BUFFALOENGINEER

SPRING 2011

Barbara and Jack Davis Hall
Named for Generous Alumnus and Wife

Faculty

- Takeuchi (BME, CBE, EE): National Inventor's Hall of Fame
- Govindaraju (CSE): Named SUNY Distinguished Professor; Wins HP Labs Innovation Award
- Park (CBE): NSF CAREER Award
- Singla: Air Force Young Investigator

Students

- Dvora (CBE): AIChE Poster Award
- UB SEDS Wins National Chapter of the Year

Development

- Alumni Association Gift
- Scholarship Funds: Bringhurst-Levy, Lee, Shames

Alumni

- Tamara Brown Cited as STEM Mentor
- Erie-Niagara NYSSPE Recognizes UB Engineering Alums
- UBEAA: Basketball and Football Parties; Spirit Award

UB Leaders Promoted

Provost and CSE Professor Satish K. Tripathi Named UB President

Dean and CBE Professor Harvey G. Stenger Jr. Named UB Interim Provost

ISE Professor & Graduate Studies Associate Dean Rajan Batta Named Acting Dean

New Fellows

(L to R): Mitin (EE), Wetherhold (MAE), Lewis (MAE), Litchinitser (EE), Govindaraju (CSE)

School and Graduate Programs Ranked Highly

School of Engineering and Applied Sciences
University at Buffalo *The State University of New York*

Message from Harvey G. Stenger Jr.:

The recent weeks and months have been a dynamic time of momentum and positive change for the UB School of Engineering.

The School received the largest individual gift in its history, from Barbara and Jack Davis (BS IE '55), which will name the new engineering building in their honor – Barbara and Jack Davis Hall. We are grateful to the Davis's for this gift, which is an endorsement of the School's past successes, and a mandate to continue to meet new challenges and to grow with improved and changing technologies, allowing our research to remain competitive internationally. Please see the Development section for more about this and other generous gifts and scholarship funds honoring our esteemed alums and colleagues: **Victoria Bringhurst-Levy** (BS EE '77), **Yong Ho Lee** (BS AE '81), and SUNY Distinguished Teaching Professor Emeritus **Irving H. Shames**. We are especially proud of a gift from our Engineering Alumni Association, an expression of their support.

Several of our faculty members have proven central to the university's mission. With a unanimous appointment by the State University of New York board of trustees, UB Provost **Satish Tripathi**, CSE professor, has been approved as the 15th president of UB, a successor to President **John Simpson**. To fill the vacant position, I have been appointed interim provost and executive vice president for academic affairs, and I am pleased to announce that the School's acting dean is now **Rajan Batta**, ISE Professor. Also, **Alexander Cartwright** (with appointments in BME and EE), who had been UB's interim vice president for research, now assumes that position in a permanent status.

We are also pleased with this year's *US News & World Report* ranking of the School, at 52nd, by fellow academics, industrial colleagues, and a composite of objective measures. These universities ranked 52nd as well: Notre Dame, Michigan State, University of Massachusetts, and Pittsburgh. This ranking is a testament to our professors' high quality and hard work, and to our students' achievements and quality. Our departments also fared well with *US News* and with the National Research Council (for details, see the table in the Education section).

Please join me with your continued support, as we look forward to the exciting possibilities in the School's growth and change.

Sincerely,

Harvey Stenger

Harvey G. Stenger Jr.
University at Buffalo Provost and Executive Vice President for Academic Affairs (Interim)

Inside This Issue:

Abbreviations Used in the *Buffalo Engineer*

Departments

BME, Biomedical Engineering
CBE, Chemical and Biological Engineering
CSEE, Civil, Structural and Environmental Engineering
CSE, Computer Science and Engineering
EE, Electrical Engineering
ISE, Industrial and Systems Engineering
MAE, Mechanical and Aerospace Engineering

Degrees

AE, Aerospace Engineering
CE, Chemical Engineering
CIE, Civil Engineering
CompE, Computer Engineering
CS, Computer Science
EE, Electrical Engineering
EnvE, Environmental Engineering
ES, Engineering Science
IE, Industrial Engineering
ME, Mechanical Engineering

❋**denotes dues-paying Alumni Association members**

Departmental Research Highlights:

BME: Researchers Show Progress on X-Ray Imaging Improvements, p. 18
Techung Lee: Engineered Stem Cells Overcome Barrier to Regenerative Medicine, p. 19

CBE: Park's National Science Foundation CAREER Award Research, p. 21
Tsianou Researches Environmentally Friendly Alternatives in Dispersants, p. 20

CSE: Fu Analyzing User Traits with Google Award, p. 22
Srihari Calculates Fingerprint Rarity, p. 23
Zhang: Interdisciplinary Research Analyzes Protein Interaction Data, p. 19

CSEE: Rabideau and Seneca Instrumental in Development of Innovative Remediation Technology at Contaminated West Valley, N.Y. Site, p. 22
Snow in Sight, Sadek Targets Weather's Effect on Traffic, p. 21

EE: Oh Researches Droplet Manipulation, p. 23
Su: Cognitive Airborne Network Design Using Cooperative Communication Concepts, p. 24

ISE: ISE Part of Team on Knowledge Discovery and Dissemination Contract, p. 20

MAE: Singla: Air Force Office of Scientific Research (AFOSR) Young Investigator (YIP) Award for Information Collection and Fusion for Space Situational Awareness, p. 24

***On the cover:** Barbara Davis, then-Dean Harvey Stenger Jr., and alumnus Jack Davis, photo by Debra Steckler. Portraits of School of Engineering faculty by Doug Levere, with the exception of Vladimir Mitin.*

Barbara and Jack Davis Hall:
Generous Gift Names New Engineering Building

Barbara and UB Engineering alumnus Jack Davis (BS IE '55) have named the School's state-of-the-art new engineering building with a generous gift. Located on UB's Amherst Campus, Barbara and Jack Davis Hall is well under construction and will house the departments of Computer Science and Engineering and Electrical Engineering.

The Davis' gifts to the School are the largest donation to be made by individuals in the School's history.

The gift represents the Davis' commitment to education and job growth in the Western New York community. Davis credited UB for the inspiration to give back to public education, citing his own education at the School of Engineering as the foundation for his success. "I have greatly benefited from the opportunity UB gave me to become an engineer," Davis said.

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Barbara and Jack Davis Hall, future home of CSE and EE (architect's rendering by Perkins+Will)

UB Leaders Promoted

Satish K. Tripathi

Satish K. Tripathi was unanimously appointed UB's 15th president by the State University of New York board of trustees. President Tripathi is a professor of CSE who joined UB as provost and executive vice president for academic affairs in 2004.

Tripathi was selected from a range of competitive international candidates, with SUNY Chancellor Nancy L. Zimpher noting his excellence as a UB and community leader.

Continued on page 15

Harvey G. Stenger Jr.

Harvey G. Stenger Jr., dean of the School of Engineering for nearly five years, was named UB interim provost and executive vice president for academic affairs. As UB's chief academic officer, he is responsible for leading the development and implementation of the university's academic vision.

UB President **Satish K. Tripathi** noted Stenger's exemplary leadership of UB Engineering, which he

Continued on page 15

Rajan Batta

Rajan Batta, an ISE professor and associate dean for graduate studies, was appointed to the position of acting dean of the School of Engineering and Applied Sciences.

Since joining UB in 1984, Batta served nine years as ISE chair, after which he was ISE graduate studies director for two years. In 2006, he was named associate dean.

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Alumna Brown Honored by Two Organizations

Tamara E. Brown recognized for her dedicated service in introducing young women to engineering, math, science, and technology

UB Engineering alumna **Tamara E. Brown** (MEng CE '03) was recognized both by the American Association of University Women (AAUW) as an Outstanding AAUW leader, and as a Girl Scouts of Western New York Woman of Distinction, for her dedicated service in introducing young women to engineering, math, science, and technology, particularly through AAUW's annual Tech Savvy event. The award honors strength of character, dedicated community service, and commitment to mentoring and encouraging girls.

Brown earned her bachelors in 1993 from Vanderbilt University, where she was the first student to complete a double major in biomedical engineering and in chemical engineering.

Brown is a Praxair Project Controls Engineer where she is part of the company's Healthcare Applications Research & Development team, and is active in its Praxair Scientist and mentor programs.

Brown is a member of the Buffalo Club of the National Association of Negro Business and Professional Women's Clubs; a board member of the Girl Scout Council of Buffalo & Erie County, and a board member of Explore & More, a children's museum in East Aurora, NY. In 2005, she was elected president of the American Association of University Women's Buffalo branch.

Erie-Niagara PEs Award Alums

The Erie-Niagara Chapter of the New York State Society of Professional Engineers (NYSSPE) recognized several UB Engineering alums at their chapter's 2011 Awards Presentation Dinner event.

Engineer of the Year, James R. Walsh, PE, (BS CIE '81), Hatch Mott MacDonald Senior Vice President and a current NYSSPE Director

NYSSPE Engineering Educator of the Year: Mark Bajorek, PE, (BS EE '94), Systems & Engineering, P.C., Senior Structural Engineer

NYSSPE Citizen of the Year: ✻Jack Davis (BS IE '55), I Squared R founder and principal

NYSSPE Basinski-Wohler Distinguished Service Award: William Schutt, PE, (BS CIE '79), Wm. Schutt Associates President and CEO

UB Engineering alums currently holding NYSSPE offices are:

✻**Mark S. Adams** (BS ME '91), Second Vice President; **Joseph F. Kessler** (BS '93 MEng '00 EE), First Vice President; **Kevin M. Madoo** (BS ME '95), Secretary; **Edward M. Murphy** (BS '99 CE, ME '03 CIE), Director (2012); **Peter T. vom Scheidt** (BS '72 EE), Treasurer; **James R. Walsh** (BS CIE '81), Director (2011).

In Memoriam

UB Engineering offers its sincere sympathy to family, friends, and classmates of those alumni recently passed away.

William J. Arthur, BS ME '48
Kurt John Asdal, BS AE '97
Francis W. Beacham, BS IE '55
John Z. Colt, Sr., BS ME '49
Frederick J. Debus, BS ME '49
Harry R. Dickenson, MS ME '58
Raymond J. Dracker, BS Nuclear Eng '78
Lawrence A. Eusanio, BS '56 MS '61 ME
Joseph H. Fairfield, MS EngSci '64
William Federick, BS EE '72
Daniel L. Flanders, BS CIE '74
Theodore F. Fluchradt, BS EE '63
George E. Hamister, BS IE '48
Robert H. Hettrich, BS ME '59
Christopher J. Jarvis, BS Nuclear Eng '78

Edward H. Jocoy, MS EE '59, an enthusiastic supporter of UB, was with Calspan for 45 years. During his tenure there, he worked with former UB President Clifford Furnas for a brief period.

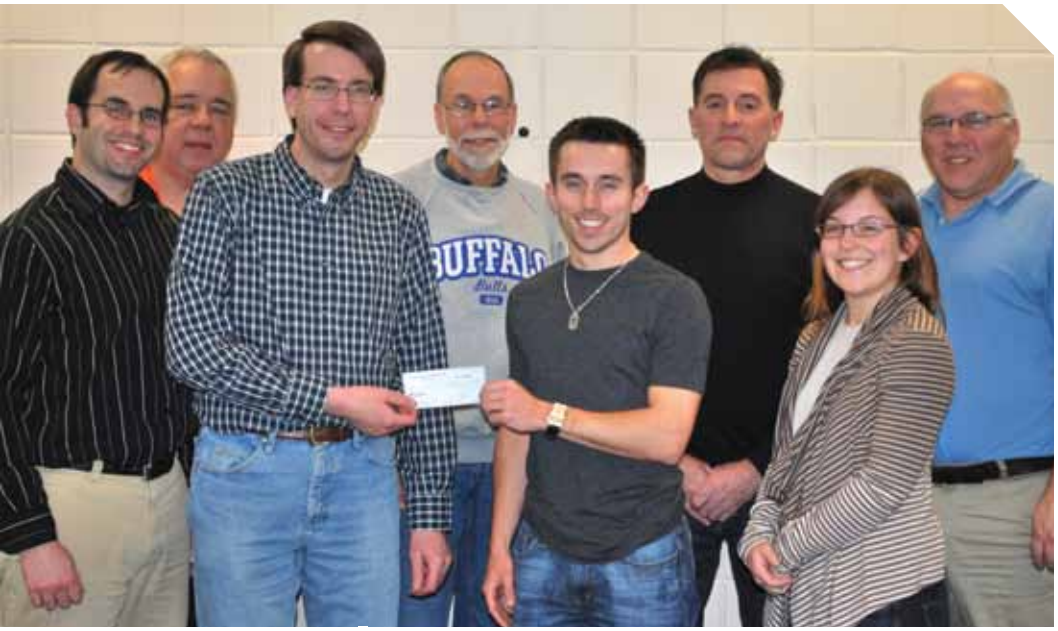
Clinton R. Johnson, BS EE '00
Michael K. Kilcoyne, BS EE '55
John F. Krylo, BS EE '50
Daniel J. Lampone, BS EE '51
Norbert G. Lange, BS ME '66
Robert L. Lockie, BS ME '48
Sudhir Mehta, MS ME '75
Gerard C. Miller, BS EE '53
Robert J. Miller, BS ME '52
Richard W. Priebe, BS ME '61
Carl J. Pritting, BS IE '50
Roy D. Saunders, BS ME '49
Neal G. Schmidt, BS CIE, '74
Addison M. Smith, MS CE '71
Justin F. Sucato Sr., BS ME '62
Norman J. Warren, BS IE '59
Richard R. Wiles, BS ME '50

Please see the Development section for an article about the UB Engineering Alumni Association's gift to the School.

24th Annual Engineers at UB Basketball and Spirit Award

At this year's Engineers at UB Basketball, the UB Engineering Alumni Association (UBEAA) members, their families, friends, students, faculty, and staff sustained the group's enthusiasm for attending and supporting UB sports. They purchased a block of 100 tickets to watch the UB Men's Bulls defeat the University of Wisconsin, Milwaukee in an ESPN Bracketbuster Game.

At the game, Tau Beta Pi's NY Nu chapter earned this year's Spirit Award, presented by UBEAA to the Engineering School club with the greatest presence at UBEAA's basketball event. In the photo, UBEAA Treasurer ✻**Steve Buechi** (BS '93, MEng '95 CIE) presents the check to TBP President **Brandon Tarney** (EE), who is standing next to TBP's Vice President of Internal Affairs **Claire Lochner** (EE). Also pictured, UBEAA board members (l to r): UBEAA Secretary ✻**Mike Dray** (BS CE '04); ✻**Jon Kolber** (BS '72, MS '74 CIE); ✻**Peter Buechi**, PE (BS '68, MS '70 CIE); Event Coordinator ✻**Rick Rink**, PE (BS CIE '80); and UBEAA Vice President ✻**Joe Frandina**, PE (BS CIE '78).



Brownlies at Bulls Game

Engineering alum Bill Brownlie, PhD, PE (BS '75 MS '76 CIE) and wife Debra enjoyed the tail-gate party and sported UB regalia at Bulls away game, Bulls vs. Baylor, in Waco, Texas. Bill, a regular, long-time donor to the School and a Delta Society member for the past few years, is Chief Engineer at Tetra Tech in Pasadena, Cal.

Hire UB Engineering Co-op and Intern Students

We encourage our alumni and industrial partners to consider employing UB Engineering students through our Co-operating Engineering Education Program.

Co-op students have completed their junior year, including coursework in their major, and many have business-success skill training through the Engineering Career Institute. They are prepared for challenging, value-added technical assignments.

Internships are also available.

Please consider employing one or more of these students.

For more information, contact:

Dean C. Millar, Assistant Dean
412 Bonner Hall, (716) 645-0971
University at Buffalo
dcmillar@buffalo.edu
www.eng-intern.buffalo.edu

Since the early 1990s, the **UB Engineering Alumni Association** has carried on a tradition of giving scholarships to deserving undergraduate students through the **UB Engineering Alumni Association Scholarship Fund.** Please consider continuing this tradition with your donations. Together, we can all work to promote UB Engineering's excellence.

Checks should be addressed to the **UB Foundation** with "School of Engineering & Applied Sciences" noted in the memo, and sent to:

External Affairs
UB Engineering Office
412 Bonner Hall
University at Buffalo
Buffalo, NY 14260-1900

UB Career Services: An Alumni Resource

- **Job hunting?** Get job search assistance and access to online postings and interviewing opportunities.
- **Seeking top candidates for your company?** To arrange on-campus interviews or showcase your organization, e-mail **jobs@buffalo.edu**.
- **Have advice for current college students?** Join the **Meet-a-Mentor** program.

Please visit: **www.ub-careers.buffalo.edu.** Career Services Office, 259 Capen Hall, North Campus, University at Buffalo (716) 645-2231

UB Engineering Alumni Association Hosts Its Largest Tailgate Ever

The UB Engineering Alumni Association (EAA) hosted its most well-attended tailgate event this fall, with 150 tickets sold and approximately 250 in attendance.

(L to R): EAA board member Rick Rink, P.E., (BS CIE '80) chaired the event and EAA Vice President Joe Frandina, P.E. (BS CIE '78) was head chef.

(L to R): EAA Treasurer Steve Buechi (BS CIE '93, MEng '95), EAA board member John Kociela, PE (BS CIE '68), who was in charge of tickets, and staff member Deanie Hedrick.

UB Engineering Alumni Association Board Members

The UB Engineering Alumni Association Board of Directors invites any UB Engineering alum who is a member of the alumni association to self-nominate to become an EAA Board member. Please send an email including a brief biographical sketch with your UB Engineering degree(s) and the year(s) of graduation, as well as employment information. The board meets quarterly. A board member's term of service is one year, and is renewable. Please address your request to ub-eaa@buffalo.edu.

Alumni Membership – One Amount Pays All

DID YOU KNOW? A member of the UB Engineering Alumni Association automatically joins the UB Alumni Association (UBAA)!

NOT A MEMBER? Join now to begin saving on events, online shopping, UB merchandise and much more. When you join the alumni association, you're making a statement that you're True Blue, you support UB and you want to make a difference. (And, you'll get all the benefits membership has to offer!) Show your pride and support an organization whose purpose is to provide support for you.

Find out more online at http://www.eng.buffalo.edu/alumni_membership.php or call UBAA at 1-800-284-5382.

THANK YOU MEMBERS

Thank you to all Engineering School alumni who have joined the UB Engineering Alumni Association and the UB Alumni Association. Your support allows us to program both alumni and student events and activities.

Wherever this symbol ✻ appears in *Buffalo Engineer*, a dues-paying alumni member has been named.

UB Engineering Alumni Association Board of Directors

Officers:

✻**James D. Boyle**, President (BS CIE '78)
✻**Joseph S. Frandina**, PE, Vice President (BS CIE '78)
✻**Stephen P. Buechi**, Treasurer (BS CIE '93, MEng '95)
✻**Michael J. Dray**, Secretary (BS CE '04)

Members:

✻**Michelle C. Barker** (BS CE '99, MS CIE '07)
✻**Peter Buechi**, PE (BS '68 MS '70 CIE)
✻**Jeffrey Dudek** (BS CIE '00)
✻**John T. Kociela**, PE (BS CIE '68)
✻**Anthony S. Markut** (BS IE '80)
✻**Brian J. Peer** (BS CE'05)
✻**Richard A. Rink**, PE (BS CIE '80)
✻**Howard Strauss**, PE, Emeritus and Founding Faculty Advisor (MS ME '54)
Bill Swensen, Emeritus Alumni Coordinator
✻**Robert E. Barnes**, Alumni Coordinator (MS '76, PhD '84 IE)

Scholar-Athlete Kourtney Brown Tops in Class and Court: Earns MAC Honors

Senior **Kourtney Brown** (CompE and EE), who earned a prestigious SUNY Chancellor Scholar-Athlete Award and a Daniel Acker Scholarship for academic achievement, has been named the Mid-American Conference (MAC) Player of the Year, the first player in UB's history to do so. Brown was also the conference's Defensive Player of the Year for a second straight season, and was on the All-MAC First Team. Of the School of Engineering, Brown said, "UB has one of the top programs in the U.S. Everyone is there to help you and make you the best engineer that you can be." For more about Brown, please see page 10 of the Buffalo Engineer Fall 2010 issue. For her stats, please visit buffalobulls.com.

NASA Flight Program Twice Accepts AIAA Flight Team

A team of UB Engineering students was selected for NASA's Reduced Gravity Education Flight Program for the second consecutive year, based on their proposal entitled, "Line of Sight Relative Attitude Determination for Two Satellites," which builds on their work of last year. Winning a spot in the program affords the team the opportunity to fly this summer at NASA's Johnson Space Center (Houston, Tex.).

The team's experiment will test a simple method for determining the relative attitude between two satellites by line of sight measurements between one another, and referencing a common third point. Two satellites will be equipped with sensors to "look at" the other and a common reference point. By communicating the measurements between one another, each satellite can determine the other's relative orientation. This can be determined independent of range, relying only on measurements and communication of the two satellites and no third party interference required.

This year's AIAA flight team members (asterisk denotes returning members from last year's team): Back row (l to r): Bradley Booth (ME), Ground Crew; John Sisti (AE),* Flight Crew; Justin Storms, Flight Crew (AE); Andrew Ring (AE), Flight Crew; Front row (l to r): Devpriyan Maniarasu (ME), Ground Crew; Dave Pohl (AE),* Captain/Flight Crew; John McGreevy (AE), Flight Crew; and Matthew McChesney (AE), Flight Crew. Not pictured: Tom Guile (Physics),* Ground Crew; and Sandra Czarnecki (AE),* Ground Crew.*

UB Students for the Exploration and Development of Space (SEDS)

UB's SEDS chapter was honored as chapter of the year by the national SEDS organization, an independent, student-run group whose mission is to promote space education and to inspire students to pursue engineering, science, and technology careers.

Dan Pastuf

Several UB students figure prominently in SEDS–USA, whose 2010–2011 directors include: **Dan Pastuf** (AE & ME) as chapter affairs head; **Dave Holewka** (AE & ME) as publications head. Business Administration major Christopher Ogden is finance head and public outreach head is Zach Liquorman (undeclared).

Dave Holewka

Another UB SEDS member, **Andrew Dianetti** (AE), won second place in SEDS-USA's YouTube contest. His video entry, which features iconic footage of President John F. Kennedy, astronaut John Glenn, and NASA launches, will be used to promote SEDS-USA and can be seen on YouTube.

Andrew Dianetti

CBE Student Hila Dvora Wins Poster Award

CBE's **Hila Dvora** received one of three AIChE Food, Pharmaceuticals, and Bioengineering Division Graduate Student Poster Awards at the annual conference in Salt Lake City, Utah. The poster, entitled "Strategies for Increasing Anthocyanin Production in *Escherichia coli* by improving UDP-Glucose Bioavailability," was presented in the Bioengineering poster session.

(L to R): Giving presentations were CBE student Eric Hao-Fan Peng, Eastman Chemical's Technology Fellow Jeff Siirola, and CBE student Gaurav Vajani

CBE's 13th Annual Graduate Research Symposium

This year's CBE Annual Graduate Symposium featured a keynote speech by prominent chemical engineer, Dr. Jeff Siirola, Technology Fellow at the Eastman Chemical Company (Tenn.). The event celebrated excellence in scholarship by showcasing doctoral student work, and was well-attended by UB students, faculty and administration, alumni, and Western New York region industry friends.

Siirola's lecture on Sustainability and Carbon Management in the Chemical and Energy Industries provided a comprehensive analysis on the topic, and was well-received by the audience.

A new component of the event featured two senior CBE PhD student seminars. **Eric Hao-Fan Peng** presented "Engineering Arterial Substitute from Hair Follicle Stem Cells and Small Intestine Submucosa," and **Gaurav Vajani** spoke on "Deactivation of Gold-Ferrochrome Very Low Temperature Water-Gas Shift Catalyst." The top posters selected were **Ankitkumar Fajalia** (for "Competitive Interactions in Surfactant Solutions: A Neutron Scattering Investigation," with CBE Assistant Professor **Marina Tsianou**); **Young Jin Kim** (for "AgxVOPO4: a demonstration of the dependence of battery-related electrochemical properties of silver vanadium phosphorous oxides on Ag/V ratios," with CBE's SUNY Distinguished and Greatbatch Professor **Esther Takeuchi**); and **Kok Hong Lim** (for "Engineering High-Affinity Monomeric Streptavidin," with CBE Assistant Professor **Sheldon Park**).

UB Society of Women Engineers (SWE) Students Organize SWE Shadow Day

Dean Harvey Stenger speaking with high school students on well-attended SWE Shadow Day

Dean **Harvey Stenger** and EE Assistant Professor ✻**Jennifer Zirnheld** spoke to local high school students participating in SWE's Shadow Day, a well-attended event to encourage high school students to pursue engineering and science study. The day highlighted opportunities at UB by allowing students to attend classes, speak with students and administrators about college life, and tour the campus, including the Structural Engineering and Earthquake Simulation Laboratory.

Involved in organizing the event were **Bich Vu**, SWE President (CompE); **Kalli Haverkamp**, SWE Vice President (AE); **Jamie Wasielewski**, SWE Treasurer (ME); **EmilyClark**, SWE Secretary (IE); **Lauren Stutzman,** SWE Webmaster (CE); and SWE members: **Jaclyn Bronner** (CIE); **Michele Ford** (BME); **Kayla Kisenwether** (ME); **Courtney Kodweis** (BME); **Michelle Mekker** (CIE); **Julia Morrissey** (Eng); and **Laura Ziegler** (ME).

Fall 2010 Undergraduate Research Award Winners

Congratulations to UB Engineering students who won research awards from The Center for Undergraduate Research and Creative Activities, and to EE Assistant Professor **Jennifer Zirnheld** (BS '93 MS '97 PhD '04 EE), who mentored them:

- **Derek Brim**, for "Characterization of Batteries and Energy Storage Devices"
- **Antonio Upia**, for "Rechargeable Electrochemical Energy Storage Devices"
- **Michael Sparks**, for "Analysis of the Current State of Battery Technology"

EE Graduate Student Association Helps Fire Victims

The EE Graduate Student Association (GSA) actively raised funds for the eight international students affected by a Merrimac Avenue house fire this past winter, some of whom study in the CSE and EE departments. The house was destroyed, leaving the students without personal belongings, including clothing, identification, and valuables.

The EE GSA received an overwhelming response from departments, local organizations, students, faculty, and staff. The monetary transactions were monitored through Graduate Student Association and Sub-Board I. The EE GSA also set out to educate other students about renter's insurance.

CSE Students Create for Positive Change

Students in CSE Teaching Assistant Professor **Michael F. Buckley**'s classes have developed software enabling veterans with limited mobility to communicate. Buckley, co-director of UB's Center for Socially Relevant Computing, asks his students to think about technology design that contributes to solving real-world problems.

Recently one team of CSE students, **Austin Miller**, **Robert Rodenhaus** (BS CS '10), **Leonard Story Jr.** (BS CS '10), and **Matthew Taylor** (BS CompE '10), developed OmniSwitch, which allows a user to control a computer with a single switch that plugs into a USB port.

Sample OmniSwitch Screen

They are working with Applied Sciences Group (Buffalo, N.Y.) to develop the software for disabled veterans in the Spinal Cord Injury program at James A. Haley Veterans Hospital (Tampa, Fla). The team formed EclectiSystems Inc. to distribute OmniSwitch.

A second team – CS master's students, **Ari Fogel** and **Praneeta Prakash** – is working with ASG to develop a speech-generating software system to enable non-verbal veterans to communicate. The UB Center for Advanced Biomedical and Bioengineering Technology (UB CAT), funded by the New York State Foundation for Science, Technology and Innovation, is helping ASG fund Fogel and Prakash's work.

Austin Miller

Robert Rodenhaus

Leonard Story Jr.

Matthew Taylor

(L to R): Coles with some of the children from the New Life Orphanage in Port-au-Prince, Haiti; and helping repair a building damaged by the earthquake.

ISE Student Coles in Haiti

As an undergraduate, **John Coles** (BS IE '09) was an Honors Scholar. His several awards included the State University of New York (SUNY) Chancellor's Award, the highest award given to students in the SUNY system.

Coles just completed his master's degree in IE from Texas A & M, and has returned to the ISE department to pursue doctoral studies, supported by a National Science Foundation graduate fellowship.

Following the earthquake of 2010, Coles went to Port-au-Prince, Haiti where he worked as a Research Assistant on Interagency Partnerships, through an NSF Rapid Response Research grant entitled, "RAPID: Collaborative Research: Identification of Key Dynamics for Optimal Distribution and Sustainable Partnership in Haitian Disaster Recovery," to collect perishable data from the disaster. He worked with his then-advisor, Texas A&M Assistant Professor **Justin Yates** (IE PhD '08), and ISE Assistant Professor **Jun Zhuang**. Zhuang and Yates were co-PIs on the NSF award.

While there, Coles also did logistics for New Life Orphanage, home to 75 children in Port-au-Prince.

Alpha Pi Mu, the industrial engineering honor society, inducted new members. From left to right: back row: Stephen Weigold, Héctor Ortiz-Peña, Gregory Tauer, Nicolette McGeorge, Oyinkansola Akintan, Nevin Mutlu, Jonathan Sinkin, Sabrina Casucci, Uduak Offiong, Xinhui Zhu, Dapeng Cao, Mayank Kushwaha; front row, officers: Dave Myers, Treasurer; Noah Bednowitz, Secretary; Michael Moskal, President; Frank Mufalli, Vice President

Order of the Engineer at 2011 Engineers Week

A central feature of Engineers Week was the Order of the Engineer ceremony, at which graduating seniors are welcomed into the engineering community with an oath of professionalism. Inductees are pictured here, and listed by discipline.

Please see the last page for more photos of Engineers Week.

AE: ***Kevin Yam, Asif Yeahia***

AE and ME: ***Gennady V. Agapov, Michael J. Allen, Brian N. Berg, Ryan P. Bonetto, Nicholas E. Day, Greg A. Fishman, Kevin Ho, Daniel M. Pastuf, Vinisha K. Patel, Nicholas A. Sinno***

CE: ***Ryan R. Barton, Michelle L. D'Lima, Andrew J. Mowbray, Anthony C. Rizvi***

CIE: ***Joseph P. Albert, Sevket Aslan, Fatma D. Ates, Sumeyra Aydin, Sungur Bahat, John G. Bauman, Begum Baysun, Bahadir Beyazoglu, Inci Bozokluoglu, Justin C. Carroll, Davut Celik, Raphael Cervantes, Mehmet H. Debooglu, Hilal Demircapa, Nedim Diker, Berk Dogan, Kyle A. Duck, Halil Dursunoglu, Yigitali Ercan, Emre Ersun, Kathleen E. Gajewski, Mehmet G. Gedik, Jonathan P. Gerlach, Eray Gonul, Eva D. Greenfield, Kortney R. Hartz, Joseph R. Jenkins, Erdem Kaftanoglu, Onur Kaya, Cihan Kocer, Joseph A. Lauri, Winnie Lei, Bryan C. Mahoney, Berk Ogunc, Burak Ozgul, Luke W. Scannell, Michelle M. Siuta, Benjamin J. Sporn, Joanne M. White, Wern Pheng Yam, Mustafa G. Yavas, Orhan Yerli, Hakan Yerlikaya, Kivanc Yoruk, Mert Zenginyurek***

CS: ***Jason A. Bussard, Austin R. Miller, Jesus Sanchez, Solmon Song***

EE: ***Sergio M. Bana, Patrick R. Bishop, Yen Jen Chen, Hon Fu Chong, Jared R. Evers, Brendan G. Farrell, Miguel A. Gadea, Matthew K. Hardenbergh, Timothy B. Hughes, Erin M. Jacklin, Bradley M. Kittrell, Yang Li, Shiya Luo, Ryan J. Manzella, Lawrence McDuffie, Ayesha Merchant, Matthew D. Miller, Anthony W. Ong, Barry L. Smith, Anthony D. Stang, Michael A. Sylvester, Brandon J. Tarney, Darren J. Tolsma, Antonio Upia, Jun Wang, David B. Willig, Sergey Yagunov***

EnvE: ***Sinem Aksit, Ekin B. Bayrak, Jonathan T. Geldard, Kaitlin George, Dylan M. Hofsiss, Carol J. Sawyer, Deniz Sener, Stephanie R. Szymanski***

IE: ***Helen E. Moore, Uduak U. Offiong***

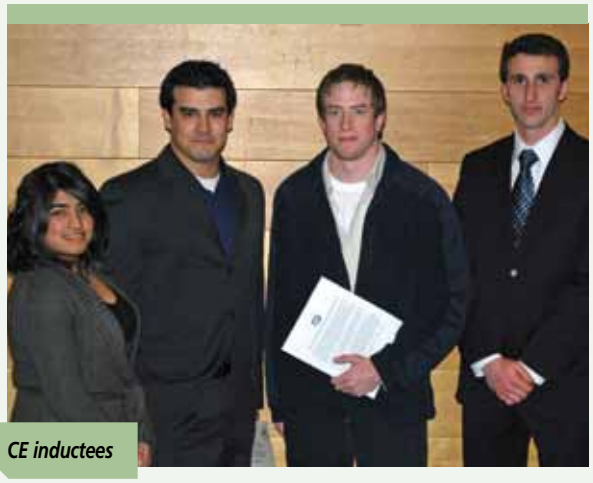
ME: ***Majeed M. Abdul, Jessica J. Allen, Michael A. Brognara-Schiavone, Peter F. Goergen, Jothi Jhen Hao Gunabalan, David P. Irving, Ankitkumar A. Kamani, Ryan J. Lee, Richard M. Lipczynski, Bilal Mohideen, Joshua M. Moss, Sameer H. Parikh, Richard J. Redding, David W. Rossi, Nicholas A. Stanley, Joseph V. Vaglio, Aalisha Abdul Wahab, Lee D. Zirk***

AE inductees

EE inductees

EE inductees

EnvE inductees



CE inductees

CSE inductees

IE inductees

CIE inductees

CIE inductees

CIE inductees

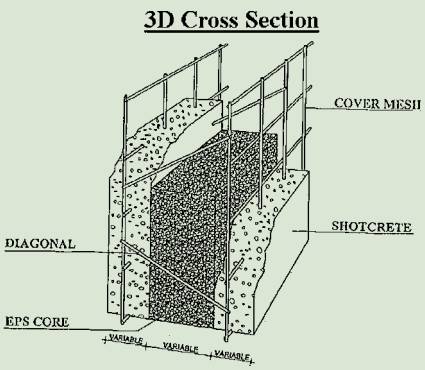
ME inductees

Fulbright Scholar, CIE Student Mashal: Proofing with 3-D Panels

CIE master's student and Fulbright Scholar **Mustafa Mashal** is adapting construction technology learned on the job in Afghanistan, a highly seismic region, for his master's thesis in earthquake engineering. Before joining CIE in 2009, Mashal designed and constructed military bases in the region for a contractor of the U.S. Army Corps of Engineers.

For a class assignment to retrofit a building to better withstand quakes, Mashal's team applied a method learned from his work experience: 3-D panels – a prefabricated, quick, and cost-efficient building technology. The panels are strong, but lightweight, capable of withstanding seismic forces, hurricane-force winds, and blasts. They consist of layers – concrete, mesh, and a polystyrene core, with diagonal connectors through the polystyrene core. Although used extensively overseas, the panels are not well-known in the U.S., and most building codes here don't cover them.

For Mashal's thesis, he is developing computational models to assess the panels' behavior in buildings of one to ten stories. He suggested that "if buildings in New Orleans had had these panels during Hurricane Katrina, there would have been very little damage, as 3-D panel walls can easily resist up to 225 mph wind speed."



Tau Beta Pi NY Nu: Chapter Induction Ceremony and Honors Employment Dinner

Tau Beta Pi's NY Nu chapter recently held its honors employment dinner and induction ceremony. Joint gold sponsors of the event were Cobham Mission Systems Division, Orchard Park, NY and Moog, Inc.

(L to R): Brandon Tarney, Moog Staffing Specialist Katie Gracie, Gregory Maloney

Undergraduate TBP inductees (l to r): Erin Jacklin (EE), Daniel Loscalzo (CIE), Colin Lea (ME), and Syed Muazzam Azam (EE). Not pictured: Stephen Arlington (ME), Alex Byrley (EE), Michael D'Angelo (EE), Carl Hempel (CIE), Eben Piazza (CIE and Bus. Adm.), and Clayton Shisler (EE).

(L to R): TBP NY Nu Chief Advisor, Senior Associate Dean Robert Barnes (MS '76 PhD '84 IE) with NY Nu current officers: External Affairs Vice President, Gregory Maloney; President, Brandon Tarney; Internal Affairs Vice President, Claire Lochner; and past president Chris Llop (BS EE '09). Officers not pictured are: Corresponding Secretary, Brian Dolan; Recording Secretary, Ryan Barton; Webmaster, Dan Snitzer.

Graduate TBP inductees (l to r): Amrish Karupponnnan Asokon (EE), Rajagopal Panchapakesan (EE), Gayatri Venugopal (EE), Matthias Schmid (AE), John Genereux (ME), Clement Vijayakumar (EE), and Priyanshu Agarwal (ME). Not pictured: Ankur Bhargava (ME).

New Presidential Scholars/ Doctoral Program: Full Funding for Top Engineering Students

The School of Engineering and the UB Honors College have launched the Presidential Scholarship/Doctoral Fellowship program to provide full, guaranteed scholarships for qualified UB Engineering students from freshman year through completion of their doctoral degrees.

Starting fall 2011, the top ten Presidential Scholars graduating with a bachelor's degree from UB Engineering and committed to attaining a PhD degree will be granted automatic admission to graduate school at UB Engineering.

For details about the program, please contact Undergraduate Education Associate Dean, CSEE Professor John Van Benschoten: jev@buffalo.edu.

Darmstadt Technical University's Professor Winner Lectures

Professor Hermann Winner (right) of Darmstadt Technical University (DTU), Germany, gave a presentation about the Automotive Engineering Summer Program, a new student exchange program now available to UB Engineering students. Dean Stenger is on the left.

EngiNet™ Offerings

EngiNet™ is principally a graduate-level distance learning program. We offer courses year-round in the following areas:

- Civil, Structural and Environmental Engineering
- Computer Science and Engineering
- Electrical Engineering
- Engineering and Applied Sciences
- Industrial and Systems Engineering
- Mechanical and Aerospace Engineering

See our website **www.eng.buffalo.edu/EngiNet** for class lists and more program information. For additional information, contact the EngiNet™ Office at (716) 645-0956 or enginet@eng.buffalo.edu.

Quisqueya University-UB/MCEER Partnership: Helping Haitians Rebuild

A profile of MCEER's ongoing partnership with Quisqueya University (UniQ) (Port-au-Prince, Haiti) was recently aired on National Public Radio's Morning Edition, as part of its "Haiti a Year Later" series. The partnership program uses an MCEER-organized team to teach engineers and architects in Haiti how to incorporate seismic design into their work through a seminar series, led by CIE Professor, MCEER Director **Andre Filiatrault**. Also teaching in the seminars is CIE PhD candidate **Pierre Fouché**, who, with Filiatrault, was interviewed as part of the radio program.

The UniQ-UB/MCEER partnership offers academic credit for attendees, according to Sofia Tangalos, MCEER Education and Outreach officer, and MCEER Director of Education Programs in Haiti. MCEER is working with UniQ to develop a professional master's degree in earthquake engineering. UB's Office of International Education was instrumental in establishing the partnership.

(L to R): Pierre Fouché; Sofia Tangalos; Jean-Richard Elie-Pierre, a seminar participant and owner of a Haitian architectural firm; and André Filiatrault. Elie-Pierre displays a teaching tool that demonstrates how buildings of different heights have different natural frequencies. Photo: MCEER

CSE's Ramamurthy: PI in NSF Cloud Computing Tool to Teach Evolution

CSE Research Associate Professor **Bina Ramamurthy** is principal investigator on Pop! World, an innovative, educational computing platform programmed in Adobe Flash. The team, of Ramamurthy, with Biology Assistant Professors Jessica Poulin and Katharina Dittmar, developed Pop! World with a National Science Foundation grant, entitled, "A Cloud-enabled Evolutionary Genetics Learning Tool for Engaging the Cyber-savvy Generation."

The tool uses cloud computing to run demanding programs on remote servers, allowing many users to be served regardless of physical location, without sacrificing speed or quality of service.

(L to R): CSE's Ramamurthy, with Biology's Poulin and Dittmar

Pop! World renders the subject of evolution more accessible to freshmen, allowing complex concepts of population genetics to be gleaned via visually appealing content. The UB team is also adapting the subject for secondary school biology students.

Using streamlined resources, the program conveys a sense of watching evolution occur with more captivating visual appeal than the old-fashioned line graph. A preliminary version of Pop! World can be accessed at: http://popworld15.appspot.com/.

CSE graduate school alums **Hongsik Kim**, **Jungeun Lee**, and **Byunghun Jang** assisted with the project.

Summer Enhancement: Course Offerings

The School of Engineering is pleased to offer a comprehensive set of summer school course offerings for undergraduates and graduate students. UB Engineering students and matriculated students from other schools are welcome to enroll, as are incoming freshmen and transfer students. For more information, please visit http://ubthissummer.buffalo.edu/. Please note: there must be sufficient enrollment for a course to be offered.

EAS 140 Returns, Still Focusing on Renewable Energy

Since last year's pilot launch of EAS 140 – Principles of Engineering, themed around alternative energy, the course was offered again, featuring a slightly updated structure. This past semester about 450 students participated. Co-taught by CBE Professor and UB Director of University Accreditation **Michael Ryan**, CSEE Professor and Associate Dean of Engineering Undergraduate Education **John Van Benschoten**, EE Assistant Professor and Energy Systems Institute Director ✻**Jennifer Zirnheld** (BS '93 MS '97 PhD '04 EE), and SEAS Director of Special Student Programs **William G. Wild Jr.** (BS IE '83, MA English '85, MS IE '87). Forty-five students also helped to lead the class.

EAS 140 offers many expert guest participants who visit to lecture, including SEAS faculty, University Facilities engineers and those in the local professional community. The course culminated in a presentation of hand-made turbine projects of the students' own design. These were presented to a professional panel for review. Here, the team of **Rosemary Evans** (CIE), **Matthew Schmucker** (AE), **Frank Fonseca** (ME), and **Annalise Polvino** (CBE) display their turbine, which was one of many to earn a winning turbine design award from the panel.

Rankings and Assessments

UB Engineering departments fared well in the most recent *US News & World Report* rankings, and in the National Research Council's (NRC) assessment of U.S. doctoral programs.

The School ranked 52nd in the *US News & World Report* rankings, tied with these universities: Notre Dame, Michigan State, University of Massachusetts, and Pittsburgh. President Satish K. Tripathi noted the university's international prominence, and stated, "We are proud that UB's graduate schools and programs continue to rise in the ranks of nationally lauded programs." Tripathi credited faculty, staff, students, and alums for contributing to and promoting these successes.

***US NEWS* & NRC ASSESSMENTS**		
Department	***US News* Ranking**	**NRC Outstanding Characteristics**
Chemical and Biological	41st	Placed in the top 10 nationally in several key research measures. In publications per faculty and awards per faculty, ranked 8th and 9th, respectively, of 106 measured programs
Civil, Structural and Environmental	27th	Ranked in the top 20 of 130 U.S. programs, based on the overall NRC R Ranking measure.
Computer Science and Engineering	Not part of this poll	Ranked seventh of 42 UB programs ranked by NRC. Ranked 4th and 5th, respectively, in students with teaching assistantships and student support & outcomes, of 128 measured programs.
Electrical Engineering	75th	Based on the mid-point of the NRC R ranking range, ranked better than most of our peer public institutions in the northeast U.S.
Industrial and Systems	26th	First in the U.S., based solely on student outcomes and student resources. (Student outcomes: support and employment opportunities for students. Student resources: professional development opportunities for students.) Seventh of 72 U.S. PhD programs in industrial engineering, operations research, and management programs, when overall quality and research productivity are considered very important, and student outcomes, student measures, and diversity are considered extremely important.
Mechanical and Aerospace	67th	ME: In the top 50 in overall rankings, including rankings in the 30s for the NRC R weighting system. AE: Ranked between 15th and 20th in all of the overall NRC ranking categories.

The School of Engineering extends condolences to the family and friends of our colleagues.

Genevieve J. (Gluszczak) Golombek, a former secretary to Dean George C. Lee, recently passed away. Known for her quiet and efficient demeanor, she will be missed.

Eleanor F. Greatbatch, wife of Wilson Greatbatch (MS EE '57, Hon ScD '84) since 1945, has passed away. Known for her humor, strength, and resourcefulness, she worked as a library aide in the Clarence schools for 31 years. Eleanor, with Wilson, was a great philanthropist to the Western New York region.

UB Engineering mourns the passing of retired CBE Clifford Furnas Eminent Professor **Vladimir Hlavacek**, who passed away after a short illness. Born and raised in Prague, Czech Republic, Hlavacek earned three doctorate degrees in science and engineering and taught briefly there, before emigrating to the U.S. and settling in Buffalo in 1981 as a professor. While at UB, Hlavacek taught courses in air reactor engineering, green engineering, and in computer-aided design of chemical operations. His research focused on solid-fuel combustion processes, and he was published in numerous international journals. Hlavacek also worked on several projects for the U.S. Navy. His distinctions include: AIChE Fellow designation; AIChE's Wilhem Award; two Fulbright Fellowships; and the Alexander Von Humboldt Research Award. He was also an avid fisherman and enjoyed travelling.

Dr. Shames (left) receiving the 1995 Engineer of the Year Award from UB Engineering Alumni Association Committee Chair Craig M. Forget (BS '92 MS '96 CIE).

The School of Engineering warmly remembers SUNY Distinguished Teaching Professor Emeritus **Irving H. Shames**, whose brilliance inspired many and lives on in those he educated, and through the many books he published, which, collectively, have sold well over half a million copies. Shames' distinguished lifelong career was marked by continuous achievement, prodigious publication output, and numerous awards, including the SUNY Chancellor's Award for Teaching Excellence and the UB Engineering Alumni Association's Engineer of the Year Award, given for career-long contributions to engineering. The School has commemorated Shames with an online memorial, and with the SUNY Distinguished Teaching Professor Irving H. Shames Memorial Scholarship Fund. To learn more please visit the Development section.

UB Leaders Promoted...

Continued from page 3

Satish K. Tripathi

From 1997–2004, Tripathi was dean of the Bourns College of Engineering at the University of California, Riverside. He was a University of Maryland CSE professor for the previous 19 years, seven of which he served as chair. His accomplishments at UB have contributed to placing UB in league with top national research universities, significantly expanding UB's international presence, and improving UB's student quality, quality of life, and educational experience. President Tripathi will continue the oversight of UB's ambitious comprehensive physical plan, which includes the building of John Kapoor Hall, Barbara and Jack Davis Hall, and William R. Greiner Hall.

Harvey G. Stenger Jr.

transformed through his commitment to innovation and academic excellence, and his great successes in forging partnerships inside and outside the university.

Stenger's major accomplishments as dean include collaborating to launch the new BME department with School of Medicine and Biomedical Sciences Dean Michael Cain, and overseeing the building of Barbara and Jack Davis Hall, from planning and conception to funding, construction, and naming of the building and its spaces. As dean, he helped make many strong faculty hires, improved engineering student diversity and quality, improved research lab quality, and applied a spirit of dynamism and innovation across the school's many enterprises. Under his leadership, a redesigned freshman-year engineering curriculum was created, and many generous philanthropic gifts to the School were garnered, including the largest in its history, from Barbara and Jack Davis (see story on page 3). In 2008, Stenger oversaw the completion of the ABET accreditation process for the School's eight programs.

Before joining UB in 2006, Stenger was dean of Lehigh University's College of Engineering and Applied Science. An accomplished CBE professor and researcher, his work focuses on reacting heterogeneous systems, including work in natural products processing, semiconductor materials manufacturing, emission control processes and synthetic fuels research.

Rajan Batta

Interim Provost Stenger cited Batta's leadership strengths and expressed his confidence that Batta "will maintain the momentum of the school and look for ways to accelerate its advancement."

A fellow of the Institute of Industrial Engineers (IIE), Batta's many awards include the IIE's David F. Baker Distinguished Research Award, the institute's highest research award; a SUNY Research Foundation Award for Research and Scholarship, the Research Foundation's highest award; a SUNY Chancellor's Award for Excellence in Teaching; a Best Paper Award from the journal *Military Operations Research*; and a UB Sustained Achievement Award. Batta's research areas range from transportation planning and analysis of urban crime patterns to military logistics, telecommunications, and homeland defense.

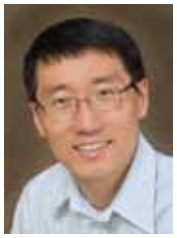
Faculty Win Major Recognitions

CSE Professor Venugopal Govindaraju:

State University of New York (SUNY) Distinguished Professor

The SUNY Board of Trustees have appointed CSE Professor Venugopal Govindaraju as a SUNY Distinguished Professor, the highest faculty rank in the SUNY system, which honors individuals of national or international prominence in their fields. Govindaraju is founding director of UB's Center for Unified Biometrics and Sensors (CUBS), and associate director of the Center for Document Analysis and Recognition (CEDAR). Govindaraju, a computer scientist specializing in pattern recognition, was a key contributor to research in machine recognition and understanding of handwriting central to the first handwritten address interpretation system used by the U.S. Postal Service. He was also a principal in technology transfer to Lockheed Martin and Siemens Corporation, for the system's deployment by the U.S. Postal Service, Australia Post, and UK Royal Mail.

CBE Assistant Professor Sheldon Park:



National Science Foundation CAREER award

Park earned the CAREER Award for his project entitled, "Yeast-based disulfide trapping for engineering selective inhibitors of a protein kinase." His protein engineering research uses modeling and experiment to characterize and design novel proteins and protein interactions for biotechnology and medical applications. The proposed study will have broad implications in the development of future molecular therapeutics and probes, by significantly reducing the complexity involved in engineering targeted interactions.

MAE Assistant Professor Puneet Singla:

Air Force Office of Scientific Research (AFOSR) Young Investigator Program (YIP) Research Award

Singla's research project, "to investigate information collection and fusion for space situational awareness," focuses on information collection and fusion, taking into account the uncertainties in mathematical models to support space situational awareness.

(For more about the research associated with Park's CAREER award and with Singla's AFOSR YIP award, see the Research section.)

UB Distinguished CBE Professor Paschalis Alexandridis:

2010 Jacob F. Schoellkopf Award, American Chemical Society Western New York Section

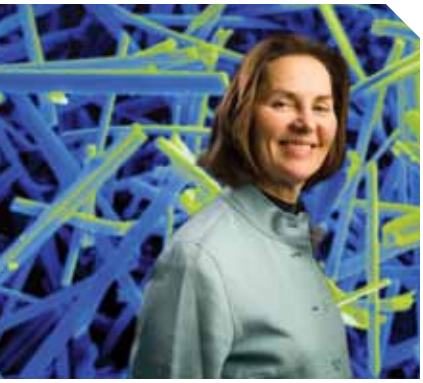
The annual Schoellkopf Award recognizes an individual in the Niagara Frontier whose work and service in the fields of chemistry or chemical engineering are outstanding. Alexandridis, also CBE graduate studies director, earned the award for his fundamental discoveries on block copolymer thermodynamics, structure and dynamics, and was cited for his development of functional products utilizing self-assembly methodologies. His work has a broad range of potential applications in the fields of health care, energy, and the environment, including uses in pharmaceuticals, coatings, inks and thermoplastic elastomers.

Cartwright Permanently Appointed

Alexander Cartwright (with appointments in BME and EE) was officially appointed vice president for research (VPR) after serving in an interim capacity since summer 2010. He has also been appointed acting executive director of UB's New York State Center of Excellence in Bioinformatics and Life Sciences.

Since joining UB in 1995, Cartwright has led a distinguished career, earning recognitions for his work as researcher, teacher, and administrator. As UB's vice provost for strategic initiatives from 2007–09, Cartwright contributed to building UB's research infrastructure and to fostering university-wide collaborations. Most recently he was chair of EE and chair of BME. His goals as VPR include significantly increasing faculty productivity and funding, with longer term goals of advancing reputation of both the university and its exceptional faculty, improving rankings, and increasing research expenditures.

Greatbatch Professor Takeuchi Inducted Into National Inventors Hall of Fame



National Academy of Engineering member, SUNY Distinguished Professor and Greatbatch Professor of Advanced Power Sources **Esther Takeuchi** (with appointments in BME, CBE, EE, and Chemistry) has been inducted into the National Inventors Hall of Fame, which recognizes inventors whose innovations have changed the world.

Takeuchi can count at least 148 patents to her name, most related to her pioneering development of sophisticated power sources for implantable devices. Implantable cardiac defibrillators (ICDs) are the leading therapy for treating serious cardiac arrhythmia, with more than 300,000 lifesaving devices implanted per year.

President Obama presented Takeuchi with the National Medal of Technology and Innovation in 2009, recognizing Takeuchi's lifesaving development of the battery that powers ICDs, the leading therapy for treating serious cardiac arrhythmia.

MAE's Chung at Chinese Academy of Sciences

MAE Professor **Deborah D.L. Chung** gave the 2010 Advanced Materials Symposium's keynote address at the Chinese Academy of Sciences (Taiyuan, China). The talk was entitled "Multifunctional Cement-Based Materials."

During Chung's visit, she met with two former MAE students in Shanghai, both of whom hold prestigious executive positions: shown with Chung at left is **(Jeff) Lin Li** (PhD MAE '93), General Manager, Emerging Market Measurement Solutions, Chemical Analysis Group, Agilent Technologies (Shanghai) Co., Ltd.; and at right, **(Simon) Xiaoming Yang** (PhD MAE '95), Managing Director – Asia Pacific, Delphi Connection Systems and Delphi Electrical Centers, Delphi Electrical/Electronic Architecture.

Chung, center, bottom row, in red patterned blouse

Achievements

Adly Fam has a new patent for "Mismatched Filters," with **Indranil Sarkar** (PhD EE '07).

CSE staff member **Maria R. Frisina** was inducted into Canisius College's DiGamma Honor Society for exemplary service.

Edward P. Furlani has a new patent for "Continuous ink-jet printing with jet straightness correction," with inventors: Kathleen M. Vaeth (Rochester, N.Y.); Ali G. Lopez (Pittsford, N.Y.). The assignee was Eastman Kodak Company (Rochester, N.Y.).

CSE's SUNY Distinguished Professor **Venugopal Govindaraju** was elected a Fellow of the American Association for the Advancement of Science Fellow, Section on Information, Computing and Communication, for contributions to science and technology.

CSE's Fu and Govindaraju won an ITESOFT best paper award for "Retrieving Handwriting Styles: A Content Based Approach to Handwritten Document Retrieval," with co-authors **Anurag Bhardwaj** (PhD CS '10) and **Achint Oommen Thomas** (PhD CS '10).

MAE Associate Professor **Venkat Krovi** won the ASME Computers and Information in Engineering (C&IE) Conference Best Paper Award for, "Simulation-Based Design of Exoskeletons Using Musculoskeletal Analysis," with co-authors: ME students **Priyanshu Agarwal**, **Madusudanan Sathia Narayanan**, ME PhD candidate **Leng-Feng Lee** (BS '03 MS '05 ME), and UB Pathology and Anatomical Sciences Associate Professor Frank Mendel, for the use of a novel synthesis approach in advancing multi-disciplinary contributions to C&IE, and stimulating bio-engineering contributions to C&IE.

MAE NYSCEDII Professor for Competitive Product & Process Design **Kemper Lewis** was elected a fellow of the American Society of Mechanical Engineers for contributions to engineering design.

Natasha Litchinitser was elected a Fellow of the Optical Society of America, for fundamental contributions in the areas of linear and nonlinear optics of metamaterials, photonic crystal fibers and optical fiber communications.

MAE Professor **Hui Meng** received the Best Presentation Award at the Live Interventional Neuroradiology Conference (LINC), Houston, for "Elevated Hemodynamic Stress Triggers Intracranial Aneurysm Initiation." At LINC, she also presented on "Morphologic-Hemodynamic Discriminants of Intracranial Aneurysm Rupture."

EE's SUNY Distinguished Professor **Vladimir Mitin** was elevated to Institute of Electrical and Electronics Engineers (IEEE) Fellow, for contributions to sensors and detectors. Mitin was an organizer of the International Symposium on Graphene Devices: Technology, Physics, and Modeling, (Sendai, Japan) and presented a paper on "Characteristics of p-i-n Terahertz and Infrared photodiodes based on Multiple Graphene Layer Structures." Co-authors were: Maxim Ryzhii, Taiichi Otsuji, and Victor Ryzhii.

CSE Assistant Professor **Atri Rudra**'s paper, "When LP is the Cure for Your Matching Woes: Improved Bounds for Stochastic Matchings," won a Best Paper Award at the 18th Annual European Symposium on Algorithms. Co-authors were: Nikhil Bansal, Anupam Gupta, Jian Li, Julian Mestre, and Viswanath Nagarajan.

CBE Assistant Professor **Marina Tsianou** participated in the NSF-sponsored "Workshop on the Science and Technology of Dispersants Relevant to Deep Sea Floor Oil Releases" (Arlington, Va.).

MAE Professor **Tarunraj Singh** was named an American Society of Mechanical Engineers (ASME) fellow, for his contributions in the area of control and estimation.

MAE Professor **Robert Wetherhold** was named an ASME fellow for achievements in mechanics of heterogeneous materials, from fabrication through end use, with particular specialties in fracture behavior, laminate design, smart/multifunctional materials and composites, and surface modification.

EE Assistant Professor ❄**Jennifer Zirnheld** (BS '93 MS '97 PhD '04 EE) received IEEE's Region 1 Outstanding Teaching Award in an IEEE Area of Interest for outstanding contributions in educational and professional leadership.

Comings & Goings

Comings

CBE

Joan Wilson is the new CBE Assistant to the Chair. Joan comes to the School of Engineering from WBFO, where she had been employed since 1996, most recently as Assistant General Manager. She holds a BS in Management and an MBA, both from UB.

CSE

CSE Associate Professor **Tevfik Kosar** earned an MS in CS from Rensselaer Polytechnic Institute (Troy, NY) and a PhD in CS from University of Wisconsin, Madison. Before joining UB, Kosar had been a Louisiana State University CS Assistant Professor since 2005. Kosar's research interests are in the cross-section of petascale distributed systems, eScience, grids, clouds, and collaborative computing with a focus on large-scale data-intensive distributed applications. His recognitions include a 2009 NSF CAREER Award.

CSE Assistant Professor **Dimitrios Koutsonikolas** earned a PhD in Electrical and Computer Engineering from Purdue University. His bachelor's degree is from the School of Electrical and Computer Engineering, at the National Technical University of Athens (Greece). His research interests are in experimental wireless networking and mobile computing, with a focus on high performance protocol design and implementation, testbed prototyping, network measurements, and performance evaluation.

EE

EE Assistant Professor **Qiaoqiang Gan** earned an MS from the Chinese Academy of Sciences' Institute of Semiconductors, Beijing, (2006) and a PhD in Electrical and Computer Engineering from Lehigh University. His research interests are in nanophotonics, optoelectronics, and biophotonics for integrated devices/systems.

*Amy Monin, a recent UB MBA graduate, joined the EE Department as a Research Administrator. She had been a Psychology Department Research Assistant and an intern at STOR – UB's Office of Science, Technology Transfer, and Economic Outreach.

EE Assistant Professor **Gesualdo Scutari** received the Electrical Engineering (2001) and the PhD degree (2005) (both with honors) from the University of Rome "La Sapienza" (URLS) (Italy). His previous research appointments include University of California, Berkeley; Hong Kong University of Science and Technology (China); URLS; and University of Illinois, Urbana-Champaign (Ill.). His primary research interests include applications of convex optimization theory, game theory, and variational inequality theory to signal processing and communications; sensor networks; and distributed decisions.

MAE Assistant Professor **Sonjoy Das** earned an MS in Civil/Structural Engineering from the Indian Institute of Science, Bangalore, India (2001); an MS in Engineering with a focus on Applied Mathematics and Statistics from Johns Hopkins University, Baltimore, Maryland (2007); and a PhD in Civil/Structural Engineering from the University of Southern California, Los Angeles (2008). His research interests are in computational stochastic and multiscale mechanics; multifidelity multidisciplinary system modeling; uncertainty quantification and propagation; stochastic search and optimization; and structural dynamics.

Goings

STAFF RETIRING ARE:

Darlene Innes, Assistant to the CBE Chair: Darlene's career at CBE spanned 34 years. She started after graduating high school, and through her talent and terrific work ethic, eventually rose to the position of assistant to the chair. Her efforts impacted every aspect of the department's operation, and faculty, staff, and students alike relied on and appreciated her ability to get things done, and done well.

Kris Bovenzi, Assistant to the ISE Chair: the ISE department enjoyed Kris's dedicated service for 25 years. Her cheerful demeanor and dedication to helping people will be missed.

Roger Mayne (BS MAE '63), MAE's SUNY Distinguished Teaching Professor, and ABET Coordinator: Mayne's research interests are in dynamic systems, optimization, computer graphics and mechanical design. During his more than 40 years with MAE, he served twice as department chair, published two books, and earned numerous recognitions, including the SUNY Chancellor's Award for Excellence in Teaching, and an Educator of the Year Award from UB's MAE Graduate Student Association. He is a Fellow of the American Society of Mechanical Engineers and has been a long-time leader in its Design Division.

CSEE Secretary **Linda Mudd**: Linda's invaluable support to the department and the school throughout her long career will be missed.

EE Advanced Technology Applications Research Professor **Mohammed Safiuddin** was the principal in creating the UB Engineering's distance learning Master of Engineering degree in EE. He was the academic liaison to the Niagara Mohawk and National Grid graduate EE programs, for professionals working at the utilities. As a SPIR Advanced Technology Applications Professor, he did outreach to companies in New York State. Safiuddin is an IEEE fellow.

EE Professor **James Whalen** joined MAE in 1970, and during his long career served as Undergraduate Studies Director and as Chair. His area of expertise is in measurement, prediction, and suppression of electromagnetic interface in analog and digital integrated circuits. For distinctions in his research, he was inducted into the Johns Hopkins Society of Scholars. Whalen is an Institute of Electrical and Electronics Engineers Life Senior Member.

Best wishes to CSEE Graduate Studies Secretary **Kirsten Brown** and to CBE Associate Professor **Mattheos Koffas**, who have moved on from UB Engineering.

UB Engineering welcomes its new members and thanks its departing staff for their years of dedicated service.

New Positions:

EE Professor **Stella Batalama** has assumed the full three-year term as EE chair, and is leaving her post as associate dean for research, where she has brought several innovations to her area. See the Research section for an article outlining these.

Geraldine (Deanie) Hedrick, formerly in the Dean's Office and in EE, is now an ISE staff assistant.

Diane Porter, formerly human resources staff member at Financial Information Resource Management, is now the assistant to the ISE chair.

Promotions:

TO THE RANK OF ASSOCIATE PROFESSOR:

Emmanuel (Manolis) Tzanakakis, CBE

TO THE RANK OF FULL PROFESSOR:

*Ann Bisantz, ISE

Vipin Chaudhury, CSE

Jeffrey Errington, CBE

School of Engineering Research Initiatives

The School of Engineering and Applied Sciences (SEAS) has recently introduced a number of research initiatives that aim at providing (i) opportunities for enhancement of interaction among students and faculty within a research area, (ii) means for recognizing and enhancing group scholarly activity and productivity, and (iii) incentives for further/new research activities and new funding. Details can be found at: http://www.eng.buffalo.edu/Research/initiatives/#sfgra.

Two of these initiatives are being implemented for the first time this year. They are: SEAS Seed Funding for Group Research Activities and SEAS Recognition for Significant Scholar Contribution. The former is initiating a range of group activities for several research areas in SEAS departments, including:

- Seminars and symposiums: a joint EE/CSE Weekly Communications and Networking Seminar organized by the CSE-Computer Systems and Networks and the EE-Signals, Communications, and Networking research areas; a series of invited seminars within the thematic scopes of the Artificial Intelligence Research Area (CSE) and the Theory of the Computation research area (CSE); and three research symposiums: Security and Defense; Health and Medical Systems; and Transportation and Logistics (organized by the corresponding ISE research areas).
- Workshops: a one-day research workshop on Opto-plasmonics for Information Processing, Sensing, and Energy Applications (EE-Optics and Photonics); an academia-industry one-day workshop on Nanoelectronics and Nanophotonics (EE-Solid State Electronics).
- A one-day retreat for faculty and PhD students to jumpstart collaborative activity in the Software Systems research area (CSE).
- Development of promotional material and research area websites (several CSE areas sponsor such activity).
- Purchasing/rehab of equipment for common use (EE – Signals, Communications and Networking; CBE – Bioengineering; CBE – Materials).

We are excited with the prospects of these initiatives; we believe that they will assist in creating a stimulating competitive research environment for our graduate student body and contribute to our School's fundamental and continuous endeavor to create and nurture a tradition of research excellence as measured by high quality graduate student training and high quality research output.

–EE Professor Stella Batalama, Associate Dean for Research

BME Researchers Show Progress on X-Ray Imaging Improvements

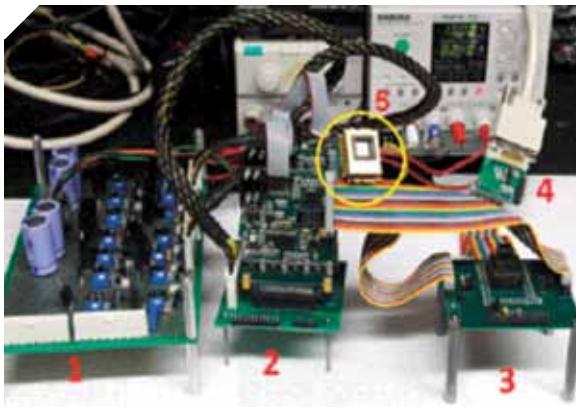
Cartwright

Rudin

Titus

BME and EE Associate Professor **Albert Titus** (BME Co-Chair), and BME and EE Professor **Alexander Cartwright** (UB interim vice president for research; director, Institute for Lasers, Photonics and Biophotonics; and co-director, Electronics Packaging Laboratory) are developing systems to improve X-ray imaging. Together with SUNY Distinguished Professor of BME and Radiology, **Stephen Rudin** (director, Division of Radiation Physics, UB-Toshiba Stroke Research Center), they are working on a NIH-funded project that aims to improve image quality while reducing x-ray exposure levels.

Their approach is among the first to develop an array of X-ray detectors to increase the field of view while maintaining necessary high-resolution. This array is based on a special type of charge-coupled device (or CCD, the standard imaging device in digital cameras for many years) called an electron multiplying CCD (EMCCD) in an array. However, the array of EMCCDs is only one part of the development that is needed; the array needs control circuitry, readout circuitry, power supply management, and thermal management.



So far, the team has demonstrated a 2x1 array capable of real-time capture and read-out of images, with the ultimate goal of achieving a 3x3 array. Ultimately, the EMCCD array system, called the Solid-State X-ray Image Intensifier (SSXII), will be able to provide clinicians with the ability to watch real-time "movies" of procedures using fluoroscopy or angiography.

(Photo left) Prototypes of some sections of the SSXII: 1 – power board; 2 – EMCCD driver board; 3 – multiplexer board; 4 – cameralink board; 5 – EMCCD chip

Full-Scale Bridge Tests Examine Isolation Bearing Properties/Performance

Testing has begun on two full-scale bridges designed and built specifically to determine the performance of seismic isolation technology over time and over a wide spectrum of temperatures and other environmental conditions. Initial tests took place at a dedicated site in Ashford, New York in fall 2010. The tests will be repeated weekly over the next five years and will be run remotely from the Structural Engineering and Earthquake Simulation Laboratory (SEESL) and NEES Equipment Site at the University at Buffalo, Amherst.

General view of the seismically isolated full-scale bridge

BME's Techung Lee: Engineered Stem Cells Overcome Barrier to Regenerative Medicine

BME and Biochemistry Associate Professor Techung Lee led a project to engineer adult stem cells that can be grown continuously in culture, a breakthrough that allows efficiency and progress in the regenerative medicine field.

The technique has potential applications in cost-effective treatments for heart disease, diabetes, immune disorders, and neurodegenerative diseases.

Stem cells help regenerate or repair damaged tissues, primarily by releasing growth factors that encourage existing cells in the human body to function and grow.

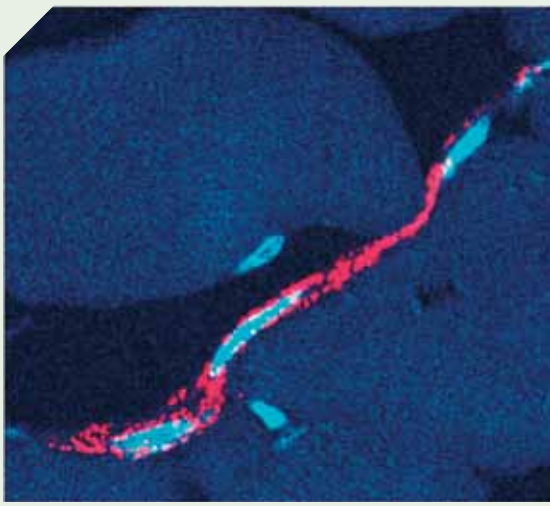
Two new cell lines, named "MSC Universal," have been generated: a human and a porcine line. They are of genetically reprogrammed mesenchymal stem cells, found in bone marrow, and capable of differentiating into cell types including bone, cartilage, muscle, fat, and beta-pancreatic islet cells.

The modified cells showed no signs of aging in culture and did not form tumors in animal testing. They did confer therapeutic benefits, in an animal study of heart disease.

Tissue damage may be repaired by injecting mesenchymal stem cells into skeletal muscle, a less invasive procedure than injecting the cells directly into an organ requiring repair. In a rodent model of heart failure, Lee and collaborators showed that intramuscular delivery of mesenchymal stem cells improved heart chamber function and reduced scar tissue formation.

Using the engineering technique Lee and colleagues developed, scientists can generate an MSC-Universal line from any donor sample of mesenchymal stem cells. "I imagine that if these cells become routinely used in the future, one can generate a line from each ethnic group for each gender for people to choose from," he adds.

UB has applied for a patent on Lee's discovery and potential license agreements are in discussion. The research was funded by the National Institutes of Health and New York State Stem Cell Science.



Intramuscularly injected mesenchymal stem cells form new capillaries: The immunofluorescence image demonstrates a mouse tissue section prepared from the hind leg muscle, which was injected with DAPI-labeled mesenchymal stem cells and harvested one month after injection. The muscle was sectioned and processed for immunostaining to reveal cellular features. Light blue: DAPI-labeled mesenchymal stem cell nuclei. Dark blue: muscle fibers. Red: a capillary stained by a vWF antibody. The image shows that the injected mesenchymal stem cells differentiated into an endomysial capillary.

CSE's Zhang: Interdisciplinary Research Analyzes Protein Interaction Data

CSE Professor and Chair Aidong Zhang is PI on an NSF-funded interdisciplinary research project entitled "Overlapping Clustering Analysis of Biological Networks," with co-PI Michael Buck, Biochemistry assistant professor.

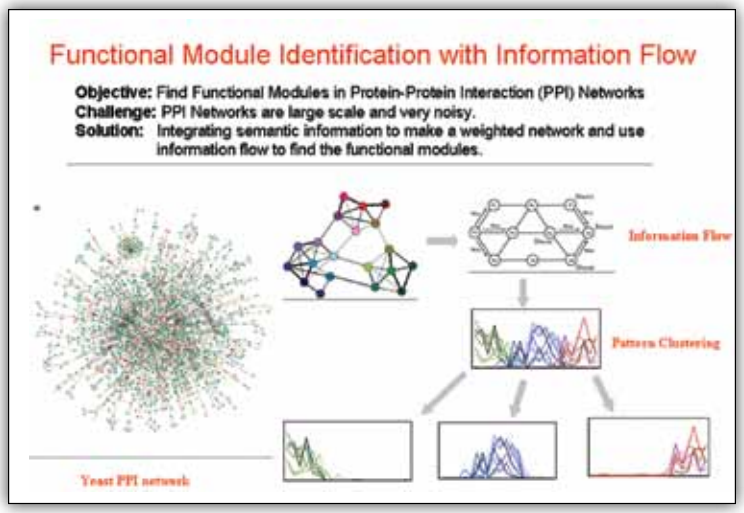
The team of expert computer scientists and biomedical scientists is tackling the challenging issues of analyzing protein interaction data.

The project develops a novel approach to detecting overlapping clusters on emerging large volumes of protein-protein interaction data and validates computational approaches in yeast. The vast amount of protein-protein interaction data provides a good opportunity to systematically analyze the structure of a large living system and also offers an understanding of fundamental principles like cellular pathways, essentiality, functions, functional modules, genetic interactions, and protein complexes.

The identification of functional modules in protein interaction networks is of great interest because they often reveal unknown functional ties between proteins, and hence predict functions for unknown proteins. A protein may be included in one or more functional groups. Therefore, overlapping clusters must be identified in protein interaction data.

The project develops several unique methods. One is to integrate domain knowledge with the protein interaction data, so that the data will be more reliable. Another is to support overlapping modularity analysis for protein interaction data that intelligently integrates biological information into the modularity analysis process. A third is the tight integration of computational methods with biological verification.

The success of this project lies in the integration of the computational and biological components. By associating unknown proteins with the known proteins within each functional module, we can suggest that those proteins positively work for the corresponding functions that are assigned to the modules. This project can also find broad applications in other areas that handle data with the modular network property, such as web networks, social networks, and technological networks.



CBE's Tsianou Researches Environmentally Friendly Alternatives in Dispersants

CBE Assistant Professor Marina Tsianou is investigating more efficient, environmentally friendly oil dispersants through a National Science Foundation RAPID Response Research Grant.

The research is especially timely since nearly 2 million gallons of dispersant were released into the Gulf of Mexico after the Deepwater Horizon oil well incident in 2010. The long-term effects, if any, of such a large volume of dispersant on the environment are not yet known.

Tsianou's research seeks a better understanding of how dispersants interact with crude oil and naturally occurring particles at the nanoscale level, using polymers, surfactants, and solvents less harsh to the environment. Her research considers several factors: oil's different compositions, depending on its origin and the time elapsed since its release – Tsianou notes that oil "from Alaska has a different composition than oil drilled from the Gulf of Mexico or the Middle East." The research also considers how mechanical disturbances, like those caused by storms, affect how a dispersant interacts with oil; and how local environmental conditions (like those on the Great Lakes where, she points out, smaller-scale spills also occur), might influence dispersant behavior and its possible long-term impacts on local wildlife and shorelines.

For some dispersant formulations, the research considers alternative solvents and surfactants, such as those found in processed foods, and mineral particles that may serve as environmentally friendly surface active agents.

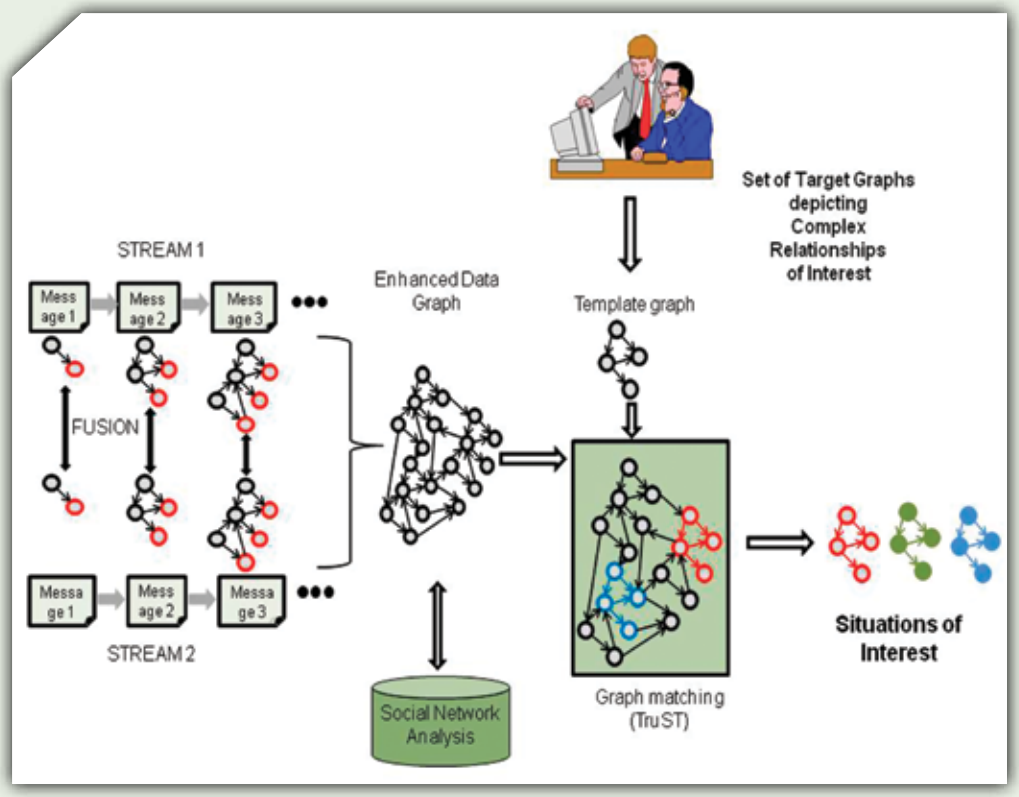
"When we study these surface interactions, we can learn how to control hydrophilicity and hydrophobicity – their affinity, or lack of affinity, for crude oil – as well as develop novel mechanisms to optimize their properties," she says.

Tsianou's work was recently reported in the journals *Bio-Medicine, Chemical Online, First Science, PhysOrg,* and others.

ISE Part of Team on Knowledge Discovery and Dissemination Contract

The ISE department is part of a team awarded a Knowledge Discovery and Dissemination (KDD) contract by Air Force Research Lab Dayton, with ISE Professor and Chair Rakesh Nagi as PI. The project will develop novel ways for analysts to quickly produce actionable intelligence using information from multiple data sources. CUBRC is the prime contractor, with ISE bringing experience in graph matching/analytics, ontological mapping, and multi-source semantic analysis.

For a U.S. Army-related research project, a recent paper in *Information Fusion*, (Volume 11, Issue 4), entitled: "Enhancements to High Level Data Fusion using Graph Matching and State Space Search," was published by ISE Research Scientist **Kedar Sambhoos** (also of CUBRC), Rakesh Nagi, ISE Professor and Center for Multisource Information Fusion Managing Director **Moises Sudit**, and Adam Stotz (of CUBRC). The research addresses the need for assuring security in conventional warfare and in counter-insurgency (COIN) operations, where deployed units (soldiers) in the field are the best sources of intelligence. By analyzing past and present intelligence data, a better understanding of insurgent approaches or tactics can be gained.



In its recent work, the ISE department has developed an inexact subgraph matching algorithm through an heuristic approach called Truncated Search Tree (TruST), as a variation of the subgraph isomorphism approach for situation assessment. The current research enhances this procedure to represent inaccurate observations, and structural representations of a state of interest, thus accounting for the uncertainties. This comprehensible approach gives pragmatic estimates providing rigor and sound understanding during situation assessment. This tool, along with other research initiatives including ontological mapping and enhancement and entity resolution through multi-source semantic analysis, provides an Intelligence analyst with a robust and rigorous analysis tool.

Snow in Sight, CSEE's Sadek Targets Weather's Effect on Traffic

CSEE Associate Professor and Transportation Systems Laboratory Director **Adel Sadek** and his team are developing a computer model of the Buffalo Niagara region and its roadways, to help planners "better manage the transportation system during inclement weather emergencies, like one that recently immobilized highway traffic in Western New York," says Sadek.

"The simulation will capture what goes on under various emergency situations," Sadek explains. "For example, we will be able to predict how closing one lane – or an entire section of the thruway – will impact the region's traffic patterns," allowing traffic planners to better plan their responses to inclement weather predictions.

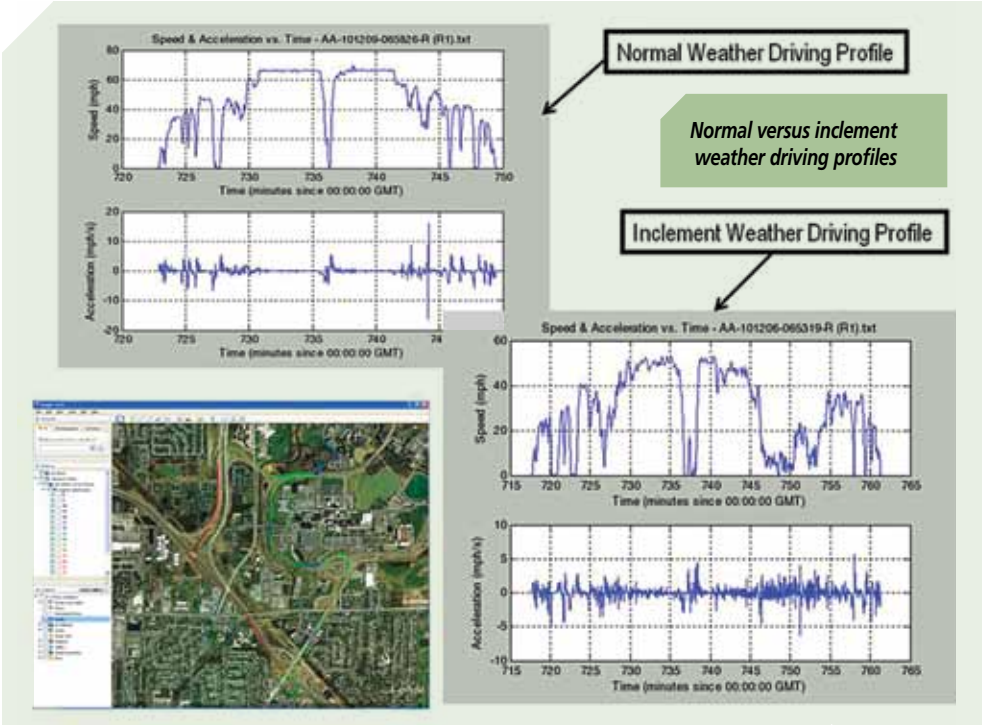
Inclement weather brought interstate traffic to a halt last winter.

Other predictions can be made based on simulations of many scenarios and factors, for example, the impact of recommending alternative routes not designed to handle high-volume traffic.

Sadek's team is modifying TRANSIMS (Transportation Analysis Simulation System), a software program developed at Los Alamos National Laboratory as part of the simulation system, which also includes a GPS-equipped car to be driven during snowstorms to precisely record drivers' behavior changes in response to weather.

In related work, the team created a traffic alert system that relays information to registered cell-phone subscribers.

CSEE PhD students working on this project are: **Yunjie Zhao** and Senior Engineering Manager–ECLIPSE Campus (an MCEER Project) **Daniel Fuglewicz**. Partnering on the Federal Highway Administration-funded project are the Greater Buffalo-Niagara Regional Transportation Council (GBNRTC) and the Niagara International Transportation Technology Coalition (NITTEC).



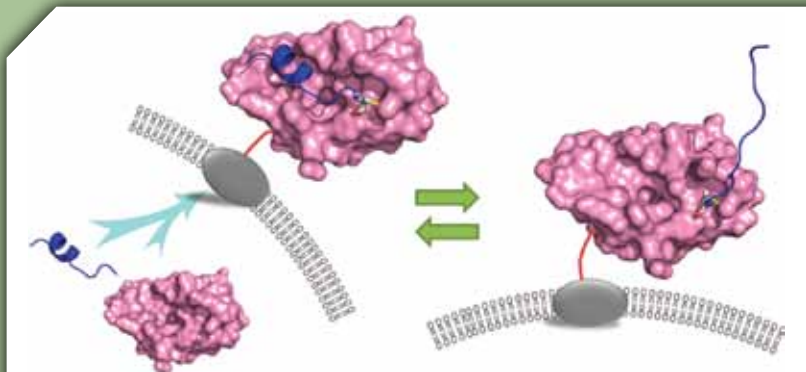
Normal versus inclement weather driving profiles

CBE's Park: National Science Foundation CAREER Award Research

CBE Assistant Professor **Sheldon Park** and his lab have pioneered the use of disulfide trapping on the yeast surface in order to study protein-protein interaction. The technique, which is referred to as Stabilization of Transient and Unstable Complexes by Engineered Disulfide (STUCKED), traps two interacting proteins in a covalent complex on the yeast surface, to allow fast and efficient detection by flow cytometry. CBE PhD students **Kok Hong "Sean" Lim** and **Jasdeep Mann** spearheaded the study, which was published in *Biotechnology* and *Bioengineering* as "Disulfide trapping of protein complexes on the yeast surface," and was also a "Spotlight" feature.

The disulfide trapping method is the basis for the current effort to engineer protein inhibitors of important mammalian kinases, funded by Park's National Science Foundation CAREER award (for more, see Awards story in Faculty section).

Investigating protein-protein interactions is an important area in cell signaling. Although intermolecular interactions can be studied many different ways, the use of yeast display is convenient and amenable to high throughput analysis. In the example shown here, a disordered peptide from the transcription factor p53 interacts with its negative regulator MDM2 within the yeast secretory pathway to form a covalent complex that is stably displayed on the yeast surface. An intermolecular disulfide prevents the loss of the bound peptide, thus creating a stable "footprint" of past interaction that can be detected independent of the dissociation kinetics.



CSEE's Rabideau and Seneca Instrumental in Development of Innovative Remediation Technology at Contaminated West Valley, N.Y. Site

An in-ground permeable treatment wall recently completed at West Valley Demonstration Project (WVDP) is expected to contain radioactive Strontium-90 from passing groundwater.

The project is the realization of over a decade of engineering research to resolve the threat the material has posed, as the groundwater from the WVDP eventually discharges into Lake Erie. WVDP is a former nuclear fuel reprocessing plant where groundwater contamination by Strontium-90 that started in the 1970s was not discovered until 1993.

The 850-foot-long and 30-foot-deep underground wall – the largest of its kind used to passively remove radioactive material from groundwater – contains clinoptilolite, a volcanic zeolite mineral mined from Idaho.

CSEE Professor **Alan Rabideau** and his team contributed to the engineering of the novel solution and ran the experiments to test it, devising a computational tool that predicts the wall's capabilities. The passive method is more efficient and effective than traditional water-treatment methods, of pumping from the ground and treating above ground. The pump-and-treat system that had been used on the site treated only a portion of the groundwater at very large cost; the in-ground wall is expected to treat all of the water that flows toward the creek with no annual maintenance cost beyond routine monitoring.

Other benefits of the new system are that it prevents the material from leaving the site, and, while it is there, the Strontium-90 will decay to significantly less toxic levels.

The wall's design was led by UB Geology alumnus Rick Frappa of AMEC-Geomatrix (Amherst, NY), with CSEE doctoral candidate **Shannon Seneca**, Dr. Rabideau, and West Valley technical staff. Douglas Bablitch and Scott Warner of AMEC-Geomatrix, Oakland (California) also lent their expertise.

CSEE graduate students **Colleen Bronner** and **Erin Johnson** worked with Rabideau and Seneca, who received support through UB's NSF-sponsored ERIE program in ecosystem restoration, and was recently interviewed on NPR about the project.

The West Valley–UB Team (left to right): CSEE PhD candidate Colleen Bronner, CSEE PhD candidate Shannon Seneca, AMEC-Geomatrix's Rick Frappa, CSEE Professor Alan Rabideau, MS graduate student Erin Johnson, AMEC-Geomatrix's Doug Bablitch

Professor Rabideau, who serves on a National Academy of Sciences panel seeking ways to improve hazardous waste management at sites where subsurface contaminants impede site closure, expressed a sense of fulfillment. "We don't often see our research translate into projects that help communities and clean up the environment, especially something as innovative as this," said Rabideau. "For me, this is about as good as it gets in terms of combining research and education with actually solving a problem."

CSE's Fu Analyzing User Traits with Google Award

Image courtesy drawing101blog

CSE Assistant Professor Yun (Raymond) Fu won a Google Faculty Research Award to support research on social media computing.

Understanding demographic traits (for example, a users' occupation) from images that are available on social media sites is an emerging research topic of social media computing. The research infers the interdependency between individuals, such as friendship, kinship, sexual relationships, peer relationships, or relationships based on beliefs.

Fu proposes a new hierarchical framework of heterogeneous context fusion for human occupation recognition, which links the human appearance in the image to the background environment, for better semantic understanding. The success of this research will attract greater attention in the multimedia community to the underlying science and technology for social systems, image retrieval and indexing; and in the intelligence community for security control, surveillance monitoring, smart environment; and industry applications, including electronic customer relationship management, passport renewal, online banking/shopping, and targeted advertising.

CSE PhD student and UB Presidential **Fellow Ming Shao** is working on this project.

CSE's Srihari Calculates Fingerprint Rarity

Fingerprints, understood to be a unique identifier, are invisible to the naked eye and often left incomplete at crime scenes. Further complicating forensic analysis, forensic scientists currently attempt to identify prints without the aid of technology.

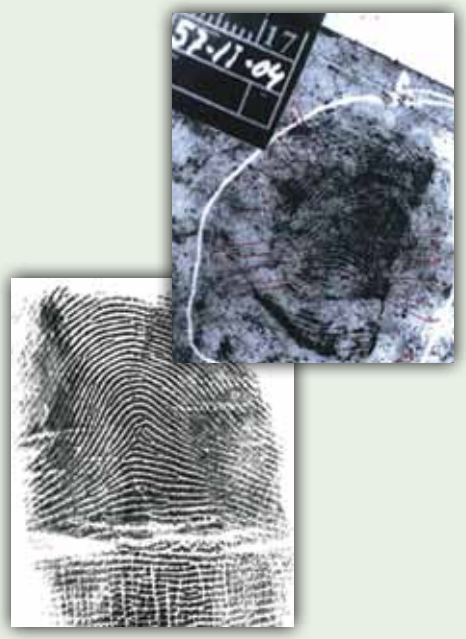
Using computational tools, CSE's SUNY Distinguished Professor **Sargur Srihari** is leading research on mathematically calculating a fingerprint's rarity, so that for the first time, forensic scientists may determine the value, as evidence, of a partial print's rarity. By determining the rarity of a particular print, it is possible to determine how likely it is to belong to a particular crime suspect.

The research involves defining fingerprints as a series of points, composed of the endings of ridges and ridge bifurcations, and comparing this information with a database of 4,000 fingerprints on file at the National Institute of Standards and Technology. With these data, Srihari's team created a computer system that can read fingerprint patterns and mathematically determine their rarity based on a print's points.

Srihari and CSE doctoral candidate **Chang Su** published the work, entitled, "Evaluation of Rarity of Fingerprints in Forensics," in *Proceedings of Neural Information Processing Systems*, and recently presented it at the Neural Information Processing Systems conference (Vancouver, Canada).

"It's purely mathematical," Srihari said. "They might find hundreds of prints at a crime scene, and right now the analysis is done intuitively by human examiners," Dr. Srihari said. "But we can calculate that. Our research provides the first systematic approach for computing the rarity of fingerprints in a scientifically robust and reliable manner."

The research was supported by a grant from the U.S. Department of Justice.



This latent fingerprint [top right image] was found on a bag of detonators connected with bombings in Madrid (2004). Markings indicate where an FBI fingerprint examiner determined the print to be similar to that of a Portland, Oregon, lawyer [whose print is at left]. Spanish officials correctly disputed the finding and said the print was that of an Algerian national.

Fingerprint images: US Department of Justice, via IEEE Spectrum.

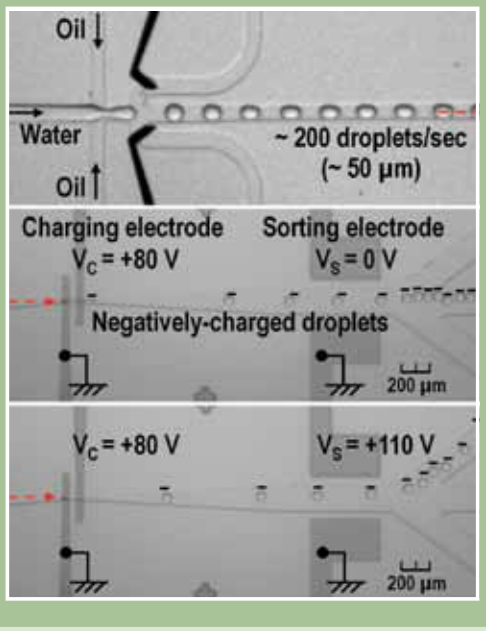
EE's Oh Researches Droplet Manipulation

EE Assistant Professor Kwang W. Oh's research group in the Sensors and MicroAcuators Learning Lab (SMALL) developed an electrostatic droplet manipulation module that can positively or negatively charge pre-formed neutral droplets on-demand.

His SMALL lab continues to investigate a synchronization and fusion module that can automatically synchronize and laterally fuse a pair of oppositely-charged droplets, and form a two-parallel-plug-like droplet. Then the in-droplet particle separation can be performed by pulling magnetic beads from one side of the fused droplet to the other in a separation channel, by use of an external magnetic field.

The research, supported by the National Science Foundation, seeks a high-throughput droplet-based microfluidic separation technology that enables on-demand electrostatic droplet manipulation and in-droplet particle separation for magnetic bead-based bioassays.

The advantages of the platform include the unique droplet-based magnetic separation, the ability to digitally manipulate droplets at a very high-throughput, compartmentalization of reagents within discrete droplets, the robust electrostatic droplet manipulation, and the possibility of many different types of on-chip integration. The platform is a generic, fast, and robust tool that can be used not only in the context of any large-scale assay, but is also well-suited for analysis of small samples for medical relevance. Potential applications of the droplet-based microfluidic platform would be protein/cell separation, DNA/RNA purification, and immunoassay/molecular diagnostics.



Photographs of on-demand electrostatic droplet manipulation. Top: Generation of neutral water-in-oil droplets on a droplet-based microfluidic device. Middle: Negatively-charged droplets flowing into the middle outlet. Bottom: Continuous droplet sorting of the negatively-charged droplets.

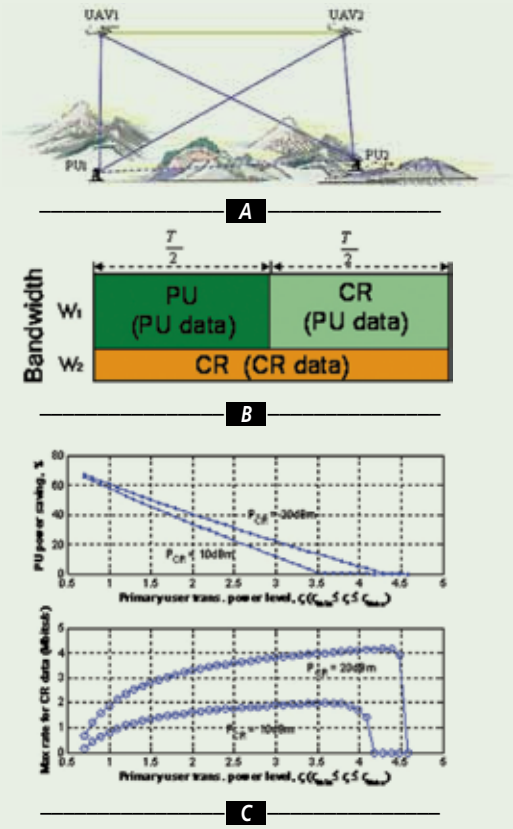
EE's Su: Cognitive Airborne Network Design Using Cooperative Communication Concepts

EE Assistant Professor Weifeng Su received a National Research Council (NRC) fellowship, which allows him to spend one academic year at the Air Force Research Laboratory (AFRL) in Rome, NY. The fellowship is sponsored and administered jointly by NRC and the Air Force Office of Scientific Research (AFOSR).

Su's research currently focuses on the design of cognitive radio (CR) networks which have attracted significant interest recently, both military and commercial. CR networks are designed to allow secondary (non-licensed) users to use part of the spectrum when primary (licensed) users (PU) who own the spectrum do not use it. Network spectrum efficiency and network throughput can be greatly improved as secondary users – also called CR users – may sense and exploit "spectrum holes" whenever they are available.

Su is applying the emerging cooperative communication concept to the design of cognitive airborne networks. Different from conventional point-to-point wireless communications, cooperative communications empower different users or nodes in a wireless network to share resources and cooperate to deliver information through distributed transmissions. Su designed a cognitive cooperative communication protocol for airborne networks (illustrated here). In this protocol, CR users assist to relay PU signals in exchange for some spectrum released by the PUs, which CR users can use for their own data transmission. As a result, both the transmission power and the on-air time of PUs are significantly reduced, which is particularly critical in low-probability-of-interception (LPI) and low-probability-of-detection (LPD) applications.

Su also received a three-year grant from AFRL, for related research on the emerging cooperative communication concept. Entitled, "Studies on Optimized Assured Cooperative Communications," this grant is referred to in EE's Signals, Communications, and Networking Group article, this section.

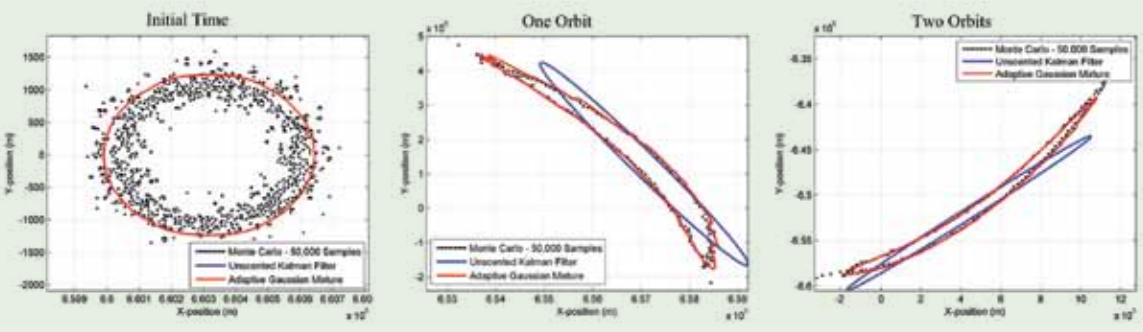


(a) Illustration of a cognitive network with two unmanned-aerial-vehicles (UAV) and two on-ground primary users (PU); (b) Illustration of the cognitive cooperative communication protocol; and (c) PU power savings and corresponding maximum rate for CR user own data.

MAE's Singla: Air Force Office of Scientific Research (AFOSR) Young Investigator (YIP) Award for Information Collection and Fusion for Space Situational Awareness

MAE Assistant Professor Puneet Singla has recently earned an AFOSR YIP award for research of analytical and computational tools that enable accurate characterization and propagation of uncertainty in the mathematical models for orbit propagation, data assimilation of irregularly spaced noisy data from various sources with model predictions, and optimal deployment of available sensors to support Space Control and Space Situational Awareness (SSA).

SSA is the cornerstone of space operations, all-inclusive of space force enhancement, space support, and space control. Effective SSA requires more than just estimating locations or collecting images of resident space objects (RSOs). It is the ability to identify a satellite's capabilities and predict future operations and performance limits with known confidence. A common example involves assigning probabilities of collisions by an RSO with another RSO. A recent incident in February 2009 involving an unintentional collision between Russia's Cosmos 2251 satellite and a US Iridium satellite underscores the need for SSA.



Orbit State PDF Propagation for a High Area to Mass Ratio Object in a Low Earth Orbit with Atmospheric Drag: the blue line represents the conventional Gaussian approximation; the red line represents the proposed Gaussian mixture approximation, while black dots represent the Monte Carlo particles.

Singla's research project proposes methodology to replace evolution of initial conditions for a dynamical system by evolution of probability density functions (PDF) for state variables, and poses the PDF evolution problem as a convex optimization problem with guaranteed convergence. The research method addresses challenges of SSA to deliver information to decision makers in a timely manner, to potentially prolong our space asset lifetime and revenue.

For an announcement of the AFOSR YIP award, see the Faculty section.

NYSTAR Center for Advanced Technology: Adding Value for Regional Economy

Esther Takeuchi Co-Directs

In a consistent demonstration of its positive contribution to the region's economic health, the UB Center for Advanced Biomedical and Bioengineering Technology (UB CAT) has had a part in creating 245 jobs and retaining another seventeen, realizing a statewide non-job economic impact in the millions, all during the past five years.

During this same time, UB CAT has contracted 57 total projects, with a recent trend toward biomedical engineering-related projects since SUNY Distinguished and Greatbatch Professor **Esther S. Takeuchi** (with appointments in BME, CBE, Chemistry, and EE) has been co-director.

The UB CAT supports university-industry collaboration in research, education and technology transfer, focusing on helping New York State-based businesses gain a competitive technological edge. UB CAT is one of 15 centers in the state with a ten-year designation from the New York State Foundation for Science, Technology and Innovation (NYSTAR). NYSTAR provides annual funding to the UB CAT, which has recently been augmented by an additional National Grid grant. UB CAT operates within the New York State Center of Excellence in Bioinformatics & Life Sciences (CoE).

In the 2010–11 fiscal year alone, UB CAT is supporting eighteen companies in the life sciences industry by distributing funds that support projects leveraging the expertise of UB researchers, including those from the School of Engineering. In addition to funding, UB CAT provides business development assistance, workforce development programming, networking, and access to UB's equipment, expertise, and research and development facilities. Below is a recent history of UB CAT projects with UB Engineering principal investigators and their industry partners. Included are several National Grid–UB CAT awards for biomedical projects, with CSE Teaching Assistant Professor **Michael Buckley**, MAE Professor **Thenkurussi "Kesh" Kesavadas**, and ISE Assistant Professor **Gwanseob Shin** as PIs on these projects.

For more information about UB CAT, please contact Marnie LaVigne, UB CAT Business Director and CoE Director of Business Development; Melissa Hagen, Account Administrator; and Renata Bator, Business Development Associate.

UPCOMING AND EXISTING UB CAT PROJECTS WITH SEAS PIS:

Applied Sciences Group, Simple and Advanced Talker Interface Development: CSE Teaching Assistant Professor Michael Buckley

Simulated Surgical Systems, Further Development of Existing Software Infrastructure and Content for HoST Technology Platform: MAE Professor Thenkurussi "Kesh" Kesavadas

New Scale Technologies, Life Science Microfluidic Pump: EE Assistant Professor Kwang Oh

Diagnaid, Inc., Computer Aided Detection of Lumbar Spinal Pathology on MRI Exams; Medcotek, Inc. (prior to 2008), IT Development for Digital Transmission and Remote Diagnosis of Medical Images: CSE Professor Vipin Chaudhury

Oral Health Innovations, Study and Prototyping of an In-Mouth Teeth Cleaning System: MAE Professor for Competitive Product & Process Design Kemper Lewis

Medical Acoustics, LLC, Prototype Development and Validation of Lung Flute® Medical Device; Oral Health Innovations, Prototype Development of an Automated Dental Cleaning Device for Persons with Limited Motor Skills: New York State Center for Engineering Design and Industrial Innovation Research Associate Andrew Olewnik (BS '00 MS '02 PhD '05 ME)

Health Transaction Network Corporation, Health Transaction Network – Device Software Development: CSE's SUNY Distinguished Professor Venu Govindaraju

Esensors, Development of Strategic Materials for THz Devices Operable at Elevated Temperatures: EE's SUNY Distinguished Professor Vladimir Mitin

Isolation Sciences, Fumehood Energy Saver Technical and Operational Efficiency Test Program: ISE Assistant Professor Gwanseob Shin

Dean's Council members and engineering faculty members listen to a presentation

Dean's Advisory Council Meeting

At the School of Engineering's Dean's Advisory Council (DAC) meeting this past fall, DAC members and faculty participants broke out into focus groups and generated ideas to further the School's mission and progress. The focus group topics were: "Successful Faculty Research," introduced by Associate Dean for Research, EE Professor **Stella Batalama**, and "Undergraduate Education: The State of the State – where do we go from here?," introduced by Associate Dean for Undergraduate Education, CSEE Professor **John Van Benschoten**. The sub-parts of the latter were: Out-of-State Recruitment; Student Experience; and Strategic Planning, with meetings by Van Benschoten; Undergraduate Education Assistant Dean **Kerry Collins-Gross** (Ed.M. '93, Higher Ed. Admin. PhD); Student Excellence Initiatives Director **William G. Wild** (BS IE '83, MA English '85, MS IE '87); and student participants.

UB Engineering Alumni Association Gift

The UB Engineering Alumni Association (UBEAA) has pledged a multi-year gift to the School of Engineering. The funds are to be used to support the creation of this publication, *Buffalo Engineer*.

UBEAA President ✻**Jim Boyle** (BS CIE '78) said, "This donation reflects the gratitude of the engineering alumni and the cooperative spirit between the university and the UB Engineering Alumni Association. We believe that UB is, and will continue to be, a leader in engineering innovation."

Dean **Harvey G. Stenger Jr.** said, "It means a lot to us that our own alumni organization thinks enough of the School to provide it with an annual gift. We are proud of the Engineering Alumni Association's achievements and all the many ways it supports the School."

Victoria and Stanley Levy Scholarship Fund Established

Victoria Bringhurst-Levy (BS EE '77) has generously established the Victoria and Stanley Levy Scholarship Fund, in appreciation of the quality education she received at UB. The endowed fund will be used for EE and CS student scholarships.

Ms. Bringhurst-Levy's career began as a senior electronics engineer in the area of biomedical electronics. She was one of a small group who developed and patented one of the first on-demand pacemakers for heart research. Her focus later shifted to the aerospace and satellite communications industry, and she worked for General Electric's research laboratory in Syracuse, New York. As a result of her love of electronics and specifically, RF and radio communication, she then worked for Motorola and is currently at XM Satellite Radio (now merged with Sirius XM Radio).

THANK YOU, DONORS

We thank our donors for their generosity.

Please visit: http://www.eng.buffalo.edu/alumniFriendsDonors/donors/ and the sidebar links to learn more about recent gifts and giving.

We are pleased to say that the UB Engineering Annual Fund has enjoyed steady growth in the past few years.
Your financial support is critical to the mission of the School.

If you're energized by UB Engineering's excellence, and wish to participate in the School's dynamic and continued growth, please consider a gift to the School.

To make a contribution, please visit http://www.eng.buffalo.edu/alumni_friends_donors.php and click on "Donate" in the left sidebar.

Development staff can be contacted any time at 1.888.205.2609 or directly, below:

- **Tim Siderakis**, Asst. Dean & Development Asst. Vice President: tsiderak@buffalo.edu, 716.645.0970
- **Michael Madonia**, Director: mmadonia@buffalo.edu, 716.645.0969
- **Patrizia Latvala**, Development Director: latvala@buffalo.edu, 716.645.5020
- **Bethany Mazur**, Assistant Development Officer: bll2@buffalo.edu, 716.645.2133
- **Donna Linenfelser**, Development Associate: dfelser@buffalo.edu, 716.645.0997

Again, we thank all of our donors for their generosity.

Barbara and Jack Davis Hall:
Generous Gift Names New Engineering Building

Continued from page 3

Dean **Harvey G. Stenger Jr.** said the School is grateful for the gift and for his longtime support of the area economy. "Jack knows the value that strong companies contribute to producing economic growth in our region. During his career, he has hired many of our graduates and given them the chance of a lifetime: to work at what they know. For that, and for his very generous support of this outstanding facility, we thank him."

Jack Davis founded Western New York's I Squared R Element Co., Inc., (Akron, N.Y) in 1964. Today the company employs over 75 workers and is the nation's only manufacturer of silicon carbide and molybdenum disilicide heating elements.

The naming was recognized with a reception to honor the Davises.

Designed by Perkins+Will architects, the 130,000-plus-square-foot Barbara and Jack Davis Hall will centralize many engineering facilities, and will feature numerous sustainable building strategies, qualifying it for Leadership in Energy and Environmental Design (LEED) gold certification.

School of Engineering Honored with Generous Lee Family Scholarship Gift

The family and in-laws of the late Yong Ho Lee (BS AE '81) have enhanced the Yong Ho Lee Scholarship Fund, which commemorates the family member who died at 39 in a tragic accident, doing what he loved – flying.

(L to R): Jinho Lee, Un Ok Lee, Mun K. Lee, Shin Kim, and Gina Lee-Glauser

"Captivating," "generous," "leader," "meticulous" – all exemplified Yong Ho Lee. The gift honors Yong's legacy, and it is an expression of the family's enduring gratitude for the outstanding education that several of them received at UB, which gave them the foundation to be leaders in their chosen careers. Family members with UB degrees are: **Gina Lee-Glauser** (BS '82 MS '88 AE & ME); her husband, **Mark Glauser** (BS '82, PhD '87 ME); and **Min H. Kim** (BS ME '87, MS Art Ed. '89), husband of Shin Kim; and ✻**Jinho Lee** (BS '85 MS '88 PhD '91 AE).

According to Gina Lee-Glauser, "When Sikorsky was looking for a test pilot with top gun pilot characteristics in the early 1990's, Yong's name was selected. This was a dream come true for Yong… He loved every aspect of his job, especially using his engineering skills combined with his real-world experiences in both Marine and Navy operations."

Irving H. Shames Memorial Scholarship Fund

The School of Engineering mourns the loss of talented educator and prolific author, SUNY Distinguished Teaching Professor Emeritus Irving H. Shames. During his tenure as a UB Engineering faculty member (1962–1993), Shames helped shape the engineering education of many students and teachers, both through his teaching and his publications. Even after his retirement from UB, his career continued as a George Washington University faculty member.

To learn more about Dr. Shames' remarkable career, to share a remembrance, or to make a donation, please visit: http://www.eng.buffalo.edu/academics/faculty/InMemoriam/IrvingShames/

To commemorate and perpetuate the lifelong impact he had on so many lives, a fund has been established in Dr. Shames' name. Contributions can be made online, or by mailing a check payable to the "University of Buffalo Foundation" to:

University at Buffalo Foundation
Office of University Development
c/o Cindy Johannes
P.O. Box 730
Buffalo, NY 14226-0730

BEAM Annual Breakfast

At BEAM's annual breakfast, based on the theme, "Preparing Our Children for a 21st Century Workforce," the guest speakers were BEAM Saturday Academy Students, who presented their recent projects. Middle schoolers reported on their Future Cities entry that received the Unique Computer Model Design Award, and students from grades 9 and 10 presented their LEGO Mindstorm creations.

The event was MC'd by BEAM President Arthur McKinnon, who presented EGW Personnel Staffing President and CEO Thomas R. Wach (pictured) with the Charles Campbell, Sr. Outstanding Service Award.

Other BEAM award recipients were: Turner Construction Company, Corporate Partner of the Year; Yolanda Bell, of Buffalo State College's Academic Talent Search, Educational Achievement Award; Darrell A. Moore, of Daemen College Computer Services, Special Achievement Award; Melissa G. Delmonte, Architect at Kideney Architects, Audubon Interior Studio, Technical Advisor Award; and Lindsay Banks, of BEAM's Buffalo State College Program, Faculty Advisor Award.

This year's BEAM officers are: President: Arthur J. McKinnon Jr.; Vice President of Programs: Robert Tom; Vice President of Membership: Carmen Vella; Secretary: Milton Cook; and Miguel Antonetti, Treasurer.

Tech Savvy 6

The American Association of University Women (AAUW) Buffalo branch held its annual Tech Savvy event at UB's North Campus, with special workshops targeted to introducing engineering, mathematics, science, and technology careers to young women. The event, conceived by Tamara Brown (MEng CE '03), was sponsored in part by the School of Engineering.

Student He an Intel Finalist

Williamsville East High School student **Bryan Dawei He** was one of 40 finalists nationwide competing in the Intel Science Talent Search 2011, with a project that he worked on as an intern with CSE Associate Professor **Sheng Zhong**. The project, entitled "Compact Binary Code of Mosaic Floorplans," enables a computer to design chips more efficiently. He's parents are CSE Professor **Xin (Roger) He** and Hwa Liu.

Bryan Dawei He

Sheng Zhong

Buffalo-area Engineering Awareness for Minorities (BEAM) is a nationally recognized program promoting engineering, math, science, and technical educational excellence for underrepresented school-age youth.

Local Student Teams in Future Cities Competition

The Tell/Marshall Homeschool Team, mentored by ISE PhD student **Sabrina Casucci**, participated in the New York–Western Region Future Cities Competition. The team earned a second place spot and a monetary award for their Future City of Jamara, located on the Hawaiian island of Molokai. The team also received recognition for the Most Innovative Transportation System from the New York Upstate Section of Transportation Engineers. The team's entry earned the high placement and the judges' praise based on several components, including a research essay describing the team's innovative health care product, a SIMCity4 computer model, a physical model, and a presentation.

(Left) Shown here with their model are teammates Jamie Tell, Tara Marshall, and Max Tell, with their Future City model.

BEAM's Saturday Academy middle school students who participated in the competition were awarded the Most Unique Computer Model Design Award for their table scale model of a city 150 years in the future, made of recycled material.

(Below) The Saturday Academy team is shown here with their model city.

1970s

Chien-Wu Chang, MS '74 PhD '77 CE, is a Lockheed Martin Space Systems Senior Staff Engineer (Sunnyvale, Cal.).

George B. Finelli, BS CS '78, is NASA's Langley Research Center Operations Director. He recently presented on "Sustainable Design of Langley Research Center's New Town and Future Infrastructure." He is the former director of NASA's Aviation Safety and Security Program in the Aeronautics Mission Directorate.

George B. Finelli

Ira Flatow, BS IE '71, award-winning science journalist, author, and host of NPR's Science Friday program, recently spoke on creativity at Buffalo & Erie County Public Library's Central Buffalo branch.


Ira Flatow

Richard D. Marczewski, BS ME '79, Senior Mechanical Engineer of Watts Architecture and Engineering, is now a principal of the firm.

Jerry Masker, BS '68 MS '70 EE, is now Director, Systems Software Development at ATTO Technology (Buffalo, NY).

David Oppenheimer, BS ME '78, is now Chief Financial Officer of ServiceSource (San Francisco, Cal.).

Doug van Dorsten, BS EE '77, has been named sp3 Inc.'s Board Chairman. He is President and CEO of vanDorsten and Co., a financial consulting firm.

John Wawrzynek, BS EE '77, is a Professor of Electrical Engineering and Computer Sciences at the University of California, Berkeley. He recently spoke on "Advances and Challenges in Reconfigurable Computing" at the International Conference on ReConFigurable Computing and FPGAs (field-programmable gate arrays).


John Wawrzynek

Peter Yao, BS'67 MS'73 EE, is serving his second term on the Claremont City Council (Cal.). He was selected as Mayor of Claremont in 2006 and 2007.


Peter Yao

1980s

Maryam Alavi, BA CS '72, has been Emory University's Goizueta Business School John M. and Lucy Cook Chair in Information Strategy and Vice Dean since 2005 (Atlanta, Ga.).


Maryam Alavi

Dan Celenti, PhD EE '88, published *Perfect 800 SAT Math* (Prufrock Press).


Dan Celenti

(Neal) Tai-Shung Chung, PhD CE '81, is a Professor in National University of Singapore's Chemical & Biomolecular Engineering Department. The Institute of Chemical Engineers, UK, noted him as "highly recommended" for Innovation & Excellence in the sections of Energy, Sustainable Technology, and Water.


Tai-Shung Chung

Phillip M. Galbo, BS CIE '83, Transportation Engineering Department Manager of Watts Architecture and Engineering, is now a principal of the firm.

Jeremy Gilbert, BS EngSci '81, is a Biomedical and Chemical Engineering Professor at Syracuse University's L.C. Smith College of Engineering and Computer Science, and Editor-in-Chief, *Journal of Biomedical Materials Research – Part B: Applied Biomaterials.*


Jeremy Gilbert

Peggy Haney, BS CS '88, is a Pembroke High School Computer and Mathematics teacher and department chair.

***Doug Hillman**, BS EE '82, a UB Engineering Dean's Advisory Council member, is President and CEO of Aerosonic, which he joined in April, 2008. He was recently interviewed in *The Wall Street Transcript's Aerospace & Defense Report.*


Doug Hillman

Deb Howell, BS '86 CE, is an Army Corps of Engineers Environmental Project Engineer (Buffalo, N.Y.).

Henry Neeman, BS CS '87, is Director, University of Oklahoma's Supercomputing Center for Education & Research, and an Adjunct Assistant Professor in its School of Computer Science.


Henry Neeman

1980s continued

Michael B. Pratt, BS CIE '83, a Civil/Structural Engineering Department Manager at Watts Architecture and Engineering, is now a principal of the firm.

Mark Pulver, BS IE '86, has been Syracuse Castings Sales Corps's CEO since 1997. He was recently interviewed in the *Syracuse Post-Standard* (N.Y.).


Mark Pulver

James A. Ritter, PhD CE '89, is Graduate Director and L.M. Weisinger Professor of Engineering at University of South Carolina.


James Ritter

Bahgat G. Sammakia, MS '80 PhD '82 ME, founding and current Director, Small Scale Systems Integration and Packaging Center, and SUNY Binghamton ME Professor, is now SUNY Binghamton's Interim Vice President for Research. Sammakia received the 2010 ITherm Achievement Award. He is an American Society of Mechanical Engineers fellow, and he recently earned a SUNY Chancellor's Award for Excellence in Scholarship and Creative Activities.


Bahgat G. Sammakia

John M. Samar, BS CIE '88, was promoted to Construction Services Vice President, John W. Danforth Company (Tonawanda, N.Y.).

John K. Schneider, BS '80 MS '87 PhD '90 EE, earned a patent for "Large-area biometric specimen comparison with small-area biometric sample," with inventors: John K. Schneider and Fred W. Kiefer, with assignee Ultra-Scan Corp. (Amherst, N.Y.).

Radha Sekar, BS CS '84, is the Chief Financial Officer for U.S. Immigration and Customs Enforcement (ICE). Prior to joining ICE, she was the Assistant Deputy Under Secretary for Financial Management for the Under Secretary of Defense Comptroller. She is a past partner at IBM Business Consulting Services and PricewaterhouseCoopers LLP.


Radha Sekar

Ashutosh Sharma, PhD CS '87, won the Infosys Prize 2010 for Engineering and Computer Science. He is the Indian Institute of Technology, Kanpur Institute Chair Professor and Principal Investigator of its Center of Nanosciences.


Ashutosh Sharma

Thomas Yorkey, BS EE '83, was promoted to Vice President of Research & Development of Solta Medical, Inc. (Cal.).

1990s

*Mark W. Ackley, MS ME '75 PhD CE '91, earned a patent for "Adsorbent and catalyst mixtures," with assignee Praxair Technology (Danbury, Conn.).

Arun Chandra, BS IE '95, recently founded Chandra Law Offices, P.C. (Forest Hills, N.Y.).


Arun Chandra

Mark Crovella, MS CS '91, a Boston University Computer Science Professor (Mass.), won a National Science Foundation grant to study simplification of graphs of complex computer networks.


Mark Crovella

Tom Gebo, BS '91 ME '98 CE, recently transitioned from Senior Thin Film Coating Process Engineer to Thermal Analysis and Design Engineer at ITT Geospatial Systems (Rochester, N.Y.).


Tom Gebo

Michael Getz, BS IE '96, Infrastructure Architecture Advisor at CA Technologies, was recently elected to CA's Council for Technical Excellence.

William T. Haney, BS CS '95, is IT Program Manager at Northrop Grumman.

Hari Kalla, MS CIE '99, is part of the Federal Highway Administration Office of Operations, and is the Team Leader for the *Manual of Uniform Traffic Control Devices.*

Amarnath Kasalanati, MS '94 PhD '98 CIE, is Dynamic Isolation System's Director of Engineering (McCarran, Nev.).


Amarnath Kasalanati

Richard Miller, BS '92 MS '93 PhD '95 ME, is a Clemson University ME Associate Professor.


Richard Miller

Paul T. Stoddard, MS CSE '90, is now Chief Information Officer at CareSource Management Group (Dayton, Ohio). He had held executive positions at BlueCross BlueShield of Western New York and at HealthNow New York Inc.


Paul Stoddard

1990s continued

Albert Wang, PhD EE '96, is an EE Professor at Bourns College of Engineering at University of California, Riverside. Wang is a fellow of both the American Association for the Advancement of Science and the Institute of Electrical and Electronics Engineers.


Albert Wang

2000s

Valerie Beecher, BS '00 MS '02 IE, an Ergonomic Specialist, Upstate University Hospital (N.Y.), recently spoke at the 4th Annual Safe Patient Handling Conference.


Valerie Beecher

William M. Breier, BS ME '09, is now a Mechanical Engineer at Lancaster Tanks (Buffalo, NY). He was a Nuclear Officer for the U.S. Navy.

Jaideep Chatterjee, MS '02 PhD '07 CIE, is a Senior Geotechnical Engineer at Burns Cooley Dennis, Inc. (Ridgeland, Miss.) and an Adjunct Assistant Professor of Civil and Environmental Engineering at Jackson State University (Miss.).


Jaideep Chatterjee

Jessica M. Crane, BS CIE '10, is a Civil Engineer in Watts Architecture & Engineering's Transportation Department (Buffalo, NY).

Wu Fan, PhD CSE '09, is a CSE Assistant Professor at Shanghai Jiao Tong University's CSE Department.

Victor Hang Fung, BS EE '06, is now an Electrical Engineer at Motorola (N.Y., N.Y.).

Prasanth George, MS ME '04, is a Mathematics Lecturer at the University of Rhode Island.


Prasanth George

Matthew J. Gounis, BS '97 MS '01 ME, a Radiology Assistant Professor and Director, New England Center for Stroke Research, University of Massachusetts Medical School, received the American Society of Mechanical Engineers' Y.C. Fung Young Investigator Award.


Matthew Gounis

Andy Park, PhD CSE '07, is Executive President, Hansung Elcomtec (Korea). His prior positions included President, iStation Corporation, and Vice President, Mobile Communication Division, Samsung Electronics (both in Korea).

2000s continued

Jesse Parrish, BS IE '10, is now a Manufacturing Engineer at Buffalo Wire Works.

Howard Phillips, BS CE '04, is President, Enviro-Safe Services, Inc. (Elmira, N.Y.).

Steven SanFilippo, BS '94 MS '96 ME, of Avox Systems, is President, Engineering Society of Buffalo.


Steven SanFilippo

Avijit Sarkar, MS '02 PhD '04 IE, was promoted to Associate Professor at University of Redlands' Business School (Cal.), which he joined in 2005.


Avijit Sakar

Michael Scipione, BS ME '03, is a Laboratory Engineer at Laboratory for Laser Energetics (Rochester, N.Y.).

Daniel Struble, MS IE '04, is Managing Principal and Executive Consultant of Facility Planning Partners (The Woodlands, Tex.).


Daniel Struble

Jesse T. Thomson, BS CS '09, is an engineer for Synacor (Buffalo, N.Y.).

Sudip Umachigi, MS CIE '05, is now Project Manager, Razz Construction (Bellingham, Wash.).

Medha Vedaprakash, MS EE '00, has been an associate of Rho Ventures Investment since 2007. Before joining Rho, she was with Siemens. She holds two technology patents.


Medha Vedaprakash

Kyle J. Young, BS ME '10, is now a Control Systems Application Engineer at Building Controls and Services (Tonawanda, N.Y.).

Zhaohui Zheng, PhD CSE '04, is now head of Yahoo! Labs, China.


Zhaohui Zheng

Brian Zilbauer, BS ME '09, is now a Manufacturing Engineer at Buffalo Wire Works.

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Engineers Week 2011

Please visit www.eng.buffalo.edu to learn about School events.

This year's Engineers Week celebration brought students out to participate in large numbers. The events were successful thanks to many, especially Student Association Engineering Club Coordinator **Dan Pastuf** (AE) and the student club members, faculty, and representatives from local corporations who assisted. To see more pictures, please visit the UB Student Experience Facebook page: Facebook.com/whatsupub.

1. ***Some of Theta Tau's Mu Gamma chapter with their 28-step Rube Goldberg machine (l to r): Kevin King (ME), Eva Greenfield (CIE), Tyler Matthews (EE), Michelle D'Lima (CBE), Sean Bicknell (ME), and Paul O'Brien (BME). The machine went to the regional and national competitions last spring.***
2. ***Bot Wars crowd watches on.***
3. ***Ms. and Mr. Engineer: Esther Buckwalter (EnvE) (left) and Andy Bartlett (CIE) (right)***
4. ***AIChE Water Filtration Competition: Christina Bieber (BME) (left) and Ben Deuell (ME) (right)***
5. ***Lego Spacecraft: Dominic Baratta (CS) (left) and Sean Bicknell (ME) (right)***
6. ***Egg Drop Competition: front row, holding egg cartons: Christine Menton (ME); middle row (l to r): Dylan La Lone (ME), Tom Scheeler (ME), Scott Literman (ME), Matt Pivarunas (AE), Josh Weisberger (AE); back row (l to r): Dave Berquist (CS), Joe Keating (ME), Dave Holewka (AE), Jonathon Burkhart (AE), Margaret Scott (ME) and Andrew Ring (AE)***

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