editor

Al Santos: Photographer

Sangeeta Kaul: Graphic Designer

This newsletter is printed on recycled paper and is also posted electronically on our website.

## Class Offers Laboratory Course on Geotechnical and Structural Engineering

Chelsea Sprague admits it. She was not altogether thrilled at the idea of taking ENCE 444 Experimental Methods in Geotechnical and Structural Engineering. She was excited about the structural aspect of the course. But not so much in regards to the geotechnical part.

"At first I was not excited for the geotechnical section," says Sprague, who graduated in December. "I enjoy learning about structures as opposed to soil." In fact, this past fall was the first time the two fields – geotechnical and structural engineering were combined into a single laboratory course.

But Sprague soon changed her mind. "After taking the course with Professor M. Sherif Aggour, I have changed my opinion," she says. "I was very pleased with the material taught and the hands-on experience during the lab portion of the class. I gained valuable knowledge and a basic understanding of the procedure to test soils."

ENCE 444 is required in the infrastructure track. "In the geotechnical engineering part of the course, major soil testing and their interpretation including classification, compaction, strength and compressibility are undertaken," says Aggour, who teaches the course.

The structural part of the course, of which Sprague mentioned, covers test planning, loading apparatus,

instrumentation, data acquisition and data analysis, as well as basic aspects of structural testing techniques and shake-table tests.

"The students benefit by performing the tests themselves, as well as understanding the required Engineering Standards outlined by the American Society of Testing and Materials," explains Aggour.

Adds Sprague, who plans to enter the professional field immediately after graduation and then further her education in graduate school "Having the hands on experience learning the methods to test soil will be the most useful aspect of the class. We were taught how to determine different characteristics of soil using numerous tests."

According to Sprague, "This is beneficial because in the professional world, it will be easier to communicate with an engineer about the details of the soil properties and the affect it will have on designing structures. Being knowledgeable of the range of tests required to determine these soil properties, is the first step in understanding what it takes to design a building."

As the faculty member guiding students through the class, Aggour finds that "by actually handling the soil and doing the tests the student will learn more than if they were simply learning via a lecture," he says. "Unless a student can actually feel the soils and visually see some of their differences

they aren't able to fully understand how many different types and qualities – strength, porosity, cohesiveness, etc., of soils there are. The type of soil to be used is of major importance in the building of foundations and retaining walls and such."



*"The students benefit by performing the tests themselves, as well as understanding the required Engineering Standards outlined by the American Society of Testing and Materials," explains Prof. Aggour.*

Adding, "By bringing these two areas together and encouraging a hands-on experience, we are offering our student a unique and valuable experience."

admits that she hadn't thought of herself working in a university setting. But has found she enjoys the atmosphere and challenges that working at CEE offers. And we enjoy having her as part of our team.

In this issue of the newsletter you will also learn about one of our new courses, **ENCE 444 Experimental Methods in Geotechnical and Structural Engineering**. ENCE 444 is required in the infrastructure track. As our instructor, Professor M. Sherif Aggour, describes it, "In the geotechnical engineering part of the course, major soil testing and their interpretation including classification, compaction, strength and compressibility are undertaken." And, "The structural part of the course covers test planning, loading apparatus, instrumentation, data acquisition and data analysis, as well as basic aspects of structural testing techniques and shake-table tests." There is a strong emphasis on the lab component of this course as we believe strongly here at CEE that hands on work is the best kind of work for our students and the future we hope for them.

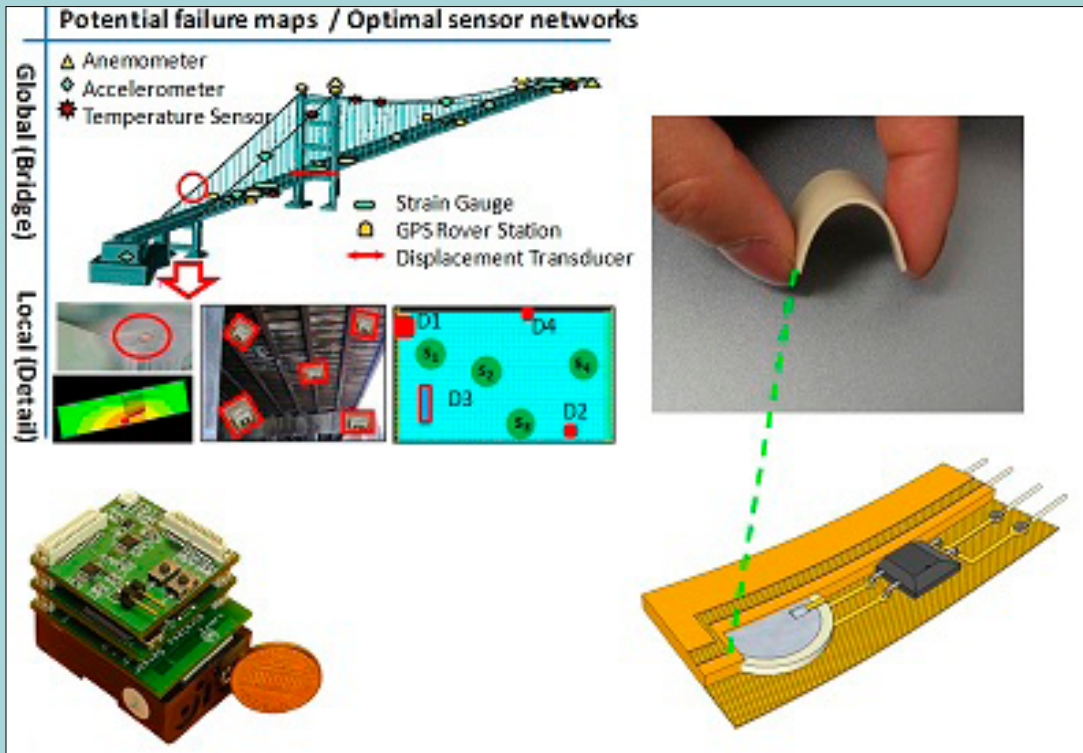
Finally, of course, we take the opportunity to show off one of our accomplished alums. Of which we have many. This time you will meet **Paul Burkart**. He is director of geotechnical engineering services at GeoConcepts Engineering Inc. in Ashburn, Va. He is a self-made man and businessman, who loves the outdoors and is driven by a job well done. I also hear he plays a mean game of disc golf. I continue to be delighted and amazed by the things I learn about our successful alumni. I think as you read about Paul Burkart you will agree.

Actually, I think this is true in reading all our profiles. At CEE we have many who bring much to the profession and the world around them.

*Ali Haghami*







Chung C. Fu



Yunfeng Zhang

## Faculty Members Awarded \$2.6 million to Participate in RITA Research Project

Professors Chung C. Fu and Yunfeng Zhang at the Department of Civil and Environmental Engineering at the University of Maryland (UMD) has recently been awarded a research project with a total budget worth \$2.67 million dollars.

The project team members also include North Carolina State University (NCSU) and URS Corporation, an engineering company. The U.S. Department of Transportation's Research and Innovative Technology Administration (RITA), under The Commercial Remote Sensing and Spatial Information (CRS&SI) Technologies Program, provides \$1.15 million under a cooperative agreement, and the rest comes from matching funds from the Maryland Transportation Authority (MdTA), Maryland State Highway Administration (MSHA), North Carolina Department of Transportation (NCDOT), as well as cost sharing by UMD and NCSU.

"The project aims to develop a smart bridge condition monitoring system termed ISHM system, which features a number of technology innovations, including remote sensing capability, piezo paint acoustic emission sensors, wind and solar based energy harvesting devices to power sensor network, high-speed wireless sensing ability and advanced data analysis methods for remaining life estimation of aging bridges," says Zhang.

Adds Fu, "With many bridges plagued with fatigue cracking problems, the current system will be focused on fatigue condition assessment of highway steel bridges with a potential for monitoring other types of structural damages,

such as corrosion. The proposed system will integrate recent advancements in civil, aerospace, and electrical disciplines to develop a transformational system that will have high-rewards in reducing the operating and maintenance costs by providing an accurate quantification of damage and degradation at an early stage."

After validation and characterization tests performed at the UMD's Structures Lab, the ISHM system will be implemented on bridges at Maryland and North Carolina for field demonstration.

"If successful," says Zhang, "this system will be deployed to more bridges in other states. One of the primary goals for the RITA-funded project is to commercialize the developed sensor technology."

The project team is also looking at possible technology transfer opportunities to commercialize the developed technology by partnering with UMD's business incubator programs. Through successful advancement and commercialization in the state-of-the-art technology of remote infrastructure sensing, the ISHM system is promising to reduce life cycle costs while significantly maintaining the sustainability of the highway infrastructures in the U.S.

"We take great honor in the fact that two of our highly-regarded and highly-respected faculty members are involved in such an important and potentially life-saving project," says Ali Haghani, chair of the Department of Civil and Environmental Engineering.



The listing below identifies 25\* Maryland high schools that send the most students to the Clark School for the 2011-2012 school year. In alphabetical order, the schools are:

- |                                       |  |                                     |
|---------------------------------------|--|-------------------------------------|
| • Arundel Senior High School          | • Walter Johnson High School           | • Sherwood High School              |
| • Atholton High School                | • Montgomery Blair High School         | • South River High School           |
| • Broadneck Senior High School        | • Richard Montgomery High School       | • Towson High School                |
| • Calvert Hall College High School    | • Mount Hebron High School             | • Tuscarora High School             |
| • Centennial High School              | • Our Lady of Good Counsel High School | • Urbana High School                |
| • Winston Churchill High School       | • Poolesville High School              | • Westminster High School           |
| • Damascus High School                | • Quince Orchard High School           | • Thomas Sprigg Wootton High School |
| • Glenelg High School                 | • River Hill High School               |                                     |
| • Huntingtown High School             | • Eleanor Roosevelt High School        |                                     |
| • Governor Thomas Johnson High School | • Severna Park Senior High School      |                                     |

*\*Note that, owing to ties in 2010-2011, there are 27 schools listed.*

The SETAC-CPRC Board of Directors announced the recipients of the 2011 Student Travel Awards:

- **Natasha Andrade**, University of Maryland. Utilizing thin-film SPE methodology to assess DDT and dieldrin bioavailability to earthworms. Advised by Professor Alba Torrents.
- **Talia Chalew**, Johns Hopkins Bloomberg School of Public Health. The fate and cellular toxicity of silver, zinc oxide, titanium dioxide engineered nanoparticles in water. Advised by Dr. Kellogg Schwab.
- **Rebecca Lazarus**, USGS-Patuxent Wildlife Research Center/ University of Maryland. Apparent tolerance of common tern (*Sterna hirundo*) embryos to a pentabrominated diphenyl ether mixture (DE-71). Advised by Dr. Barnett Rattner.

Each of these students received a \$350 award in support of their attendance of the conference in Boston. The awards were given to in person to these students at SETAC-Boston during the CPRC meeting in November.

Soccer player and CEE senior **Lydia Hastings'** work ethic has become a staple of the No. 18 Terps over her four years at College Park. Coach Brian Pensky describes her as a "consummate pro," a player willing to come to practice early and stay late. Hastings was profiled in a recent issue of the university's student newspaper, the Diamondback.

When Secretary of Energy Steven Chu announced that the University of Maryland's **WaterShed** solar house had placed second in the final component of the Department of Energy's 10-part Solar Decathlon—the market appeal contest—everyone cheering in the main tent in West Potomac Park, Washington, D.C., knew that taking first place overall was all but assured for Maryland.

That's exactly how it played out: third place for New Zealand, second for Purdue University, and first place for Maryland in a competition involving 20 teams from all over the U.S. and the world. The elated Maryland team received the big silver trophy, which team members passed from person to person, citing the contributions made by each. Celebrations continued when the team returned to WaterShed, the 800 square foot solar home they had designed and built over the preceding two years to reach this moment.

Led by Professor Amy Gardner, team advisor from the School of Architecture, Planning and Preservation, and Associate Professor Keith Herold, team advisor from the Clark School (Fischell Department of Bioengineering), the team comprised some 200 students, faculty members and staff members from all over campus.

Clark School Dean Darryll Pines congratulated Gardner and Herold and complimented the students involved. "Our students were unbelievable," he said. "They had to deal with all the challenges of an enormous engineering project and seven days of cloudy and wet weather during the competition. As I always say, our students are the best, bar none—and they really rise to the top in fierce competition like the Solar Decathlon!"

**Erin Strittmatter**, a civil engineering undergraduate student, has received a 2011-2012 Science, Mathematics And Research for Transformation (SMART) Scholarship from the Department of Defense (DOD).

Strittmatter participated in FLEXUS: The Dr. Marilyn Berman Pollans Women in Engineering Living & Learning Community, and is a Clark School Ambassador.

The highly selective SMART program was established to support the education of the nation's future scientists and engineers, and to increase the number of civilian scientists and engineers employed by DOD. Undergraduate and graduate students in Science, Technology, Engineering and Mathematics (STEM) majors who are accepted into the program receive a full scholarship, a cash award of \$25,000–\$41,000, health insurance and textbook allowances, and mentoring. While earning their degrees, SMART Scholars are assigned to a DOD laboratory, in which they serve paid summer internships. After graduation, they continue to work for DOD as civilian employees engaged in theoretical or applied research for a period of at least one year.

Two graduate students associated with the National Center of Excellence in Aviation Operations Research (NEXTOR) have received Federal Aviation Administration graduate research awards for 2011-2012.



# Finding Herself...and More

## Senior Has Made the Best of her College Years as a Civil Engineering Major

**S**hana Weisberg is an academically talented young woman who is majoring in civil engineering and enjoys figure skating in her free time. She will be receiving her bachelor's degree from the University's Honors Program this spring in civil engineering.

As one might suspect her resume is impressive. She is the recipient of the Department of Civil and Environmental Engineering Chair's Award and the Perry Laudenslager Memorial Endowed Scholarship Fund. She is also a University of Maryland Banneker/Key Finalist Scholar and a Maryland Distinguished Scholar.

In other activities she has been president and vice president/chief operation officer for the American Society of Civil Engineering; project manager of the Concrete Canoe team, as well as assistant project manager; a vice president of the Chi Epsilon Honors Society; a member of the Clark School Ambassador Society; and a member of the Maryland Figure Skating Club, serving as vice president and treasurer.

She like so many of today's engineering, and especially civil engineering students are committed to making an impact on the world around them. Weisberg is no different. She has participated in the alternative spring break program, where instead of lying on the beach and hanging with friends, she donates her time to needy causes with a civil engineering emphasis. In fact she was promoted by her peers as a spring break trip lead ambassador and has worked with Habitat Humanity in Florida and with community members in an impoverished area of West Virginia.

As Dr. Ali Haghani, department chair, says so often, she is what is best about the Department of Civil and Engineering program.

Recently, Weisberg took time from her busy schedule to talk about her life as a student at the University of Maryland and within the Department of Civil and Environmental Engineering.

*Where are you from originally?*

I am originally from Columbia, Md. I was born and raised in Columbia and my parents still reside there.

*Why did you decide to attend the University of Maryland?*

I decided to come to the University of Maryland because I thought it was the best school in the area for engineering and it offered the most opportunities based on the amount of students that attended. I only applied to one college but I couldn't imagine being anywhere else.

*I noticed you are involved with the Honors Program. What has that meant to your experience at the university and how helpful do you feel it will be as you continue your career?*

The Honors Program at UMD is amazing. The main reason why I like it so much is because of the honors seminars that you are able to take as an honors student. I have been able to take unique classes in short stories, the Vietnam War, and the galaxy over the course of my college career. I feel the Honors Program will be helpful as I continue my career because I am more well-rounded.

*What do your parents do professionally? Also, do you have any siblings, and if so are they attending college and where, as well as their major?*

My mother, Rachel Weisberg, is the manager of the Columbia Ice Rink. She actually began working there when I was about 10 years old because both my brother and I were competitive figure skaters. We skated in the morning before school for about an hour and half and then after school for a few hours. We did this everyday and she was spending so much time at the rink that she started working there while we were skating. My father, Franklin Weisberg, is a special education teacher. He also plays piano professionally. I have one older brother, Jason, who graduated in the spring of 2011. He majored in business and is now working at a bank.

*You really seem to have made the most of your experience at the university. What have you enjoyed most about your life as a student at UMCP and what have you found most challenging and why?*

To be honest, my best experiences have been in the engineering school. I love all of the students I have met at the school, especially those that I have met in Alpha Omega Epsilon or A.O.E. (the engineering sorority that I joined the spring semester of my freshman year) and the American Society



of Civil Engineers (ASCE). Through both of these organizations I have met mentors, friends, roommates, study partners, etc. I can't even begin to explain how grateful I am for the friendships and relationships I made through these organizations.

The most challenging part about my life as a student at UMCP has to be the fact that I became so involved. It's one of the best parts because I have met amazing people and worked on projects that I would have never worked on before; however, it is time consuming. Sometimes I wonder why I took on so much responsibility over the past few years, but I really do love it. I end up accomplishing more when I have a really busy schedule.

STUDENT PROFILE (cont. on page 15)

**Professor Steven A. Gabriel** recently gave two talks on exporting U.S. natural gas to Europe and Asia. The first talk was at the 10th Berlin Infraday in October. Gabriel also as in previous years read the laudatio for the two winners of the Hans-Jurgen Ewers Prize. In October Gabriel also gave a gas exports talk as one of three invited international speakers at the SERECO research seminar at Electricite de France in Clamart, outside of Paris.



**Professor Allen P. Davis** will serve on the National Research Council Committee on Review of EPA's *Economic Analysis of Final Water Quality Standards for Nutrients for Lakes and Flowing Waters in Florida*.

The Metropolitan Area Transportation Operations Coordination (MATOC) program which is housed at the **Center**

**for Advanced Transportation Technology's** *Capital Wireless Information Net* (CapWIN) offices was recently touted in several Washington Post articles for successfully monitoring the metro region during the 9/11 Memorial Ride and the 5.8M Earthquake.

The August 19 ride which consisted of nearly 2,000 motorcycles stretching 12 miles began in Shanksville, Pa., and snaked through Maryland and Virginia ending the day at the Pentagon. On the following day, the procession continued across the District of Columbia and back into Maryland towards New York City, its final destination. Departments of Transportation from Maryland, Virginia, and the District of Columbia worked with police and public safety agencies to warn motorists avoid the event's route because of the potential severe congestion it could create. Taran Hutchinson, MATOC Facilitator, was interviewed by the Washington Post about the Washington Area's response to the warning. "If you look at [Interstate] 66, even for a Friday that's light, so I think people got the warning" was his quote published in the Post. MATOC operator, John Minisi, was also quoted in the Post article about how fast the ride was able to come through the area.

MATOC was also on hand during the major earthquake that shook the metro region on August 23. One Post article discussed the horrendous commute most residents faced after the earthquake. Hutchinson commented on how while congestion started earlier it was pretty normal for rush hour. The other Post article talked about how the earthquake highlighted how problematic evacuating Washington, D.C., is. Hutchinson commented, "Once people began moving out, it was just a volume issue."

**The Clark School** rose two spots to #11 among engineering schools ranked in the 2011 *Academic Ranking of World Universities* annual list of engineering/technology and computer science schools by the Institute of Higher Education and Center for World-Class Universities. Among all public university programs, the Clark School was ranked 8<sup>th</sup>.

The rankings were based on four equally weighted criteria:

The total number of highly cited researchers in three categories—engineering, computer science, materials science—as provided by isihighlycited.com. The Clark School's score: 58.1

The total number of papers indexed by Science Citation Index-Expanded in engineering fields. The Clark School's score: 56.2

The percentage of papers published in the top 20% journals of engineering fields to that in all engineering journals. The Clark School's score: 81.7

The total engineering-related research expenditures as provided by ASEE. The Clark School's score: 76.1

The Clark School's total score is 75.8.

"My congratulations to the entire Clark School family, and in particular our outstanding faculty members, for the exceptional impact we are making in engineering research and for the recognition this gains for the school," said Clark School Dean Darryll Pines.

Since 2003, Shanghai Jiao Tong University's Institute of Higher Education and Center for World-Class Universities has published the *Academic Ranking of World Universities (ARWU)*. The ranking is purely objective, based on quantitative measures of productivity with no reputation component.

The University of Maryland is launching a cutting-edge research center to develop novel policy solutions for today's most pressing environmental challenges. Principally funded by a newly announced \$27.5 million, five-year grant from the National Science Foundation, the multidisciplinary University of Maryland center will bring together the expertise of environmental, social and computational scientists, engineers, economists, public policy experts and others from around the world.

The National Socio-Environmental Synthesis Center, known as SeSynC, will be home for collaborative research on such critical issues as water availability, sustainable food production and the interaction between human activity and healthy ecosystems. Science, public policy and engineering faculty from the University of Maryland, environmental economists from Resources for the Future, a Washington, D.C.-based nonprofit research organization, and social scientists from the University of Michigan will lead activities of the center, which will also draw experts from around the world.

"The collaborations of this new University of Maryland center represent exactly the kind of innovative, interdisciplinary approaches that are essential if we are to tackle the complex environmental challenges facing our nation and world," says Wallace D. Loh, president of the University of Maryland, College Park.

The center will feature the latest in information technology environments designed to foster collaboration and put scientists and policymakers on the same information plane.

"We intend to create a new model for accelerating environmental discovery," says Professor Joseph Jaja (joint, Department of Electrical and Computer Engineering and the University of Maryland Institute for Advanced Computer Studies), who will oversee information technology and computational needs at SeSynC. "And that will come from the seamless communication and collaboration between disciplines as diverse as computer science, engineering, biology, public policy, geography, and economics."



# A Class Act

Meet New Assistant Professor Baoxia Mi

**B**aoxia Mi is an assistant professor with the Department of Civil and Environmental Engineering and is establishing a Membrane Innovation Lab here. She joined the faculty this past year. Mi received her bachelor's and master's degrees in environmental engineering from Tianjin University in China and her Ph.D. in environmental engineering from the University of Illinois at Urbana-Champaign in 2006.

Mi is affiliated with the North American Membrane Society; American Chemical Society; Material Research Society; Association of Environmental Engineering and Science Professors; and the Chinese-American Professors in Environmental Engineering and Science.

She is the recipient of the Institute for Sustainability Fellowship for 2010; the Dithery Faculty Fellowship in 2010; the Best M.S. Degree Thesis from Tianjin University; and the Distinguished University Student also from Tianjin University.

Prior to joining the Department of Civil and Environmental Engineering, Mi was an assistant professor at the Department of Civil and Environmental Engineering at George Washington University (GWU). Before that she was a postdoctoral research associate in environmental engineering at Yale University.

Highly regarded for her research, she is currently involved with three projects funded by the National Science Foundation or NSF including:

## Collaborative Research

*Elucidating the Mechanisms for Inhibition of Biofouling on Polymeric Membranes Modified with Polyelectrolyte Multilayers and Antimicrobial Nanoparticles*  
(09/01/2011 - 08/31/2014, \$171,003, PI)

The experiments are designed to test the hypothesis that the resistance of membranes modified by PEMs towards biofouling is controlled by its anti-adhesive and antimicrobial properties. PEM parameters (e.g., constituent polyelectrolytes and NPs and number of bilayers within PEMs) are systematically varied in order to investigate their influence on the anti-adhesive and antimicrobial properties of the membranes. To probe the membrane's anti-adhesive

properties, the kinetics of bacterial deposition on the membrane during filtration, as well as the adhesive forces between a bacterium and the membrane surface, are measured. The antimicrobial properties of the membranes are studied through the enumeration of bacterial colonies on the membrane surface and by using a fluorescent dye technique to detect deposited cells with damaged membranes. The biofouling resistance of membranes modified by PEMs is evaluated by monitoring the permeate flux decline in long-term filtration experiments with bacteria suspensions. Another component of this research is to investigate the effects of the above-mentioned PEM parameters on the rate of unintended NP leaching. Finally, this research examines several physical and chemical methods for the in situ regeneration of PEM-NP assemblies on membrane surfaces and evaluates the performance of the regenerated membranes.

*Integration of Experiments and Simulations for Molecular-Level Understanding of Membrane Fouling Mechanisms*  
(09/01/2010 - 08/31/2013, \$365,095, PI)

This project integrates molecular simulation and multiscale experimental characterization to achieve a molecular-level understanding of the fouling of reverse osmosis and nanofiltration (RO/NF) membranes. RO/NF membranes are increasingly being used for water separation and desalination. However, the performance of RO/NF membranes is severely hampered by the long-standing problem of colloidal/organic fouling. Development of efficient fouling-mitigation strategies and highly fouling-resistant membranes relies on the fundamental understanding of membrane-foulant interactions. However, current experimental studies attempting to understand the effects of membrane properties on fouling often draw inconsistent conclusions. In addition, current efforts to develop antifouling materials are mostly based on experimental trial-and-error, which is tedious, expensive and time-consuming. Therefore, we urgently need a more efficient approach to designing new antifouling materials. Towards this goal, we: (1) develop a novel hybrid molecular simulation approach that is specifically fit for simulating the long-time binding events between foulants and membrane surfaces; (2) conduct multiscale experimental characterization, including nanoscale interaction force measurement



by atomic force microscopy, microscopic direct-observation of foulant-deposition on membrane surfaces, and macroscopic characterization of long-term membrane fouling behavior; and (3) integrate experimental measurements and molecular simulations to achieve a molecular-level understanding of membrane fouling, thus greatly facilitating the design of novel antifouling membranes.

*Nano Undergraduate Engineering at the George Washington University* (09/01/2009 - 08/31/2012, \$200,000, co-PI)

This Nanotechnology Undergraduate Education in Engineering (NUE) program at the George

FACULTY PROFILE (cont. on page 15)



The Department of Civil and Environmental Engineering held its first annual alumni dinner on October 14, 2011. The event was held at the UMUC Inn and Conference Center on campus. **Captain Tom Jones**, Chief of Civil Engineering, U.S. Coast Guard, was the speaker at the event.

Captain Jones graduated from the University of Maryland in December 1983 and immediately reported to

Officer Candidate School (OCS) in Yorktown, Va. He later earned a Master of Science Degree in Civil Engineering from the University of Illinois; a Master of Public Administration Degree from Old Dominion University; and recently a Master of Arts Degree in National Security and Strategic Studies from the Naval War College.

Following graduation from OCS in May of 1984, Captain Jones served on the Fifth Coast Guard District Civil Engineering staff, and then Coast Guard Cutters TANEY and INGHAM. Following his sea tours, Captain Jones served as the Greater Antilles Section Civil Engineer and Industrial Manager. Later he served as a project manager at the Facilities Design and Construction Center, Atlantic and Facilities Engineering Officer at Integrated Support Command Portsmouth. Captain Jones served for three years as a Program Reviewer and the Acquisition, Construction and Improvements Budget Coordinator in the Coast Guard Chief of Staff's office.

He is currently serving as chief of the Coast Guard Civil Engineering Program. Captain Jones is a registered professional engineer in the Commonwealth of Virginia and a certified facility manager. He was named the *Coast Guard Engineer of the Year* in 2004.

**Roger Snyder** (M.S. '98, civil engineering) has been appointed as the new manager of the Department of Energy's (DOE) Pacific Northwest Site Office that oversees the DOE national laboratory in Richland, Washington.

Alabama State University (ASU) has announced **Lt. Col. Dawn M. Davis**, an 18 year veteran in the Air Force, as the new commander of ASU's ROTC Detachment 019.

Davis, the second female to command Detachment 019, is the senior Air Force officer on campus and holds dual responsibilities as detachment commander and head of the Department of Aerospace Studies. She is responsible for recruiting, training, motivating and educating Air Force officer candidates.

Davis received a Bachelor of Science degree in civil engineering from the University of Maryland in 1988 and a Master of Science degree in management from Troy State University. She earned her commission through the Air Force Officer Training School in 1993. As a civil engineer officer, she has led military and civilian professionals as a flight commander and as an interim squadron commander in a variety of assignments at base and major command levels and during several contingency operations in support of the global war on terror.

## HELLO!

We'd Love To Hear From You!



**CivilRemarks** is published twice yearly for alumni and friends of the Department of Civil and Environmental Engineering at the A. James Clark School of Engineering. Your alumni news, updates and comments are always welcome.

We want to know where life has taken you since you left the University of Maryland. We are always actively looking to include our alumni in our publications. Please send us an update on your personal stationary, or via email (please see contact info). We welcome any photographs you would like to include as well (electronic files or copies please as we cannot guarantee the return of any originals).

In your update, please be sure to include the following information:

- FIRST NAME, MIDDLE INITIAL, LAST NAME
- DEGREE(S): GRADUATION YEAR(S)
- HOME ADDRESS: CITY: STATE: ZIP+4
- EMPLOYER NAME: POSITION TITLE
- EMPLOYER ADDRESS: CITY: STATE: ZIP+4
- BUSINESS PHONE: E-MAIL
- SHORT BIO ON LIFE AFTER GRADUATION FROM UMD

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# Engineering and the Great Outdoors

## *Alum Has Built Career Eagerly Facing the Next Challenge and Opportunity*

Most ambitious and successful men enjoy a round of golf as a way of relaxing. The same is true for Paul Burkart with one exception. Burkart doesn't always play golf in the traditional sense. For example, he has a real passion for the occasional game of disc golf. "It's about taking it up a notch, you know what I mean?" he says with a glint in his eyes.

And where did he discover this love of disc golf? Exactly where he discovered his love for his professional career. The campus at the University of Maryland (and the Calvert Road Park disc golf course). The man, after all, has a Terrapin turtle mouse pad. Fear the turtle. Or, Burkart, who through his own hard work and dedication is today director of geotechnical engineering services at GeoConcepts Engineering Inc. in Ashburn, Va.

Burkart took to nature naturally. His parents were from the Midwest, both growing up on farmland. "We visited our families often," he says. "On those trips, I left suburbia behind and discovered agriculture." Adding, "I loved the outdoors."

Once at the University of Maryland, Burkart, who grew up in Columbia, Md., didn't stop there. He felt rejuvenated by the outdoors. As a college student he hopped on a bike and travelled across the nation from San Francisco, Calif. to Washington, D.C. And, when he wasn't enjoying being outside, he was discovering he had an aptitude for engineering. "Slowly, it all came together," he says.

Burkart has more than 26 years experience in geotechnical engineering and materials testing and has provided project design and technical review of over 1,500 projects in the Mid-Atlantic region. He is active with the Design Build Institute of America and the America Society of Highway Engineers.

"Our senior leadership here at GeoConcepts, including Vivian Lewis (President) and Ted Lewis (CEO), has an average of over 22 years experience and have spent their entire careers providing geotechnical-related solutions to requirement in the various jurisdictions the company serves," he says. "Our experience and expertise are trusted and relied upon by our clients to provide practical and cost-effective solutions to development issues."

As a high school student, Burkart initially had his eyes set on becoming an agriculture engineer. That stuck. For a bit. "Until my junior year of college," he says. One can hear the delight in his voice as he begins to tell the story of how Paul Burkart of then became the Paul Burkart of today. He discovered civil engineering, changing his major and graduating in 1985.

He had found his place. He found himself drawn to the Department of Civil and Environmental Engineering and its faculty, many of whom he speaks of today. "I remember the first class I had with Dr. Sternberg," he recalls. "It was ground water hydrology. The score of my first exam was 28 out of 100, with the average being like 40 out of 100."

In hindsight, the exam wasn't that difficult. Burkart would come to realize. "Dr. Sternberg was just giving us real-life problems that required us to know the theory, and if we didn't know it, there was no way to come up with the right answer," says Burkart. Adding, "I have come to appreciate this approach to teaching, and yes, I made it through the class."

As he went on to earn his bachelor's degree in 1985 and his master's degree in geotechnical engineering in 1992, he would meet many others who would challenge and mold his mind into the professional he has become today.

"Dr. McCuen, for example," he says with a chuckle. "Another intellectual mind with a keen admiration for the great outdoors, especially a good game of tennis. He was tough in a different way," says Burkart. "He expected us to get to class on time, be prepared and act professionally. He prepared us for the real world."

With his bachelor's and master's degrees in hand, Burkart went to work for Schanbel Engineering Associates in Bethesda, Md. Then in 1999 he and three other co-workers formed their own geotechnical engineering consulting firm.

Since then, "The company has grown from the four founding members to about 45 employees with over 11,000 square feet of office and laboratory space," says Burkart proudly. "We serve clients all over the mid-Atlantic region, with the focus in Maryland, Virginia and Washington, D.C."



Paul Burkart with wife Mary Kay

In 2001, GeoConcepts earned the New Business of the Year Award from the town of Leesburg, Va., and was a finalist for Entrepreneur of the Year in Loudoun County, Va. Burkart himself is a professional engineer in Maryland, Virginia, Washington, D.C., Delaware, Pennsylvania, New York, Tennessee, Kentucky, West Virginia, Connecticut, Maine and Rhode Island. And Burkart is a member of the ASFE Fundamentals of Professional Practice.

His projects and the projects of his team are endless. And inspired. For example, he was project engineer for the \$1 billion dollar BRAC 133 Washington Headquarters Service in Alexandria, Va.; DISA Headquarters Facility in Fort Meade, Md.; the National Cancer Institute project in Rockville, Md.; NASA Exploration Sciences Building at Goddard



#### STUDENT PROFILE (cont. from page 7)

*Noticed that you worked for Geo-Technology Associates Inc. or GTA and Axiom Decisions Systems Inc. Were both internships? And how did you come to work for both companies? Do you feel that experience will impact your career later on, and if so, why?*

Yes, both of these were internships. My high school had an internship program set up for juniors and seniors. If you were accepted into the internship program, rather than going to classes for the last two hours of the day, you would go to an internship. My teacher got into contact with the president of Axiom Decision Systems in Ellicott City, Md. Although I was only 16 when I had this internship, I certainly learned a lot. I realized the importance of networking and became more comfortable speaking with adults. By the time I entered college I had already made presentations to civil engineers and had an interview, so I feel I was a little ahead of some of my peers in that aspect.

I worked for GTA this past summer. After interviewing for the Perry Laudenslager Memorial Fund Scholarship on campus last year, I met individuals in GTA and MRA. GTA and their sister company Morris & Ritchie Associates, Inc., (MRA), provide a scholarship each year to individuals who show a compassion for civil engineering, are involved in ASCE, and enjoy the outdoors. They base the scholarship off of Perry Laudenslager, who was a former UMD student and former ASCE student chapter president who worked for GTA. Tragically, he was killed in a car accident, but GTA and MRA remember his dedication to civil engineering through the scholarship. I worked outdoors on different construction sites around Maryland the entire summer performing materials testing. I learned so much from this internship about materials and basic civil engineering principles. When I came back to school for this fall semester, I had a much better understanding of what I was learning in class because of the work I did over the summer.

*Why did you decide to become involved with ASCE, and what has that experience meant to you, especially as president and a leader?*



I didn't get very involved in ASCE until I was a sophomore. I saw the concrete canoe floating during Maryland Day when I was a freshman. The then-president of Alpha Omega Epsilon was on the row team and I saw the canoe. I thought it was so cool that students put it together. I started getting involved in project management duties and became the assistant project manager. I loved concrete canoe. I spent just about everyday in the lab working on the canoe my spring semester of my sophomore year. It was the best experience I have ever had because I can look back and realize how naive I was and how new everything was to me. It was the first time in college where I realized what I could do with a civil engineering degree. I was doing a hands-on project and it was fun!

After my sophomore year I was promoted to project manager of Concrete Canoe and vice president/chief operations officer of ASCE. My junior year as project manager I tried to get more students to join the team and to get things more organized. It was definitely more difficult having more responsibility. I realized I was no longer the "newbie" on the team and I was the one having to make critical decisions that would affect the rest of the team and the rest of the project. This year, I was voted as president of ASCE. Initially, I was heartbroken that I would have to leave my responsibilities with the concrete canoe team.

I really enjoy being president though. I've seen how much ASCE has helped me and my friends, and now I am able to share my experiences with the younger students and get them involved. It's funny how things come full circle—as a Clark School Ambassador I spoke to high school students when they visited Maryland for the first time. I talked to them about my experiences with ASCE, Concrete Canoe, A.O.E., etc. So far this semester I have already seen some of those students who I talked to when they were in high school, and now they have joined ASCE. I can only hope that I can inspire freshman and sophomores who aren't as involved in the engineering community to get involved! I know I was afraid when I was a freshman and sophomore, but it really is worth it now.

*Besides your many honors, it appears you took great advantage of what the university and the engineering program had to offer. How valuable do you feel it is for*

*students to invest themselves in the many activities college has to offer?*

I believe that extracurricular are the most important part of college. Obviously your education is number one. But I can say that I have learned so much from being involved and getting hands on experience. It is one thing to learn about project management in a book, it's another when you actually have 100 people to manage.

I didn't go into college thinking I would be as involved as I am now. I wanted to do things that made me happy and everything I am involved in makes me happy, so that was my main goal.

*Which activity has meant the most and why?*

It's hard to say which activity has meant the most.... I love all of them!

I'm really curious about your involvement in figure skating. Could you tell us more about that?

I was competitively skating until I was about 14, when I decided to stop and pursue some team sports such as field hockey, lacrosse, and track in high school. I skated almost everyday for those years and went to some of the most amazing places. When I was 10 years old, I went to France and Amsterdam to compete. I also travelled all over the U.S. Even at the university I have remained involved with skating with the Maryland Figure Skating Club. All of the members are students of UMCP. I will most definitely be continuing after college.

*Finally, what are your future plans? Are you interested in continuing your education, or do you want to begin your career search immediately? What type of career would you like to have?*

I have already begun my career search. I am hoping to get a job performing project management tasks, but I am open to consulting as well. I have so many interests that I can't really pinpoint exactly what I want to do, so it's hard to say. I know I want to stay in the Maryland area and get a job near D.C. or Baltimore. I don't want to continue my education right now because I am interested in too many subjects to pick just one to focus on. I am hoping that in the future I will go back and get my MBA, because that is something I feel will be satisfying and difficult. I like the idea of that combination.

#### FACULTY NEWS (cont. from page 7)

A team consisting of CEE research professor **Stuart Milner**, ECE Professor Christopher Davis, and ECE alumnus Jamie Llorca, was a runner-up in the University of Maryland Office of Technology Commercialization competition for inventions of year 2010. Their invention was titled "Self-Optimization, Dynamic Positioning and Mobility Management in Wireless Networks."

**Alan Santos**, director of student services, has received the *Regents University System of Maryland Staff Award for Outstanding Service to Students in an Academic Environment*.

The award represents the highest honor bestowed for the achievements of staff employees from institutions within the University System

of Maryland. The award for Outstanding Service to Students in an Academic Environment honors those who consistently make a difference in the lives of students, although not a part of their job description, and contribute an original, innovative idea that was implemented and transformed an aspect of the "student experience."

Colleagues noted Santos' grace under pressure and his concern for students beyond their academic success. Current and former students pointed to his enthusiasm, positive attitude and friendliness. He was commended for making it easier for CEE students to study abroad.

Santos has been with the Department of Civil and Environmental Engineering for 16 years.

# Bring on the Acronyms!

*Staff Member Charity McGee is Glad to Be Here at CEE*

The first time you see or meet Charity McGee, you can't help but notice the big beautiful eyes and the warm smile. She is the type of person one is drawn to and you can't help but wonder if the Department of Civil and Environmental Engineering is a better place just because of her being there. Although, she is one to never, ever admit it.

Recently, she took time from her extremely busy schedule to let us know more about Charity McGee. And, by the end of this interview, our readers, no doubt, will be glad she's part of the Department of Civil and Environmental Engineering team. She makes one believe one can do anything

*Where are you from originally?*

I was born in Washington, D.C. But I've lived all over Prince George's County most of my life. I am the real meaning of an area local.

*Do you have a family?*

My husband and I have been married for 11 years. We met years ago working after-school jobs while in high school. In September of 2000 we were married and now we have two beautiful daughters. My husband's name is Braeden McGee. We also have a daughter, Briana, who is 10 years old, and Bonita, who is 19 years old.

*How did you decide to come to work at the university and more specifically at the Department of Civil and Environmental Engineering?*

I've always worked downtown Washington, D.C., and never thought about working at a university although I have worked at early learning centers in the past as a teachers aid. I just never thought about it. At the time my sister-in-law was working on campus at the Health Center and she encouraged me to apply on campus to work and so it began. I went to the Chesapeake Bldg. to apply and I think it was maybe a few days later after taking a typing test, I was called in for an interview with Lisa Schuetz and Stephanie Peters (Note: Lisa Schuetz is director of administrative services. Stephanie Peters is a business manager). After that interview it could've been a day later or so I received a phone call that I was hired and that began my journey here on campus.

*From what I understand this is your first time working in a university setting. What is your impression?*

This is my first time working at a university; however, I've had some experience in a school setting. I have to say that it took sometime getting use to all the acronyms used for forms, buildings, etc. It was my little struggle when I came here.

*What do you find most reward and most challenging about what you do?*

I'm an outgoing/people person so I guess that is the most rewarding part for me—the interaction everyday with different people and different cultures. I feel like I'm being helpful to others so if it's a purchase that they need processing – hey what can I do to help?

I may face challenges when I don't know something within my job; however, one thing about me is that I will ask to get the answer. It was recently commented to by a student that I'm like a private investigator. He had dilemma and I was pulling from all the resources until I got the answer I needed.

*Could you provide a brief description of you work responsibilities?*

My work responsibilities are to process travel, purchasing orders for the department and any procurement forms.

*How does working at the university with faculty and students compare with the other types of work you have done?*

I've worked since I was in high school apart of work study programs with NASA Goddard (Equal Opportunity office), fast food restaurants, and temp agencies which allowed me the opportunity to work at numerous places. With that being said I don't feel like working here with faculty and students is different from working anywhere else I've worked simply because I work hard, and I apply the same principles every place I've gone no how demanding that job may be. So, ultimately whom I'm working with doesn't matter.

*You must be quite good at what you do—from your resume I noticed that since joining the department and university*



*in 2007 as an administrative assistant you have moved up to an account clerk III in 2009.*

I feel honored by that because I was trying so hard to be a team player, work hard and be of good service to others. I like the getting the job done and with a smile. A lot of my background has been in administrative assistance; however, when the opportunity arose that I could move to an account clerk I was nervous by the challenge because math was never my strong suit. But my supervisor said that she had faith in me that I could accomplish the task at hand because of what she had seen of me as an admin assistant. I was encouraged and challenged and so I took it on. *Could you talk about your previous jobs briefly—what does IREX and Browdy & Neimark do?*

STAFF PROFILE (cont. on page 15)



#### FACULTY PROFILE (cont. from page 9)

Washington University (GWU) develops a program that prepares undergraduate engineering students for careers or graduate studies in the design of systems and devices employing biological nanotechnology. This goal is accomplished by infusing bio-nanotechnology into GWU's undergraduate engineering degree programs with new content, in the form of new courses and new laboratory experiments. With strong institutional support, faculty from the Mechanical and Aerospace Engineering, Electrical and Computer Engineering, and Civil and Environmental Engineering departments are collaborating to develop six new courses along with a set of 10 laboratory experiments to enhance existing courses. Mi developed a new undergraduate course on applications of nanotechnology in environmental engineering and their impacts on environmental sustainability. In addition, she enhanced an existing undergraduate hydraulics lab course by adding new experiments on micro and nanoscale behavior of fluids.

#### Getting to Know Assistant Professor Baoxia Mi Better

*Where are you from originally?*

My hometown is Zhengding, a small county in Hebei Province approximately 170 miles south of Beijing, China. This town has a long history of Buddhism and hosts the training base for the Chinese National Table Tennis Team.

*How and why did you become interested in environmental engineering? Do you remember when you discovered that you wanted to pursue this area?*

I began to learn about the field of environmental engineering when I selected the major during registration for the national college entrance examination. At that time, I thought this major was something to do with clean water, fresh air and green grass. Indeed, protecting the nature and environment is a noble profession and should have a very good job prospect as well.

*Why did you decide to pursue your Ph.D. in the U.S.?*

The decision was made from my own curiosity as well as considerations for my future career development. I wanted to see how the life in the U.S. is different from that in China, and I thought that a solid training on environmental research in the U.S. will prepare me very well for a future academic position.

*Could you briefly describe your area of research/expertise? What do you find most rewarding/challenging about your work?*

The subject of my research is membrane-based water separation. Simply speaking, the membrane acts like a sieve that allows water to pass through it while leaving behind unwanted substances. The immediate applications of membrane technology are desalination, drinking water purification, and wastewater reclamation. Other significant applications include renewable energy generation, biosensing, artificial organ development, and drug delivery. Currently my group is trying to understand the fundamental separation mechanisms and to fabricate novel materials for enhanced membrane performance.

Perhaps the most attractive reward is to see that our research will eventually pave the way for safer, sustainable membrane-based water treatment and reuse. Challenges we are facing now include how to make the membrane processes more energy-efficient and environmentally friendly, and how to more effectively remove emerging water contaminants (such as pharmaceuticals, endocrine disruptors, nanoparticles) that have posed a growing threat to public health.

*What do you hope to accomplish through your Membrane Innovation Lab at the university?*

My long-term goal is to make UMD a leader in research and education on next-generation membrane science and technology. To achieve this goal, I will involve students at different levels to carry out exciting research and will establish cross-disciplinary collaborations on campus.

*What is your impression of the department and the university?*

I find that people in the CEE department are all very friendly and helpful. The faculty members in the environmental program form a tight and supportive group. The university has many characterization equipment and facilities that are very important for my research.

Besides your research, how do you feel about teaching? What do you hope to accomplish in sharing your knowledge with students? How important do you feel that is to work with students, the next generation of engineers?

Being a university professor, I view teaching as one of the most rewarding experiences. In teaching, I make every effort to ensure that students develop a solid understanding of the theory as well as know how to apply the theory to real-world environmental problems. Also, I believe a good teacher should expose students not only to the textbook knowledge but also to the research frontier in order to stimulate students' interests in exploring the unknown world in their future professional careers. For this reason, I strive to integrate materials and outcomes of my research into teaching.

I am very interested in motivating undergraduates to conduct research. In my opinion, the best way to inspire undergraduate students to pursue graduate study is to actively involve them in ongoing research projects. I have been mentoring several undergraduate researchers over the past years and find it quite rewarding.

*Was anyone in your family involved with engineering, parents perhaps?*

My father works as a project manager at a local building construction firm in my hometown. Thanks to the many years of engineering experiences, he did a lot of repair and improvement jobs for my newly purchased house during a recent visit. My husband is a licensed structural engineer working in a local firm.

#### STAFF PROFILE (cont. from page 13)

IREX is an international nonprofit organization that provides leadership and innovative programs to promote positive lasting change globally. I met some very interesting and special people working there and helped at times administratively with programs such as *Edmund S. Muskie Graduate Fellowship Program* (brings emerging leaders in key professional fields from Eurasia to the United States for one to two years of graduate study at institutions across the United States). They have offices in Moscow, Turkmenistan, Kazakhstan, etc. So, I always feel like working there has helped me better deal with some of the language and international barriers I may come across within my job.

Browdy and Niemark is a patent and trademark law firm and I was an administrative/legal assistant when I worked there. It was demanding but interesting

working to help process paperwork to patent someone's maybe profitable idea.

*Currently it appears you are working towards a bachelor's degree in legal studies at UMUC.*

I am working toward finishing my degree; however, my area of study has taken a turn along the way to business.

*How did you become interested in this area of study?*

I was originally interested in legal studies after working at Browdy & Niemark in my early 20's, and I was intrigued by patent and trademark law.

*And what do you hope to do with your major? Also, when do anticipate graduating?*

I hope I graduate before my oldest daughter graduates as she has just started college.

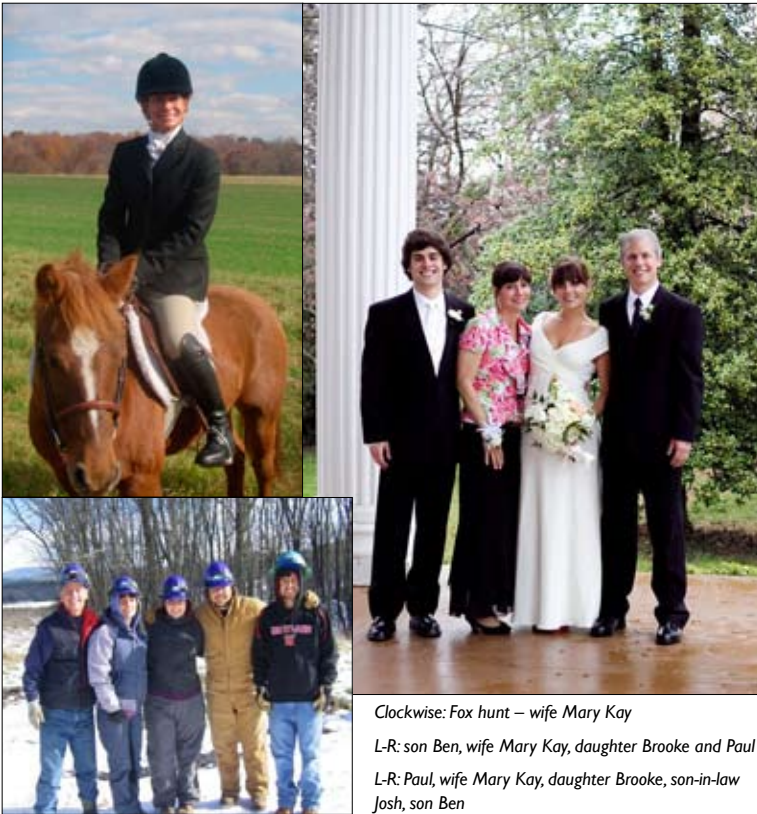
*And would you like to continue your education?*

I would like to continue my education but I would like to focus in an area that is worthwhile and rewarding not just for money but for inner-joy accomplishment.

*On your resume you are listed as an honor roll student; outstanding computer application student; and exemplary general office student. Where did these awards come from?*

These accomplishments are from high school and I'm very proud. I lost my way during my early years in high school and to be able to pick myself back up and become an honor student, gain computer skills, and valuable office skills through work study programs was very rewarding. I worked very hard. And, I am working very hard once again.





Clockwise: Fox hunt – wife Mary Kay  
 L-R: son Ben, wife Mary Kay, daughter Brooke and Paul  
 L-R: Paul, wife Mary Kay, daughter Brooke, son-in-law Josh, son Ben

Space Flight Center in Greenbelt, Md.; C2CNT East project at Aberdeen Proving Grounds, Md.; Howard Hughes Medical Institute (HHMI) research campus in Ashburn, Va.; and the HHMI headquarters expansion in Chevy Chase, Md.; among countless others.

The engineer continues to brave the great outdoors and the coming together of one to enhance the other. And the young boy that loved to visit the family farms, owns one of his own now. “We have dogs, horses, mini-donkey, and goats,” he says. “We especially enjoy riding horses. It’s something we do together as a family, and my wife Mary Kay is an accomplished rider and specializes in resolving behavior problems in horses through principles of natural horsemanship.”

Family is important to Burkart. Their 29-year-old daughter Brooke is a research associate and professor at UNC Wilmington, and 20-year-old son Ben is a junior at William and Mary College majoring in religious studies.

“Life is good, and I have made staying healthy my top priority,” says Burkart. “Playing disc golf and riding horses at age 90 could prove to be quite the challenge,” he chuckles. “I always have to keep looking ahead. I need that next challenge. It makes me who I am.”

Paul Burkart can be reached at [pburkart@geoconcepts-eng.com](mailto:pburkart@geoconcepts-eng.com).

#### STUDENT NEWS (cont. from page 6)

Graduate student **Kleoniki Vlachou** received the grant for the topic, “*Equitable Resource Allocation Mechanisms During Reduced Airspace Capacity*,” while **Prem Swaroop** will be researching “*Service Expectations Setting in Air Traffic Flow Management: A Consensus-Building Mechanism*.”

The \$10,000 grants are part of the 2011 Graduate Research Award Program on Public-Sector Aviation Issues. The award is administered by the Airport Cooperative Research Program of the Transportation Research Board/National Academies.

Vlachou is a fifth-year CEE Ph.D. student advised by Professor David Lovell (CEE/ISR). Swaroop is a fourth-year Robert H. Smith School of Business Ph.D. student advised by Professor Michael Ball (BMGT/ISR).

NEXTOR was created in 1996 as one of five FAA Centers of Excellence leading the aviation community in advancing new ideas and paradigms for aviation operations, educating and training aviation professionals, and promoting knowledge transfer among industry, government and academic leaders. Since NEXTOR’s inception in 1996, the Institute for Systems Research (ISR) has been the home for University of Maryland NEXTOR researchers and has actively supported the NEXTOR research program and its events.

The Clark School has established *Virtus: A Living-Learning Community for Success in Engineering*, which focuses on male engineering students. The initiative will promote community among first- and second-year engineering students and provide support for academic and professional success.

Participants in the program live together in Easton Hall and attend many of the same classes together. They take a one-credit seminar on career opportunities within the engineering field.

The program is modeled after Flexus: the Dr. Marilyn Berman Pollans *Women in Engineering Living and Learning Community* for female engineering students. Virtus is part of the Successful Engineering Education and Development Support (SEEDS) Program funded through the National Science Foundation.

Environmental engineering graduate student **Qiang Huang** has been awarded the American Chemical Society Agro Educational Award sponsored by Bayer CropScience to present his work entitled “*Raman Microscopic Analysis of PM<sub>10</sub> for Assessing Source Distributions from Agricultural Operations*” at the 2011 Fall ACS National meeting in Denver.

**Golnaz Khorsa**, a CEE graduate student, won second place in the 2011 Dean’s Masters Student Research Award Competition. Khorsa’s research is titled “*The Production and Fate of Fats, Oils, Grease from Small Dairy-based Food Service Establishments*.” Professors Allen Davis and Alba Torrents are her advisors.



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Bob Chen, Managing Director of PMI China, Dr. Pin-Chao Liao of Tsinghua University, GAC Chair John Cable. Photo courtesy of PMI.



Bob Chen, Dr. Changfeng Wang of Beijing University of Posts & Telecommunications, John Cable. Photo courtesy of PMI.

The Project Management Institute's (PMI) Global Accreditation Center (GAC) has rewarded two universities in China with accredited status of their degree programs. The universities with newly accredited project management degree programs are the Tsinghua University, School of Civil Engineering, Department of Construction Management; and Beijing University of Posts & Telecommunications, School of Economics and Management. Specifically, the following degree programs were accredited:

Tsinghua University, School of Civil Engineering, Department of Construction Management:

- Bachelor of Science in Construction Management (BSc-CM),
- Master of Science in Real Estate and Construction (MSc-RE&C),
- Master of Engineering in Project Management (MEng-PM),
- Doctor of Philosophy in Real Estate and Construction (PhD-RE&C),

Beijing University of Posts & Telecommunications, School of Economics and Management:  
Master of Engineering in Project Management (MEng-PM) Program

These two universities join Shanghai Jiao Tong to equal three universities in China that have PM programs accredited by the GAC. The awards were presented at the 2<sup>nd</sup> annual PMI China Congress in front of an audience of @ 1,300 attendees in Beijing on 16 September 2011.

According to John Cable, GAC chair, RA, PMP, director of the Project Management Center for Excellence at the University of Maryland, when making the awards, "The PMI Global Accreditation Center for Project Management education programs is a specialized accrediting body. Our mission is to advance excellence in project management education worldwide through collaboration with and support of academic institutions through accreditation of academic programs. We are committed to the attainment of and continuous improvement of excellence in project management education. The primary objective is to ensure that 'GAC

accredited' education programs prepare students to meet the current and anticipated needs of businesses, government, and non-profit organizations for qualified professionals in the field of project management."

"Credible institutions of higher learning seek to demonstrate the quality of their specialized academic programs by also having their programs accredited. You have achieved the high distinction of earning programmatic accreditation by meeting or exceeding a set of high international standards developed by global peers," he stated. "You have now joined distinguished institutions from Australia, China, France, Germany, Costa Rica, South Africa, Spain, Romania, Canada, United Kingdom, and the United States. You are now welcomed by the over 365,000 members of the PMI representing 180 countries as an institution with an accredited academic program. Congratulations on a well deserved distinction!"

The PMI GAC is a specialized accrediting body that assures the quality of project management degree programs at the graduate and undergraduate levels around the world. GAC is an independent accreditation body founded through PMI to create a global standard among project management educators and programs.

Cable also said that this was an exciting step towards expanding PMI's and the GAC's recognition in China, where the project management field is growing rapidly. According to PMI, there are now dozens of universities throughout the country teaching project management at the graduate and undergraduate levels.

Established by PMI in 2001, the PMI GAC accredits degree programs at the bachelors, masters and doctorate levels in the field of project management that are offered within accredited institutions of higher education worldwide. PMI is the world's largest project management member association, representing more than half a million practitioners in over 192 countries.